

# THE NETWORK READINESS INDEX 2020

Accelerating Digital Transformation  
in a post-COVID Global Economy



**Soumitra Dutta** and  
**Bruno Lanvin**  
Editors





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## Preface

In most parts of the world, 2020 will be remembered as the year when COVID struck, triggering a planetary shockwave. At the time of writing (October 2020), it is still too early to fathom the many ways in which this health phenomenon will translate into the unavoidable social, economic, and geopolitical shocks and realignments that loom on the horizon.

Yet, it is clear that, to adopt the right strategies, governments, businesses, analysts, and individual citizens will need the relevant metrics to monitor at least three major trends, which can be summarized in the following three questions:

- How fast will the world be able to produce and deploy the tools necessary to tame the health crisis (typically a vaccine)?
- How much will current economic mechanisms and balances need to be adapted to a post-COVID world in which longstanding and new challenges will be made more acute, including massive unemployment, growing inequalities, and diminished trust in our institutions?
- How far should we be ready to go to address global issues such as climate change, and how will the crisis affect our collective ability to do so?

Answering these three key questions (how fast, how much and how far) requires us to consider a critical and central issue, namely: How will the various relevant stakeholders (governments, business, and citizens) cooperate (and/or compete) to fully leverage the possibilities offered by technological innovation to tackle current and upcoming challenges?

Our view is that metrics can help. Facts and evidence about how various countries are faring in the face of such challenges and identifying the lessons to be drawn from their individual and collective experience are key ingredients to a successful, equitable, and sustainable digital transformation of the global economy.

That is why we created the Network Readiness Index (NRI) some 20 years ago, and that is why it is even more relevant today.

## “What’s past is prologue”

*(William Shakespeare, The Tempest, Act 2, Scene 1)*

In the face of rapid technological change, our maps are incomplete, our compasses are imprecise, and our data are either scarce or overabundant. This is the background against which we created the Portulans Institute in 2019: Portulans were the sketchy maps on which the navigators of the 15th and 16th centuries had to rely: A few ports could be located, interspersed with the dotted lines of hypothetical coastlines. This did not prevent some visionary minds from discovering new worlds and reshaping the one they lived in.

Today, our ability to “think beyond COVID” and prepare for a world in which technology and innovation are better governed is the key to making our future better than what preceded it. It is in that context that Shakespeare’s judgment that “What is past is prologue” becomes a promise, rather than a threat.

Last year, we launched the first edition of the “new NRI,” offering a better balance between the technology and human dimensions of network readiness, and emphasizing the importance of measuring trust, security, privacy, and our abilities to leverage technological change to address global challenges such as climate change, and accelerate the realization of the Sustainable Development Goals (SDGs). Based on further analyses, and on the significant feedback received since then, we came to the conclusion that the new NRI model is both valid and powerful.

However, this does not prevent us from pursuing our efforts to continuously improve the index and the NRI report. Additional data have been added to this year’s index, and the 2020 edition of the report is accompanied by a series of interviews carried out by the Portulans Institute team with high-level decision makers, opinion leaders, and implementers to address a large array of issues around “digital transformation,” the theme of this year’s report.

None of this would have been possible without the continuous support and active participation of our partners, Advisory Board, and Technical Advisory Group, whom we thank most warmly. This year, we are particularly happy to welcome STL as our new sponsor. Being a major global player on the ICT scene, they will clearly help us to improve our vision of what is happening on the ground, and make NRI even more precise and relevant in the future.



**PROF. BRUNO LANVIN**



**PROF. SOUMITRA DUTTA**





# The World is ready for one network, is the Network Ready?



**Dr Anand Agarwal,**

Group CEO  
STL - Sterlite Technologies Limited

This has been a unique year. We have seen a turning of the tables. The physical world saw “social distancing” as a norm. On the other hand, the digital world went ballistic - with nearly 1 million new Internet users being added every day. Internet usage also grew at unprecedented rates - both in data volume and practical applications. Now, we literally travel at the speed of light from one continent to another, or even to our local grocery store. We see a new world emerging, where the Internet brings everyone closer together. We learn on videos; we interact in e-conferences, we engage in news from the other side of the globe - we, as humanity, are ready for one network.

The question is - “Is the Network ready?” for this new phase of humanity.

As STL – Sterlite Technologies Limited, we are excited to partner with Portulans Institute to answer this question - with the Network Readiness Index (NRI). This report assesses how countries are leveraging information technologies to be future-ready. At STL, we have spent the last twenty-five years dedicated to connecting the world with the purpose of “Transforming billions of lives by delivering digital networks”. This has meant an ongoing quest for developing and implementing solutions that will bring large-scale, high-quality and affordable Internet to the whole world.

The last twenty-five years have seen a dramatic transformation, and today more than 4.5 billion people – 59% of the world population are now connected. The Internet has now become the lifeblood of global economies, fuelling innovation, and technological advancement. We have come a long way with technology adoption, and yet this is just the beginning. The next phase of the Internet has to move into the deeper parts of global society, bringing this great tool of humanity to everyone.

We already see a whole new architecture for the next phase evolving- the Next-Gen Digital Network. It will be built in a fundamentally different way by bringing together four specialized technological confluences: wired and wireless, software and hardware, connectivity and computation, and open-source - all at the edge of the network. This network will bring affordable, high-quality Internet to the world. STL, as an industry-leading integrator of digital networks, is empowering its customers in over 100 nations to bring this Next-Gen network to the market.

Digital disruption is the new normal, and the global community is embracing digital technologies to compete and flourish in a new world. The NRI model recognizes the pervasiveness of digital technologies in today’s networked world and focuses on four fundamental dimensions: Technology, People, Governance, and Impact. It covers issues ranging from future technologies such as AI and the Internet of Things (IoT) to the role of digital transformation in reaching the Sustainable Development Goals (SDGs). The Network Readiness Index provides nations with invaluable knowledge they must have to succeed and be future-ready.

Technology is set to bring humanity together - to collaborate and transform the everyday lives of billions. To get there, we need an ecosystem of like-minded futurists, digital network creators - Telecom companies, Cloud companies, Governments, and Private Enterprises - to work together in an integrated manner.

The Network Readiness Index is that looking glass with which all nations and ecosystems can reflect upon their areas of strengths and opportunities. As the shift to digital is permanent, let us make the most of this window of opportunity to make the network ready.





# Accelerating Digital Transformation in a Post-COVID Global Economy



# Digital Transformation in a Post-COVID Global Economy

*Soumitra Dutta, Bruno Lanvin, and Michael Bratt*

- *“(COVID-19 has) highlighted a great disparity across our society, (...) We are in the midst of a forced transformation, but I would argue that it’s been underway for quite a while.”* (Vint Cerf, Google’s Chief Internet Evangelist)
- *“Even though there is a lot of celebration around how far Africa has come, in terms of digitization, there still is a lot more that needs to be done, if we really want to deliver an inclusive Africa”* (Vera Songwe, Executive Secretary, United Nations Economic Commission for Africa)

*Source: all quotes are from exclusive interviews carried out in September-October 2020 for Portulans’ Digital Transformation Dialogue Series.*

Over the past few months, our lives have been deeply affected by significant limitations to the way we interact, work, travel, learn, and create value. During that time, technology often came to the rescue, helping us to mitigate or circumvent such limitations. Tele-working, tele-conferencing, and an increased reliance on tele-medicine, distance learning, and e-commerce became part of a “new normal” that is still changing every day.

How many of these changes and new habits will fade away after the crisis, and how many of them will stay with us, affecting our economies and societies in the future?

If we look back at the decade that preceded the COVID crisis, it is fair to say that many governments, businesses (large and small), and pundits have made the costly mistake of confusing “digital initiatives” with “digital strategies.” While they were busy spending resources to digitize their payroll, accounting, purchasing, and sometimes HR operations, many missed the massive changes that were happening under their feet, as entire sectors were being swept away or significantly reshaped by a deeper phenomenon of “digital transformation.”: The media, retail, hospitality, and automotive industries were among them. They might soon be followed by health, education, air transport, and insurance, to name a few.

The acceleration impelled by COVID has not been limited to the use of digital tools. It has also induced a significant “deepening” of the ways in which governments, businesses, and individuals consider digital transformation. There are many debates about artificial intelligence (AI) and its potential impact on jobs. Similarly, recent controversies around 5G have shown how geo-politics, technology, and environmental concerns can mix in unprecedented ways. The result is that digital transformation is now seen as a critical concern by all types of stakeholders: governments (central and local), corporations (large and small), and individual citizens.

## What is digital transformation?

The main reason why digital transformation differs markedly from digital initiatives and digital strategies (some would say from digitization and digitalization), is that it implies a radical change (a metamorphosis) in the nature of an existing entity, rather than differences in its modus operandi alone. Most analysts and practitioners have now adopted the typology articulated by McKinsey, according to which there are four types (or levels) of digital transformation: business process, business model, domain, and cultural/organizational.

**This is rather easy to understand for a company, but does it have any meaning for a country? And should it?**

**Can the “core” of a national economy be digitally transformed? And if so, how?**

There are at least four levels (comparable to the four levels of McKinsey’s typology) that need to be considered to apply the notion of “digital transformation” to a country. They include: (1) the “regalian” functions of a sovereign state (e.g. fiscal matters, laws and regulations, national security), (2) the day-to-day organization and delivery of public services (health, education, justice, and most government services), (3) the proper functioning of the economy and society according to some set of accepted rules (typically a constitution), a particular economic system, as well as a set of cultural and confessional values, and (4) the overall efficiency and performance of the national economy as a whole, as it competes on the international scene.

At each of those four levels, digital transformation is clearly happening at an increasingly faster pace. Beyond the obvious examples of public services “moving to the cloud” and increasingly being delivered online lies a deeper reality

in which crypto-money may challenge the monopolies of national currencies, and cyber-attacks are becoming part of international conflicts, where digital competition may displace entire sectors away from the geographies where they had traditionally been hosted, where high-level talent will become globally mobile (but create value at digital hubs and along digital highways), and where value chains may migrate to new horizons and new models on a continuing basis.

NRI data show that digital transformation is happening at all levels: internationally, nationally, and locally. Smart cities, in particular, may be seen as a harbinger of the kind of digital transformations to come when “smart nations” start burgeoning. From this year’s analysis, a number of key messages (see below) emerge, showing that, whether we have a definition of it or not, digital transformation has already started, and is changing the world.

But is it changing the world for the better? As is often the case with innovation and technology, the answer is a “yes, but”: In the face of longstanding and new challenges (climate change, growing inequalities, health), digital transformation can be a formidable tool to allow countries, cities, corporations, and individuals to build a better future. However, if unchecked and left to the spontaneous forces of the market, it may lead to the opposite outcome. Re-balancing technological and human aspects of digital transformation is hence a tall agenda for all of us.

## Three important questions on digital transformation

As the pace of digital transformation intensifies, we need to ask three important questions.

### HOW IS DIGITAL TRANSFORMATION IMPACTING GLOBAL INEQUALITY?

In 2019, about two-thirds of the global population own a mobile phone, and a little more than 55 percent of the global population is connected to the Internet. While these penetration rates are significant, especially when compared to five or 10 years ago, the rate of growth in penetration has slowed. With prevalent technologies and at current rates of increases in penetration, it may take us another 50 years or more to get the whole world connected to the Internet. As we usher in an accelerated phase of digital transformation, is this technology divide in effect accentuating global inequality? The technology divide is not just across high-income and low-income countries, but also across richer (typically cities) and poorer (usually rural) parts within the same country. Divides also exist regarding the quality of technology being accessed—such as the bandwidth of broadband connectivity. There are fears that high-income economies with more skills and greater access to resources may be able to leverage better technology to create more economic value at a faster rate than low-income nations who have access to some technology (but not the best), have limited skills, and access to fewer resources. This will in turn increase the wealth gap and make the world a more unequal place. While the recent trends regarding inequality are mixed—increasing in some places (typically advanced industrial nations) and decreasing in others—the question of whether increased digital transformation will increase inequality over time remains an important question in the minds of many.

### IS DIGITAL TRANSFORMATION LEADING TO BETTER LIVES?

We have seen an undeniable increase in the ease with which we can search for a restaurant, make a hotel reservation, buy a book online, or run a video call across multiple parties. All of these conveniences have helped to make our lives so much better (at least those of us who have access to the Internet). At the same time, there is growing concern about whether digital technologies are ultimately leading to better lives for us. Questions are being raised about the nature of jobs being created in the so-called “gig economy.” Most employees in the gig economy work part-time, without contract, without health benefits,

and often at or close to minimum wage. It is estimated that around 40 percent of the US working population is in the gig economy. Many of these workers have a hard time saving for buying a home or paying for their children’s education. Thus it is not surprising to see gig workers protesting with strikes. Uber drivers often have to work long hours or take multiple jobs to make ends meet. The nature of work itself is also changing in the gig economy. With ubiquitous technology, employers are able to monitor minute details of their employees’ behaviors and reward or penalize them accordingly. Working for small rewards and bearing the constant monitoring of the gig economy does not necessarily lead to better lives.

### ARE WE CONTROLLING OR BEING CONTROLLED BY TECHNOLOGY?

Recent controversies have brought into focus how much data is being harvested by digital companies and how all this data can be so easily mined and used for the wrong purposes. Authors such as Shoshana Zuboff have critiqued the rise of a new kind of “surveillance capitalism” in which our personal data is being harvested, mined and in some cases sold by digital companies, all without our explicit knowledge or permission. We are far from the utopian scenario of individuals controlling the privacy and use of their own data. In most cases, we are helpless participants who are resigned to the loss of personal privacy in our digital lives. Further, the progress of AI over the last decade has instilled a deeper existential fear in the minds of many. AI has reached or surpassed the levels of performance of human experts in some fields, and it is approaching human-level performance in many others. There are studies that show that significant proportions of jobs in many sectors are at risk of being taken over by intelligent machines. Due to this, many people wonder, “Will my job be secure in the future?”

The NRI provides us with a framework for analyzing the above questions by putting the human-technology dyad at the center of an economy’s vision of digital transformation. These questions are also guiding ongoing research by the authors, Soumitra Dutta and Bruno Lanvin, on the creation of a new digital agenda to address these concerns and build a better future for all.







# KEY MESSAGES OF NRI 2020

## Key messages of NRI 2020

### KEY MESSAGE NO. 1

#### DIGITAL TRANSFORMATION NEEDS TO BE “SYSTEM-WIDE.”

The best-performing countries in the index typically do well in many dimensions. A case in point is that eight of the top 10 in the overall rankings also feature in the top 10 in at least three of the four pillars. Similarly, at the other end of the rankings, seven of the bottom 10 in the overall rankings are in the bottom 10 in at least three of the four pillars. This underlines the importance of adopting a multi-dimensional approach in improving network readiness and indicates that economies should take steps to address a broad range of issues—from access to technology through matters of trust to the application of digital technologies in healthcare—rather than focusing on just a few policy areas.

### KEY MESSAGE NO. 2

#### DIGITAL TRANSFORMATION MAY CREATE NEW FORMS OF DIGITAL DIVIDES.

As in previous years, the NRI rankings show remarkable stability at the top: All of the top 10 countries in the NRI 2020 were also in the top 10 last year. In fact, the same can be said about the top 25 economies in this year's NRI. At the same time, specific regions continue to lag. Most notably, Africa trails all regions, especially when it comes to access and usage of ICTs. Once the “ripple effect” of COVID starts to hit international trade and investment flows, such divergences between “network-ready economies” and “laggards” may be amplified.

### KEY MESSAGE NO. 3

#### TRUST AND SECURITY ARE CENTRAL TO SUCCESSFUL DIGITAL TRANSFORMATION.

High levels of trust and security are strongly associated with performance in the NRI for economies in the top quartile, which suggests that these are among the most important factors that separate the most advanced economies. For instance, 18 of the top 20 economies in the NRI are also among the top 20 performers when it comes to trust, which is the highest number of all sub-pillars (along with the use of digital technologies by governments). In this

regard, the NRI also carries a strong message for other economies: Trust and security need to be at the core of digital transformation strategies to allow them to generate their full expected benefits, be it in electronic transactions (including e-commerce) or in broader areas such as education (certification, grading). A novelty in this year's index is that it emphasizes that there are various facets in building digital trust; in particular, it draws attention to the importance of fostering a trusting environment and trusting behavior. As the protection of privacy is becoming crucial as big data and AI continue to develop, global lessons can be drawn from Europe's experience with GDPR.

### KEY MESSAGE NO. 4

#### THE COVID CRISIS IS ACCELERATING DIGITAL TRANSFORMATION.

It is still too early to see any impact on the NRI data due to COVID (national accounts and annual reports will only start showing comparable evidence at the end of the calendar year). Yet, the rapid development of tele-working in locked-down economies, as well as the substitution of tele-conferencing for physical meetings and events have shown that the potential to digitize a number of activities (including education, for example) was generally far greater than anticipated. The resulting practices, for the majority, are here to stay, and will continue to affect the way we work, learn, compete, and cooperate.

### KEY MESSAGE NO. 5

#### EDUCATION AND RE-SKILLING ARE CRITICALLY IMPORTANT FOR SUCCESSFUL AND SUSTAINABLE DIGITAL TRANSFORMATION.

In all types of economies, investments in technology alone cannot guarantee higher levels of network readiness. New technologies, equipment, and services require that the corresponding skills be available locally. The ability of national economies to sustain efforts to allow a constant re-skilling and up-skilling of their local workforce and talents is key to their future. The example of NRI top-ranking economies shows that education is a central tenet of global competitiveness. As jobs continue to change, education needs to be seen as a life-long process. Curricula and methods need to be constantly updated, and increased

attention should be brought to the certifications needed to ensure that efforts to re-skill and up-skill (both by employers and employees) are properly rewarded. This will be critically important in new areas such as AI.

#### KEY MESSAGE NO. 6

### DIGITAL TRANSFORMATION CAN HELP THE ACCELERATED IMPLEMENTATION OF SDGS.

Each and every one of the 17 UN Sustainable Development Goals adopted in 2015 (SDGs) can be accelerated through the adequate use of digital technology. A truly planetary digital transformation would be one that strives to end poverty and inequality, tackle climate change and environmental degradation, and strive for peace and justice. Available data, however, show that a new acceleration of policies and efforts is needed to trigger such a transformation. The new NRI model proposed in 2019 includes a sub-pillar that aims to monitor efforts towards that end. One of the takeaways of that sub-pillar is that it highlights the positive impact digital technologies can have on sustainable development, as well as on issues related to health, well-being, and education. This strong connection between digital transformation as a tool to accelerate the realization of SDGs is further underlined in the NRI 2020 by making explicit the SDGs where ICTs have most impact.

#### KEY MESSAGE NO. 7

### DIGITAL TRANSFORMATION CAN HELP REBUILD GLOBAL COOPERATION AND REDEFINE GLOBALIZATION.

The last decade has been marked by a continuous erosion of multilateral cooperation and increasing tendencies toward protectionist—and sometimes nationalistic—policies. In such a context, digital technologies have come to be seen as instruments of domination, interference, and sometimes as weapons, rather than as vectors of cooperation and openness. Available data show that successful innovators tend to be open economies, encouraging the free flow of ideas and innovations. Network readiness is one dimension of the ability of national economies (as well as other players such as cities, including smart cities) may have to rebuild globalization around a set of shared values, including environmental sustainability, reduced inequality, and faith in a shared global future. As such, it deserves to be closely monitored and supported in all types of economies.





# KEY RESULTS OF NRI 2020



## Key results of NRI 2020

### The top 10

The top 10 performers in NRI 2020 (Table 1) are the same as last year, although there have been some changes in rankings within the group. The most notable change is Denmark surging into the runner-up position (from 6th last year), behind Sweden, which remains the outright leader, and ahead of Singapore, which drops one place. However, it is important to point out that it is close at the top. For example, fewer than 1.5 points separate Sweden from fourth-place Netherlands.

Two things that make the performances of the highest-ranked economies stand out are (i) consistently strong showings in most, if not all, pillars and sub-pillars and (ii) impressive scores in advanced fields. With regard to the first point, Table 1 clearly shows that the top 10 performers are often among the highest-ranked countries in each of the four pillars. As for the second point, the performances of top-ranked economies, generally speaking, do not differ much when it comes to fundamentals such as broad access to ICTs or regulation. What often sets them apart are issues such as adoption of and investment in emerging technologies (AI, robotics, Internet of Things, 5G).

TABLE 1: TOP 10 PERFORMERS IN NRI 2020

Country	NRI Rank	NRI Score	PILLARS			
			Technology	People	Governance	Impact
Sweden	1	82.75	2	4	4	3
Denmark	2	82.19	5	1	2	5
Singapore	3	81.39	10	5	13	1
Netherlands	4	81.37	3	9	3	4
Switzerland	5	80.41	1	13	10	2
Finland	6	80.16	9	3	5	9
Norway	7	79.39	11	8	1	6
United States	8	78.91	4	7	8	14
Germany	9	77.48	7	12	12	7
United Kingdom	10	76.27	8	14	14	10

### Regional leaders

The top 3 countries in each region are in some ways a reflection of the differences in regional performances in the NRI 2020. Thus, Europe (with three countries in the global

top 4) is the leading region in the world, while Africa (with only one country in the upper half) is the most sluggish region.

TABLE 2: TOP 3 COUNTRIES BY REGION

Africa	Arab States	Asia & Pacific	CIS	Europe	The Americas
1. Mauritius (61)	1. United Arab Emirates (30)	1. Singapore (3)	1. Russian Federation (48)	1. Sweden (1)	1. United States (8)
2. South Africa (76)	2. Qatar (38)	2. Australia (12)	2. Armenia (55)	2. Denmark (2)	2. Canada (13)
3. Kenya (82)	3. Saudi Arabia (41)	3. Korea, Rep. (14)	3. Kazakhstan (56)	3. Netherlands (4)	3. Uruguay (47)

Note: Global ranks in parentheses. CIS = Commonwealth of Independent States.

## Income group leaders

Performance in the NRI 2020 is strongly associated with income level. This is immediately clear from just considering the top 3 countries in each income group (Table 3). High-income countries dominate the top quartile, which only includes one country—Malaysia—from another income group (upper-middle-income countries). Two lower-middle-income countries make it into the upper half of the NRI rankings (Viet Nam and Ukraine), while only one low-income country (Rwanda) is outside the bottom quartile.

The two largest countries in the world—China and India—are ranked 40th and 88th, respectively. Both countries are undoubtedly home to some of the most advanced and innovative businesses and organizations around. Yet, they continue to face challenges in extending ICT access and skills to the general population, which partly explains their positions in the NRI 2020. In the final analysis, both China and India are in line with their income levels—in fact, they do better than most countries in their respective income groups, which might reflect their advanced tech sectors.

**TABLE 3: TOP 3 COUNTRIES BY INCOME GROUP**

High-income countries	Upper-middle-income countries	Lower-middle-income countries	Low-income countries
1. Sweden (1)	1. Malaysia (34)	1. Viet Nam (62)	1. Rwanda (96)
2. Denmark (2)	2. China (40)	2. Ukraine (64)	2. Tajikistan (109)
3. Singapore (3)	3. Bulgaria (46)	3. Moldova (71)	3. Uganda (114)

*Note: Global ranks in parentheses.*

(Detailed results can be found in next section)



## Continuing to improve the NRI model

As already underlined in last year's NRI Report, during the development process for the 2019 renewed NRI, the team reviewed over 30 other general or technology-specific indices and surveys, and compared the metrics and methodology used. A clear conclusion they found from this exercise is that a majority of existing indices have focused either on infrastructure—from its presence to its affordability, adoption, and in some cases relevance (e.g. the existence of content in a local language)—or on individual perceptions of the adoption of one specific technology (e.g. AI, fintech, digital health tools), and thus do not provide country-level data that allows for rankings.

A smaller number of indices give priority to the human factor of network readiness and try to capture the impact of people's choices regarding technology and governance on economic growth, and more generally the contribution of network readiness to the achievement of broader goals, such as the SDGs.

At a high level, the main concept underlying the new NRI model is that our collective future will require a harmonious integration of people and technology. Technology will continue to evolve and become more intelligent with the spread of AI and related technological innovations. People and technology will increasingly interact as collaborators

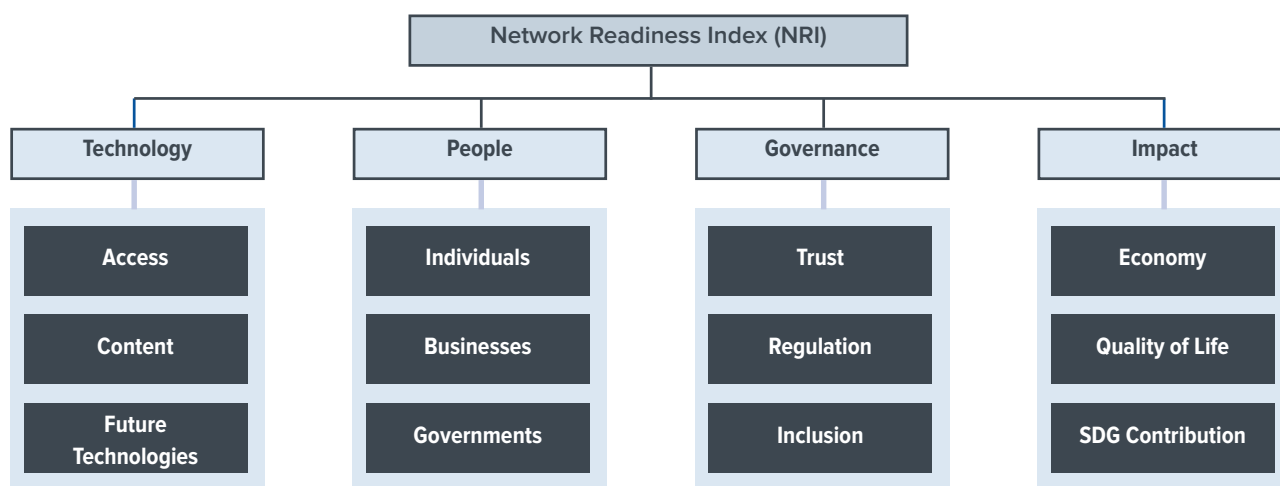
and partners in most parts of society and business. To ensure the effectiveness of this integration, appropriate governance mechanisms will have to be implemented to address issues related to trust, security, and inclusion. The ultimate objective is for technology to have a positive impact on the economy and our Quality of Life, helping us to achieve the SDGs.

A technical advisory group was then created to help advise on the redesign of the NRI model. There were three major principles guiding this process:

- to maintain continuity with the major components of the NRI from previous years
- to reflect the current issues with respect to ICT deployment that were not adequately captured in the NRI model of 2016
- to future-proof the NRI model for future technology trends and developments.

In light of these considerations, a new NRI model emerged that rests on four pillars: Technology, People, Governance, and Impact. Each pillar is itself comprised of three sub-pillars, leading to the redesigned NRI model depicted in Figure 1.

**FIGURE 1: THE NRI 2020 MODEL**



The reasoning behind the pillars and sub-pillars of the redesigned NRI model can be summarized as follows:

## TECHNOLOGY

Technology is at the heart of the network economy. This pillar, therefore, seeks to assess the level of technology that is a sine qua non for a country's participation in the global economy. The following three sub-pillars have been identified for that purpose:

- **Access:** The fundamental level of ICT in countries, including on issues of communications infrastructure and affordability.
- **Content:** The type of digital technology produced in countries, and the content/applications that can be deployed locally.
- **Future Technologies:** The extent to which countries are prepared for the future of the network economy and new technology trends such as AI and Internet of Things (IoT).

## PEOPLE

The availability and level of technology in a country is only of interest insofar as its population and organizations have the access, resources, and skills to use it productively. This pillar is therefore concerned with the application of ICT by people at three levels of analysis: individuals, businesses, and governments.

- **Individuals:** How individuals use technology and how they leverage their skills to participate in the network economy.
- **Businesses:** How businesses use ICT and participate in the network economy.
- **Governments:** How governments use and invest in ICT for the benefit of the general population.

## GOVERNANCE

A country's network readiness does not take place in a vacuum and is a function of the national context within which people operate. Thus, this pillar seeks to capture how conducive the national environment is for a country's participation in the network economy, based on issues of trust, regulation, and inclusion.

- **Trust:** How safe individuals and firms are in the context of the network economy, as reflected by an environment conducive to trust and the trusting behavior of the population.
- **Regulation:** The extent to which the government promotes participation in the network economy through regulation.

- **Inclusion:** The digital divides within countries where governance can address issues such as inequality based on gender, disabilities, and socioeconomic status.

## IMPACT

Ultimately, readiness in the network economy is a means to improve the growth and well-being of society and the economy. This pillar, therefore, seeks to assess the economic, social, and human impact of participation in the network economy.

- **Economy:** The economic impact of participating in the network economy.
- **Quality of Life:** The social impact of participating in the network economy.
- **SDG Contribution:** The impact of participating in the network economy in the context of the SDGs—the goals agreed upon by the UN for a better and more sustainable future for all. The focus is on goals where ICT has an important role to play, including such indicators as health, education, and environment.

The main changes in NRI 2020 concern the two sub-pillars Trust and SDG Contribution. The Trust sub-pillar has been conceptually and substantively strengthened by including indicators that address two aspects of digital trust: trust environment and trust behavior. This approach is partly drawn from a study on digital trust by Chakravorti and Chaturvedi (2017). The SDG Contribution sub-pillar has been reframed so that each indicator is explicitly linked to a particular SDG. More specifically, the sub-pillar consists of five indicators that each represent one SDG: SDG 3, Good Health and Well-Being; SDG 4, Quality Education; SDG 5, Gender Equality; SDG 7, Affordable and Clean Energy; and SDG 11, Sustainable Cities and Communities.<sup>1</sup>

Eventually, 60 indicators were identified to populate these 12 sub-pillars. Details about these indicators can be found in Appendix II: Sources and Definitions.

<sup>1</sup> These are also among six SDGs highlighted in the study "2019 ICT Sustainable Development Goals Benchmark" by Huawei and The Sustainability Institute. The sixth SDG discussed in that study—SDG 9: Industry, Innovation and Infrastructure—is already covered in the NRI's sub-pillar on Economy.







# DETAILED RESULTS OF NRI 2020



# Detailed results of NRI 2020

## Overall rankings

The Network Readiness Index 2020 ranks a total of 134 economies that collectively account for almost 98 percent of global gross domestic product (GDP). Sweden remains the top performer (Table 1). The biggest mover is Denmark, which surged from sixth position to rank second in this year's index, pushing Singapore and the Netherlands down one place each to third and fourth, respectively. Switzerland, like last year, rounds out the top 5. The other five countries that make up the top 10 are Finland (6th, up from 7th in NRI 2019), Norway (7th, down from 6th), United States, Germany, and the United Kingdom (8th, 9th, and 10th, respectively, the same as their 2019 positions).

As the list of the top 10 performers indicates, NRI 2020 confirms that advanced economies in Europe, parts of Asia and the Pacific, and North America are among the world's most network-ready societies. More concretely, 17 of the top 25 countries are in Europe (primarily Northern and Western Europe), four economies are in Eastern and Southeastern Asia, two are in Oceania (Australia and New Zealand), and two are in North America (Canada and the United States).

All in all, the country coverage has increased from 121 economies in NRI 2019 to 134 economies in NRI 2020. No country has dropped out from last year's index; the rise is therefore due to 13 new additions: Angola, Benin, Bolivia, Burkina Faso, Burundi, Cabo Verde, Chad, Côte d'Ivoire, Democratic Republic of the Congo, Gambia, Guinea, Lesotho, and Montenegro.

Of the economies covered in this year's index, 50 are high-income economies, 35 are upper-middle-income countries, 34 are lower-middle-income countries, and 15 are low-income countries. In terms of regional distribution, there are 31 African countries, 13 Arab States, 21 economies from Asia and the Pacific, seven from the Commonwealth of Independent States (CIS), 41 European countries, and 21 countries from the Americas.

## Pillar-level performances

Table 2 shows the performances of economies across the four pillars of the NRI: Technology, People, Governance, and Impact. A cursory look is enough to confirm that one of the insights of previous NRI editions remains very much valid: the best-performing countries in the index typically do well in many dimensions. A case in point is that eight of the top 10 in the overall rankings also feature in the top 10 in at least three of the four pillars. Similarly, at the other end of the rankings, seven of the bottom 10 in the overall rankings are in the bottom 10 in at least three of the four pillars. This underlines the importance of adopting a multi-dimensional approach in improving network readiness and indicates that economies should take steps to address a broad range of issues—from access to technology through matters of trust to the application of digital technologies in healthcare—rather than focusing on just a few policy areas.

**TABLE 1: NRI 2020 RANKINGS AND SCORES**

Rank	Country/Economy	Score	Income group	Region
1	Sweden	82.75	High-income	Europe
2	Denmark	82.19	High-income	Europe
3	Singapore	81.39	High-income	Asia & Pacific
4	Netherlands	81.37	High-income	Europe
5	Switzerland	80.41	High-income	Europe
6	Finland	80.16	High-income	Europe
7	Norway	79.39	High-income	Europe
8	United States	78.91	High-income	The Americas
9	Germany	77.48	High-income	Europe
10	United Kingdom	76.27	High-income	Europe

Rank	Country/Economy	Score	Income group	Region
11	Luxembourg	75.27	High-income	Europe
12	Australia	75.09	High-income	Asia & Pacific
13	Canada	74.92	High-income	The Americas
14	Korea, Rep.	74.60	High-income	Asia & Pacific
15	Japan	73.54	High-income	Asia & Pacific
16	New Zealand	73.27	High-income	Asia & Pacific
17	France	73.18	High-income	Europe
18	Austria	72.92	High-income	Europe
19	Ireland	72.13	High-income	Europe
20	Belgium	70.67	High-income	Europe
21	Iceland	70.55	High-income	Europe
22	Hong Kong (China)	70.52	High-income	Asia & Pacific
23	Estonia	70.32	High-income	Europe
24	Israel	69.81	High-income	Europe
25	Spain	67.31	High-income	Europe
26	Malta	66.73	High-income	Europe
27	Slovenia	66.58	High-income	Europe
28	Czech Republic	66.33	High-income	Europe
29	Lithuania	64.70	High-income	Europe
30	United Arab Emirates	64.42	High-income	Arab States
31	Portugal	64.40	High-income	Europe
32	Italy	63.69	High-income	Europe
33	Poland	61.80	High-income	Europe
34	Malaysia	61.43	Upper-middle-income	Asia & Pacific
35	Slovakia	60.78	High-income	Europe
36	Cyprus	60.67	High-income	Europe
37	Latvia	60.47	High-income	Europe
38	Qatar	60.26	High-income	Arab States
39	Hungary	60.05	High-income	Europe
40	China	58.44	Upper-middle-income	Asia & Pacific
41	Saudi Arabia	57.97	High-income	Arab States
42	Bahrain	57.59	High-income	Arab States
43	Croatia	55.94	High-income	Europe
44	Oman	55.33	High-income	Arab States
45	Greece	55.20	High-income	Europe
46	Bulgaria	55.03	Upper-middle-income	Europe
47	Uruguay	54.87	High-income	The Americas
48	Russian Federation	54.23	Upper-middle-income	CIS
49	Romania	54.16	High-income	Europe
50	Chile	54.06	High-income	The Americas



Rank	Country/Economy	Score	Income group	Region
51	Thailand	53.45	Upper-middle-income	Asia & Pacific
52	Serbia	52.96	Upper-middle-income	Europe
53	Kuwait	52.27	High-income	Arab States
54	Costa Rica	52.15	Upper-middle-income	The Americas
55	Armenia	51.91	Upper-middle-income	CIS
56	Kazakhstan	51.38	Upper-middle-income	CIS
57	Turkey	51.24	Upper-middle-income	Europe
58	Montenegro	50.95	Upper-middle-income	Europe
59	Brazil	50.58	Upper-middle-income	The Americas
60	Argentina	50.36	Upper-middle-income	The Americas
61	Mauritius	49.83	High-income	Africa
62	Viet Nam	49.68	Lower-middle-income	Asia & Pacific
63	Mexico	49.67	Upper-middle-income	The Americas
64	Ukraine	49.43	Lower-middle-income	Europe
65	Belarus	49.16	Upper-middle-income	CIS
66	Azerbaijan	48.76	Upper-middle-income	CIS
67	North Macedonia	48.28	Upper-middle-income	Europe
68	Georgia	47.95	Upper-middle-income	Europe
69	Jordan	47.50	Upper-middle-income	Arab States
70	Jamaica	47.36	Upper-middle-income	The Americas
71	Moldova	47.09	Lower-middle-income	Europe
72	Colombia	46.81	Upper-middle-income	The Americas
73	Indonesia	46.71	Upper-middle-income	Asia & Pacific
74	Philippines	45.95	Lower-middle-income	Asia & Pacific
75	Dominican Republic	45.77	Upper-middle-income	The Americas
76	South Africa	45.26	Upper-middle-income	Africa
77	Panama	44.74	High-income	The Americas
78	Albania	44.21	Upper-middle-income	Europe
79	Iran, Islamic Rep.	43.91	Upper-middle-income	Asia & Pacific
80	Peru	43.67	Upper-middle-income	The Americas
81	Trinidad and Tobago	43.61	High-income	The Americas
82	Kenya	43.22	Lower-middle-income	Africa
83	Sri Lanka	42.65	Lower-middle-income	Asia & Pacific
84	Egypt	42.56	Lower-middle-income	Arab States
85	Ecuador	42.20	Upper-middle-income	The Americas
86	Cabo Verde	42.01	Lower-middle-income	Africa
87	Bosnia and Herzegovina	41.73	Upper-middle-income	Europe
88	India	41.57	Lower-middle-income	Asia & Pacific
89	Mongolia	41.44	Lower-middle-income	Asia & Pacific
90	Lebanon	41.30	Upper-middle-income	Arab States

Rank	Country/Economy	Score	Income group	Region
91	Tunisia	41.30	Lower-middle-income	Arab States
92	Paraguay	41.12	Upper-middle-income	The Americas
93	Morocco	39.71	Lower-middle-income	Arab States
94	Kyrgyzstan	38.60	Lower-middle-income	CIS
95	El Salvador	37.33	Lower-middle-income	The Americas
96	Rwanda	37.24	Low-income	Africa
97	Lao PDR	37.12	Lower-middle-income	Asia & Pacific
98	Ghana	36.97	Lower-middle-income	Africa
99	Botswana	36.94	Upper-middle-income	Africa
100	Senegal	36.90	Lower-middle-income	Africa
101	Bolivia	36.72	Lower-middle-income	The Americas
102	Honduras	36.23	Lower-middle-income	The Americas
103	Namibia	36.11	Upper-middle-income	Africa
104	Cambodia	36.01	Lower-middle-income	Asia & Pacific
105	Bangladesh	36.01	Lower-middle-income	Asia & Pacific
106	Guatemala	35.51	Upper-middle-income	The Americas
107	Algeria	35.15	Lower-middle-income	Arab States
108	Venezuela	34.57	Upper-middle-income	The Americas
109	Tajikistan	34.14	Low-income	CIS
110	Tanzania	33.92	Lower-middle-income	Africa
111	Pakistan	33.29	Lower-middle-income	Asia & Pacific
112	Benin	32.25	Lower-middle-income	Africa
113	Nepal	31.81	Lower-middle-income	Asia & Pacific
114	Uganda	31.40	Low-income	Africa
115	Côte d'Ivoire	31.23	Lower-middle-income	Africa
116	Zambia	30.54	Lower-middle-income	Africa
117	Nigeria	30.44	Lower-middle-income	Africa
118	Cameroon	29.86	Lower-middle-income	Africa
119	Gambia	29.40	Low-income	Africa
120	Guinea	28.42	Low-income	Africa
121	Lesotho	27.72	Lower-middle-income	Africa
122	Eswatini	27.21	Lower-middle-income	Africa
123	Mali	27.00	Low-income	Africa
124	Madagascar	25.84	Low-income	Africa
125	Burkina Faso	25.79	Low-income	Africa
126	Zimbabwe	25.78	Lower-middle-income	Africa
127	Malawi	25.23	Low-income	Africa
128	Mozambique	24.18	Low-income	Africa
129	Ethiopia	23.49	Low-income	Africa
130	Burundi	22.62	Low-income	Africa

Rank	Country/Economy	Score	Income group	Region
131	Angola	20.96	Lower-middle-income	Africa
132	Yemen	18.00	Low-income	Arab States
133	Congo, Dem. Rep.	16.60	Low-income	Africa
134	Chad	14.80	Low-income	Africa

Note: CIS = Commonwealth of Independent States.

Notwithstanding the significance of pursuing multi-dimensional strategies in strengthening network readiness, a deeper analysis points out certain differences among different types of countries that have a bearing on which efforts might be most fruitful. In particular, high levels of trust and security and being at the forefront of future technologies are strongly associated with performance in the NRI for economies in the top quartile, which suggests that these are among the most important factors that separate the most advanced economies. The rationale is straightforward: The performances of top-ranked economies do not, generally speaking, differ much when it comes to fundamentals such as broad access to ICTs or regulation. Therefore, what sets them apart are issues where they diverge more, including adoption of and investment in emerging technologies (AI, robotics, Internet of Things, and the like).

The picture alters as one moves down the NRI rankings. It becomes clear that what distinguishes countries from one another is access to technology and ICT usage and skills in larger segments of the population. By contrast, issues such as the prevalence of future technologies and the extent of advanced ICTs seem to play less of a role in determining network readiness. The inference to draw from this is that these countries in the bottom half of the rankings should, in general, focus their attention on improving digital access, usage, and skills in their populations at large.

Turning to the specific pillars, Switzerland is the highest-ranked country when it comes to **Technology**. Not only does it claim the top spot in the Content sub-pillar, it is also the only country to feature in the top 10 of the other two sub-pillars (Access and Future Technologies). Switzerland is followed by Sweden and the Netherlands, both of which perform best in the Content and Future Technologies sub-pillars. Just behind them is the United States, which is the undisputed global leader when it comes to Future Technologies, making it into the top 10 in each of the five indicators. The Access sub-pillar, meanwhile, is headed by Luxembourg, which can be partly attributed to the affordability of ICTs.

Denmark remains the best-performing country with respect to the **People** pillar and is also ahead of the pack in the sub-pillar that relates to how governments engage in ICTs.

The Republic of Korea and Finland, respectively, follow Denmark as a result of their world-class levels of usage and skills in all sub-pillars: Individuals, Businesses, and Governments. In fact, each of the top 3 countries in the People pillar feature in the top 10 in each of its three sub-pillars. The leader when it comes to Businesses is Japan, thanks to its private sector's excellent usage and skills relevant to digital technologies. The United Arab Emirates, meanwhile, is the country with the best showing in terms of Individuals, especially as it relates to ICT usage.

Northern European countries dominate the **Governance** pillar, with Norway holding on to the top position that it claimed in last year's NRI. The country is also the top performer in the Regulation sub-pillar and ranks second when it comes to Trust. The latter sub-pillar is headed by neighboring Denmark, which has high scores in terms of both a secure environment and trusting behavior. The rest of the top 5 consists of the Netherlands, Sweden, and Finland, which all are among the 10 best performers in each of the three sub-pillars. The global leader with respect to the Inclusion sub-pillar is Canada, which also enjoys high levels of Trust, but could do more to improve Regulation related to ICTs.

The best-performing countries in the **Impact** pillar in NRI 2020 are the same as last year: Singapore, Switzerland, and Sweden (in that order). Singapore is particularly impressive as it is also the leading country in two of the three sub-pillars—Economy and SDG Contribution—and enjoys a high Quality of Life. The other top 3 countries are likewise strong all-round performers across the three sub-pillars, as is the Netherlands, which is ranked just below them. The country with the highest Quality of Life is Iceland, an economy marked by income equality, a high level of well-being, and a strong sense of happiness and freedom.

TABLE 2: RANKINGS PER PILLAR

Country/Economy	NRI ranking	Technology	People	Governance	Impact
Sweden	1	2	4	4	3
Denmark	2	5	1	2	5
Singapore	3	10	5	13	1
Netherlands	4	3	9	3	4
Switzerland	5	1	13	10	2
Finland	6	9	3	5	9
Norway	7	11	8	1	6
United States	8	4	7	8	14
Germany	9	7	12	12	7
United Kingdom	10	8	14	14	10
Luxembourg	11	6	19	16	17
Australia	12	17	10	6	18
Canada	13	12	18	9	16
Korea, Rep.	14	22	2	17	13
Japan	15	21	6	23	11
New Zealand	16	20	15	7	24
France	17	18	20	15	12
Austria	18	16	16	19	15
Ireland	19	15	33	18	8
Belgium	20	19	24	20	21
Iceland	21	14	22	31	23
Hong Kong (China)	22	13	25	26	22
Estonia	23	24	21	11	29
Israel	24	23	17	29	19
Spain	25	25	27	22	27
Malta	26	28	29	32	20
Slovenia	27	29	28	25	25
Czech Republic	28	26	32	24	26
Lithuania	29	32	23	21	39
United Arab Emirates	30	33	11	37	38
Portugal	31	27	34	34	32
Italy	32	30	36	33	28
Poland	33	36	40	27	31
Malaysia	34	41	30	38	34
Slovakia	35	34	49	30	35
Cyprus	36	37	37	39	37
Latvia	37	38	39	28	42
Qatar	38	35	45	41	30
Hungary	39	31	51	40	36
China	40	44	35	43	41
Saudi Arabia	41	45	26	45	57

Country/Economy	NRI ranking	Technology	People	Governance	Impact
Bahrain	42	40	48	42	40
Croatia	43	52	58	36	50
Oman	44	63	56	35	44
Greece	45	39	46	49	55
Bulgaria	46	43	55	44	62
Uruguay	47	48	41	50	49
Russian Federation	48	49	31	65	60
Romania	49	46	59	55	43
Chile	50	50	38	46	77
Thailand	51	51	61	47	51
Serbia	52	53	52	54	54
Kuwait	53	55	43	72	47
Costa Rica	54	54	60	62	46
Armenia	55	42	42	76	65
Kazakhstan	56	67	54	57	52
Turkey	57	58	53	48	81
Montenegro	58	47	71	59	68
Brazil	59	69	47	53	69
Argentina	60	70	50	56	64
Mauritius	61	56	73	61	61
Viet Nam	62	57	82	80	33
Mexico	63	73	64	69	48
Ukraine	64	62	65	58	79
Belarus	65	68	62	71	56
Azerbaijan	66	60	57	87	58
North Macedonia	67	65	70	60	78
Georgia	68	59	63	64	94
Jordan	69	75	44	73	90
Jamaica	70	71	85	63	59
Moldova	71	74	69	74	66
Colombia	72	77	72	70	71
Indonesia	73	72	79	68	72
Philippines	74	80	74	92	45
Dominican Republic	75	87	68	75	73
South Africa	76	64	83	52	109
Panama	77	66	90	82	67
Albania	78	82	66	96	80
Iran, Islamic Rep.	79	88	76	66	96
Peru	80	90	75	85	82
Trinidad and Tobago	81	78	88	79	83
Kenya	82	99	78	51	104

Country/Economy	NRI ranking	Technology	People	Governance	Impact
Sri Lanka	83	84	94	81	74
Egypt	84	85	80	93	84
Ecuador	85	94	81	91	70
Cabo Verde	86	86	91	89	76
Bosnia and Herzegovina	87	92	89	77	89
India	88	76	84	84	108
Mongolia	89	96	96	67	88
Lebanon	90	61	67	123	100
Tunisia	91	81	77	101	98
Paraguay	92	105	93	78	75
Morocco	93	79	87	102	97
Kyrgyzstan	94	102	95	97	85
El Salvador	95	106	105	106	63
Rwanda	96	100	97	95	103
Lao PDR	97	89	103	127	53
Ghana	98	109	100	86	107
Botswana	99	91	102	99	105
Senegal	100	97	104	88	102
Bolivia	101	101	92	118	86
Honduras	102	103	108	100	92
Namibia	103	93	98	105	106
Cambodia	104	83	110	113	93
Bangladesh	105	107	115	94	95
Guatemala	106	110	107	107	87
Algeria	107	108	86	120	101
Venezuela	108	118	101	108	91

Country/Economy	NRI ranking	Technology	People	Governance	Impact
Tajikistan	109	104	109	110	99
Tanzania	110	117	112	83	114
Pakistan	111	98	106	115	110
Benin	112	120	111	98	115
Nepal	113	111	113	114	113
Uganda	114	112	121	90	129
Côte d'Ivoire	115	115	117	104	119
Zambia	116	123	116	103	121
Nigeria	117	124	99	112	125
Cameroon	118	95	120	125	123
Gambia	119	114	122	111	117
Guinea	120	119	119	126	111
Lesotho	121	113	124	119	122
Eswatini	122	116	114	128	127
Mali	123	121	129	116	120
Madagascar	124	125	128	117	124
Burkina Faso	125	132	123	109	126
Zimbabwe	126	122	118	124	132
Malawi	127	130	125	122	118
Mozambique	128	126	127	121	130
Ethiopia	129	129	126	130	112
Burundi	130	127	130	131	116
Angola	131	128	131	129	131
Yemen	132	131	133	134	128
Congo, Dem. Rep.	133	134	132	132	133
Chad	134	133	134	133	134

## Top 10 NRI performers

Although there were some ranking changes within the group, the countries in the NRI 2020 top 10 remain the same from last year's edition. One distinguishing feature of the top 10 performers is that they do well in most dimensions of the NRI. Indeed, they are all among the 15 highest-ranked countries in each of the four pillars and perform equally well in at least two-thirds of the 12 sub-pillars. As would be expected, all of the top 10 countries are high-income economies. As for the regional distribution, Europe dominates with eight countries, while Singapore is the only top 10 economy situated in Asia and the Pacific, and the United States is the only one located in the Americas.

**1. Sweden** remains in the top spot as the world's most network-ready society. One of the country's strengths is its impressive all-round performance. It is perhaps telling that Sweden is not the best performer in any pillar or sub-pillar, but it is in the top 5 in each of the four pillars and

in half of the 12 sub-pillars. The country's highest rank at the pillar level relates to Technology (2nd), partly by virtue of it being one of the leaders in adopting and investing in Future Technologies (2nd). Sweden is almost equally impressive in the Impact (3rd) pillar, which is boosted by an advanced, digital Economy (4th) and a society marked by a high Quality of Life (5th). It ranks 4th in the two remaining pillars—People and Governance—as a result of high levels of Trust (5th), progressive Regulation (3rd), and excellent ICT usage and skills in Businesses (2nd), among others. More could be done, though, to boost the use of digital technologies among Individuals (16th).

**2. Denmark** climbs into the top 3 in this year's NRI, up from last year's position of 6th. The main reason for its improved overall performance is higher scores in the Technology (5th) and Governance (2nd) pillars. With regard to the latter dimension, Denmark is the global leader in matters of Trust, although there is room for improvement in spreading access to digital technologies (13th in the Inclusion sub-

pillar). As for the former dimension, the country produces a high level of digital Content (5th), but the country's comparably low affordability of ICTs drags down its score in the Access (13th) sub-pillar. Denmark's best performance at the pillar level relates to People (1st), with high rankings in all three sub-pillars (Individuals, 7th; Businesses, 4th; Governments, 1st). The impressive performance in the final pillar—Impact (5th)—is primarily a reflection of the society's high Quality of Life (4th) in a sustainable environment (6th in SDG Contribution).

**3. Singapore** stays in the top 3 in the NRI 2020, albeit dropping one position from last year. Once again, its key strength lies in the Impact (1st) of digital technologies on society; within this pillar, Singapore is the global leader in both the Economy and SDG Contribution sub-pillars. The city-state is also one of the prominent performers when it comes to the People (5th) pillar, where ICT usage and skills among Individuals (2nd) and in the Government (4th) are particularly impressive. Although access to digital technologies is widespread (3rd in Inclusion), weaker showings in the sub-pillars related to Trust (18th) and Regulation (20th) dampen the country's score in the Governance (13th) pillar. As for Technology (10th), Singapore's excellent performances in the sub-pillars related to Access and Future Technologies (5th in both) are partly offset by weaker showings in several indicators that capture digital content creation (19th in Content).

**4. Netherlands** falls outside of the top 3 by a thin margin, with an overall score that is only fractionally lower than that of Singapore. Its best showings are in the Technology and Governance pillars (ranking 3rd in both). More specifically, the country primarily benefits from world-class creation of digital Content (2nd) in the former dimension and from superb levels of Trust (3rd) and Inclusion (5th) in the latter. The Netherlands is also one of the top economies with respect to the Impact (4th) of ICTs on the society, with solid performances in all three sub-pillars (Economy, 8th; Quality of Life, 10th; SDG Contribution, 9th). A greater use of ICTs among Individuals (20th) in an otherwise digitally skilled population would lift the score of the People (9th) pillar. Still, the Netherlands stands out as a strong overall performer and as one of four countries in the top 10 in each of the four fundamental NRI pillars (the others being Sweden, Denmark, and Finland).

**5. Switzerland** is the global leader when it comes to Technology, where it is second to none in terms of digital participation and creation of Content. The affordability of ICTs contributes to a strong Access (4th) to technology, and the country is also in the forefront with respect to adopting and investing in Future Technologies (7th). Switzerland is almost equally impressive in the Impact (2nd) of digital technologies on its society, with an advanced Economy (3rd) and a society marked by a high Quality of Life (6th) and sustainable development (4th in SDG Contribution). Its weakest dimension relates to the usage of ICT among

People (13th), which is uncharacteristically low among Individuals (41st) and in the Government (17th). As for Governance (10th), Switzerland's strength in Regulation (4th) is offset by weaker levels of Trust (14th) and Inclusion (12th).

**6. Finland** performs well in all four pillars, ranking in the top 10 in each of them. It has a particular advantage in ICT usage and skills of Individuals (4th), Businesses (5th), and the Government (5th), which results in a high rank in the People (3rd) pillar. The country's best sub-pillar performance, however, relates to Regulation (2nd) in the Governance (5th) pillar, which is complemented by solid levels of Trust (6th) and Inclusion (9th). Finland ranks 9th with respect to both the Technology and Impact pillars, where the former benefits from high adoption of and investment in Future Technologies (6th) and the latter is primarily due to the country's excellent Quality of Life (3rd). The area where Finland has the most room for improvement in the Technology pillar is the Access (15th) sub-pillar, including scope to expand fixed-broadband penetration. As for Impact, the role of digital technologies in promoting sustainable development could be enhanced further (SDG Contribution, 28th).

**7. Norway** is ahead of all economies when it comes to Governance, which is mainly driven by world-class Regulation (1st) and an excellent level of Trust (2nd). The country also enjoys a strong Impact (6th) of ICTs, where high Quality of Life and SDG Contribution (2nd in both sub-pillars) are slightly offset by its performance in the Economy (16th) sub-pillar, with the potential for a greater share of high-tech manufactures. Norway has one of the world's most digitally engaged Governments (3rd), which contributes to its top 10 ranking in the People (8th) pillar. However, Norway could improve its ranking by increasing ICT usage among Individuals (21st) and Businesses (19th). More could also be done to increase adoption of and investment in Future Technologies (22nd), but impressive Access (6th) to ICTs and, above all, digital participation and creation of Content (3rd) means that Norway ends up just outside the top 10 in the Technology (11th) pillar.

**8. The United States** is the undisputed global leader when it comes to Future Technologies; indeed, it is ranked in the top 10 in each of the sub-pillar's five indicators (claiming the top spot in two of them). The country also generates a lot of digital Content (9th), which contributes to an excellent overall performance in the Technology (4th) pillar that is somewhat dampened by a comparatively low Access (28th) to ICTs. The US is a top 10 performer in the pillars related to People (7th) and Governance (8th). The latter pillar is boosted by strong showings in the sub-pillars associated with Trust and Inclusion (4th in both), but more could be done to strengthen Regulation (30th), especially as it relates to the ICT regulatory environment and issues of privacy. The People pillar, meanwhile, primarily benefits from extensive engagement of Businesses (10th) and the Government

(9th) in digital technologies and would improve further if usage and skills were to become more widespread among Individuals (14th). Although it enjoys an advanced, high-tech Economy (5th), the US’s worst performance at the pillar level concerns Impact (14th); reducing inequality and improving the environment would raise the Quality of Life (40th) and the SDG Contribution (31st).

**9. Germany** finds itself in the top 10 in two of the four pillars: Technology and Impact (ranking 7th in both). Its best performance at the sub-pillar level relates to Future Technologies (3rd), which can be attributed to the country being at the forefront of adopting and investing in emerging technologies, such as robotics. Also in the Technology pillar, Germany is a top 10 country when it comes to Content (10th), but its main challenge is to improve Access (27th) to ICTs. As for the Impact pillar, its main advantage lies in its advanced, high-tech Economy (7th), while addressing inequalities in income and gender would improve the other sub-pillars (Quality of Life, 17th; SDG Contribution, 12th). The overall performance of Germany in the People (12th) pillar masks diverse showings in the three sub-pillars: high usage and skills of ICTs among Businesses (6th) and, to a lesser

extent, in the Government (14th) is offset by sub-par levels among Individuals (53rd). Although the contrasts are not as stark, the Governance (12th) pillar includes two sub-pillars—Trust (10th) and Regulation (7th)—where Germany ranks in the top 10 and that stand against a weaker level of Inclusion (27th).

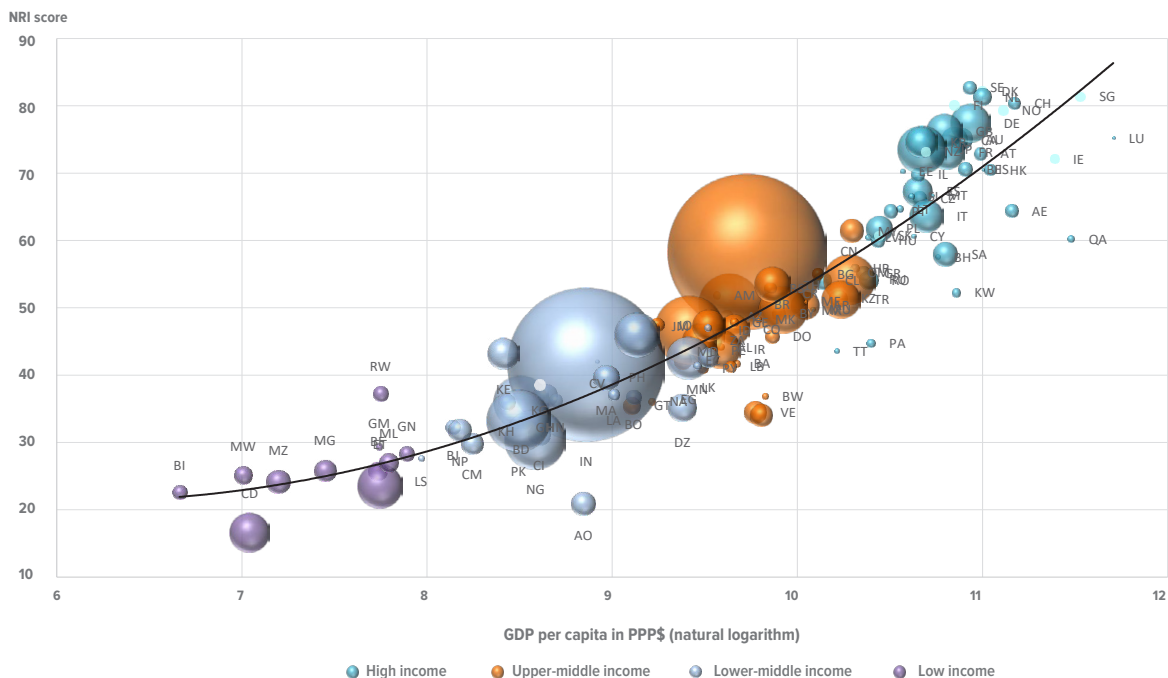
**10. The United Kingdom** is particularly strong when it comes to Technology (8th), which is due to an impressive level of Access (3rd) to ICTs and strong showings in both the Content (8th) and Future Technologies (14th) sub-pillars. These factors seem to have a positive Impact (10th) on the society, especially in terms of sustainable development (5th in SDG Contribution). The UK does not do quite as well when it comes to People and Governance (ranking 14th in both pillars). With regard to the former, it benefits from relatively high levels of ICT use in Businesses (16th) and the Government (10th), whereas it faces a challenge in raising usage and skills among Individuals (37th). In the latter pillar, the UK similarly enjoys solid performances in two sub-pillars—Trust (12th) and Inclusion (7th)—and a weaker showing in the third dimension (Regulation, 34th).

### NRI Performances by Income Group<sup>2</sup>

One of the strongest indicators of NRI performance is a country’s income level. Figure 3 displays this relationship, plotting NRI score against GDP per capita in terms of

purchasing power parity (PPP). As observed, NRI score rises with income level. Hence, the top NRI performers are predominantly high-income economies, while the bottom NRI performers are mainly low-income economies, with lower-middle-income and upper-middle-income countries placed in between in the expected order.

**FIGURE 1: NRI SCORE VERSUS GDP PER CAPITA (PPP)**



Note: GDP per capita is in PPP\$ (natural logarithms). Both GDP per capita and population data (represented by the size of the bubbles) are for 2019 or the latest year available. The data are drawn from the World Bank’s World Development Indicators database. The trend line is a polynomial of degree two ( $R^2 = 0.86$ ).

<sup>2</sup> Countries are grouped according to the World Bank Income Classifications. Economies are divided based on their 2019 gross national income (GNI) per capita, calculated using the World Bank Atlas method (see <https://blogs.worldbank.org/opendata/new-world-bank-country-classifications-income-level-2020-2021>).

## Country/Economy codes for the chart

CODE	COUNTRY/ECONOMY	CODE	COUNTRY/ECONOMY	CODE	COUNTRY/ECONOMY	CODE	COUNTRY/ECONOMY
AE	United Arab Emirates	DO	Dominican Republic	KW	Kuwait	PT	Portugal
AL	Albania	DZ	Algeria	KZ	Kazakhstan	PY	Paraguay
AM	Armenia	EC	Ecuador	LA	Lao PDR	QA	Qatar
AO	Angola	EE	Estonia	LB	Lebanon	RO	Romania
AR	Argentina	EG	Egypt	LK	Sri Lanka	RS	Serbia
AT	Austria	ES	Spain	LS	Lesotho	RU	Russian Federation
AU	Australia	ET	Ethiopia	LT	Lithuania	RW	Rwanda
AZ	Azerbaijan	FI	Finland	LU	Luxembourg	SA	Saudi Arabia
BA	Bosnia and Herzegovina	FR	France	LV	Latvia	SE	Sweden
BD	Bangladesh	GB	United Kingdom	MA	Morocco	SG	Singapore
BE	Belgium	GE	Georgia	MD	Moldova	SI	Slovenia
BF	Burkina Faso	GH	Ghana	ME	Montenegro	SK	Slovakia
BG	Bulgaria	GM	Gambia	MG	Madagascar	SN	Senegal
BH	Bahrain	GN	Guinea	MK	North Macedonia	SV	El Salvador
BI	Burundi	GR	Greece	ML	Mali	SZ	Eswatini
BJ	Benin	GT	Guatemala	MN	Mongolia	TD	Chad
BO	Bolivia	HK	Hong Kong (China)	MT	Malta	TH	Thailand
BR	Brazil	HN	Honduras	MU	Mauritius	TJ	Tajikistan
BW	Botswana	HR	Croatia	MW	Malawi	TN	Tunisia
BY	Belarus	HU	Hungary	MX	Mexico	TR	Turkey
CA	Canada	ID	Indonesia	MY	Malaysia	TT	Trinidad and Tobago
CD	Congo, Dem. Rep.	IE	Ireland	MZ	Mozambique	TZ	Tanzania
CH	Switzerland	IL	Israel	NA	Namibia	UA	Ukraine
CI	Côte d'Ivoire	IN	India	NG	Nigeria	UG	Uganda
CL	Chile	IR	Iran, Islamic Rep.	NL	Netherlands	US	United States
CM	Cameroon	IS	Iceland	NO	Norway	UY	Uruguay
CN	China	IT	Italy	NP	Nepal	VE	Venezuela
CO	Colombia	JM	Jamaica	NZ	New Zealand	VN	Viet Nam
CR	Costa Rica	JO	Jordan	OM	Oman	YE	Yemen
CV	Cabo Verde	JP	Japan	PA	Panama	ZA	South Africa
CY	Cyprus	KE	Kenya	PE	Peru	ZM	Zambia
CZ	Czech Republic	KG	Kyrgyzstan	PH	Philippines	ZW	Zimbabwe
DE	Germany	KH	Cambodia	PK	Pakistan		
DK	Denmark	KR	Korea, Rep.	PL	Poland		

Another way to observe the strong positive correlation between NRI score and income level is to look at the summary statistics of each income group. This is done in Figure 4, which shows that high-income economies consistently outperform the other three income groups in the various percentiles. Indeed, such is the dominance of this set of countries that the NRI score of the 25th percentile of the high-income group is on par with that of the best-performing upper-middle-income country. The

dispersion of NRI scores among high-income economies is greater than in the other income groups, as reflected by the size of the box-and-whisker plots. Still, all but the very last country in the top quartile are high-income economies, and only the two lowest-ranked high-income countries have NRI scores that are inferior to the best-performing lower-middle-income country.

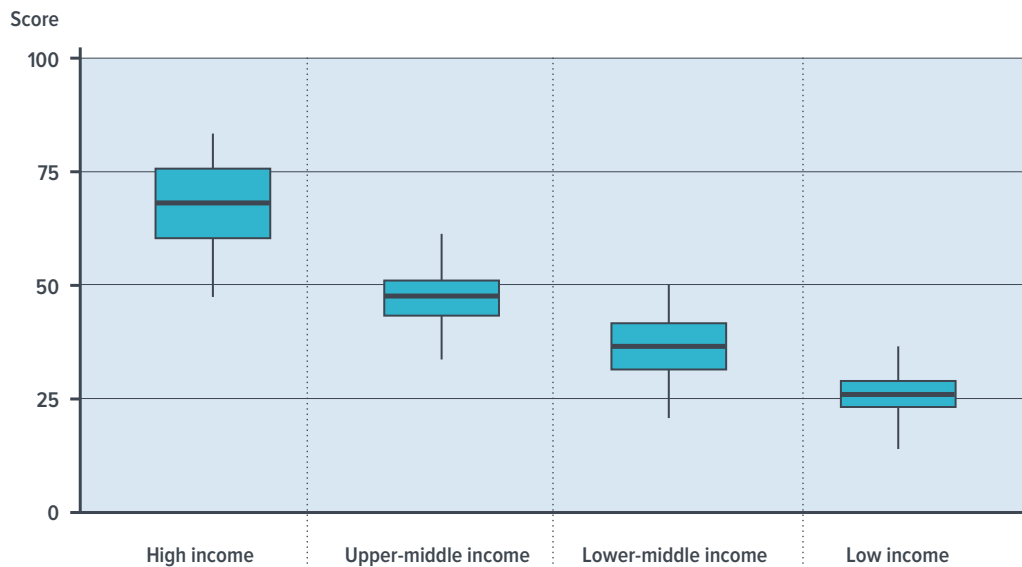
Just as Figure 3 and Figure 4 illustrate the wide gap in NRI



scores between high-income economies and the other income groups, they make it clear that there are sizeable gaps among the upper-middle-income, lower-middle-income, and low-income groups as well. Roughly speaking, it can be said that the 25th percentile of one income group performs at a slightly higher level than the 75th percentile

of the income group just below it. A concrete example: the NRI score at the 25th percentile of upper-middle-income countries is 43.79, which can be compared with a score of 41.53 at the 75th percentile of lower-middle-income countries.

**FIGURE 2: NRI SCORES BY INCOME GROUP**



*Note: The whiskers indicate minimum and maximum values, while the extremes of a box indicate the 25th and 75th percentiles. The line within a box represents the median (i.e. 50th percentile).*

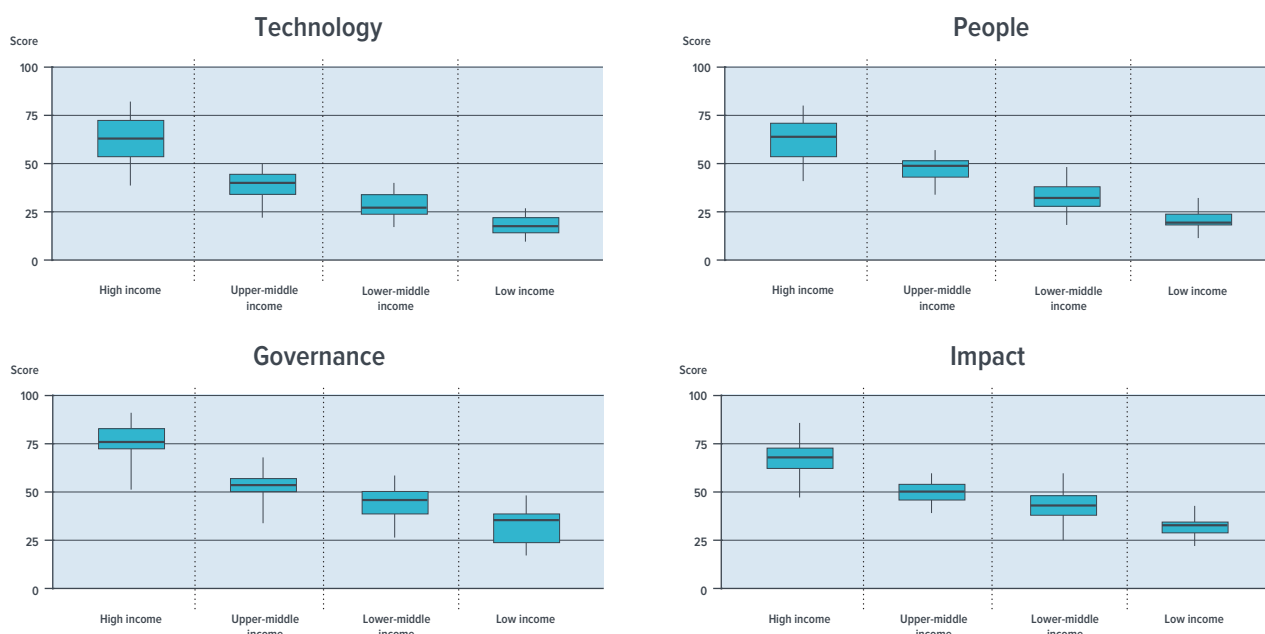
The difference in overall NRI performance across income groups is also evident at the pillar level (Figure 5). Each of the four pillars shows a similar “step-like” pattern, with higher-income economies outperforming lower-income economies. The same can be said about each of the sub-pillars.

Nevertheless, there are some differences among the pillars when viewed through the prism of income groups. First, high-income economies are primarily dominant in Technology and Governance, as the gaps vis-à-vis the other income groups tend to be greater in these two pillars. Second, the group of upper-middle-income countries does particularly well in the People pillar. For instance, the score of the median upper-middle-income country in this pillar is closer to the median high-income economy than in the other three pillars. Conversely, it is in the People pillar that the score of the median upper-middle-income country is the greatest compared to the medians of the lower-middle-income and low-income countries. Third, the Impact pillar seems to be the dimension with the least variation among the economies. The gaps between the various income groups are often narrower in this pillar than in the other

pillars at different percentiles, and it is the dimension with the lowest standard deviation.

Within each income group, it is interesting to note that high-income economies display the greatest variation in the Technology pillar and the least variation in the Impact pillar. This is in stark contrast to lower-middle-income countries, where the opposite holds true. In the case of the high-income group, the wide dispersion of scores in the Technology pillar is primarily due to different levels of creation of digital Content and adoption of Future Technologies. As for the lower-middle-income group, the same sub-pillars show particularly low variation, whereas all the sub-pillars related to the Impact pillar (Economy, Quality of Life, and SDG Contribution) show wide dispersions. Both upper-middle-income and low-income countries have narrower distributions in the Impact pillar (like the high-income group) and wider variations in the Governance pillar, especially when it comes to Regulation.

FIGURE 3: NRI SCORES BY INCOME GROUP AND PILLAR



Note: The whiskers indicate minimum and maximum values, while the extremes of a box indicate the 25th and 75th percentiles. The line within a box represents the median (i.e. 50th percentile).

Table 3 lists the top 3 countries of each income group. The best-performing high-income economies—Sweden, Denmark, and Singapore—are discussed above in the section on the top 10 NRI performers. At the opposite end, one finds Mauritius (61st), Panama (77th), and Trinidad and Tobago (81st). All three countries have their highest rankings

in the Technology pillar and their lowest rankings in the People pillar. Comparative performances in the sub-pillars related to Technology vary among the three countries, but are similar in the case of People, with the highest scores in the Individuals sub-pillar and the lowest scores in the Government sub-pillar.

TABLE 3: TOP 3 COUNTRIES BY INCOME GROUP

High-income countries	Upper-middle-income countries	Lower-middle-income countries	Low-income countries
1. Sweden (1)	1. Malaysia (34)	1. Viet Nam (62)	1. Rwanda (96)
2. Denmark (2)	2. China (40)	2. Ukraine (64)	2. Tajikistan (109)
3. Singapore (3)	3. Bulgaria (46)	3. Moldova (71)	3. Uganda (114)

Note: Global ranks in parentheses.

The group of **upper-middle-income countries** is headed by Malaysia (34th), China (40th), and Bulgaria (46th). Malaysia is the only non-high-income economy that makes it into the top quartile of the NRI 2020 (albeit in the bottom position), which is primarily due to its performance in the People (30th) pillar. More specifically, it does well in the sub-pillars related to Individuals (18th) and Government (24th), with

high usage of ICTs and solid ICT skills being among the country’s strengths. Its best-performing sub-pillar, however, is Economy (13th), which is boosted by an export-oriented high-tech industry. By contrast, Malaysia performs worse when it comes to Quality of Life (60th) and SDG Contribution (75th)—its lowest-ranked sub-pillars—which dampens the score of the Impact (34th) pillar. The country’s weakest

pillar is Technology (41st), where more could be done to increase digital participation and creation of Content (58th) and to boost Access (48th) through greater affordability and coverage.

China's performance in the NRI is similar to Malaysia's in several ways. First, it does particularly well in the People (35th) pillar, although this is mainly driven by the use and investment of Businesses (25th). Second, the country has an export-oriented high-tech industry that boosts its score in the Economy (39th) sub-pillar, which, in turn, benefits the Impact (41st) pillar. Finally, its weakest pillar is also Technology (44th), which primarily stems from a sub-par showing in the Content (83rd) sub-pillar. China has a more mixed performance than Malaysia when it comes to Governance (43rd), where more could be done to strengthen the country's Regulation (75th), especially as it relates to the ICT regulatory environment.

In contrast to the two best-performing upper-middle-income countries just discussed, Bulgaria ranks highest in the pillars related to Technology (43rd) and Governance (44th). In the former case, the country does particularly well when it comes to the creation of digital Content (33rd)—again, as opposed to Malaysia and China—which is its best-performing sub-pillar and where it makes it into the top quartile thanks to, above all, its strengths in software and app development. Bulgaria's second highest-ranked sub-pillar is Regulation (35th), where its ICT-related regulation in particular boosts the Governance pillar. The Impact (62nd) pillar presents the most scope for improvement, including reducing income inequality, improving health and well-being, and enhancing opportunities for a better life.

The top 3 countries of the **lower-middle-income group** are Viet Nam (62nd), Ukraine (64th), and Moldova (71st). Viet Nam has a very mixed performance in the NRI. On the one hand, it makes it into the top quartile in the Impact (33rd) pillar. On the other hand, it finds itself well into the second quartile in the People (82nd) and Governance (80th) pillars. The country's best-performing sub-pillar by far is Economy (19th), which is mainly due to its export-oriented high-tech industry. It also enjoys a relatively high Quality of Life (38th), whereas its SDG Contribution (66th) would increase with improved sustainability. As for Governance, Viet Nam displays a fairly solid level of Trust (54th), but this is offset by weaker levels of Regulation (98th) and Inclusion (97th). When it comes to People, the country needs to raise ICT usage and skills at all levels: Individuals (77th), Businesses (89th), and Government (87th). Viet Nam does quite well in the Technology (57th) pillar, which is primarily boosted by the country's adoption of and investment in Future Technologies (56th).

Ukraine's strongest showing is in the Governance (58th) pillar, where a solid level of Trust (49th)—in terms of both environment and behavior—is offset by weaker Regulation (83rd) and Inclusion (72nd). It also performs well with respect

to Technology (62nd), which can be partly attributed to its strength in software development to create digital Content (46th) and its adoption of and investment in Future Technologies (53rd). Ukraine also makes it into the third quartile in the People (65th) pillar, where it generally does better in indicators that relate to digital skills rather than usage of ICT. Its weakest showing relates to Impact (79th). Above all, there is a need to address health, well-being, and sustainability in order to raise Quality of Life (77th) and SDG Contribution (91st).

Moldova makes it into the third quartile in one of the four pillars—Impact (66th)—where one of its strengths lies in addressing income inequality, which in turn boosts the Quality of Life (50th) sub-pillar. It also does relatively well in the People (69th) pillar thanks to solid showings in all three sub-pillars (Individuals, 70th; Businesses, 68th; Government, 63rd). The country's weakest performances are in the pillars related to Technology and Governance (74th in both dimensions). Although Moldova enjoys good Access to ICTs and fairly high levels of Trust (56th in both cases), it scores well below par in the sub-pillars on Future Technologies (126th) and Regulation (101st).

All but one **low-income economy** is positioned in the bottom quartile in the NRI 2020. The exception is Rwanda (96th), which is followed by Tajikistan (109th) and Uganda (114th). In fact, Rwanda makes it into the second quartile in three of the four pillars: Governance (95th), People (97th), and Technology (100th). With respect to Governance, the country's strengths are its levels of Trust (87th) and Inclusion (85th). However, at the sub-pillar level, its best performance relates to its involvement in Future Technologies (47th). The score in the Technology pillar is weighed down by unimpressive Access (99th) and creation of digital Content (120th). In the People pillar, ICT usage and investment by Rwanda's Government (57th) is offset by comparatively lower levels of ICT usage and skills by Individuals (116th) and Businesses (94th). The country's weakest pillar is Impact (103rd), where the greatest challenges include addressing inequalities of various forms and improving health and well-being (Economy, 84th; Quality of Life, 110th; SDG Contribution, 97th).

Tajikistan barely makes it into the second quartile in one pillar: Impact (99th), where the country achieves a relatively high rank with respect to Quality of Life (64th), which can be partly attributed to fairly low income inequality. Another sub-pillar where Tajikistan performs well is Future Technologies (73rd)—especially as it relates to investment—which boosts its showing in the Technology (104th) pillar. The country's two weakest pillars, meanwhile, are People (109th) and Governance (110th). With regard to the former, the area in most urgent need of attention is increasing the usage of ICT by the Government (123rd). As for the latter, Tajikistan's weak level of Regulation (126th)—both general and ICT-specific—leaves a lot to be desired.

Uganda’s strength is undoubtedly Governance (90th), which is the only pillar where it is not placed in the bottom quartile. It finds itself in the second quartile in all three sub-pillars: Trust (84th), Regulation (91st), and Inclusion (87th). Uganda also makes it into the second quartile in the sub-pillars related to Access (97th) to ICTs and the adoption of and investment in Future Technologies (91st), but their impact on

the Technology (112th) pillar is dampened by a weak level of digital creation of Content (123rd). The country’s lowest-ranked pillars are People (121st) and Impact (129th), where the most discouraging performances are in the Individuals (120th) and Businesses (121st) sub-pillars in the former case and in the SDG Contribution (130th) sub-pillar in the latter.

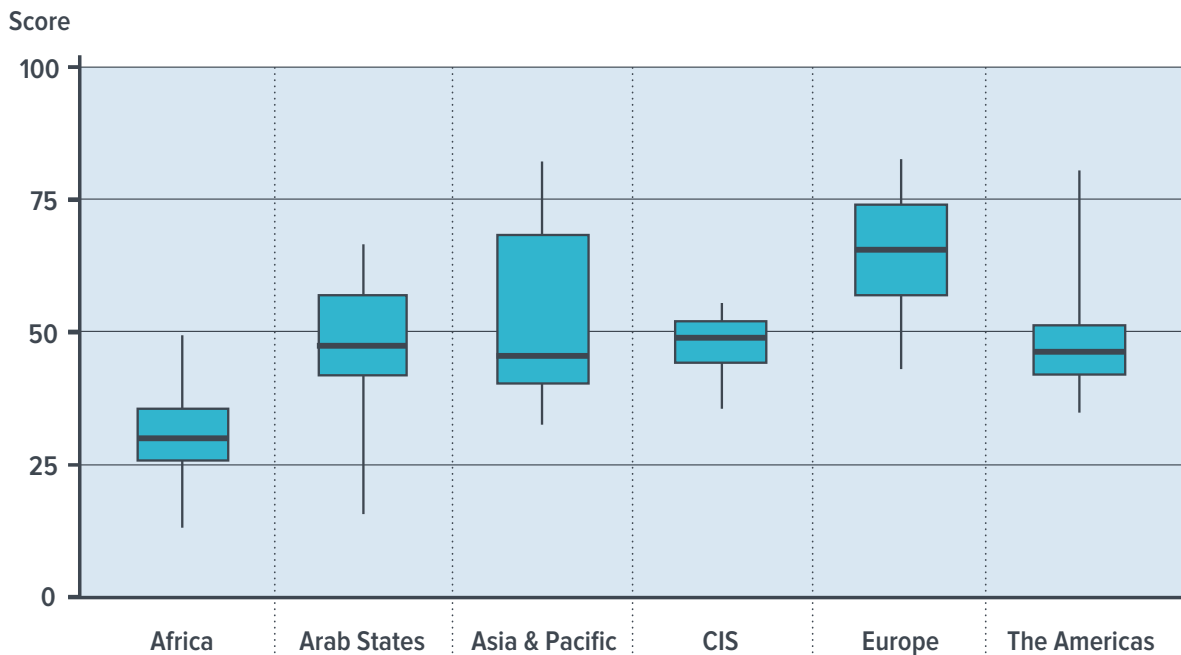
## NRI Performances by Region

Figure 6 shows some summary statistics of the NRI across six regions: Africa, the Arab States, Asia and the Pacific, the Commonwealth of Independent States (CIS), Europe, and the Americas. As would be expected, regional performances are partly a reflection of the frequency of income groups in each region. To take the most obvious example, Africa—where 87 percent of the countries are either lower-middle-income or low-income economies—is the regional laggard in the NRI, whereas Europe—where more than three quarters (76 percent) of the countries are high-income—is the leading region.

To an extent, it can be said that regions with more countries

display a greater dispersion of NRI scores than those with fewer countries. For instance, it is, visually clear that Europe (41 countries) has a larger variation of scores than CIS (seven countries). However, this is not always the case, as indicated by the size of the box-and-whiskers of Asia and the Pacific (21 economies), which is bigger than that of Europe. A more appropriate measure of dispersion is therefore the coefficient of variation, which considers the regions’ different means. This reveals that the relative dispersion is lowest for countries from Europe and the CIS and highest for economies in Asia and the Pacific. It also suggests that the dispersion of the group of Arab States (13 countries), despite a significantly lower number of countries, is almost as high as that of Africa (31 countries) and higher than that of the Americas (21 countries).

**FIGURE 4: NRI SCORES BY REGION**

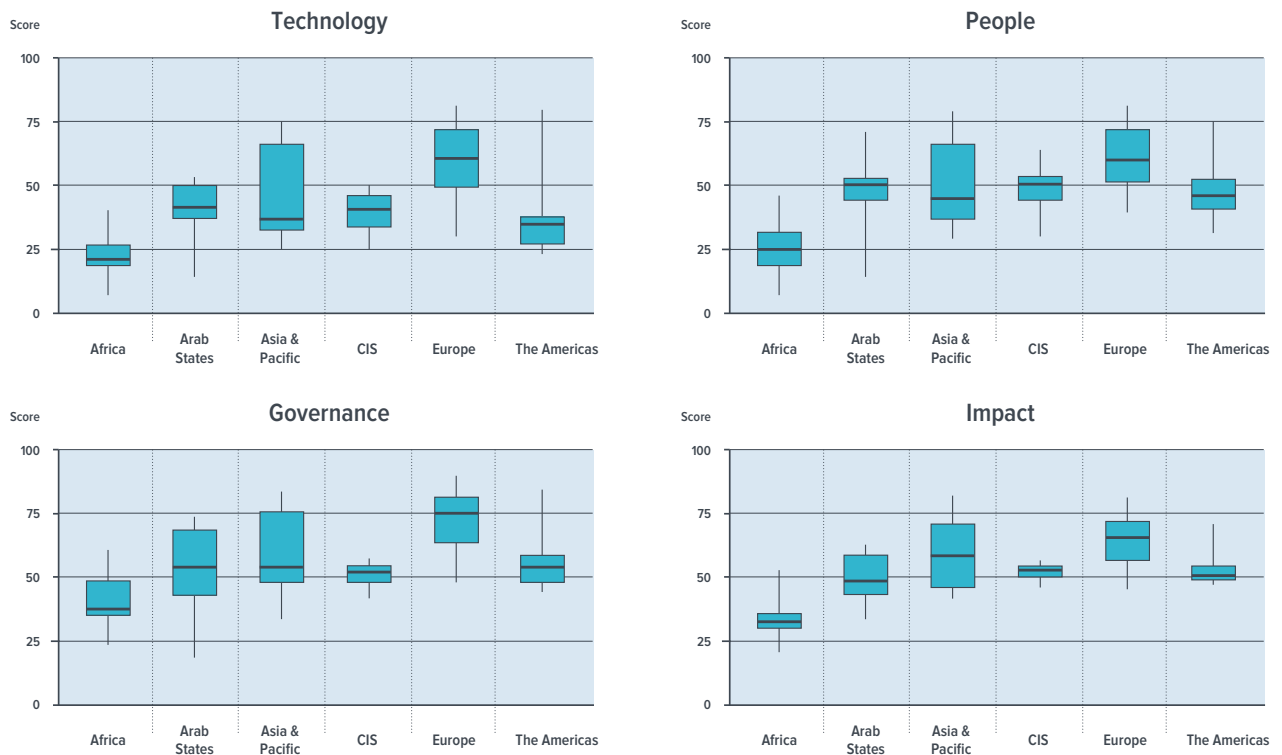


Note: Note: The whiskers indicate minimum and maximum values, while the extremes of a box indicate the 25th and 75th percentiles. The line within a box represents the median (i.e. 50th percentile). CIS = Commonwealth of Independent States.

When comparing performances across the six regions by pillar, it remains the case that Europe is the most network-ready group, while Africa is the least network-ready region. As for the other regions, the group of Arab States appears to do comparatively better in the Technology and People pillars than in the Governance and Impact pillars, whereas

the opposite holds for the Americas. The CIS region’s weakest dimension seems to be Governance. As for Asia and the Pacific, the results imply that its overall strengths are in the Governance and Impact pillars, while it does not perform as well against other regions in the Technology and People pillars.

FIGURE 5: NRI SCORES BY REGION AND PILLAR



Note: Note: The whiskers indicate minimum and maximum values, while the extremes of a box indicate the 25th and 75th percentiles. The line within a box represents the median (i.e. 50th percentile). CIS = Commonwealth of Independent States.

Turning to country performances, the highest-ranked economies in **Africa** are Mauritius (61st), South Africa (76th), and Kenya (82nd). Mauritius is the only country in the Africa region that is placed in the third quartile in the NRI 2020. Its highest rank is in the Technology (56th) pillar, as a result of solid showings in all three sub-pillars (Access, 64th; Content, 56th; Future Technologies, 58th). The island state ranks almost as highly in the Governance and Impact pillars (61st in both), which can be partly attributed to high levels of Trust (61st) in the former pillar and Quality of Life (43rd) in the latter. Its weakest pillar is People (73rd), where Mauritius— notwithstanding its impressive business environment and use of open data—could do more to improve all sub-pillars (Individuals, 71st; Businesses, 72nd; Government, 74th).

South Africa does particularly well in the Governance (52nd) pillar, with strong performance in all three sub-pillars (Trust, 58th; Regulation, 59th; Inclusion, 52nd). The country’s strongest sub-pillar relates to the adoption of and investment in Future Technologies (48th), which ensures its place in the third quartile in the Technology (64th) pillar, despite its weaker Access (69th) to ICTs and creation of digital Content (71st) sub-indicators. South Africa would do well to increase efforts to improve the People (83rd) pillar, where low ICT skills among Individuals (97th) is a particular weakness, but the country’s greatest challenge is to lift the Impact (109th) of ICTs, especially its dismal Quality of Life (127th), where high income inequality and low healthy

life expectancy are two areas that need to be addressed urgently.

Kenya, like South Africa, enjoys its best performance in the Governance (51st) pillar, which similarly is due to encouraging levels of Trust (50th), Regulation (58th), and Inclusion (65th). The country’s strong showings in the sub-pillars related to Businesses (51st) and Government (41st) boost the People (78th) pillar, but they are partly offset by a low usage of ICTs among Individuals (106th). The weakest dimensions for Kenya relate to Technology (99th) and Impact (104th). The former pillar is hampered by low Access (101st) to ICTs and poor creation of digital Content (115th), even though its adoption of and investment in Future Technologies (49th) is positive. The latter pillar, meanwhile, presents challenges across the board (Economy, 94th; Quality of Life, 100th; SDG Contribution, 108th).

The top 3 **Arab States** are the United Arab Emirates (UAE, 30th), Qatar (38th), and Saudi Arabia (41st). The UAE—the only country in the region that makes it into the top quartile—is the global leader when it comes to ICT usage and skills among Individuals, which drives its exceptional performance in the People (11th) pillar. It is also one of highest-ranked countries in terms of Access (10th) to ICTs, although its showing in the Technology (33rd) pillar would improve if the country improved its creation of digital Content (52nd). In the Governance (37th) and Impact (38th) pillars, there is ample room for improvement in the

Regulation (52nd) of ICTs and SDG Contribution (80th). At the level of indicators, it is worth pointing out that the UAE is very active when it comes to adopting, investing in, and promoting emerging technologies—both among firms and governmental authorities.

Qatar is one of the world’s best countries in terms of Access (2nd) to ICTs. However, its rank in the related pillar—Technology—is weighed down by moderate involvement in Future Technologies (34th) and, primarily, a sub-par level of digital participation and creation of Content (72nd). A similar situation is found with regard to the People (45th) pillar, in which Qatar is a top 10 performer when it comes to Individuals (10th), but where poor ICT usage and skills in Businesses (79th) and, to a lesser extent, Government (47th), render it the country’s worst-performing pillar. Qatar’s best-performing pillar, meanwhile, is Impact (30th) thanks to impressive showings in the sub-pillars related to Economy (16th) and Quality of Life (22nd) that offset a discouraging level of SDG Contribution (88th). As for the Governance

(41st) pillar, a solid level of Trust (24th) counterbalances lacklustre scores in the Regulation (64th) and Inclusion (46th) sub-pillars.

Saudi Arabia makes it into the top quartile in the People (26th) pillar, primarily as a result of impressive ICT usage and skills among Individuals (12th), but the country also enjoys solid showings in the sub-pillars related to Businesses (29th) and Government (32nd). It ranks 45th in both the Technology and Governance pillars. In the former case, solid Access (19th) to ICTs is offset by a disappointing ranking for the creation of digital Content (73rd). In the latter dimension, Saudi Arabia’s best performance relates to Inclusion (38th), while its weakest sub-pillar is Regulation (60th). The lowest-ranked pillar is Impact (57th), which is lifted by top-quartile showings in the sub-pillars concerned with Economy (29th) and Quality of Life (32nd), but is impeded by dismal SDG Contribution (118th), which suggests that gender equality and sustainability are among the pressing issues that should be at the top of the country’s agenda.

**TABLE 4: TOP 3 COUNTRIES BY REGION**

Africa	Arab States	Asia & Pacific	CIS	Europe	The Americas
1. Mauritius (61)	1. United Arab Emirates (30)	1. Singapore (3)	1. Russian Federation (48)	1. Sweden (1)	1. United States (8)
2. South Africa (76)	2. Qatar (38)	2. Australia (12)	2. Armenia (55)	2. Denmark (2)	2. Canada (13)
3. Kenya (82)	3. Saudi Arabia (41)	3. Korea, Rep. (14)	3. Kazakhstan (56)	3. Netherlands (4)	3. Uruguay (47)

Note: Global ranks in parentheses. CIS = Commonwealth of Independent States.

Singapore, Australia (12th), and the Republic of Korea (South Korea, 14th) head the Asia and the Pacific region. Singapore has already been discussed above in the section on the NRI top performers. Australia is a top 10 country when it comes to the People (10th) and Governance (6th) pillars. With regard to the latter, its performance is impressive, with high ranks in all three sub-pillars (Trust, 8th; Regulation, 5th; Inclusion, 14th). In the former dimension, its high ICT usage and skills of digital technologies among Individuals (6th) stand out. Impressive Access (8th) to ICTs drives the Technology (17th) pillar. Australia also performs well with respect to digital creation of Content (14th) and its involvement in Future Technologies (23rd), although the latter would improve with greater adoption of, investment in, and promotion of emerging technologies like robotics. The country’s lowest-ranked pillar relates to the Impact (18th) of ICTs, which would receive a great boost if the share of high-tech manufactures in the Economy (24th) was expanded.

South Korea is one of the world’s most impressive countries

when it comes to ICT usage and skills among its People (2nd). Indeed, it is featured in the top 5 countries in all three sub-pillars (Individuals, 5th; Businesses, 3rd; Government, 2nd). South Korea is also a leading country in the Impact (13th) of ICTs on its Economy (2nd). However, the positive role of digital technologies on the society is hampered by relatively poor showings in the Quality of Life (45th) and SDG Contribution sub-pillars (37th), which would be improved by greater gender equality and sustainability. South Korea enjoys high levels of Trust (11th) and Inclusion (18th), which benefit the pillar related to Governance (17th). However, more could be done to strengthen Regulation (32nd), especially as it pertains to the ICT regulatory environment. The country’s weakest pillar is Technology (22nd), which might be surprising since it boasts the highest robot density in the world and is a top 10 country when it comes to Future Technologies (10th). However, low affordability of digital technologies has a negative impact on Access (20th) to ICTs, while more could be done to boost its digital participation and creation of Content (44th).

### Box 1: What about Taiwan, China?

One highly network-ready economy that is not covered in the NRI 2020 is Taiwan, China. The reason for its omission is simply that its data coverage does not meet the pre-determined thresholds for inclusion in the NRI (see the appendix on technical notes for details). More specifically, there is insufficient data coverage overall and, in particular, a lack of data with respect to the sub-pillar related to SDG Contribution. Nevertheless, there is enough data to get a rough sense of the state of network readiness of Taiwan, China, and how it would fare in this year's index.

Overall, it is safe to say that Taiwan, China, would feature in the top quartile of the NRI, albeit not in the top 15. Its best dimension is undoubtedly People, as it performs well in all three sub-pillars. It is also a strong performer when it comes to Access to ICTs and the adoption of and investment in Future Technologies, but its showing in Technology is let down by a level of digital creation of Content that falls short of expectations. Taiwan, China, makes a solid showing with regard to the Impact of ICTs, whereas the data suggests that the greatest scope for improvement is in all three sub-pillars associated with Governance.

Japan is similarly impressive in terms of ICT usage and skills among its People (6th). Most impressive of all is the role of digital technologies in Businesses (1st), where it is the clear global leader. The country also has a strong showing in the Impact (11th) pillar, which is largely due to its innovative, high-tech Economy (11th) and a positive SDG Contribution (7th) based on strong health and well-being, education, and sustainability. Despite its low income inequality, Japan faces a challenge in improving its Quality of Life (29th). When it comes to Technology (21st), the country is one of the pacesetters in adopting and investing in Future Technologies (4th), but its performance is more sluggish in the Access (36th) and Content (40th) sub-pillars. Japan's weakest pillar relates to Governance (23rd), where there is plenty of room for improvement in raising levels of Trust (29th) and Regulation (27th), although the scope of its Inclusion (10th) is encouraging.

India is a regional economic powerhouse that ranks 88th globally. Its best performance is in the Technology (76th)

pillar, which is mainly due to its involvement in Future Technologies (59th). Perhaps surprisingly, the country falls short of expectations when it comes to digital participation and creation of Content (95th). India also makes it into the second quartile in two other pillars: People and Governance (84th in both). With respect to the former dimension, the country benefits from strong usage of ICTs by its national authorities (Government, 45th) but faces an uphill struggle to improve ICT usage and skills among Individuals (103rd) and Businesses (92nd). As for the latter pillar, India performs relatively well in terms of Inclusion (71st) and Trust (77th)—although its trust environment does not appear to stimulate trusting behavior—where more could be done to improve Regulation (96th). However, the greatest scope for improvement is found in the Impact (108th) pillar, where its moderately high-tech Economy (70th) is offset by dismal Quality of Life (104th) and SDG Contribution (117th), with India placed in the bottom quartile in both sub-pillars.

The region comprising the Commonwealth of Independent States is headed by Russia (48th), Armenia (55th), and Kazakhstan (56th). Russia's best performance undoubtedly relates to ICT usage and skills among its People (31st), the only pillar where the country makes it into the top quartile. In fact, Russia features in the top quartile in all three sub-pillars (Individuals, 28th; Businesses, 34th; Government, 34th). The country's next best performance is in the Technology (49th) pillar, where digital participation and creation of Content (45th) constitutes its strongest dimension. Relatively solid showings in the sub-pillars related to Economy (47th) and SDG Contribution (51st) boost the Impact (60th) of ICTs, but are partly offset by a discouraging Quality of Life that would benefit from improved healthy life expectancy. Russia's weakest dimension is Governance (65th), as decent levels of Trust (40th) and Inclusion (30th) stand in contrast to the country being one of the world's worst performers when it comes to Regulation (128th).

Armenia's strongest showings are in the pillars related to Technology and People (42nd in both). This is mainly due to

the two sub-pillars where the country makes it into the top quartile—digital creation of Content (27th) in the Technology pillar, and ICT usage and skills among Businesses (36th) in the People pillar. Armenia's worst-performing pillar is Governance (76th), with poor showings across the board (Trust, 80th; Regulation, 77th; Inclusion, 77th). As for the Impact (65th) of ICTs, the greatest positive effect is on SDG Contribution (53rd). However, there is ample scope to boost the Economy (87th), especially when it comes to raising the role of high-tech manufactures.

Right behind Armenia is Kazakhstan, which has its best performance in the Impact (52nd) pillar. This is primarily due to low inequality that boosts its Quality of Life (36th), whereas unimpressive education and sustainability are two important factors that hamper SDG Contribution (77th). Kazakhstan ranks almost as high in the People (54th) pillar, with a Government (61st) that seems highly engaged in using and furthering digital technologies, albeit could increase R&D spending. The country enjoys relatively solid levels of Trust (51st) and Inclusion (48th), but its poor

level of Regulation (95th)—especially as it pertains to ICT rather than general rule of law—has a dampening effect on the Governance (57th) pillar. The worst-performing pillar is Technology (67th), which contains the only sub-pillar where Kazakhstan is placed in the bottom quartile: Future Technologies (102nd).

Europe's top 3—Sweden, Denmark, and the Netherlands—are discussed above in the section on the best NRI performers. Two of the largest economies not mentioned so far are France (17th) and Italy (32nd). France makes it into the top 20 in each of the four pillars. Its strongest showing relates to Impact (12th) of ICTs, where the country primarily owes its high rank to its innovative, high-tech Economy (14th). This is followed by Governance (15th), which is the result of good levels of Trust (16th) and Inclusion (17th), and of excellent Regulation (9th). In the Technology (18th) pillar, France primarily benefits from its adoption of and investment in Future Technologies (16th). Its worst-performing pillar—People (20th)—is also the one with the greatest contrast, as it contains both its highest-ranked and the lowest-ranked sub-pillars: Government (8th) and Individuals (60th).

Italy features in the top quartile in three of the four pillars, with its best performance in the dimension related to Impact (28th). More specifically, the positive impact of ICTs is driven by a strong SDG Contribution (21st), especially as it pertains to well-being and sustainability, and—to a lesser extent—by the country's advanced, high-tech Economy (30th). Quality of Life (42nd) is more disappointing, however, primarily because of a lack of opportunities to make life choices. Italy's second best-performing pillar is Technology (30th), which is primarily due to its adoption of Future Technologies (21st), including robotics. Although ICTs are pretty affordable, Access (45th) to digital technologies is the country's lowest-ranked sub-pillar because of disappointing Internet access and capacity. Italy has one of the world's best ICT regulatory environments, but Regulation (39th) is its lowest-ranked dimension in the Governance (33rd) pillar, partly because the general regulatory quality is weaker and regulation could be better adapted to new technologies. The only pillar where Italy is outside the top quartile is People (36th), with mediocre results in all three sub-pillars (Individuals, 44th; Businesses, 37th; Government, 36th).

The leading country in the Americas—the United States—is discussed above in the section on the top 10 NRI performers. It is followed by neighboring Canada (13th) and the South American country Uruguay (47th). Canada claims the top spot when it comes to the Inclusion pillar, as various segments of the population have almost equal access to digital technologies. This, in combination with very high levels of Trust (7th), makes it a top 10 country in terms of Governance (9th), despite its weak showing in the Regulation (28th) sub-pillar. Canada also features in the top 10 in the sub-pillar that relates to ICT engagement of Governments (7th). However, lower ICT usage and skills among Individuals (38th) and Businesses (26th) make

the People (18th) pillar the country's worst-performing dimension. Strong digital participation and creation of Content (13th) and high adoption and investment rates in Future Technologies (11th) contribute to a good state of Technology (12th), although Canada could do more to expand Access (29th) to ICTs, including through better affordability and coverage. As for the Impact (16th) pillar, the country's key strengths include superior health and well-being, high education levels, and sustainable communities. Raising the share of high-tech industries and addressing inequalities of various forms would, however, raise the associated sub-pillars (Economy, 21st; Quality of Life, 15th; SDG Contribution, 17th).

Uruguay puts in fairly consistent performances across all pillars, ranging from a rank of 41st in People to 50th in Governance. With regard to the former, the country enjoys high usage of digital technologies among its Individuals (31st) and national authorities (35th in Government), while there is ample scope to increase it among Businesses (64th). As for the latter, improving the ICT regulatory environment is the greatest challenge in terms of strengthening Regulation (48th), while addressing gaps in the use of digital technologies among different segments of the society would raise Inclusion (62nd) levels. Both the Technology (48th) and Impact (49th) pillars contain two stronger sub-pillars and one weaker sub-pillar. Access (46th) to ICTs, especially in schools, and digital creation of Content (43rd) boost Technology but are offset by weak adoption of and investment in Future Technologies (84th). The impact of ICTs, meanwhile, is hampered by an unimpressive Economy (93rd)—partly explained by a low share of high-tech manufactures—but is boosted by more impressive Quality of Life (33rd) and SDG Contribution (36th).

One economic powerhouse in the Americas that has not been mentioned so far is Brazil (59th). Among Latin American countries, it finds itself behind Uruguay, Chile (50th), and Costa Rica (54th), and just ahead of neighboring Argentina (60th) and, slightly further down, Mexico (63rd). Brazil's strength relates to ICT usage among its People (47th), especially in the way the Government (29th) uses it to engage with its citizens. Although levels of Trust (69th) could be significantly higher, the country makes it into the third quartile with respect to Governance (53rd) thanks to more solid levels of Inclusion (43rd). Its weakest pillars are Technology and Impact (69th in both). The most pressing issues facing Brazil in the former dimension are expanding Access (73rd) to ICTs and increasing the adoption of Future Technologies (85th). As for the impact of ICTs, areas in urgent need of attention include boosting labor productivity and reducing income inequality, which would help lift the Economy (69th) and Quality of Life (80th).



NRI 2020 – ANNEX TABLE 1 – RANKINGS IN THE TECHNOLOGY PILLAR AND ASSOCIATED SUB-PILLARS

Country	PILLAR	SUB-PILLARS		
	Technology	Access	Content	Future Technologies
Switzerland	1	4	1	7
Sweden	2	14	6	2
Netherlands	3	12	2	8
United States	4	28	9	1
Denmark	5	13	5	9
Luxembourg	6	1	7	13
Germany	7	27	10	3
United Kingdom	8	3	8	14
Finland	9	15	11	6
Singapore	10	5	19	5
Norway	11	6	3	22
Canada	12	29	13	11
Hong Kong (China)	13	9	18	12
Iceland	14	7	4	31
Ireland	15	11	16	19
Austria	16	35	15	17
Australia	17	8	14	23
France	18	22	22	16
Belgium	19	17	23	18
New Zealand	20	16	12	29
Japan	21	36	40	4
Korea, Rep.	22	20	44	10
Israel	23	53	24	15
Estonia	24	26	17	38
Spain	25	23	30	20
Czech Republic	26	33	20	32
Portugal	27	25	25	28
Malta	28	31	21	33
Slovenia	29	24	26	35
Italy	30	45	35	21
Hungary	31	21	32	44
Lithuania	32	30	28	50
United Arab Emirates	33	10	52	36
Slovakia	34	38	37	37
Qatar	35	2	72	34
Poland	36	32	34	60
Cyprus	37	47	29	61
Latvia	38	40	31	70
Greece	39	37	36	62
Bahrain	40	41	62	25
Malaysia	41	48	58	30
Armenia	42	62	27	72
Bulgaria	43	50	33	78
China	44	42	83	24
Saudi Arabia	45	19	73	39
Romania	46	18	48	82
Montenegro	47	63	39	40
Uruguay	48	46	43	84
Russian Federation	49	59	45	57
Chile	50	43	51	81
Thailand	51	39	69	51
Croatia	52	49	38	118
Serbia	53	51	42	103
Costa Rica	54	67	50	43
Kuwait	55	34	64	83
Mauritius	56	64	56	58
Viet Nam	57	60	65	56
Turkey	58	54	78	55
Georgia	59	44	53	125
Azerbaijan	60	85	61	27
Lebanon	61	57	60	88
Ukraine	62	79	46	53
Oman	63	55	90	66
South Africa	64	69	71	48
North Macedonia	65	61	49	120
Panama	66	78	47	80
Kazakhstan	67	52	74	102
Belarus	68	58	41	134
Brazil	69	73	59	85
Argentina	70	72	55	92
Jamaica	71	66	85	64
Indonesia	72	68	92	52
Mexico	73	70	76	75
Moldova	74	56	66	126
Jordan	75	81	67	54
India	76	74	95	59
Colombia	77	75	63	94
Trinidad and Tobago	78	65	70	116
Morocco	79	71	91	99
Philippines	80	83	88	68
Tunisia	81	77	84	100
Albania	82	84	54	117

Country	PILLAR	SUB-PILLARS		
	Technology	Access	Content	Future Technologies
Cambodia	83	76	104	79
Sri Lanka	84	88	93	46
Egypt	85	80	96	76
Cabo Verde	86	89	99	45
Dominican Republic	87	86	86	77
Iran, Islamic Rep.	88	82	80	107
Lao PDR	89	112	108	26
Peru	90	87	68	115
Botswana	91	90	87	90
Bosnia and Herzegovina	92	91	57	129
Namibia	93	103	79	71
Ecuador	94	95	77	95
Cameroon	95	94	110	67
Mongolia	96	98	75	110
Senegal	97	111	116	41
Pakistan	98	96	101	87
Kenya	99	101	115	49
Rwanda	100	99	120	47
Bolivia	101	100	94	93
Kyrgyzstan	102	92	98	124
Honduras	103	113	102	63
Tajikistan	104	107	107	73
Paraguay	105	106	81	113
El Salvador	106	104	82	122
Bangladesh	107	102	105	86
Algeria	108	93	111	96

Country	PILLAR	SUB-PILLARS		
	Technology	Access	Content	Future Technologies
Ghana	109	109	112	69
Guatemala	110	110	97	97
Nepal	111	114	89	106
Uganda	112	97	123	91
Lesotho	113	105	114	109
Gambia	114	126	122	42
Côte d'Ivoire	115	108	127	89
Eswatini	116	116	106	114
Tanzania	117	120	125	74
Venezuela	118	115	103	128
Guinea	119	122	132	65
Benin	120	117	117	112
Mali	121	125	100	111
Zimbabwe	122	124	109	105
Zambia	123	118	124	98
Nigeria	124	119	119	104
Madagascar	125	127	118	101
Mozambique	126	121	126	123
Burundi	127	131	113	119
Angola	128	123	128	132
Ethiopia	129	129	133	108
Malawi	130	128	130	127
Yemen	131	132	121	131
Burkina Faso	132	130	129	130
Chad	133	133	131	133
Congo, Dem. Rep.	134	134	134	121

## NRI 2020 – ANNEX TABLE 2 – RANKINGS IN THE PEOPLE PILLAR AND ASSOCIATED SUB-PILLARS

Country	PILLAR	SUB-PILLARS		
	People	Individuals	Businesses	Governments
Denmark	1	7	4	1
Korea, Rep.	2	5	3	2
Finland	3	4	5	5
Sweden	4	16	2	6
Singapore	5	2	11	4
Japan	6	17	1	16
United States	7	14	10	9
Norway	8	21	19	3
Netherlands	9	20	9	11
Australia	10	6	22	12
United Arab Emirates	11	1	39	25
Germany	12	53	6	14
Switzerland	13	41	8	17
United Kingdom	14	37	16	10
New Zealand	15	23	15	18
Austria	16	45	13	13
Israel	17	29	7	19
Canada	18	38	26	7
Luxembourg	19	56	12	15
France	20	60	18	8
Estonia	21	8	21	23
Iceland	22	3	17	28
Lithuania	23	26	27	20
Belgium	24	42	20	22
Hong Kong (China)	25	15	32	26
Saudi Arabia	26	12	29	32
Spain	27	27	31	21
Slovenia	28	34	23	30
Malta	29	22	38	31
Malaysia	30	18	50	24
Russian Federation	31	28	34	34
Czech Republic	32	61	24	33
Ireland	33	35	28	40
Portugal	34	39	40	27
China	35	47	25	43
Italy	36	44	37	36
Cyprus	37	13	45	51
Chile	38	24	44	54
Latvia	39	19	35	79
Poland	40	48	33	50
Uruguay	41	31	64	35
Armenia	42	58	36	52
Kuwait	43	11	57	70
Jordan	44	55	14	96
Qatar	45	10	79	47
Greece	46	25	61	64
Brazil	47	79	56	29
Bahrain	48	9	74	67
Slovakia	49	80	30	59
Argentina	50	32	67	48
Hungary	51	59	41	66
Serbia	52	65	48	49
Turkey	53	57	63	39
Kazakhstan	54	43	54	61
Bulgaria	55	40	55	65
Oman	56	46	83	38
Azerbaijan	57	64	65	42
Croatia	58	62	43	77
Romania	59	49	49	73
Costa Rica	60	30	59	85
Thailand	61	52	66	55
Belarus	62	36	46	94
Georgia	63	67	47	75
Mexico	64	73	80	37
Ukraine	65	63	52	71
Albania	66	68	69	44
Lebanon	67	33	42	112
Dominican Republic	68	69	75	58
Moldova	69	70	68	63
North Macedonia	70	74	60	80
Montenegro	71	50	62	92
Colombia	72	72	73	69
Mauritius	73	71	72	74
Philippines	74	54	95	68
Peru	75	75	58	91
Iran, Islamic Rep.	76	78	98	46
Tunisia	77	85	84	56
Kenya	78	106	51	41
Indonesia	79	81	102	53
Egypt	80	93	78	60
Ecuador	81	82	82	88
Viet Nam	82	77	89	87

Country	PILLAR	SUB-PILLARS		
	People	Individuals	Businesses	Governments
South Africa	83	97	81	62
India	84	103	92	45
Jamaica	85	92	71	89
Algeria	86	84	117	76
Morocco	87	91	91	86
Trinidad and Tobago	88	51	101	114
Bosnia and Herzegovina	89	66	77	125
Panama	90	87	88	102
Cabo Verde	91	89	111	81
Bolivia	92	86	103	97
Paraguay	93	90	85	101
Sri Lanka	94	99	114	72
Kyrgyzstan	95	88	90	113
Mongolia	96	83	110	106
Rwanda	97	116	94	57
Namibia	98	95	100	100
Nigeria	99	117	53	99
Ghana	100	101	116	82
Venezuela	101	76	96	133
Botswana	102	94	108	111
Lao PDR	103	102	112	93
Senegal	104	110	115	84
El Salvador	105	98	105	117
Pakistan	106	119	87	95
Guatemala	107	100	99	121
Honduras	108	104	104	115

Country	PILLAR	SUB-PILLARS		
	People	Individuals	Businesses	Governments
Tajikistan	109	105	93	123
Cambodia	110	96	125	105
Benin	111	124	76	98
Tanzania	112	118	120	78
Nepal	113	108	109	107
Eswatini	114	107	97	120
Bangladesh	115	115	122	90
Zambia	116	114	70	131
Côte d'Ivoire	117	112	107	110
Zimbabwe	118	109	113	119
Guinea	119	127	86	108
Cameroon	120	113	123	104
Uganda	121	120	121	103
Gambia	122	121	106	130
Burkina Faso	123	133	129	83
Lesotho	124	111	128	134
Malawi	125	130	119	122
Ethiopia	126	123	131	109
Mozambique	127	132	124	116
Madagascar	128	122	126	127
Mali	129	131	118	129
Burundi	130	126	130	118
Angola	131	128	127	124
Congo, Dem. Rep.	132	125	133	128
Yemen	133	129	132	132
Chad	134	134	134	126

## NRI 2020 – ANNEX TABLE 3 – RANKINGS IN THE GOVERNANCE PILLAR AND ASSOCIATED SUB-PILLARS

Country	PILLAR	SUB-PILLARS			Country	PILLAR	SUB-PILLARS		
	Governance	Trust	Regulation	Inclusion		Governance	Trust	Regulation	Inclusion
Norway	1	2	1	11	Bahrain	42	60	36	28
Denmark	2	1	8	13	China	43	36	75	45
Netherlands	3	3	10	5	Bulgaria	44	48	35	58
Sweden	4	5	3	6	Saudi Arabia	45	46	60	38
Finland	5	6	2	9	Chile	46	52	41	50
Australia	6	8	5	14	Thailand	47	55	49	49
New Zealand	7	9	16	2	Turkey	48	42	74	61
United States	8	4	30	4	Greece	49	62	44	54
Canada	9	7	28	1	Uruguay	50	53	48	62
Switzerland	10	14	4	12	Kenya	51	50	58	65
Estonia	11	13	11	8	South Africa	52	58	59	52
Germany	12	10	7	27	Brazil	53	69	53	43
Singapore	13	18	20	3	Serbia	54	57	63	56
United Kingdom	14	12	34	7	Romania	55	59	54	78
France	15	16	9	17	Argentina	56	71	51	51
Luxembourg	16	17	6	22	Kazakhstan	57	51	95	48
Korea, Rep.	17	11	32	18	Ukraine	58	49	83	72
Ireland	18	19	12	19	Montenegro	59	70	61	53
Austria	19	23	17	15	North Macedonia	60	64	68	66
Belgium	20	15	22	25	Mauritius	61	61	73	68
Lithuania	21	21	18	23	Costa Rica	62	78	42	67
Spain	22	25	26	16	Jamaica	63	67	71	64
Japan	23	29	27	10	Georgia	64	63	45	86
Czech Republic	24	22	24	41	Russian Federation	65	40	128	30
Slovenia	25	28	21	31	Iran, Islamic Rep.	66	47	102	69
Hong Kong (China)	26	35	15	32	Mongolia	67	68	103	40
Poland	27	20	47	20	Indonesia	68	66	80	80
Latvia	28	27	19	42	Mexico	69	76	40	90
Israel	29	33	25	35	Colombia	70	73	65	74
Slovakia	30	31	33	36	Belarus	71	45	122	44
Iceland	31	26	37	39	Kuwait	72	65	94	73
Malta	32	41	13	37	Jordan	73	92	69	63
Italy	33	34	39	29	Moldova	74	56	101	81
Portugal	34	43	14	34	Dominican Republic	75	100	50	75
Oman	35	32	46	21	Armenia	76	80	77	77
Croatia	36	38	38	33	Bosnia and Herzegovina	77	95	57	79
United Arab Emirates	37	30	52	26	Paraguay	78	86	84	60
Malaysia	38	37	29	47	Trinidad and Tobago	79	103	82	55
Cyprus	39	44	31	24	Viet Nam	80	54	98	97
Hungary	40	39	23	59	Sri Lanka	81	96	87	57
Qatar	41	24	64	46	Panama	82	89	56	93

Country	PILLAR	SUB-PILLARS		
	Governance	Trust	Regulation	Inclusion
Tanzania	83	74	89	82
India	84	77	96	71
Peru	85	101	55	88
Ghana	86	93	72	84
Azerbaijan	87	82	78	95
Senegal	88	111	62	89
Cabo Verde	89	94	70	100
Uganda	90	84	91	87
Ecuador	91	104	81	94
Philippines	92	79	79	109
Egypt	93	85	88	102
Bangladesh	94	98	110	76
Rwanda	95	87	105	85
Albania	96	75	76	117
Kyrgyzstan	97	113	106	70
Benin	98	102	93	92
Botswana	99	81	85	112
Honduras	100	127	43	110
Tunisia	101	90	92	108
Morocco	102	107	67	121
Zambia	103	88	90	119
Côte d'Ivoire	104	99	86	118
Namibia	105	91	121	91
El Salvador	106	121	97	101
Guatemala	107	118	109	98
Venezuela	108	72	123	104

Country	PILLAR	SUB-PILLARS		
	Governance	Trust	Regulation	Inclusion
Burkina Faso	109	115	100	114
Tajikistan	110	110	126	83
Gambia	111	97	66	134
Nigeria	112	83	113	122
Cambodia	113	123	119	99
Nepal	114	117	107	113
Pakistan	115	112	111	120
Mali	116	126	108	107
Madagascar	117	130	99	115
Bolivia	118	119	124	96
Lesotho	119	120	116	111
Algeria	120	122	120	103
Mozambique	121	116	114	116
Malawi	122	114	104	127
Lebanon	123	109	125	105
Zimbabwe	124	105	130	106
Cameroon	125	108	118	126
Guinea	126	128	112	128
Lao PDR	127	125	115	130
Eswatini	128	106	133	125
Angola	129	124	117	133
Ethiopia	130	132	129	123
Burundi	131	129	127	132
Congo, Dem. Rep.	132	131	132	129
Chad	133	134	131	124
Yemen	134	133	134	131

NRI 2020 – ANNEX TABLE 4 – RANKINGS IN THE IMPACT PILLAR AND ASSOCIATED SUB-PILLARS

Country	PILLAR	SUB-PILLARS			Country	PILLAR	SUB-PILLARS		
	Impact	Economy	Quality of Life	SDG Contribution		Impact	Economy	Quality of Life	SDG Contribution
Singapore	1	1	8	1	Latvia	42	46	72	26
Switzerland	2	3	6	4	Romania	43	54	49	41
Sweden	3	4	5	8	Oman	44	49	23	78
Netherlands	4	8	10	9	Philippines	45	25	69	81
Denmark	5	12	4	6	Costa Rica	46	61	37	49
Norway	6	18	2	2	Kuwait	47	55	44	54
Germany	7	7	17	12	Mexico	48	44	51	57
Ireland	8	10	16	10	Uruguay	49	93	33	36
Finland	9	17	3	28	Croatia	50	65	53	38
United Kingdom	10	15	19	5	Thailand	51	42	41	84
Japan	11	11	29	7	Kazakhstan	52	59	36	77
France	12	14	20	22	Lao PDR	53	22	84	92
Korea, Rep.	13	2	45	37	Serbia	54	48	55	73
United States	14	5	40	31	Greece	55	67	63	42
Austria	15	23	11	23	Belarus	56	77	59	40
Canada	16	21	15	17	Saudi Arabia	57	29	32	118
Luxembourg	17	26	12	14	Azerbaijan	58	52	73	70
Australia	18	24	14	16	Jamaica	59	98	48	43
Israel	19	9	39	29	Russian Federation	60	47	89	51
Malta	20	27	13	15	Mauritius	61	79	43	59
Belgium	21	20	21	20	Bulgaria	62	56	81	67
Hong Kong (China)	22	6	92	3	El Salvador	63	112	47	45
Iceland	23	28	1	71	Argentina	64	75	58	64
New Zealand	24	38	7	24	Armenia	65	87	68	53
Slovenia	25	43	9	18	Moldova	66	97	50	79
Czech Republic	26	31	18	32	Panama	67	105	62	47
Spain	27	34	31	11	Montenegro	68	68	86	63
Italy	28	30	42	21	Brazil	69	69	87	60
Estonia	29	35	28	19	Ecuador	70	121	74	34
Qatar	30	16	22	88	Colombia	71	83	79	52
Poland	31	41	25	27	Indonesia	72	57	82	89
Portugal	32	51	26	13	Dominican Republic	73	63	66	90
Viet Nam	33	19	38	66	Sri Lanka	74	95	95	39
Malaysia	34	13	60	75	Paraguay	75	101	78	46
Slovakia	35	40	30	30	Cabo Verde	76	71	97	48
Hungary	36	36	46	35	Chile	77	72	90	69
Cyprus	37	50	34	33	North Macedonia	78	81	80	76
United Arab Emirates	38	32	24	80	Ukraine	79	62	77	91
Lithuania	39	45	61	25	Albania	80	107	65	68
Bahrain	40	33	27	83	Turkey	81	58	103	72
China	41	39	52	44	Peru	82	115	67	58

Country	PILLAR	SUB-PILLARS		
	Impact	Economy	Quality of Life	SDG Contribution
Trinidad and Tobago	83	76	54	99
Egypt	84	60	96	93
Kyrgyzstan	85	110	35	103
Bolivia	86	123	75	56
Guatemala	87	109	70	82
Mongolia	88	118	85	61
Bosnia and Herzegovina	89	90	57	102
Jordan	90	66	91	101
Venezuela	91	102	102	55
Honduras	92	132	88	65
Cambodia	93	127	71	87
Georgia	94	126	83	85
Bangladesh	95	119	56	104
Iran, Islamic Rep.	96	73	101	95
Morocco	97	88	94	109
Tunisia	98	82	98	105
Tajikistan	99	120	64	107
Lebanon	100	86	113	94
Algeria	101	89	107	98
Senegal	102	80	99	112
Rwanda	103	84	110	97
Kenya	104	94	100	108
Botswana	105	111	123	50
Namibia	106	99	128	62
Ghana	107	104	106	100
India	108	70	104	117

Country	PILLAR	SUB-PILLARS		
	Impact	Economy	Quality of Life	SDG Contribution
South Africa	109	78	127	86
Pakistan	110	92	93	124
Guinea	111	53	111	128
Ethiopia	112	37	105	133
Nepal	113	117	76	127
Tanzania	114	103	109	115
Benin	115	64	117	125
Burundi	116	74	126	114
Gambia	117	106	108	119
Malawi	118	124	120	106
Côte d'Ivoire	119	91	116	121
Mali	120	114	112	116
Zambia	121	108	129	96
Lesotho	122	96	130	110
Cameroon	123	85	122	123
Madagascar	124	113	124	113
Nigeria	125	100	125	120
Burkina Faso	126	125	114	122
Eswatini	127	134	133	74
Yemen	128	122	118	126
Uganda	129	116	115	130
Mozambique	130	129	119	131
Angola	131	131	134	111
Zimbabwe	132	128	131	129
Congo, Dem. Rep.	133	130	121	134
Chad	134	133	132	132









# COUNTRY/ ECONOMY PROFILES



# How to Read the Country/Economy Profiles

The Country/Economy Profiles section presents a scorecard for each of the 134 economies covered in The Network Readiness Index 2020. Each profile summarizes an economy's performance in the various dimensions of the NRI.

Each profile consists of three parts:

## 1. PERFORMANCE HIGHLIGHTS

The first section of the profile displays the economy's performance in the overall NRI, the four pillars, and the 12 sub-pillars. For each of these dimensions, the economy's rank (out of 134 economies) and score (on a 0-to-100 scale, from worst to best) are reported.

## 2. RADAR CHART

The second section presents a radar chart that visually depicts the economy's performance in the overall NRI and its four pillars. The blue line plots the economy's score, while the gray line represents the average score of all economies in the income group in which the economy under review belongs. The country classification by income group is defined by the World Bank and reflects the situation as of July 2020.

## 3. THE NETWORK READINESS INDEX IN DETAIL

The third section presents an economy's performance in each of the 60 indicators comprising the NRI. The indicators are organized by pillar and sub-pillar. The numbering of the indicators matches that of the data tables in the next section of the report, which provides descriptions, years, rankings, values, and normalized scores for all the indicators.

## THE NRI ONLINE

To complement the analysis presented in this report, the NRI website (<https://networkreadinessindex.org/>) offers additional analysis and a number of analytical tools and visualizations, including sortable rankings and maps. It also offers individual country/economy profiles.



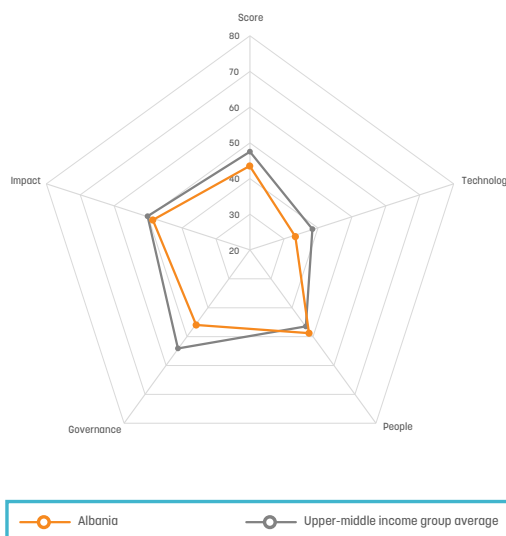
# Index of Country/Economy Profiles

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Armenia	68	Guatemala	113	Oman	158
Australia	69	Guinea	114	Pakistan	159
Austria	70	Honduras	115	Panama	160
Azerbaijan	71	Hong Kong (China)	116	Paraguay	161
Bahrain	72	Hungary	117	Peru	162
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Belarus	74	India	119	Poland	164
Belgium	75	Indonesia	120	Portugal	165
Benin	76	Iran, Islamic Rep.	121	Qatar	166
Bolivia	77	Ireland	122	Romania	167
Bosnia and Herzegovina	78	Israel	123	Russian Federation	168
Botswana	79	Italy	124	Rwanda	169
Brazil	80	Jamaica	125	Saudi Arabia	170
Bulgaria	81	Japan	126	Senegal	171
Burkina Faso	82	Jordan	127	Serbia	172
Burundi	83	Kazakhstan	128	Singapore	173
Cabo Verde	84	Kenya	129	Slovakia	174
Cambodia	85	Korea, Rep.	130	Slovenia	175
Cameroon	86	Kuwait	131	South Africa	176
Canada	87	Kyrgyzstan	132	Spain	177
Chad	88	Lao PDR	133	Sri Lanka	178
Chile	89	Latvia	134	Sweden	179
China	90	Lebanon	135	Switzerland	180
Colombia	91	Lesotho	136	Tajikistan	181
Congo, Dem. Rep.	92	Lithuania	137	Tanzania	182
Costa Rica	93	Luxembourg	138	Thailand	183
Côte d'Ivoire	94	Madagascar	139	Trinidad and Tobago	184
Croatia	95	Malawi	140	Tunisia	185
Cyprus	96	Malaysia	141	Turkey	186
Czech Republic	97	Mali	142	Uganda	187
Denmark	98	Malta	143	Ukraine	188
Dominican Republic	99	Mauritius	144	United Arab Emirates	189
Ecuador	100	Mexico	145	United Kingdom	190
Egypt	101	Moldova	146	United States	191
El Salvador	102	Mongolia	147	Uruguay	192
Estonia	103	Montenegro	148	Venezuela	193
Eswatini	104	Morocco	149	Viet Nam	194
Ethiopia	105	Mozambique	150	Yemen	195
Finland	106	Namibia	151	Zambia	196
France	107	Nepal	152	Zimbabwe	197
Gambia	108	Netherlands	153		



# Albania

	Rank (out of 134)	Score
<b>Network Readiness Index</b>	<b>78</b>	<b>44.21</b>
<b>A. Technology pillar</b>	<b>82</b>	<b>33.63</b>
1st sub-pillar: Access	84	50.17
2nd sub-pillar: Content	54	34.16
3rd sub-pillar: Future Technologies	117	16.57
<b>B. People pillar</b>	<b>66</b>	<b>48.62</b>
1st sub-pillar: Individuals	68	54.49
2nd sub-pillar: Businesses	69	41.82
3rd sub-pillar: Governments	44	49.54
<b>C. Governance pillar</b>	<b>96</b>	<b>45.74</b>
1st sub-pillar: Trust	75	34.41
2nd sub-pillar: Regulation	76	63.58
3rd sub-pillar: Inclusion	117	39.23
<b>D. Impact pillar</b>	<b>80</b>	<b>48.83</b>
1st sub-pillar: Economy	107	14.58
2nd sub-pillar: Quality of Life	65	65.82
3rd sub-pillar: SDG Contribution	68	66.09



## The Network Readiness Index in detail

INDICATOR	RANK/134	SCORE
<b>A. Technology pillar</b>		
<b>1st sub-pillar: Access</b>		
1.1.1 Mobile tariffs	85	52.38
1.1.2 Handset prices	82	37.43
1.1.3 Households with internet access	96	30.00
1.1.4 4G mobile network coverage	74	85.50
1.1.5 Fixed-broadband subscriptions	84	28.65
1.1.6 International Internet bandwidth	46	70.49
1.1.7 Internet access in schools	44	46.77
<b>2nd sub-pillar: Content</b>		
1.2.1 GitHub commits	69	3.30
1.2.2 Wikipedia edits	47	63.89
1.2.3 Internet domain registrations*	-	-
1.2.4 Mobile apps development	65	63.70
<b>3rd sub-pillar: Future Technologies</b>		
1.3.1 Adoption of emerging technologies	117	19.18
1.3.2 Investment in emerging technology	116	21.88
1.3.3 ICT PCT patent applications	n/a	n/a
1.3.4 Computer software spending	87	8.66
1.3.5 Robot density	n/a	n/a
<b>B. People pillar</b>		
<b>1st sub-pillar: Individuals</b>		
2.1.1 Internet users	60	71.33
2.1.2 Active mobile-broadband subscriptions	84	23.91
2.1.3 Use of virtual social networks	81	48.45
2.1.4 Tertiary enrollment	53	39.87
2.1.5 Adult literacy rate	30	97.64
2.1.6 ICT skills	78	45.72
<b>2nd sub-pillar: Businesses</b>		
2.2.1 Firms with website	54	58.40
2.2.2 Ease of doing business	77	66.36
2.2.3 Professionals	54	29.44
2.2.4 Technicians and associate professionals	90	19.83
2.2.5 Business use of digital tools	110	35.07
2.2.6 R&D expenditure by businesses	n/a	n/a
<b>3rd sub-pillar: Governments</b>		
2.3.1 Government online services	31	83.64
2.3.2 Publication and use of open data	50	32.43
2.3.3 Government promotion of investment in emerging technologies	81	32.54
2.3.4 R&D expenditure by governments and higher education	n/a	n/a

INDICATOR	RANK/134	SCORE
<b>C. Governance pillar</b>		
<b>1st sub-pillar: Trust</b>		
3.1.1 Secure Internet servers	65	53.01
3.1.2 Cybersecurity	65	67.50
3.1.3 Online access to financial account	112	8.62
3.1.4 Internet shopping	80	8.51
<b>2nd sub-pillar: Regulation</b>		
3.2.1 Regulatory quality	57	57.62
3.2.2 ICT regulatory environment	67	83.40
3.2.3 Legal framework's adaptability to emerging technologies	102	20.74
3.2.4 E-commerce legislation	77	75.00
3.2.5 Privacy protection by law content	25	81.17
<b>3rd sub-pillar: Inclusion</b>		
3.3.1 E-Participation	36	83.95
3.3.2 Socioeconomic gap in use of digital payments	122	22.80
3.3.3 Availability of local online content	121	26.14
3.3.4 Gender gap in internet use	n/a	n/a
3.3.5 Rural gap in use of digital payments	121	24.03
<b>D. Impact pillar</b>		
<b>1st sub-pillar: Economy</b>		
4.1.1 Medium and high-tech industry	110	8.26
4.1.2 High-tech exports	127	0.09
4.1.3 PCT patent applications	n/a	n/a
4.1.4 Labour productivity per employee	74	21.82
4.1.5 Prevalence of gig economy	99	28.16
<b>2nd sub-pillar: Quality of Life</b>		
4.2.1 Happiness	97	45.25
4.2.2 Freedom to make life choices	81	68.41
4.2.3 Income inequality	39	76.80
4.2.4 Healthy life expectancy at birth	43	72.81
<b>3rd sub-pillar: SDG Contribution</b>		
4.3.1 SDG 3: Good Health and Well-Being	100	50.82
4.3.2 SDG 4: Quality Education	47	42.10
4.3.3 SDG 5: Gender Equality	61	75.69
4.3.4 SDG 7: Affordable and Clean Energy	16	90.10
4.3.5 SDG 11: Sustainable Cities and Communities	53	71.73

\* Data on indicator 1.2.3 is confidential, but has been included in the computation. Please see Appendix I: Technical Notes for further details.



# Algeria

	Rank (out of 134)	Score
<b>Network Readiness Index</b>	<b>107</b>	<b>35.15</b>
<b>A. Technology pillar</b>	<b>108</b>	<b>25.66</b>
1st sub-pillar: Access	93	43.71
2nd sub-pillar: Content	111	12.79
3rd sub-pillar: Future Technologies	96	20.48
<b>B. People pillar</b>	<b>86</b>	<b>38.85</b>
1st sub-pillar: Individuals	84	50.88
2nd sub-pillar: Businesses	117	25.65
3rd sub-pillar: Governments	76	40.01
<b>C. Governance pillar</b>	<b>120</b>	<b>35.24</b>
1st sub-pillar: Trust	122	16.63
2nd sub-pillar: Regulation	120	41.36
3rd sub-pillar: Inclusion	103	47.73
<b>D. Impact pillar</b>	<b>101</b>	<b>40.85</b>
1st sub-pillar: Economy	89	18.99
2nd sub-pillar: Quality of Life	107	49.35
3rd sub-pillar: SDG Contribution	98	54.21



## The Network Readiness Index in detail

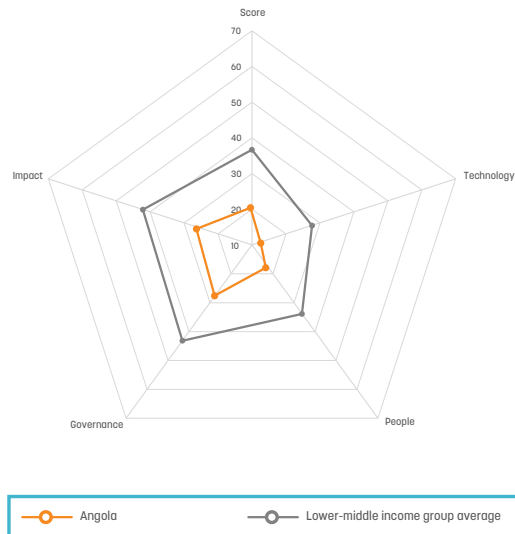
INDICATOR	RANK/134	SCORE
<b>A. Technology pillar</b>		
<b>1st sub-pillar: Access</b>		
1.1.1 Mobile tariffs	110	35.94
1.1.2 Handset prices	98	32.17
1.1.3 Households with internet access	54	74.31
1.1.4 4G mobile network coverage	117	30.64
1.1.5 Fixed-broadband subscriptions	85	28.20
1.1.6 International Internet bandwidth	105	61.03
1.1.7 Internet access in schools	n/a	n/a
<b>2nd sub-pillar: Content</b>		
1.2.1 GitHub commits	113	0.33
1.2.2 Wikipedia edits	95	25.52
1.2.3 Internet domain registrations*	-	-
1.2.4 Mobile apps development	123	25.02
<b>3rd sub-pillar: Future Technologies</b>		
1.3.1 Adoption of emerging technologies	65	47.15
1.3.2 Investment in emerging technology	85	33.92
1.3.3 ICT PCT patent applications	78	0.24
1.3.4 Computer software spending	122	0.63
1.3.5 Robot density	n/a	n/a
<b>B. People pillar</b>		
<b>1st sub-pillar: Individuals</b>		
2.1.1 Internet users	80	58.68
2.1.2 Active mobile-broadband subscriptions	34	37.67
2.1.3 Use of virtual social networks	74	50.52
2.1.4 Tertiary enrollment	57	37.22
2.1.5 Adult literacy rate	77	76.09
2.1.6 ICT skills	79	45.09
<b>2nd sub-pillar: Businesses</b>		
2.2.1 Firms with website	n/a	n/a
2.2.2 Ease of doing business	124	32.48
2.2.3 Professionals	68	23.59
2.2.4 Technicians and associate professionals	89	19.85
2.2.5 Business use of digital tools	86	51.40
2.2.6 R&D expenditure by businesses	77	0.92
<b>3rd sub-pillar: Governments</b>		
2.3.1 Government online services	127	25.46
2.3.2 Publication and use of open data	n/a	n/a
2.3.3 Government promotion of investment in emerging technologies	41	48.79
2.3.4 R&D expenditure by governments and higher education	37	45.78

INDICATOR	RANK/134	SCORE
<b>C. Governance pillar</b>		
<b>1st sub-pillar: Trust</b>		
3.1.1 Secure Internet servers	111	31.27
3.1.2 Cybersecurity	107	27.52
3.1.3 Online access to financial account	119	4.16
3.1.4 Internet shopping	104	3.56
<b>2nd sub-pillar: Regulation</b>		
3.2.1 Regulatory quality	129	23.58
3.2.2 ICT regulatory environment	120	58.50
3.2.3 Legal framework's adaptability to emerging technologies	53	46.28
3.2.4 E-commerce legislation	115	50.00
3.2.5 Privacy protection by law content	70	28.44
<b>3rd sub-pillar: Inclusion</b>		
3.3.1 E-Participation	132	12.35
3.3.2 Socioeconomic gap in use of digital payments	78	60.38
3.3.3 Availability of local online content	93	47.78
3.3.4 Gender gap in internet use	83	28.16
3.3.5 Rural gap in use of digital payments	3	89.99
<b>D. Impact pillar</b>		
<b>1st sub-pillar: Economy</b>		
4.1.1 Medium and high-tech industry	120	3.12
4.1.2 High-tech exports	118	1.14
4.1.3 PCT patent applications	81	0.04
4.1.4 Labour productivity per employee	64	28.02
4.1.5 Prevalence of gig economy	32	62.63
<b>2nd sub-pillar: Quality of Life</b>		
4.2.1 Happiness	107	40.32
4.2.2 Freedom to make life choices	132	1.79
4.2.3 Income inequality	12	91.24
4.2.4 Healthy life expectancy at birth	75	64.04
<b>3rd sub-pillar: SDG Contribution</b>		
4.3.1 SDG 3: Good Health and Well-Being	30	81.97
4.3.2 SDG 4: Quality Education	76	12.96
4.3.3 SDG 5: Gender Equality	121	39.70
4.3.4 SDG 7: Affordable and Clean Energy	52	82.23
4.3.5 SDG 11: Sustainable Cities and Communities	n/a	n/a

\* Data on indicator 1.2.3 is confidential, but has been included in the computation. Please see Appendix I: Technical Notes for further details.

# Angola

	Rank (out of 134)	Score
<b>Network Readiness Index</b>	<b>131</b>	<b>20.96</b>
<b>A. Technology pillar</b>	<b>128</b>	<b>13.09</b>
1st sub-pillar: Access	123	24.47
2nd sub-pillar: Content	128	6.58
3rd sub-pillar: Future Technologies	132	8.21
<b>B. People pillar</b>	<b>131</b>	<b>17.41</b>
1st sub-pillar: Individuals	128	14.27
2nd sub-pillar: Businesses	127	19.18
3rd sub-pillar: Governments	124	18.78
<b>C. Governance pillar</b>	<b>129</b>	<b>27.24</b>
1st sub-pillar: Trust	124	15.64
2nd sub-pillar: Regulation	117	44.44
3rd sub-pillar: Inclusion	133	21.63
<b>D. Impact pillar</b>	<b>131</b>	<b>26.09</b>
1st sub-pillar: Economy	131	7.42
2nd sub-pillar: Quality of Life	134	20.73
3rd sub-pillar: SDG Contribution	111	50.13



## The Network Readiness Index in detail

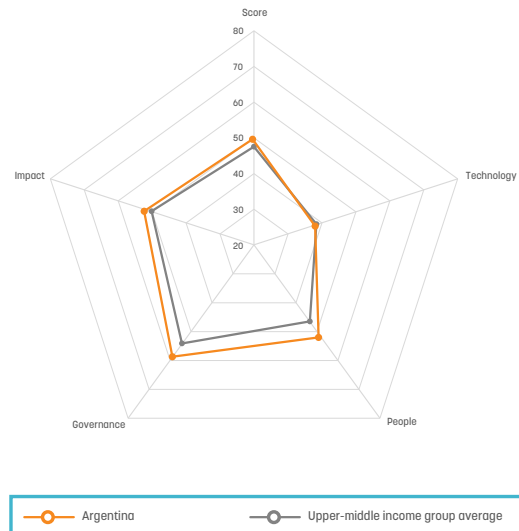
INDICATOR	RANK/134	SCORE
<b>A. Technology pillar</b>		
<b>1st sub-pillar: Access</b>		
1.1.1 Mobile tariffs	99	47.35
1.1.2 Handset prices	107	27.56
1.1.3 Households with internet access	121	11.06
1.1.4 4G mobile network coverage	126	8.00
1.1.5 Fixed-broadband subscriptions	96	16.14
1.1.6 International Internet bandwidth	111	58.51
1.1.7 Internet access in schools	68	2.70
<b>2nd sub-pillar: Content</b>		
1.2.1 GitHub commits	122	0.09
1.2.2 Wikipedia edits	n/a	n/a
1.2.3 Internet domain registrations*	-	-
1.2.4 Mobile apps development	126	19.64
<b>3rd sub-pillar: Future Technologies</b>		
1.3.1 Adoption of emerging technologies	121	16.41
1.3.2 Investment in emerging technology	131	0.00
1.3.3 ICT PCT patent applications	n/a	n/a
1.3.4 Computer software spending	n/a	n/a
1.3.5 Robot density	n/a	n/a
<b>B. People pillar</b>		
<b>1st sub-pillar: Individuals</b>		
2.1.1 Internet users	126	12.04
2.1.2 Active mobile-broadband subscriptions	124	6.07
2.1.3 Use of virtual social networks	126	4.95
2.1.4 Tertiary enrollment	111	6.27
2.1.5 Adult literacy rate	95	56.29
2.1.6 ICT skills	133	0.00
<b>2nd sub-pillar: Businesses</b>		
2.2.1 Firms with website	104	22.52
2.2.2 Ease of doing business	130	19.55
2.2.3 Professionals	105	12.43
2.2.4 Technicians and associate professionals	104	14.90
2.2.5 Business use of digital tools	119	26.48
2.2.6 R&D expenditure by businesses	n/a	n/a
<b>3rd sub-pillar: Governments</b>		
2.3.1 Government online services	106	47.27
2.3.2 Publication and use of open data	n/a	n/a
2.3.3 Government promotion of investment in emerging technologies	120	8.39
2.3.4 R&D expenditure by governments and higher education	110	0.68

INDICATOR	RANK/134	SCORE
<b>C. Governance pillar</b>		
<b>1st sub-pillar: Trust</b>		
3.1.1 Secure Internet servers	124	21.63
3.1.2 Cybersecurity	126	9.64
3.1.3 Online access to financial account	n/a	n/a
3.1.4 Internet shopping	n/a	n/a
<b>2nd sub-pillar: Regulation</b>		
3.2.1 Regulatory quality	126	29.39
3.2.2 ICT regulatory environment	113	62.17
3.2.3 Legal framework's adaptability to emerging technologies	117	11.18
3.2.4 E-commerce legislation	77	75.00
3.2.5 Privacy protection by law content	n/a	n/a
<b>3rd sub-pillar: Inclusion</b>		
3.3.1 E-participation	105	43.21
3.3.2 Socioeconomic gap in use of digital payments	125	17.79
3.3.3 Availability of local online content	125	23.19
3.3.4 Gender gap in internet use	n/a	n/a
3.3.5 Rural gap in use of digital payments	127	2.34
<b>D. Impact pillar</b>		
<b>1st sub-pillar: Economy</b>		
4.1.1 Medium and high-tech industry	118	3.99
4.1.2 High-tech exports	75	10.09
4.1.3 PCT patent applications	n/a	n/a
4.1.4 Labour productivity per employee	94	10.15
4.1.5 Prevalence of gig economy	123	5.46
<b>2nd sub-pillar: Quality of Life</b>		
4.2.1 Happiness	125	21.65
4.2.2 Freedom to make life choices	133	0.00
4.2.3 Income inequality	113	30.15
4.2.4 Healthy life expectancy at birth	114	31.10
<b>3rd sub-pillar: SDG Contribution</b>		
4.3.1 SDG 3: Good Health and Well-Being	126	19.67
4.3.2 SDG 4: Quality Education	n/a	n/a
4.3.3 SDG 5: Gender Equality	106	52.27
4.3.4 SDG 7: Affordable and Clean Energy	51	82.30
4.3.5 SDG 11: Sustainable Cities and Communities	89	46.30

\* Data on indicator 1.2.3 is confidential, but has been included in the computation. Please see Appendix I: Technical Notes for further details.

# Argentina

	Rank (out of 134)	Score
<b>Network Readiness Index</b>	<b>60</b>	<b>50.36</b>
<b>A. Technology pillar</b>	<b>70</b>	<b>38.66</b>
1st sub-pillar: Access	72	60.87
2nd sub-pillar: Content	55	33.92
3rd sub-pillar: Future Technologies	92	21.19
<b>B. People pillar</b>	<b>50</b>	<b>51.87</b>
1st sub-pillar: Individuals	32	65.32
2nd sub-pillar: Businesses	67	42.16
3rd sub-pillar: Governments	48	48.14
<b>C. Governance pillar</b>	<b>56</b>	<b>58.62</b>
1st sub-pillar: Trust	71	37.15
2nd sub-pillar: Regulation	51	70.14
3rd sub-pillar: Inclusion	51	68.57
<b>D. Impact pillar</b>	<b>64</b>	<b>52.28</b>
1st sub-pillar: Economy	75	22.09
2nd sub-pillar: Quality of Life	58	67.78
3rd sub-pillar: SDG Contribution	64	66.96



## The Network Readiness Index in detail

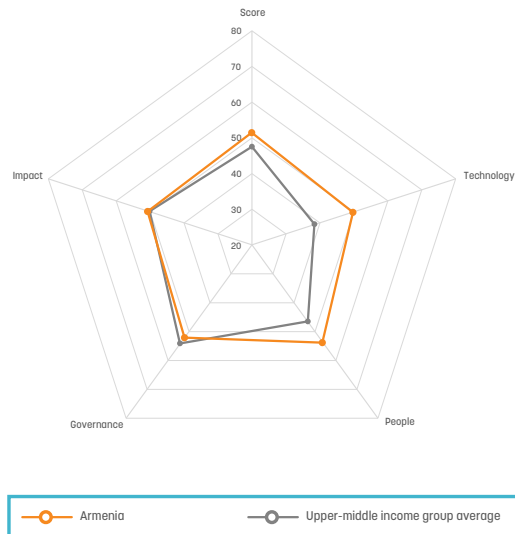
INDICATOR	RANK/134	SCORE
<b>A. Technology pillar</b>		
<b>1st sub-pillar: Access</b>		
1.1.1 Mobile tariffs	69	60.86
1.1.2 Handset prices	67	44.12
1.1.3 Households with internet access	53	75.88
1.1.4 4G mobile network coverage	75	85.00
1.1.5 Fixed-broadband subscriptions	68	53.45
1.1.6 International Internet bandwidth	77	66.77
1.1.7 Internet access in schools	48	39.98
<b>2nd sub-pillar: Content</b>		
1.2.1 GitHub commits	52	8.22
1.2.2 Wikipedia edits	54	55.09
1.2.3 Internet domain registrations*	-	-
1.2.4 Mobile apps development	55	67.74
<b>3rd sub-pillar: Future Technologies</b>		
1.3.1 Adoption of emerging technologies	51	51.97
1.3.2 Investment in emerging technology	83	34.66
1.3.3 ICT PCT patent applications	68	1.67
1.3.4 Computer software spending	79	12.48
1.3.5 Robot density	41	5.17
<b>B. People pillar</b>		
<b>1st sub-pillar: Individuals</b>		
2.1.1 Internet users	54	73.86
2.1.2 Active mobile-broadband subscriptions	58	31.17
2.1.3 Use of virtual social networks	14	76.29
2.1.4 Tertiary enrollment	4	65.65
2.1.5 Adult literacy rate	18	98.75
2.1.6 ICT skills	77	46.18
<b>2nd sub-pillar: Businesses</b>		
2.2.1 Firms with website	38	69.43
2.2.2 Ease of doing business	106	50.82
2.2.3 Professionals	67	23.93
2.2.4 Technicians and associate professionals	52	40.51
2.2.5 Business use of digital tools	54	64.81
2.2.6 R&D expenditure by businesses	58	3.45
<b>3rd sub-pillar: Governments</b>		
2.3.1 Government online services	30	84.25
2.3.2 Publication and use of open data	39	37.51
2.3.3 Government promotion of investment in emerging technologies	71	34.98
2.3.4 R&D expenditure by governments and higher education	51	35.80

INDICATOR	RANK/134	SCORE
<b>C. Governance pillar</b>		
<b>1st sub-pillar: Trust</b>		
3.1.1 Secure Internet servers	50	63.94
3.1.2 Cybersecurity	94	43.23
3.1.3 Online access to financial account	77	22.93
3.1.4 Internet shopping	61	18.52
<b>2nd sub-pillar: Regulation</b>		
3.2.1 Regulatory quality	91	46.06
3.2.2 ICT regulatory environment	51	86.88
3.2.3 Legal framework's adaptability to emerging technologies	64	42.48
3.2.4 E-commerce legislation	1	100.00
3.2.5 Privacy protection by law content	34	75.26
<b>3rd sub-pillar: Inclusion</b>		
3.3.1 E-Participation	29	85.18
3.3.2 Socioeconomic gap in use of digital payments	73	62.32
3.3.3 Availability of local online content	58	64.13
3.3.4 Gender gap in internet use	37	62.78
3.3.5 Rural gap in use of digital payments	63	68.43
<b>D. Impact pillar</b>		
<b>1st sub-pillar: Economy</b>		
4.1.1 Medium and high-tech industry	59	33.06
4.1.2 High-tech exports	80	9.71
4.1.3 PCT patent applications	70	0.31
4.1.4 Labour productivity per employee	55	30.37
4.1.5 Prevalence of gig economy	81	37.00
<b>2nd sub-pillar: Quality of Life</b>		
4.2.1 Happiness	50	66.68
4.2.2 Freedom to make life choices	68	75.16
4.2.3 Income inequality	84	55.67
4.2.4 Healthy life expectancy at birth	39	73.62
<b>3rd sub-pillar: SDG Contribution</b>		
4.3.1 SDG 3: Good Health and Well-Being	39	78.69
4.3.2 SDG 4: Quality Education	71	20.41
4.3.3 SDG 5: Gender Equality	35	81.29
4.3.4 SDG 7: Affordable and Clean Energy	66	78.97
4.3.5 SDG 11: Sustainable Cities and Communities	46	75.43

\* Data on indicator 1.2.3 is confidential, but has been included in the computation. Please see Appendix I: Technical Notes for further details.

# Armenia

	Rank (out of 134)	Score
<b>Network Readiness Index</b>	<b>55</b>	<b>51.91</b>
<b>A. Technology pillar</b>	<b>42</b>	<b>50.19</b>
1st sub-pillar: Access	62	67.56
2nd sub-pillar: Content	27	55.90
3rd sub-pillar: Future Technologies	72	27.12
<b>B. People pillar</b>	<b>42</b>	<b>54.09</b>
1st sub-pillar: Individuals	58	57.47
2nd sub-pillar: Businesses	36	57.56
3rd sub-pillar: Governments	52	47.22
<b>C. Governance pillar</b>	<b>76</b>	<b>52.36</b>
1st sub-pillar: Trust	80	32.60
2nd sub-pillar: Regulation	77	63.03
3rd sub-pillar: Inclusion	77	61.44
<b>D. Impact pillar</b>	<b>65</b>	<b>50.99</b>
1st sub-pillar: Economy	87	19.81
2nd sub-pillar: Quality of Life	68	65.12
3rd sub-pillar: SDG Contribution	53	68.03



## The Network Readiness Index in detail

INDICATOR	RANK/134	SCORE
<b>A. Technology pillar</b>		
<b>1st sub-pillar: Access</b>		
1.1.1 Mobile tariffs	80	55.81
1.1.2 Handset prices	74	41.74
1.1.3 Households with internet access	71	64.60
1.1.4 4G mobile network coverage	66	90.05
1.1.5 Fixed-broadband subscriptions	74	47.98
1.1.6 International Internet bandwidth	34	72.77
1.1.7 Internet access in schools	1	100.00
<b>2nd sub-pillar: Content</b>		
1.2.1 GitHub commits	51	8.35
1.2.2 Wikipedia edits	7	90.42
1.2.3 Internet domain registrations*	-	-
1.2.4 Mobile apps development	53	68.94
<b>3rd sub-pillar: Future Technologies</b>		
1.3.1 Adoption of emerging technologies	64	47.72
1.3.2 Investment in emerging technology	52	46.26
1.3.3 ICT PCT patent applications	53	5.84
1.3.4 Computer software spending	88	8.65
1.3.5 Robot density	n/a	n/a
<b>B. People pillar</b>		
<b>1st sub-pillar: Individuals</b>		
2.1.1 Internet users	75	64.01
2.1.2 Active mobile-broadband subscriptions	67	29.22
2.1.3 Use of virtual social networks	74	50.52
2.1.4 Tertiary enrollment	54	39.58
2.1.5 Adult literacy rate	9	99.69
2.1.6 ICT skills	47	61.81
<b>2nd sub-pillar: Businesses</b>		
2.2.1 Firms with website	28	76.74
2.2.2 Ease of doing business	46	78.29
2.2.3 Professionals	46	35.79
2.2.4 Technicians and associate professionals	60	34.12
2.2.5 Business use of digital tools	59	62.89
2.2.6 R&D expenditure by businesses	n/a	n/a
<b>3rd sub-pillar: Governments</b>		
2.3.1 Government online services	68	69.09
2.3.2 Publication and use of open data	n/a	n/a
2.3.3 Government promotion of investment in emerging technologies	28	56.97
2.3.4 R&D expenditure by governments and higher education	84	15.61

INDICATOR	RANK/134	SCORE
<b>C. Governance pillar</b>		
<b>1st sub-pillar: Trust</b>		
3.1.1 Secure Internet servers	71	49.25
3.1.2 Cybersecurity	80	52.76
3.1.3 Online access to financial account	85	17.52
3.1.4 Internet shopping	72	10.88
<b>2nd sub-pillar: Regulation</b>		
3.2.1 Regulatory quality	59	57.34
3.2.2 ICT regulatory environment	57	86.30
3.2.3 Legal framework's adaptability to emerging technologies	58	43.81
3.2.4 E-commerce legislation	77	75.00
3.2.5 Privacy protection by law content	55	52.70
<b>3rd sub-pillar: Inclusion</b>		
3.3.1 E-Participation	56	74.07
3.3.2 Socioeconomic gap in use of digital payments	98	46.09
3.3.3 Availability of local online content	71	59.29
3.3.4 Gender gap in internet use	56	59.10
3.3.5 Rural gap in use of digital payments	62	68.63
<b>D. Impact pillar</b>		
<b>1st sub-pillar: Economy</b>		
4.1.1 Medium and high-tech industry	115	5.46
4.1.2 High-tech exports	49	18.70
4.1.3 PCT patent applications	50	1.06
4.1.4 Labour productivity per employee	67	27.01
4.1.5 Prevalence of gig economy	57	46.85
<b>2nd sub-pillar: Quality of Life</b>		
4.2.1 Happiness	91	46.57
4.2.2 Freedom to make life choices	72	73.56
4.2.3 Income inequality	47	73.71
4.2.4 Healthy life expectancy at birth	64	66.62
<b>3rd sub-pillar: SDG Contribution</b>		
4.3.1 SDG 3: Good Health and Well-Being	73	67.21
4.3.2 SDG 4: Quality Education	n/a	n/a
4.3.3 SDG 5: Gender Equality	57	75.96
4.3.4 SDG 7: Affordable and Clean Energy	86	72.76
4.3.5 SDG 11: Sustainable Cities and Communities	76	56.18

\* Data on indicator 1.2.3 is confidential, but has been included in the computation. Please see Appendix I: Technical Notes for further details.

# Australia

	Rank (out of 134)	Score
<b>Network Readiness Index</b>	<b>12</b>	<b>75.09</b>
<b>A. Technology pillar</b>	<b>17</b>	<b>70.38</b>
1st sub-pillar: Access	8	88.84
2nd sub-pillar: Content	14	72.81
3rd sub-pillar: Future Technologies	23	49.49
<b>B. People pillar</b>	<b>10</b>	<b>71.91</b>
1st sub-pillar: Individuals	6	74.08
2nd sub-pillar: Businesses	22	65.21
3rd sub-pillar: Governments	12	76.44
<b>C. Governance pillar</b>	<b>6</b>	<b>86.77</b>
1st sub-pillar: Trust	8	86.40
2nd sub-pillar: Regulation	5	90.32
3rd sub-pillar: Inclusion	14	83.57
<b>D. Impact pillar</b>	<b>18</b>	<b>71.30</b>
1st sub-pillar: Economy	24	46.86
2nd sub-pillar: Quality of Life	14	86.12
3rd sub-pillar: SDG Contribution	16	80.94



## The Network Readiness Index in detail

INDICATOR	RANK/134	SCORE
<b>A. Technology pillar</b>		
<b>1st sub-pillar: Access</b>		
1.1.1 Mobile tariffs	25	80.25
1.1.2 Handset prices	2	94.04
1.1.3 Households with internet access	32	86.08
1.1.4 4G mobile network coverage	24	99.00
1.1.5 Fixed-broadband subscriptions	29	92.80
1.1.6 International Internet bandwidth	56	69.71
1.1.7 Internet access in schools	1	100.00
<b>2nd sub-pillar: Content</b>		
1.2.1 GitHub commits	13	61.22
1.2.2 Wikipedia edits	26	78.42
1.2.3 Internet domain registrations*	-	-
1.2.4 Mobile apps development	16	87.44
<b>3rd sub-pillar: Future Technologies</b>		
1.3.1 Adoption of emerging technologies	15	82.33
1.3.2 Investment in emerging technology	24	65.76
1.3.3 ICT PCT patent applications	22	54.67
1.3.4 Computer software spending	53	22.79
1.3.5 Robot density	24	21.92
<b>B. People pillar</b>		
<b>1st sub-pillar: Individuals</b>		
2.1.1 Internet users	25	86.49
2.1.2 Active mobile-broadband subscriptions	9	54.05
2.1.3 Use of virtual social networks	22	71.13
2.1.4 Tertiary enrollment	2	82.72
2.1.5 Adult literacy rate	n/a	n/a
2.1.6 ICT skills	23	76.02
<b>2nd sub-pillar: Businesses</b>		
2.2.1 Firms with website	25	78.79
2.2.2 Ease of doing business	14	90.18
2.2.3 Professionals	17	53.66
2.2.4 Technicians and associate professionals	30	55.88
2.2.5 Business use of digital tools	12	86.56
2.2.6 R&D expenditure by businesses	21	26.21
<b>3rd sub-pillar: Governments</b>		
2.3.1 Government online services	7	94.55
2.3.2 Publication and use of open data	6	81.15
2.3.3 Government promotion of investment in emerging technologies	36	51.42
2.3.4 R&D expenditure by governments and higher education	10	78.66

INDICATOR	RANK/134	SCORE
<b>C. Governance pillar</b>		
<b>1st sub-pillar: Trust</b>		
3.1.1 Secure Internet servers	16	83.87
3.1.2 Cybersecurity	11	95.56
3.1.3 Online access to financial account	11	79.37
3.1.4 Internet shopping	10	86.81
<b>2nd sub-pillar: Regulation</b>		
3.2.1 Regulatory quality	5	93.91
3.2.2 ICT regulatory environment	8	96.72
3.2.3 Legal framework's adaptability to emerging technologies	17	70.66
3.2.4 E-commerce legislation	1	100.00
3.2.5 Privacy protection by law content	n/a	n/a
<b>3rd sub-pillar: Inclusion</b>		
3.3.1 E-Participation	9	96.30
3.3.2 Socioeconomic gap in use of digital payments	10	96.86
3.3.3 Availability of local online content	8	93.01
3.3.4 Gender gap in internet use	31	64.91
3.3.5 Rural gap in use of digital payments	66	66.79
<b>D. Impact pillar</b>		
<b>1st sub-pillar: Economy</b>		
4.1.1 Medium and high-tech industry	56	34.38
4.1.2 High-tech exports	28	31.66
4.1.3 PCT patent applications	22	20.93
4.1.4 Labour productivity per employee	16	65.17
4.1.5 Prevalence of gig economy	11	82.16
<b>2nd sub-pillar: Quality of Life</b>		
4.2.1 Happiness	10	89.26
4.2.2 Freedom to make life choices	16	92.22
4.2.3 Income inequality	47	73.71
4.2.4 Healthy life expectancy at birth	12	89.27
<b>3rd sub-pillar: SDG Contribution</b>		
4.3.1 SDG 3: Good Health and Well-Being	2	96.72
4.3.2 SDG 4: Quality Education	28	62.43
4.3.3 SDG 5: Gender Equality	54	76.98
4.3.4 SDG 7: Affordable and Clean Energy	80	74.57
4.3.5 SDG 11: Sustainable Cities and Communities	10	93.99

\* Data on indicator 1.2.3 is confidential, but has been included in the computation. Please see Appendix I: Technical Notes for further details.

# Austria

	Rank (out of 134)	Score
<b>Network Readiness Index</b>	<b>18</b>	<b>72.92</b>
<b>A. Technology pillar</b>	<b>16</b>	<b>70.47</b>
1st sub-pillar: Access	35	79.66
2nd sub-pillar: Content	15	71.13
3rd sub-pillar: Future Technologies	17	60.61
<b>B. People pillar</b>	<b>16</b>	<b>69.44</b>
1st sub-pillar: Individuals	45	60.46
2nd sub-pillar: Businesses	13	71.79
3rd sub-pillar: Governments	13	76.07
<b>C. Governance pillar</b>	<b>19</b>	<b>80.04</b>
1st sub-pillar: Trust	23	71.58
2nd sub-pillar: Regulation	17	85.32
3rd sub-pillar: Inclusion	15	83.22
<b>D. Impact pillar</b>	<b>15</b>	<b>71.74</b>
1st sub-pillar: Economy	23	47.84
2nd sub-pillar: Quality of Life	11	87.85
3rd sub-pillar: SDG Contribution	23	79.54



## The Network Readiness Index in detail

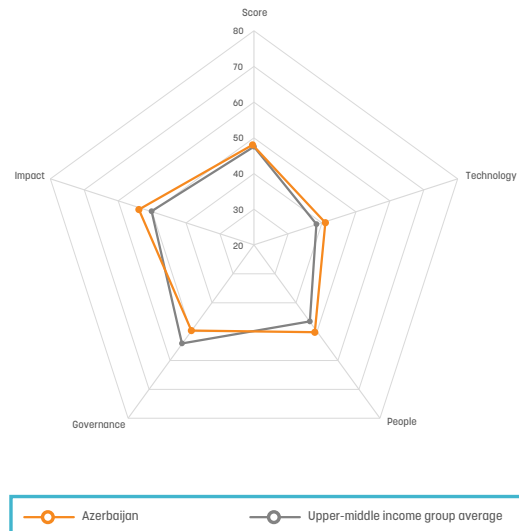
INDICATOR	RANK/134	SCORE
<b>A. Technology pillar</b>		
<b>1st sub-pillar: Access</b>		
1.1.1 Mobile tariffs	16	84.44
1.1.2 Handset prices	19	69.12
1.1.3 Households with internet access	21	88.76
1.1.4 4G mobile network coverage	38	98.00
1.1.5 Fixed-broadband subscriptions	61	69.51
1.1.6 International Internet bandwidth	66	68.11
1.1.7 Internet access in schools	n/a	n/a
<b>2nd sub-pillar: Content</b>		
1.2.1 GitHub commits	21	44.48
1.2.2 Wikipedia edits	14	84.99
1.2.3 Internet domain registrations*	-	-
1.2.4 Mobile apps development	2	97.21
<b>3rd sub-pillar: Future Technologies</b>		
1.3.1 Adoption of emerging technologies	21	74.59
1.3.2 Investment in emerging technology	26	64.42
1.3.3 ICT PCT patent applications	17	60.07
1.3.4 Computer software spending	15	52.25
1.3.5 Robot density	12	51.73
<b>B. People pillar</b>		
<b>1st sub-pillar: Individuals</b>		
2.1.1 Internet users	23	87.69
2.1.2 Active mobile-broadband subscriptions	47	34.13
2.1.3 Use of virtual social networks	79	49.48
2.1.4 Tertiary enrollment	11	62.04
2.1.5 Adult literacy rate	n/a	n/a
2.1.6 ICT skills	38	68.95
<b>2nd sub-pillar: Businesses</b>		
2.2.1 Firms with website	7	92.82
2.2.2 Ease of doing business	26	85.81
2.2.3 Professionals	23	48.66
2.2.4 Technicians and associate professionals	12	74.37
2.2.5 Business use of digital tools	43	72.43
2.2.6 R&D expenditure by businesses	6	56.65
<b>3rd sub-pillar: Governments</b>		
2.3.1 Government online services	7	94.55
2.3.2 Publication and use of open data	14	70.22
2.3.3 Government promotion of investment in emerging technologies	32	53.85
2.3.4 R&D expenditure by governments and higher education	7	85.68

INDICATOR	RANK/134	SCORE
<b>C. Governance pillar</b>		
<b>1st sub-pillar: Trust</b>		
3.1.1 Secure Internet servers	22	81.21
3.1.2 Cybersecurity	30	88.62
3.1.3 Online access to financial account	22	59.89
3.1.4 Internet shopping	29	56.59
<b>2nd sub-pillar: Regulation</b>		
3.2.1 Regulatory quality	18	85.44
3.2.2 ICT regulatory environment	32	90.93
3.2.3 Legal framework's adaptability to emerging technologies	18	67.88
3.2.4 E-commerce legislation	1	100.00
3.2.5 Privacy protection by law content	21	82.37
<b>3rd sub-pillar: Inclusion</b>		
3.3.1 E-Participation	6	97.53
3.3.2 Socioeconomic gap in use of digital payments	19	95.06
3.3.3 Availability of local online content	22	85.27
3.3.4 Gender gap in internet use	58	58.74
3.3.5 Rural gap in use of digital payments	10	79.51
<b>D. Impact pillar</b>		
<b>1st sub-pillar: Economy</b>		
4.1.1 Medium and high-tech industry	17	58.29
4.1.2 High-tech exports	41	22.05
4.1.3 PCT patent applications	10	50.06
4.1.4 Labour productivity per employee	12	71.62
4.1.5 Prevalence of gig economy	79	37.17
<b>2nd sub-pillar: Quality of Life</b>		
4.2.1 Happiness	12	88.50
4.2.2 Freedom to make life choices	26	89.83
4.2.3 Income inequality	18	85.82
4.2.4 Healthy life expectancy at birth	17	87.26
<b>3rd sub-pillar: SDG Contribution</b>		
4.3.1 SDG 3: Good Health and Well-Being	25	83.61
4.3.2 SDG 4: Quality Education	21	65.28
4.3.3 SDG 5: Gender Equality	77	72.89
4.3.4 SDG 7: Affordable and Clean Energy	40	85.04
4.3.5 SDG 11: Sustainable Cities and Communities	19	90.88

\* Data on indicator 1.2.3 is confidential, but has been included in the computation. Please see Appendix I: Technical Notes for further details.

# Azerbaijan

	Rank (out of 134)	Score
<b>Network Readiness Index</b>	<b>66</b>	<b>48.76</b>
<b>A. Technology pillar</b>	<b>60</b>	<b>41.70</b>
1st sub-pillar: Access	85	49.61
2nd sub-pillar: Content	61	30.15
3rd sub-pillar: Future Technologies	27	45.35
<b>B. People pillar</b>	<b>57</b>	<b>50.04</b>
1st sub-pillar: Individuals	64	56.00
2nd sub-pillar: Businesses	65	42.85
3rd sub-pillar: Governments	42	51.26
<b>C. Governance pillar</b>	<b>87</b>	<b>49.45</b>
1st sub-pillar: Trust	82	32.53
2nd sub-pillar: Regulation	78	62.85
3rd sub-pillar: Inclusion	95	52.97
<b>D. Impact pillar</b>	<b>58</b>	<b>53.84</b>
1st sub-pillar: Economy	52	31.60
2nd sub-pillar: Quality of Life	73	64.02
3rd sub-pillar: SDG Contribution	70	65.90



## The Network Readiness Index in detail

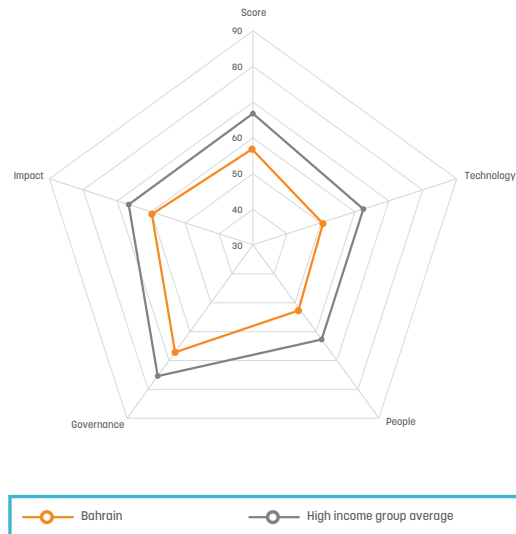
INDICATOR	RANK/134	SCORE
<b>A. Technology pillar</b>		
<b>1st sub-pillar: Access</b>		
1.1.1 Mobile tariffs	56	67.37
1.1.2 Handset prices	112	22.84
1.1.3 Households with internet access	50	78.14
1.1.4 4G mobile network coverage	104	49.00
1.1.5 Fixed-broadband subscriptions	101	8.20
1.1.6 International Internet bandwidth	67	68.10
1.1.7 Internet access in schools	41	53.63
<b>2nd sub-pillar: Content</b>		
1.2.1 GitHub commits	98	1.17
1.2.2 Wikipedia edits	49	61.17
1.2.3 Internet domain registrations*	-	-
1.2.4 Mobile apps development	78	56.86
<b>3rd sub-pillar: Future Technologies</b>		
1.3.1 Adoption of emerging technologies	34	62.72
1.3.2 Investment in emerging technology	23	67.18
1.3.3 ICT PCT patent applications	n/a	n/a
1.3.4 Computer software spending	95	6.14
1.3.5 Robot density	n/a	n/a
<b>B. People pillar</b>		
<b>1st sub-pillar: Individuals</b>		
2.1.1 Internet users	40	79.53
2.1.2 Active mobile-broadband subscriptions	87	22.61
2.1.3 Use of virtual social networks	98	36.08
2.1.4 Tertiary enrollment	85	19.80
2.1.5 Adult literacy rate	6	99.76
2.1.6 ICT skills	18	78.23
<b>2nd sub-pillar: Businesses</b>		
2.2.1 Firms with website	99	27.28
2.2.2 Ease of doing business	33	82.21
2.2.3 Professionals	51	30.05
2.2.4 Technicians and associate professionals	53	39.92
2.2.5 Business use of digital tools	32	77.54
2.2.6 R&D expenditure by businesses	88	0.11
<b>3rd sub-pillar: Governments</b>		
2.3.1 Government online services	64	69.70
2.3.2 Publication and use of open data	n/a	n/a
2.3.3 Government promotion of investment in emerging technologies	19	69.32
2.3.4 R&D expenditure by governments and higher education	85	14.77

INDICATOR	RANK/134	SCORE
<b>C. Governance pillar</b>		
<b>1st sub-pillar: Trust</b>		
3.1.1 Secure Internet servers	78	47.17
3.1.2 Cybersecurity	56	69.88
3.1.3 Online access to financial account	114	6.93
3.1.4 Internet shopping	88	6.15
<b>2nd sub-pillar: Regulation</b>		
3.2.1 Regulatory quality	97	43.03
3.2.2 ICT regulatory environment	101	68.92
3.2.3 Legal framework's adaptability to emerging technologies	26	64.46
3.2.4 E-commerce legislation	77	75.00
3.2.5 Privacy protection by law content	n/a	n/a
<b>3rd sub-pillar: Inclusion</b>		
3.3.1 E-Participation	72	67.90
3.3.2 Socioeconomic gap in use of digital payments	106	41.30
3.3.3 Availability of local online content	23	85.01
3.3.4 Gender gap in internet use	74	49.90
3.3.5 Rural gap in use of digital payments	124	20.72
<b>D. Impact pillar</b>		
<b>1st sub-pillar: Economy</b>		
4.1.1 Medium and high-tech industry	78	25.71
4.1.2 High-tech exports	86	8.74
4.1.3 PCT patent applications	n/a	n/a
4.1.4 Labour productivity per employee	81	18.36
4.1.5 Prevalence of gig economy	15	73.58
<b>2nd sub-pillar: Quality of Life</b>		
4.2.1 Happiness	85	48.75
4.2.2 Freedom to make life choices	52	81.48
4.2.3 Income inequality	n/a	n/a
4.2.4 Healthy life expectancy at birth	83	61.85
<b>3rd sub-pillar: SDG Contribution</b>		
4.3.1 SDG 3: Good Health and Well-Being	88	60.66
4.3.2 SDG 4: Quality Education	50	39.76
4.3.3 SDG 5: Gender Equality	91	65.28
4.3.4 SDG 7: Affordable and Clean Energy	46	83.45
4.3.5 SDG 11: Sustainable Cities and Communities	36	80.34

\* Data on indicator 1.2.3 is confidential, but has been included in the computation. Please see Appendix I: Technical Notes for further details.

# Bahrain

	Rank (out of 134)	Score
<b>Network Readiness Index</b>	<b>42</b>	<b>57.59</b>
<b>A. Technology pillar</b>	<b>40</b>	<b>51.16</b>
1st sub-pillar: Access	41	78.07
2nd sub-pillar: Content	62	29.69
3rd sub-pillar: Future Technologies	25	45.72
<b>B. People pillar</b>	<b>48</b>	<b>52.39</b>
1st sub-pillar: Individuals	9	73.35
2nd sub-pillar: Businesses	74	40.45
3rd sub-pillar: Governments	67	43.37
<b>C. Governance pillar</b>	<b>42</b>	<b>67.00</b>
1st sub-pillar: Trust	60	45.55
2nd sub-pillar: Regulation	36	78.57
3rd sub-pillar: Inclusion	28	76.89
<b>D. Impact pillar</b>	<b>40</b>	<b>59.80</b>
1st sub-pillar: Economy	33	39.98
2nd sub-pillar: Quality of Life	27	77.44
3rd sub-pillar: SDG Contribution	83	62.00



## The Network Readiness Index in detail

INDICATOR	RANK/134	SCORE
<b>A. Technology pillar</b>		
<b>1st sub-pillar: Access</b>		
1.1.1 Mobile tariffs	78	57.10
1.1.2 Handset prices	110	23.16
1.1.3 Households with internet access	7	97.54
1.1.4 4G mobile network coverage	1	100.00
1.1.5 Fixed-broadband subscriptions	20	94.83
1.1.6 International Internet bandwidth	26	73.88
1.1.7 Internet access in schools	1	100.00
<b>2nd sub-pillar: Content</b>		
1.2.1 GitHub commits	93	1.45
1.2.2 Wikipedia edits	70	42.29
1.2.3 Internet domain registrations*	-	-
1.2.4 Mobile apps development	44	72.18
<b>3rd sub-pillar: Future Technologies</b>		
1.3.1 Adoption of emerging technologies	30	65.71
1.3.2 Investment in emerging technology	n/a	n/a
1.3.3 ICT PCT patent applications	n/a	n/a
1.3.4 Computer software spending	41	25.74
1.3.5 Robot density	n/a	n/a
<b>B. People pillar</b>		
<b>1st sub-pillar: Individuals</b>		
2.1.1 Internet users	4	98.96
2.1.2 Active mobile-broadband subscriptions	13	49.60
2.1.3 Use of virtual social networks	6	84.54
2.1.4 Tertiary enrollment	60	36.57
2.1.5 Adult literacy rate	34	96.77
2.1.6 ICT skills	27	73.66
<b>2nd sub-pillar: Businesses</b>		
2.2.1 Firms with website	n/a	n/a
2.2.2 Ease of doing business	42	81.00
2.2.3 Professionals	80	17.86
2.2.4 Technicians and associate professionals	77	26.16
2.2.5 Business use of digital tools	33	76.71
2.2.6 R&D expenditure by businesses	80	0.52
<b>3rd sub-pillar: Governments</b>		
2.3.1 Government online services	45	78.18
2.3.2 Publication and use of open data	74	18.91
2.3.3 Government promotion of investment in emerging technologies	17	71.20
2.3.4 R&D expenditure by governments and higher education	101	5.22

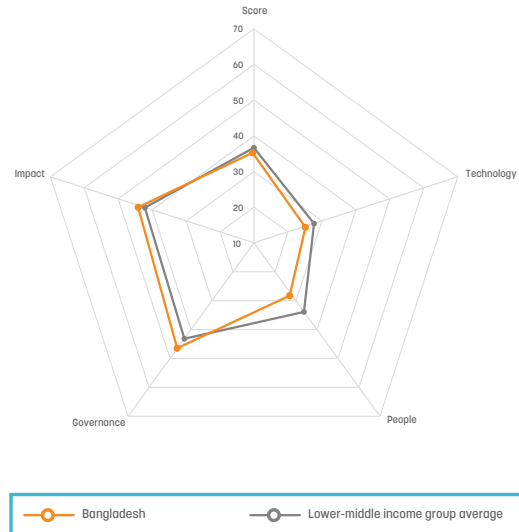
INDICATOR	RANK/134	SCORE
<b>C. Governance pillar</b>		
<b>1st sub-pillar: Trust</b>		
3.1.1 Secure Internet servers	75	47.59
3.1.2 Cybersecurity	70	62.51
3.1.3 Online access to financial account	47	40.00
3.1.4 Internet shopping	43	32.09
<b>2nd sub-pillar: Regulation</b>		
3.2.1 Regulatory quality	50	61.24
3.2.2 ICT regulatory environment	45	88.42
3.2.3 Legal framework's adaptability to emerging technologies	25	64.62
3.2.4 E-commerce legislation	1	100.00
3.2.5 Privacy protection by law content	n/a	n/a
<b>3rd sub-pillar: Inclusion</b>		
3.3.1 E-Participation	50	76.54
3.3.2 Socioeconomic gap in use of digital payments	48	77.50
3.3.3 Availability of local online content	13	88.80
3.3.4 Gender gap in internet use	25	66.36
3.3.5 Rural gap in use of digital payments	31	75.26
<b>D. Impact pillar</b>		
<b>1st sub-pillar: Economy</b>		
4.1.1 Medium and high-tech industry	68	28.14
4.1.2 High-tech exports	119	0.85
4.1.3 PCT patent applications	n/a	n/a
4.1.4 Labour productivity per employee	21	64.06
4.1.5 Prevalence of gig economy	24	66.86
<b>2nd sub-pillar: Quality of Life</b>		
4.2.1 Happiness	43	69.47
4.2.2 Freedom to make life choices	25	90.24
4.2.3 Income inequality	n/a	n/a
4.2.4 Healthy life expectancy at birth	44	72.61
<b>3rd sub-pillar: SDG Contribution</b>		
4.3.1 SDG 3: Good Health and Well-Being	34	80.33
4.3.2 SDG 4: Quality Education	n/a	n/a
4.3.3 SDG 5: Gender Equality	94	63.98
4.3.4 SDG 7: Affordable and Clean Energy	125	41.69
4.3.5 SDG 11: Sustainable Cities and Communities	n/a	n/a

\* Data on indicator 1.2.3 is confidential, but has been included in the computation. Please see Appendix I: Technical Notes for further details.



# Bangladesh

	Rank (out of 134)	Score
<b>Network Readiness Index</b>	<b>105</b>	<b>36.01</b>
<b>A. Technology pillar</b>	<b>107</b>	<b>25.78</b>
1st sub-pillar: Access	102	38.33
2nd sub-pillar: Content	105	15.18
3rd sub-pillar: Future Technologies	86	23.82
<b>B. People pillar</b>	<b>115</b>	<b>27.90</b>
1st sub-pillar: Individuals	115	26.76
2nd sub-pillar: Businesses	122	21.67
3rd sub-pillar: Governments	90	35.26
<b>C. Governance pillar</b>	<b>94</b>	<b>46.30</b>
1st sub-pillar: Trust	98	27.12
2nd sub-pillar: Regulation	110	50.05
3rd sub-pillar: Inclusion	76	61.74
<b>D. Impact pillar</b>	<b>95</b>	<b>44.06</b>
1st sub-pillar: Economy	119	11.34
2nd sub-pillar: Quality of Life	56	68.14
3rd sub-pillar: SDG Contribution	104	52.71



## The Network Readiness Index in detail

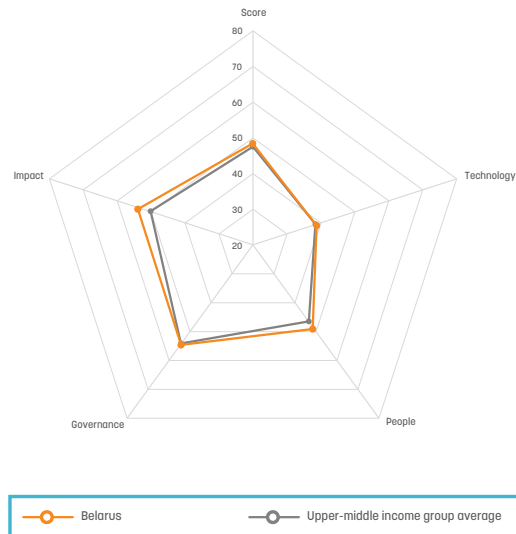
INDICATOR	RANK/134	SCORE
<b>A. Technology pillar</b>		
<b>1st sub-pillar: Access</b>		
1.1.1 Mobile tariffs	50	69.55
1.1.2 Handset prices	59	46.95
1.1.3 Households with internet access	130	6.50
1.1.4 4G mobile network coverage	99	58.00
1.1.5 Fixed-broadband subscriptions	94	20.00
1.1.6 International Internet bandwidth	92	63.19
1.1.7 Internet access in schools	67	4.14
<b>2nd sub-pillar: Content</b>		
1.2.1 GitHub commits	99	1.07
1.2.2 Wikipedia edits	98	22.80
1.2.3 Internet domain registrations*	-	-
1.2.4 Mobile apps development	111	36.61
<b>3rd sub-pillar: Future Technologies</b>		
1.3.1 Adoption of emerging technologies	107	27.75
1.3.2 Investment in emerging technology	98	29.07
1.3.3 ICT PCT patent applications	n/a	n/a
1.3.4 Computer software spending	73	14.65
1.3.5 Robot density	n/a	n/a
<b>B. People pillar</b>		
<b>1st sub-pillar: Individuals</b>		
2.1.1 Internet users	125	12.72
2.1.2 Active mobile-broadband subscriptions	110	13.65
2.1.3 Use of virtual social networks	106	20.62
2.1.4 Tertiary enrollment	93	14.54
2.1.5 Adult literacy rate	89	66.44
2.1.6 ICT skills	109	32.60
<b>2nd sub-pillar: Businesses</b>		
2.2.1 Firms with website	106	19.50
2.2.2 Ease of doing business	129	26.20
2.2.3 Professionals	109	10.98
2.2.4 Technicians and associate professionals	116	7.14
2.2.5 Business use of digital tools	101	44.54
2.2.6 R&D expenditure by businesses	n/a	n/a
<b>3rd sub-pillar: Governments</b>		
2.3.1 Government online services	84	60.00
2.3.2 Publication and use of open data	92	10.57
2.3.3 Government promotion of investment in emerging technologies	70	35.22
2.3.4 R&D expenditure by governments and higher education	n/a	n/a

INDICATOR	RANK/134	SCORE
<b>C. Governance pillar</b>		
<b>1st sub-pillar: Trust</b>		
3.1.1 Secure Internet servers	100	36.79
3.1.2 Cybersecurity	79	56.01
3.1.3 Online access to financial account	96	14.08
3.1.4 Internet shopping	120	1.59
<b>2nd sub-pillar: Regulation</b>		
3.2.1 Regulatory quality	119	33.22
3.2.2 ICT regulatory environment	89	73.75
3.2.3 Legal framework's adaptability to emerging technologies	105	18.21
3.2.4 E-commerce legislation	77	75.00
3.2.5 Privacy protection by law content	n/a	n/a
<b>3rd sub-pillar: Inclusion</b>		
3.3.1 E-Participation	90	55.55
3.3.2 Socioeconomic gap in use of digital payments	76	61.43
3.3.3 Availability of local online content	89	50.03
3.3.4 Gender gap in internet use	n/a	n/a
3.3.5 Rural gap in use of digital payments	7	79.95
<b>D. Impact pillar</b>		
<b>1st sub-pillar: Economy</b>		
4.1.1 Medium and high-tech industry	103	12.20
4.1.2 High-tech exports	120	0.58
4.1.3 PCT patent applications	n/a	n/a
4.1.4 Labour productivity per employee	102	6.91
4.1.5 Prevalence of gig economy	102	25.67
<b>2nd sub-pillar: Quality of Life</b>		
4.2.1 Happiness	88	47.59
4.2.2 Freedom to make life choices	29	89.57
4.2.3 Income inequality	29	78.87
4.2.4 Healthy life expectancy at birth	92	56.53
<b>3rd sub-pillar: SDG Contribution</b>		
4.3.1 SDG 3: Good Health and Well-Being	109	32.79
4.3.2 SDG 4: Quality Education	n/a	n/a
4.3.3 SDG 5: Gender Equality	110	50.11
4.3.4 SDG 7: Affordable and Clean Energy	22	88.87
4.3.5 SDG 11: Sustainable Cities and Communities	104	39.05

\* Data on indicator 1.2.3 is confidential, but has been included in the computation. Please see Appendix I: Technical Notes for further details.

# Belarus

	Rank (out of 134)	Score
<b>Network Readiness Index</b>	<b>65</b>	<b>49.16</b>
<b>A. Technology pillar</b>	<b>68</b>	<b>39.05</b>
1st sub-pillar: Access	58	70.07
2nd sub-pillar: Content	41	42.03
3rd sub-pillar: Future Technologies	134	5.06
<b>B. People pillar</b>	<b>62</b>	<b>48.94</b>
1st sub-pillar: Individuals	36	63.21
2nd sub-pillar: Businesses	46	51.51
3rd sub-pillar: Governments	94	32.12
<b>C. Governance pillar</b>	<b>71</b>	<b>54.47</b>
1st sub-pillar: Trust	45	53.82
2nd sub-pillar: Regulation	122	38.67
3rd sub-pillar: Inclusion	44	70.90
<b>D. Impact pillar</b>	<b>56</b>	<b>54.17</b>
1st sub-pillar: Economy	77	21.63
2nd sub-pillar: Quality of Life	59	67.66
3rd sub-pillar: SDG Contribution	40	73.24



## The Network Readiness Index in detail

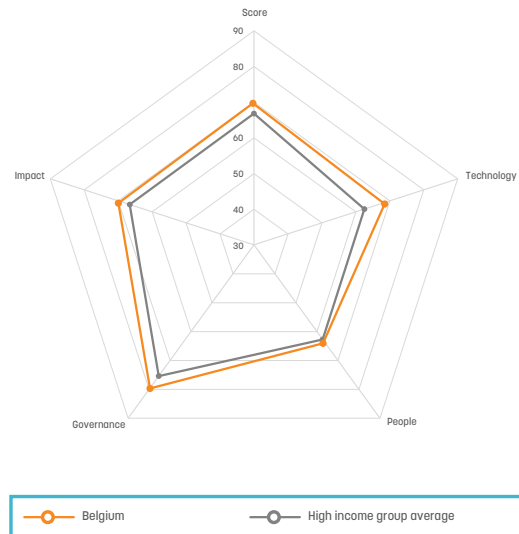
INDICATOR	RANK/134	SCORE
<b>A. Technology pillar</b>		
<b>1st sub-pillar: Access</b>		
1.1.1 Mobile tariffs	37	74.30
1.1.2 Handset prices	62	46.77
1.1.3 Households with internet access	59	72.37
1.1.4 4G mobile network coverage	82	75.70
1.1.5 Fixed-broadband subscriptions	67	57.86
1.1.6 International Internet bandwidth	14	76.52
1.1.7 Internet access in schools	32	87.01
<b>2nd sub-pillar: Content</b>		
1.2.1 GitHub commits	31	27.68
1.2.2 Wikipedia edits	38	68.97
1.2.3 Internet domain registrations*	-	-
1.2.4 Mobile apps development	58	66.85
<b>3rd sub-pillar: Future Technologies</b>		
1.3.1 Adoption of emerging technologies	n/a	n/a
1.3.2 Investment in emerging technology	n/a	n/a
1.3.3 ICT PCT patent applications	43	11.33
1.3.4 Computer software spending	105	3.28
1.3.5 Robot density	58	0.56
<b>B. People pillar</b>		
<b>1st sub-pillar: Individuals</b>		
2.1.1 Internet users	44	78.84
2.1.2 Active mobile-broadband subscriptions	51	33.48
2.1.3 Use of virtual social networks	94	40.21
2.1.4 Tertiary enrollment	10	63.78
2.1.5 Adult literacy rate	8	99.72
2.1.6 ICT skills	n/a	n/a
<b>2nd sub-pillar: Businesses</b>		
2.2.1 Firms with website	30	74.30
2.2.2 Ease of doing business	48	77.93
2.2.3 Professionals	19	50.85
2.2.4 Technicians and associate professionals	49	43.78
2.2.5 Business use of digital tools	n/a	n/a
2.2.6 R&D expenditure by businesses	41	10.68
<b>3rd sub-pillar: Governments</b>		
2.3.1 Government online services	64	69.70
2.3.2 Publication and use of open data	91	10.95
2.3.3 Government promotion of investment in emerging technologies	n/a	n/a
2.3.4 R&D expenditure by governments and higher education	83	15.70

INDICATOR	RANK/134	SCORE
<b>C. Governance pillar</b>		
<b>1st sub-pillar: Trust</b>		
3.1.1 Secure Internet servers	46	69.04
3.1.2 Cybersecurity	71	61.76
3.1.3 Online access to financial account	38	46.02
3.1.4 Internet shopping	37	38.49
<b>2nd sub-pillar: Regulation</b>		
3.2.1 Regulatory quality	111	36.88
3.2.2 ICT regulatory environment	127	38.80
3.2.3 Legal framework's adaptability to emerging technologies	n/a	n/a
3.2.4 E-commerce legislation	77	75.00
3.2.5 Privacy protection by law content	79	4.00
<b>3rd sub-pillar: Inclusion</b>		
3.3.1 E-Participation	56	74.07
3.3.2 Socioeconomic gap in use of digital payments	29	86.15
3.3.3 Availability of local online content	n/a	n/a
3.3.4 Gender gap in internet use	28	66.06
3.3.5 Rural gap in use of digital payments	84	57.32
<b>D. Impact pillar</b>		
<b>1st sub-pillar: Economy</b>		
4.1.1 Medium and high-tech industry	29	51.75
4.1.2 High-tech exports	91	7.55
4.1.3 PCT patent applications	57	0.74
4.1.4 Labour productivity per employee	68	26.46
4.1.5 Prevalence of gig economy	n/a	n/a
<b>2nd sub-pillar: Quality of Life</b>		
4.2.1 Happiness	65	61.49
4.2.2 Freedom to make life choices	120	47.96
4.2.3 Income inequality	3	97.42
4.2.4 Healthy life expectancy at birth	77	63.77
<b>3rd sub-pillar: SDG Contribution</b>		
4.3.1 SDG 3: Good Health and Well-Being	39	78.69
4.3.2 SDG 4: Quality Education	37	55.11
4.3.3 SDG 5: Gender Equality	10	88.86
4.3.4 SDG 7: Affordable and Clean Energy	107	63.44
4.3.5 SDG 11: Sustainable Cities and Communities	39	80.08

\* Data on indicator 1.2.3 is confidential, but has been included in the computation. Please see Appendix I: Technical Notes for further details.

# Belgium

	Rank (out of 134)	Score
<b>Network Readiness Index</b>	<b>20</b>	<b>70.67</b>
<b>A. Technology pillar</b>	<b>19</b>	<b>69.26</b>
1st sub-pillar: Access	17	85.91
2nd sub-pillar: Content	23	62.34
3rd sub-pillar: Future Technologies	18	59.53
<b>B. People pillar</b>	<b>24</b>	<b>63.80</b>
1st sub-pillar: Individuals	42	62.25
2nd sub-pillar: Businesses	20	67.05
3rd sub-pillar: Governments	22	62.10
<b>C. Governance pillar</b>	<b>20</b>	<b>79.57</b>
1st sub-pillar: Trust	15	78.20
2nd sub-pillar: Regulation	22	83.31
3rd sub-pillar: Inclusion	25	77.20
<b>D. Impact pillar</b>	<b>21</b>	<b>70.05</b>
1st sub-pillar: Economy	20	48.78
2nd sub-pillar: Quality of Life	21	81.17
3rd sub-pillar: SDG Contribution	20	80.19



## The Network Readiness Index in detail

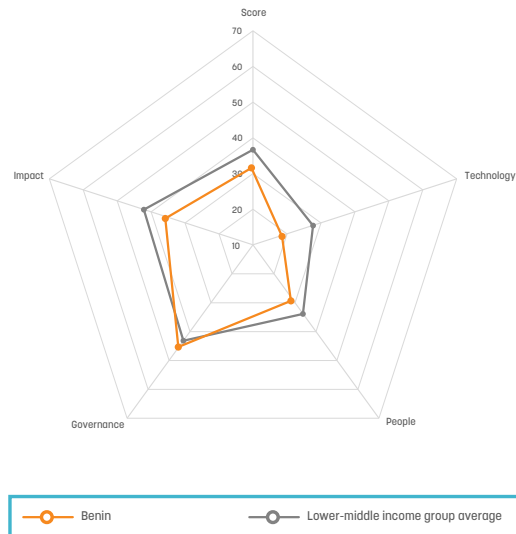
INDICATOR	RANK/134	SCORE
<b>A. Technology pillar</b>		
<b>1st sub-pillar: Access</b>		
1.1.1 Mobile tariffs	42	71.98
1.1.2 Handset prices	14	71.27
1.1.3 Households with internet access	27	87.24
1.1.4 4G mobile network coverage	1	100.00
1.1.5 Fixed-broadband subscriptions	12	96.76
1.1.6 International Internet bandwidth	24	74.10
1.1.7 Internet access in schools	1	100.00
<b>2nd sub-pillar: Content</b>		
1.2.1 GitHub commits	22	42.95
1.2.2 Wikipedia edits	21	80.03
1.2.3 Internet domain registrations*	-	-
1.2.4 Mobile apps development	33	78.79
<b>3rd sub-pillar: Future Technologies</b>		
1.3.1 Adoption of emerging technologies	n/a	n/a
1.3.2 Investment in emerging technology	21	67.50
1.3.3 ICT PCT patent applications	21	56.93
1.3.4 Computer software spending	7	57.95
1.3.5 Robot density	10	55.75
<b>B. People pillar</b>		
<b>1st sub-pillar: Individuals</b>		
2.1.1 Internet users	21	88.66
2.1.2 Active mobile-broadband subscriptions	68	29.17
2.1.3 Use of virtual social networks	40	64.95
2.1.4 Tertiary enrollment	19	58.06
2.1.5 Adult literacy rate	n/a	n/a
2.1.6 ICT skills	35	70.43
<b>2nd sub-pillar: Businesses</b>		
2.2.1 Firms with website	9	89.65
2.2.2 Ease of doing business	45	79.17
2.2.3 Professionals	11	61.46
2.2.4 Technicians and associate professionals	26	60.09
2.2.5 Business use of digital tools	n/a	n/a
2.2.6 R&D expenditure by businesses	11	44.87
<b>3rd sub-pillar: Governments</b>		
2.3.1 Government online services	75	64.85
2.3.2 Publication and use of open data	29	45.28
2.3.3 Government promotion of investment in emerging technologies	n/a	n/a
2.3.4 R&D expenditure by governments and higher education	11	76.18

INDICATOR	RANK/134	SCORE
<b>C. Governance pillar</b>		
<b>1st sub-pillar: Trust</b>		
3.1.1 Secure Internet servers	30	78.89
3.1.2 Cybersecurity	32	87.32
3.1.3 Online access to financial account	13	73.15
3.1.4 Internet shopping	14	73.44
<b>2nd sub-pillar: Regulation</b>		
3.2.1 Regulatory quality	25	78.59
3.2.2 ICT regulatory environment	11	96.14
3.2.3 Legal framework's adaptability to emerging technologies	n/a	n/a
3.2.4 E-commerce legislation	77	75.00
3.2.5 Privacy protection by law content	18	83.49
<b>3rd sub-pillar: Inclusion</b>		
3.3.1 E-Participation	76	64.20
3.3.2 Socioeconomic gap in use of digital payments	6	97.89
3.3.3 Availability of local online content	24	84.52
3.3.4 Gender gap in internet use	46	61.30
3.3.5 Rural gap in use of digital payments	14	78.08
<b>D. Impact pillar</b>		
<b>1st sub-pillar: Economy</b>		
4.1.1 Medium and high-tech industry	14	63.25
4.1.2 High-tech exports	40	22.64
4.1.3 PCT patent applications	17	30.06
4.1.4 Labour productivity per employee	6	79.17
4.1.5 Prevalence of gig economy	n/a	n/a
<b>2nd sub-pillar: Quality of Life</b>		
4.2.1 Happiness	21	80.18
4.2.2 Freedom to make life choices	82	68.22
4.2.3 Income inequality	9	91.75
4.2.4 Healthy life expectancy at birth	26	84.54
<b>3rd sub-pillar: SDG Contribution</b>		
4.3.1 SDG 3: Good Health and Well-Being	10	91.80
4.3.2 SDG 4: Quality Education	13	68.71
4.3.3 SDG 5: Gender Equality	58	75.80
4.3.4 SDG 7: Affordable and Clean Energy	77	75.14
4.3.5 SDG 11: Sustainable Cities and Communities	22	89.47

\* Data on indicator 1.2.3 is confidential, but has been included in the computation. Please see Appendix I: Technical Notes for further details.

# Benin

	Rank (out of 134)	Score
<b>Network Readiness Index</b>	<b>112</b>	<b>32.25</b>
<b>A. Technology pillar</b>	<b>120</b>	<b>19.14</b>
1st sub-pillar: Access	117	28.61
2nd sub-pillar: Content	117	11.39
3rd sub-pillar: Future Technologies	112	17.41
<b>B. People pillar</b>	<b>111</b>	<b>29.05</b>
1st sub-pillar: Individuals	124	17.09
2nd sub-pillar: Businesses	76	39.88
3rd sub-pillar: Governments	98	30.17
<b>C. Governance pillar</b>	<b>98</b>	<b>45.19</b>
1st sub-pillar: Trust	102	26.03
2nd sub-pillar: Regulation	93	56.03
3rd sub-pillar: Inclusion	92	53.50
<b>D. Impact pillar</b>	<b>115</b>	<b>35.64</b>
1st sub-pillar: Economy	64	25.65
2nd sub-pillar: Quality of Life	117	43.63
3rd sub-pillar: SDG Contribution	125	37.64



## The Network Readiness Index in detail

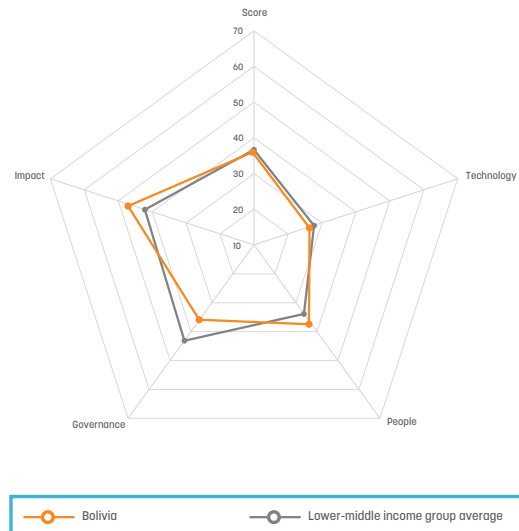
INDICATOR	RANK/134	SCORE
<b>A. Technology pillar</b>		
<b>1st sub-pillar: Access</b>		
1.1.1 Mobile tariffs	122	27.38
1.1.2 Handset prices	126	10.17
1.1.3 Households with internet access	128	7.65
1.1.4 4G mobile network coverage	109	40.00
1.1.5 Fixed-broadband subscriptions	89	23.56
1.1.6 International Internet bandwidth	94	62.87
1.1.7 Internet access in schools	n/a	n/a
<b>2nd sub-pillar: Content</b>		
1.2.1 GitHub commits	107	0.57
1.2.2 Wikipedia edits	102	18.34
1.2.3 Internet domain registrations*	-	-
1.2.4 Mobile apps development	121	26.41
<b>3rd sub-pillar: Future Technologies</b>		
1.3.1 Adoption of emerging technologies	110	26.30
1.3.2 Investment in emerging technology	115	21.93
1.3.3 ICT PCT patent applications	n/a	n/a
1.3.4 Computer software spending	100	4.02
1.3.5 Robot density	n/a	n/a
<b>B. People pillar</b>		
<b>1st sub-pillar: Individuals</b>		
2.1.1 Internet users	118	17.88
2.1.2 Active mobile-broadband subscriptions	123	6.44
2.1.3 Use of virtual social networks	118	7.42
2.1.4 Tertiary enrollment	103	8.43
2.1.5 Adult literacy rate	104	25.82
2.1.6 ICT skills	99	36.53
<b>2nd sub-pillar: Businesses</b>		
2.2.1 Firms with website	90	33.44
2.2.2 Ease of doing business	118	39.22
2.2.3 Professionals	n/a	n/a
2.2.4 Technicians and associate professionals	n/a	n/a
2.2.5 Business use of digital tools	96	47.00
2.2.6 R&D expenditure by businesses	n/a	n/a
<b>3rd sub-pillar: Governments</b>		
2.3.1 Government online services	102	49.70
2.3.2 Publication and use of open data	98	7.32
2.3.3 Government promotion of investment in emerging technologies	78	33.50
2.3.4 R&D expenditure by governments and higher education	n/a	n/a

INDICATOR	RANK/134	SCORE
<b>C. Governance pillar</b>		
<b>1st sub-pillar: Trust</b>		
3.1.1 Secure Internet servers	126	18.55
3.1.2 Cybersecurity	81	51.68
3.1.3 Online access to financial account	63	30.59
3.1.4 Internet shopping	109	3.31
<b>2nd sub-pillar: Regulation</b>		
3.2.1 Regulatory quality	94	43.94
3.2.2 ICT regulatory environment	112	62.55
3.2.3 Legal framework's adaptability to emerging technologies	92	27.61
3.2.4 E-commerce legislation	1	100.00
3.2.5 Privacy protection by law content	59	46.05
<b>3rd sub-pillar: Inclusion</b>		
3.3.1 E-Participation	93	53.09
3.3.2 Socioeconomic gap in use of digital payments	56	72.04
3.3.3 Availability of local online content	113	29.61
3.3.4 Gender gap in internet use	n/a	n/a
3.3.5 Rural gap in use of digital payments	81	59.28
<b>D. Impact pillar</b>		
<b>1st sub-pillar: Economy</b>		
4.1.1 Medium and high-tech industry	n/a	n/a
4.1.2 High-tech exports	97	5.38
4.1.3 PCT patent applications	n/a	n/a
4.1.4 Labour productivity per employee	n/a	n/a
4.1.5 Prevalence of gig economy	59	45.91
<b>2nd sub-pillar: Quality of Life</b>		
4.2.1 Happiness	99	44.88
4.2.2 Freedom to make life choices	86	67.23
4.2.3 Income inequality	108	39.18
4.2.4 Healthy life expectancy at birth	121	23.23
<b>3rd sub-pillar: SDG Contribution</b>		
4.3.1 SDG 3: Good Health and Well-Being	126	19.67
4.3.2 SDG 4: Quality Education	n/a	n/a
4.3.3 SDG 5: Gender Equality	112	46.07
4.3.4 SDG 7: Affordable and Clean Energy	121	49.35
4.3.5 SDG 11: Sustainable Cities and Communities	113	35.48

\* Data on indicator 1.2.3 is confidential, but has been included in the computation. Please see Appendix I: Technical Notes for further details.

# Bolivia

	Rank (out of 134)	Score
<b>Network Readiness Index</b>	<b>101</b>	<b>36.72</b>
<b>A. Technology pillar</b>	<b>101</b>	<b>27.00</b>
1st sub-pillar: Access	100	39.01
2nd sub-pillar: Content	94	21.09
3rd sub-pillar: Future Technologies	93	20.89
<b>B. People pillar</b>	<b>92</b>	<b>37.21</b>
1st sub-pillar: Individuals	86	50.29
2nd sub-pillar: Businesses	103	30.82
3rd sub-pillar: Governments	97	30.52
<b>C. Governance pillar</b>	<b>118</b>	<b>35.63</b>
1st sub-pillar: Trust	119	18.58
2nd sub-pillar: Regulation	124	35.56
3rd sub-pillar: Inclusion	96	52.74
<b>D. Impact pillar</b>	<b>86</b>	<b>47.04</b>
1st sub-pillar: Economy	123	10.06
2nd sub-pillar: Quality of Life	75	63.45
3rd sub-pillar: SDG Contribution	56	67.59



## The Network Readiness Index in detail

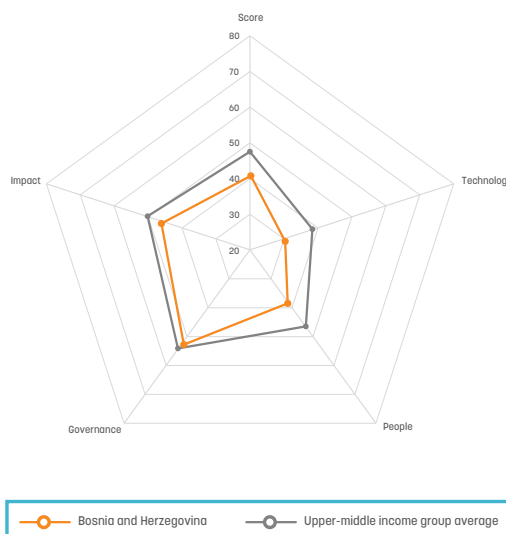
INDICATOR	RANK/134	SCORE
<b>A. Technology pillar</b>		
<b>1st sub-pillar: Access</b>		
1.1.1 Mobile tariffs	82	53.67
1.1.2 Handset prices	99	32.07
1.1.3 Households with internet access	93	31.98
1.1.4 4G mobile network coverage	86	74.48
1.1.5 Fixed-broadband subscriptions	103	8.14
1.1.6 International Internet bandwidth	81	65.18
1.1.7 Internet access in schools	64	7.52
<b>2nd sub-pillar: Content</b>		
1.2.1 GitHub commits	83	1.92
1.2.2 Wikipedia edits	90	29.66
1.2.3 Internet domain registrations*	-	-
1.2.4 Mobile apps development	93	51.70
<b>3rd sub-pillar: Future Technologies</b>		
1.3.1 Adoption of emerging technologies	106	27.75
1.3.2 Investment in emerging technology	127	12.03
1.3.3 ICT PCT patent applications	n/a	n/a
1.3.4 Computer software spending	52	22.88
1.3.5 Robot density	n/a	n/a
<b>B. People pillar</b>		
<b>1st sub-pillar: Individuals</b>		
2.1.1 Internet users	97	42.45
2.1.2 Active mobile-broadband subscriptions	59	30.85
2.1.3 Use of virtual social networks	40	64.95
2.1.4 Tertiary enrollment	n/a	n/a
2.1.5 Adult literacy rate	61	90.32
2.1.6 ICT skills	123	22.91
<b>2nd sub-pillar: Businesses</b>		
2.2.1 Firms with website	70	46.32
2.2.2 Ease of doing business	119	37.89
2.2.3 Professionals	88	16.82
2.2.4 Technicians and associate professionals	88	19.86
2.2.5 Business use of digital tools	113	33.23
2.2.6 R&D expenditure by businesses	n/a	n/a
<b>3rd sub-pillar: Governments</b>		
2.3.1 Government online services	88	56.98
2.3.2 Publication and use of open data	56	27.87
2.3.3 Government promotion of investment in emerging technologies	123	6.71
2.3.4 R&D expenditure by governments and higher education	n/a	n/a

INDICATOR	RANK/134	SCORE
<b>C. Governance pillar</b>		
<b>1st sub-pillar: Trust</b>		
3.1.1 Secure Internet servers	93	41.12
3.1.2 Cybersecurity	121	14.19
3.1.3 Online access to financial account	101	12.41
3.1.4 Internet shopping	85	6.61
<b>2nd sub-pillar: Regulation</b>		
3.2.1 Regulatory quality	123	31.71
3.2.2 ICT regulatory environment	130	27.22
3.2.3 Legal framework's adaptability to emerging technologies	125	6.48
3.2.4 E-commerce legislation	115	50.00
3.2.5 Privacy protection by law content	48	62.38
<b>3rd sub-pillar: Inclusion</b>		
3.3.1 E-Participation	86	58.02
3.3.2 Socioeconomic gap in use of digital payments	83	56.89
3.3.3 Availability of local online content	116	28.29
3.3.4 Gender gap in internet use	77	47.08
3.3.5 Rural gap in use of digital payments	43	73.42
<b>D. Impact pillar</b>		
<b>1st sub-pillar: Economy</b>		
4.1.1 Medium and high-tech industry	97	14.65
4.1.2 High-tech exports	84	9.20
4.1.3 PCT patent applications	n/a	n/a
4.1.4 Labour productivity per employee	92	11.08
4.1.5 Prevalence of gig economy	124	5.31
<b>2nd sub-pillar: Quality of Life</b>		
4.2.1 Happiness	69	58.60
4.2.2 Freedom to make life choices	41	86.07
4.2.3 Income inequality	89	53.61
4.2.4 Healthy life expectancy at birth	94	55.53
<b>3rd sub-pillar: SDG Contribution</b>		
4.3.1 SDG 3: Good Health and Well-Being	79	65.57
4.3.2 SDG 4: Quality Education	n/a	n/a
4.3.3 SDG 5: Gender Equality	95	63.81
4.3.4 SDG 7: Affordable and Clean Energy	81	74.42
4.3.5 SDG 11: Sustainable Cities and Communities	64	66.57

\* Data on indicator 1.2.3 is confidential, but has been included in the computation. Please see Appendix I: Technical Notes for further details.

# Bosnia and Herzegovina

	Rank (out of 134)	Score
<b>Network Readiness Index</b>	<b>87</b>	<b>41.73</b>
<b>A. Technology pillar</b>	<b>92</b>	<b>30.26</b>
1st sub-pillar: Access	91	46.12
2nd sub-pillar: Content	57	32.94
3rd sub-pillar: Future Technologies	129	11.72
<b>B. People pillar</b>	<b>89</b>	<b>37.82</b>
1st sub-pillar: Individuals	66	55.03
2nd sub-pillar: Businesses	77	39.79
3rd sub-pillar: Governments	125	18.63
<b>C. Governance pillar</b>	<b>77</b>	<b>52.24</b>
1st sub-pillar: Trust	95	27.48
2nd sub-pillar: Regulation	57	68.31
3rd sub-pillar: Inclusion	79	60.92
<b>D. Impact pillar</b>	<b>89</b>	<b>46.60</b>
1st sub-pillar: Economy	90	18.98
2nd sub-pillar: Quality of Life	57	67.79
3rd sub-pillar: SDG Contribution	102	53.02



## The Network Readiness Index in detail

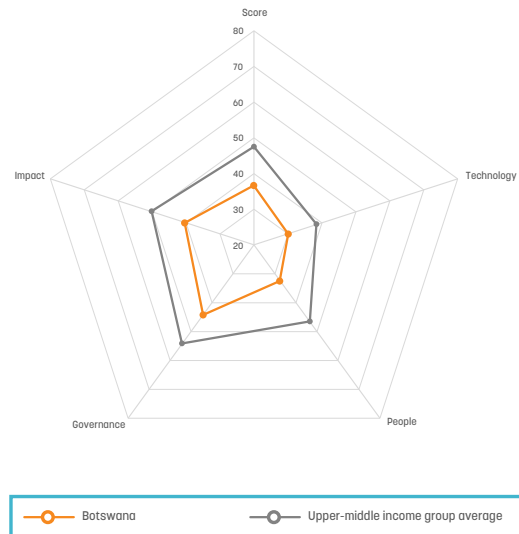
INDICATOR	RANK/134	SCORE
<b>A. Technology pillar</b>		
<b>1st sub-pillar: Access</b>		
1.1.1 Mobile tariffs	94	49.42
1.1.2 Handset prices	75	41.31
1.1.3 Households with internet access	67	69.11
1.1.4 4G mobile network coverage	130	0.00
1.1.5 Fixed-broadband subscriptions	75	46.79
1.1.6 International Internet bandwidth	52	70.08
1.1.7 Internet access in schools	n/a	n/a
<b>2nd sub-pillar: Content</b>		
1.2.1 GitHub commits	56	7.09
1.2.2 Wikipedia edits	41	66.50
1.2.3 Internet domain registrations*	-	-
1.2.4 Mobile apps development	84	54.84
<b>3rd sub-pillar: Future Technologies</b>		
1.3.1 Adoption of emerging technologies	95	33.05
1.3.2 Investment in emerging technology	124	16.99
1.3.3 ICT PCT patent applications	74	0.73
1.3.4 Computer software spending	92	7.26
1.3.5 Robot density	59	0.55
<b>B. People pillar</b>		
<b>1st sub-pillar: Individuals</b>		
2.1.1 Internet users	65	69.55
2.1.2 Active mobile-broadband subscriptions	94	20.90
2.1.3 Use of virtual social networks	72	51.55
2.1.4 Tertiary enrollment	n/a	n/a
2.1.5 Adult literacy rate	37	96.16
2.1.6 ICT skills	97	37.00
<b>2nd sub-pillar: Businesses</b>		
2.2.1 Firms with website	41	68.03
2.2.2 Ease of doing business	84	62.28
2.2.3 Professionals	66	24.58
2.2.4 Technicians and associate professionals	55	39.38
2.2.5 Business use of digital tools	105	42.73
2.2.6 R&D expenditure by businesses	66	1.76
<b>3rd sub-pillar: Governments</b>		
2.3.1 Government online services	95	52.12
2.3.2 Publication and use of open data	97	8.02
2.3.3 Government promotion of investment in emerging technologies	125	4.61
2.3.4 R&D expenditure by governments and higher education	90	9.76

INDICATOR	RANK/134	SCORE
<b>C. Governance pillar</b>		
<b>1st sub-pillar: Trust</b>		
3.1.1 Secure Internet servers	53	62.92
3.1.2 Cybersecurity	112	21.24
3.1.3 Online access to financial account	103	10.71
3.1.4 Internet shopping	68	15.07
<b>2nd sub-pillar: Regulation</b>		
3.2.1 Regulatory quality	86	46.87
3.2.2 ICT regulatory environment	19	94.98
3.2.3 Legal framework's adaptability to emerging technologies	104	19.36
3.2.4 E-commerce legislation	1	100.00
3.2.5 Privacy protection by law content	26	80.37
<b>3rd sub-pillar: Inclusion</b>		
3.3.1 E-Participation	84	59.26
3.3.2 Socioeconomic gap in use of digital payments	74	62.05
3.3.3 Availability of local online content	76	54.25
3.3.4 Gender gap in internet use	69	54.04
3.3.5 Rural gap in use of digital payments	33	75.01
<b>D. Impact pillar</b>		
<b>1st sub-pillar: Economy</b>		
4.1.1 Medium and high-tech industry	83	23.31
4.1.2 High-tech exports	78	9.99
4.1.3 PCT patent applications	73	0.26
4.1.4 Labour productivity per employee	48	38.41
4.1.5 Prevalence of gig economy	108	22.92
<b>2nd sub-pillar: Quality of Life</b>		
4.2.1 Happiness	54	65.31
4.2.2 Freedom to make life choices	103	58.94
4.2.3 Income inequality	37	77.32
4.2.4 Healthy life expectancy at birth	50	69.59
<b>3rd sub-pillar: SDG Contribution</b>		
4.3.1 SDG 3: Good Health and Well-Being	96	54.10
4.3.2 SDG 4: Quality Education	62	30.52
4.3.3 SDG 5: Gender Equality	103	59.66
4.3.4 SDG 7: Affordable and Clean Energy	112	59.75
4.3.5 SDG 11: Sustainable Cities and Communities	71	61.07

\* Data on indicator 1.2.3 is confidential, but has been included in the computation. Please see Appendix I: Technical Notes for further details.

# Botswana

	Rank (out of 134)	Score
<b>Network Readiness Index</b>	<b>99</b>	<b>36.94</b>
<b>A. Technology pillar</b>	<b>91</b>	<b>30.31</b>
1st sub-pillar: Access	90	46.37
2nd sub-pillar: Content	87	22.31
3rd sub-pillar: Future Technologies	90	22.27
<b>B. People pillar</b>	<b>102</b>	<b>32.53</b>
1st sub-pillar: Individuals	94	42.59
2nd sub-pillar: Businesses	108	29.92
3rd sub-pillar: Governments	111	25.08
<b>C. Governance pillar</b>	<b>99</b>	<b>44.38</b>
1st sub-pillar: Trust	81	32.58
2nd sub-pillar: Regulation	85	59.41
3rd sub-pillar: Inclusion	112	41.17
<b>D. Impact pillar</b>	<b>105</b>	<b>40.53</b>
1st sub-pillar: Economy	111	13.99
2nd sub-pillar: Quality of Life	123	38.72
3rd sub-pillar: SDG Contribution	50	68.88



## The Network Readiness Index in detail

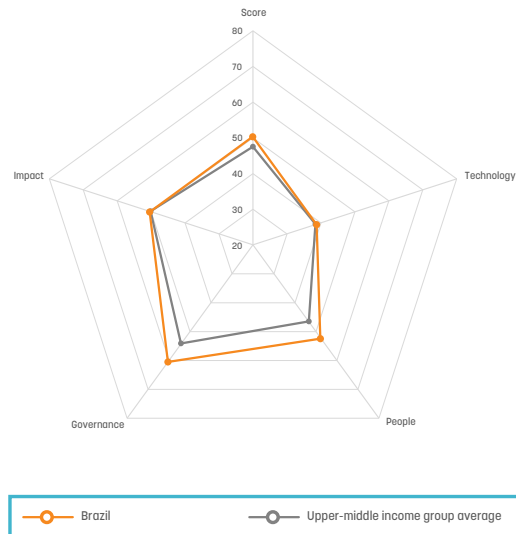
INDICATOR	RANK/134	SCORE
<b>A. Technology pillar</b>		
<b>1st sub-pillar: Access</b>		
1.1.1 Mobile tariffs	101	46.05
1.1.2 Handset prices	39	58.28
1.1.3 Households with internet access	85	45.57
1.1.4 4G mobile network coverage	96	65.00
1.1.5 Fixed-broadband subscriptions	114	1.18
1.1.6 International Internet bandwidth	98	62.12
1.1.7 Internet access in schools	n/a	n/a
<b>2nd sub-pillar: Content</b>		
1.2.1 GitHub commits	82	2.16
1.2.2 Wikipedia edits	73	40.54
1.2.3 Internet domain registrations*	-	-
1.2.4 Mobile apps development	100	45.28
<b>3rd sub-pillar: Future Technologies</b>		
1.3.1 Adoption of emerging technologies	109	26.73
1.3.2 Investment in emerging technology	95	30.84
1.3.3 ICT PCT patent applications	n/a	n/a
1.3.4 Computer software spending	85	9.23
1.3.5 Robot density	n/a	n/a
<b>B. People pillar</b>		
<b>1st sub-pillar: Individuals</b>		
2.1.1 Internet users	92	45.71
2.1.2 Active mobile-broadband subscriptions	62	29.92
2.1.3 Use of virtual social networks	88	42.27
2.1.4 Tertiary enrollment	88	17.70
2.1.5 Adult literacy rate	71	83.07
2.1.6 ICT skills	98	36.86
<b>2nd sub-pillar: Businesses</b>		
2.2.1 Firms with website	92	31.46
2.2.2 Ease of doing business	82	63.62
2.2.3 Professionals	91	15.79
2.2.4 Technicians and associate professionals	63	33.17
2.2.5 Business use of digital tools	115	33.06
2.2.6 R&D expenditure by businesses	64	2.42
<b>3rd sub-pillar: Governments</b>		
2.3.1 Government online services	117	34.55
2.3.2 Publication and use of open data	99	5.89
2.3.3 Government promotion of investment in emerging technologies	90	29.70
2.3.4 R&D expenditure by governments and higher education	59	30.19

INDICATOR	RANK/134	SCORE
<b>C. Governance pillar</b>		
<b>1st sub-pillar: Trust</b>		
3.1.1 Secure Internet servers	88	42.72
3.1.2 Cybersecurity	88	46.80
3.1.3 Online access to financial account	51	36.21
3.1.4 Internet shopping	97	4.60
<b>2nd sub-pillar: Regulation</b>		
3.2.1 Regulatory quality	48	61.43
3.2.2 ICT regulatory environment	61	85.72
3.2.3 Legal framework's adaptability to emerging technologies	101	22.24
3.2.4 E-commerce legislation	115	50.00
3.2.5 Privacy protection by law content	29	77.64
<b>3rd sub-pillar: Inclusion</b>		
3.3.1 E-Participation	114	34.56
3.3.2 Socioeconomic gap in use of digital payments	99	44.09
3.3.3 Availability of local online content	124	23.56
3.3.4 Gender gap in internet use	n/a	n/a
3.3.5 Rural gap in use of digital payments	77	62.45
<b>D. Impact pillar</b>		
<b>1st sub-pillar: Economy</b>		
4.1.1 Medium and high-tech industry	113	7.08
4.1.2 High-tech exports	116	1.27
4.1.3 PCT patent applications	n/a	n/a
4.1.4 Labour productivity per employee	50	35.03
4.1.5 Prevalence of gig economy	119	12.56
<b>2nd sub-pillar: Quality of Life</b>		
4.2.1 Happiness	129	15.29
4.2.2 Freedom to make life choices	59	77.79
4.2.3 Income inequality	115	25.00
4.2.4 Healthy life expectancy at birth	109	36.79
<b>3rd sub-pillar: SDG Contribution</b>		
4.3.1 SDG 3: Good Health and Well-Being	96	54.10
4.3.2 SDG 4: Quality Education	n/a	n/a
4.3.3 SDG 5: Gender Equality	31	81.84
4.3.4 SDG 7: Affordable and Clean Energy	24	88.73
4.3.5 SDG 11: Sustainable Cities and Communities	82	50.85

\* Data on indicator 1.2.3 is confidential, but has been included in the computation. Please see Appendix I: Technical Notes for further details.

# Brazil

	Rank (out of 134)	Score
<b>Network Readiness Index</b>	<b>59</b>	<b>50.58</b>
<b>A. Technology pillar</b>	<b>69</b>	<b>38.95</b>
1st sub-pillar: Access	73	60.50
2nd sub-pillar: Content	59	32.25
3rd sub-pillar: Future Technologies	85	24.10
<b>B. People pillar</b>	<b>47</b>	<b>52.41</b>
1st sub-pillar: Individuals	79	52.41
2nd sub-pillar: Businesses	56	46.78
3rd sub-pillar: Governments	29	58.03
<b>C. Governance pillar</b>	<b>53</b>	<b>60.51</b>
1st sub-pillar: Trust	69	40.73
2nd sub-pillar: Regulation	53	69.73
3rd sub-pillar: Inclusion	43	71.07
<b>D. Impact pillar</b>	<b>69</b>	<b>50.45</b>
1st sub-pillar: Economy	69	24.01
2nd sub-pillar: Quality of Life	87	60.11
3rd sub-pillar: SDG Contribution	60	67.23



## The Network Readiness Index in detail

INDICATOR	RANK/134	SCORE
<b>A. Technology pillar</b>		
<b>1st sub-pillar: Access</b>		
1.1.1 Mobile tariffs	52	68.61
1.1.2 Handset prices	96	32.70
1.1.3 Households with internet access	74	60.65
1.1.4 4G mobile network coverage	76	83.05
1.1.5 Fixed-broadband subscriptions	71	52.04
1.1.6 International Internet bandwidth	82	64.42
1.1.7 Internet access in schools	38	62.04
<b>2nd sub-pillar: Content</b>		
1.2.1 GitHub commits	48	9.43
1.2.2 Wikipedia edits	66	43.55
1.2.3 Internet domain registrations*	-	-
1.2.4 Mobile apps development	49	70.16
<b>3rd sub-pillar: Future Technologies</b>		
1.3.1 Adoption of emerging technologies	46	55.65
1.3.2 Investment in emerging technology	66	38.96
1.3.3 ICT PCT patent applications	51	7.81
1.3.4 Computer software spending	76	14.05
1.3.5 Robot density	43	4.01
<b>B. People pillar</b>		
<b>1st sub-pillar: Individuals</b>		
2.1.1 Internet users	68	66.82
2.1.2 Active mobile-broadband subscriptions	44	34.20
2.1.3 Use of virtual social networks	37	65.98
2.1.4 Tertiary enrollment	58	37.21
2.1.5 Adult literacy rate	58	91.31
2.1.6 ICT skills	126	18.95
<b>2nd sub-pillar: Businesses</b>		
2.2.1 Firms with website	63	50.38
2.2.2 Ease of doing business	104	51.03
2.2.3 Professionals	59	26.93
2.2.4 Technicians and associate professionals	64	32.77
2.2.5 Business use of digital tools	39	72.82
2.2.6 R&D expenditure by businesses	n/a	n/a
<b>3rd sub-pillar: Governments</b>		
2.3.1 Government online services	20	86.67
2.3.2 Publication and use of open data	18	58.86
2.3.3 Government promotion of investment in emerging technologies	94	28.57
2.3.4 R&D expenditure by governments and higher education	n/a	n/a

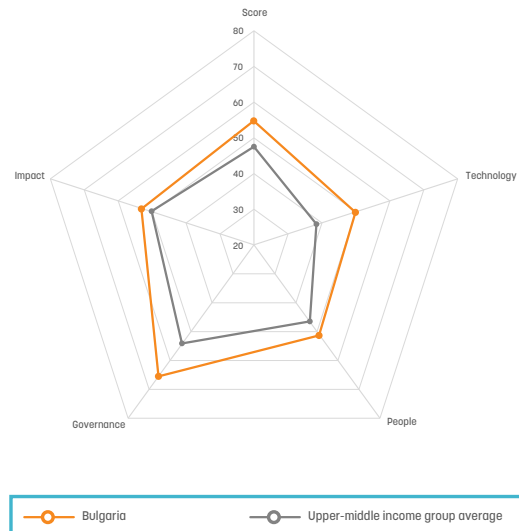
INDICATOR	RANK/134	SCORE
<b>C. Governance pillar</b>		
<b>1st sub-pillar: Trust</b>		
3.1.1 Secure Internet servers	52	63.17
3.1.2 Cybersecurity	72	61.65
3.1.3 Online access to financial account	79	19.93
3.1.4 Internet shopping	63	18.19
<b>2nd sub-pillar: Regulation</b>		
3.2.1 Regulatory quality	93	44.51
3.2.2 ICT regulatory environment	35	89.77
3.2.3 Legal framework's adaptability to emerging technologies	48	48.36
3.2.4 E-commerce legislation	1	100.00
3.2.5 Privacy protection by law content	45	66.01
<b>3rd sub-pillar: Inclusion</b>		
3.3.1 E-Participation	18	90.13
3.3.2 Socioeconomic gap in use of digital payments	81	58.01
3.3.3 Availability of local online content	50	67.46
3.3.4 Gender gap in internet use	32	64.50
3.3.5 Rural gap in use of digital payments	30	75.26
<b>D. Impact pillar</b>		
<b>1st sub-pillar: Economy</b>		
4.1.1 Medium and high-tech industry	39	45.11
4.1.2 High-tech exports	36	24.54
4.1.3 PCT patent applications	52	0.99
4.1.4 Labour productivity per employee	80	18.39
4.1.5 Prevalence of gig economy	93	31.02
<b>2nd sub-pillar: Quality of Life</b>		
4.2.1 Happiness	30	73.87
4.2.2 Freedom to make life choices	61	77.39
4.2.3 Income inequality	116	23.45
4.2.4 Healthy life expectancy at birth	70	65.74
<b>3rd sub-pillar: SDG Contribution</b>		
4.3.1 SDG 3: Good Health and Well-Being	25	83.61
4.3.2 SDG 4: Quality Education	70	21.96
4.3.3 SDG 5: Gender Equality	25	83.72
4.3.4 SDG 7: Affordable and Clean Energy	56	81.50
4.3.5 SDG 11: Sustainable Cities and Communities	66	65.38

\* Data on indicator 1.2.3 is confidential, but has been included in the computation. Please see Appendix I: Technical Notes for further details.



# Bulgaria

	Rank (out of 134)	Score
<b>Network Readiness Index</b>	<b>46</b>	<b>55.03</b>
<b>A. Technology pillar</b>	<b>43</b>	<b>50.13</b>
1st sub-pillar: Access	50	74.33
2nd sub-pillar: Content	33	49.93
3rd sub-pillar: Future Technologies	78	26.13
<b>B. People pillar</b>	<b>55</b>	<b>51.27</b>
1st sub-pillar: Individuals	40	62.42
2nd sub-pillar: Businesses	55	46.96
3rd sub-pillar: Governments	65	44.43
<b>C. Governance pillar</b>	<b>44</b>	<b>65.53</b>
1st sub-pillar: Trust	48	51.50
2nd sub-pillar: Regulation	35	78.69
3rd sub-pillar: Inclusion	58	66.39
<b>D. Impact pillar</b>	<b>62</b>	<b>53.19</b>
1st sub-pillar: Economy	56	31.10
2nd sub-pillar: Quality of Life	81	62.14
3rd sub-pillar: SDG Contribution	67	66.33



## The Network Readiness Index in detail

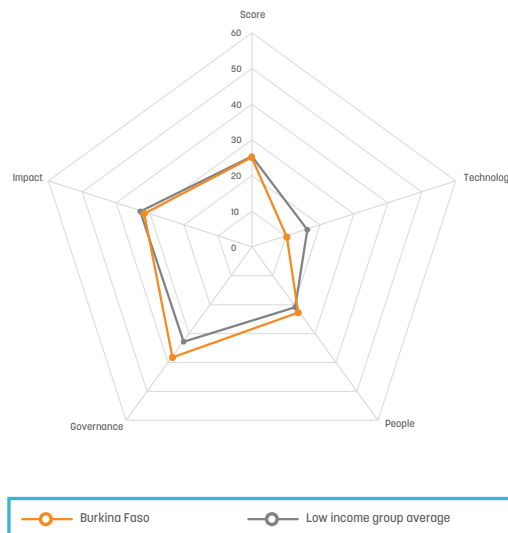
INDICATOR	RANK/134	SCORE
<b>A. Technology pillar</b>		
<b>1st sub-pillar: Access</b>		
1.1.1 Mobile tariffs	62	64.87
1.1.2 Handset prices	95	33.06
1.1.3 Households with internet access	61	72.06
1.1.4 4G mobile network coverage	16	99.71
1.1.5 Fixed-broadband subscriptions	10	97.71
1.1.6 International Internet bandwidth	12	78.58
1.1.7 Internet access in schools	n/a	n/a
<b>2nd sub-pillar: Content</b>		
1.2.1 GitHub commits	27	30.16
1.2.2 Wikipedia edits	33	72.97
1.2.3 Internet domain registrations*	-	-
1.2.4 Mobile apps development	28	81.97
<b>3rd sub-pillar: Future Technologies</b>		
1.3.1 Adoption of emerging technologies	60	48.94
1.3.2 Investment in emerging technology	50	46.61
1.3.3 ICT PCT patent applications	46	11.01
1.3.4 Computer software spending	56	21.77
1.3.5 Robot density	45	2.34
<b>B. People pillar</b>		
<b>1st sub-pillar: Individuals</b>		
2.1.1 Internet users	74	64.05
2.1.2 Active mobile-broadband subscriptions	27	39.97
2.1.3 Use of virtual social networks	63	55.67
2.1.4 Tertiary enrollment	27	51.71
2.1.5 Adult literacy rate	27	97.91
2.1.6 ICT skills	44	65.24
<b>2nd sub-pillar: Businesses</b>		
2.2.1 Firms with website	76	42.03
2.2.2 Ease of doing business	59	73.84
2.2.3 Professionals	40	40.24
2.2.4 Technicians and associate professionals	54	39.40
2.2.5 Business use of digital tools	40	72.75
2.2.6 R&D expenditure by businesses	38	13.50
<b>3rd sub-pillar: Governments</b>		
2.3.1 Government online services	46	76.37
2.3.2 Publication and use of open data	41	37.14
2.3.3 Government promotion of investment in emerging technologies	49	45.90
2.3.4 R&D expenditure by governments and higher education	75	18.30

INDICATOR	RANK/134	SCORE
<b>C. Governance pillar</b>		
<b>1st sub-pillar: Trust</b>		
3.1.1 Secure Internet servers	14	84.60
3.1.2 Cybersecurity	48	77.25
3.1.3 Online access to financial account	92	16.23
3.1.4 Internet shopping	48	27.91
<b>2nd sub-pillar: Regulation</b>		
3.2.1 Regulatory quality	42	64.11
3.2.2 ICT regulatory environment	26	93.25
3.2.3 Legal framework's adaptability to emerging technologies	51	48.04
3.2.4 E-commerce legislation	1	100.00
3.2.5 Privacy protection by law content	12	88.07
<b>3rd sub-pillar: Inclusion</b>		
3.3.1 E-Participation	23	88.89
3.3.2 Socioeconomic gap in use of digital payments	92	50.14
3.3.3 Availability of local online content	35	78.10
3.3.4 Gender gap in internet use	53	59.35
3.3.5 Rural gap in use of digital payments	87	55.45
<b>D. Impact pillar</b>		
<b>1st sub-pillar: Economy</b>		
4.1.1 Medium and high-tech industry	50	37.85
4.1.2 High-tech exports	47	19.46
4.1.3 PCT patent applications	46	2.13
4.1.4 Labour productivity per employee	60	28.89
4.1.5 Prevalence of gig economy	23	67.17
<b>2nd sub-pillar: Quality of Life</b>		
4.2.1 Happiness	89	47.47
4.2.2 Freedom to make life choices	65	75.99
4.2.3 Income inequality	79	58.25
4.2.4 Healthy life expectancy at birth	62	66.86
<b>3rd sub-pillar: SDG Contribution</b>		
4.3.1 SDG 3: Good Health and Well-Being	85	62.30
4.3.2 SDG 4: Quality Education	48	41.66
4.3.3 SDG 5: Gender Equality	26	82.88
4.3.4 SDG 7: Affordable and Clean Energy	98	67.63
4.3.5 SDG 11: Sustainable Cities and Communities	42	77.18

\* Data on indicator 1.2.3 is confidential, but has been included in the computation. Please see Appendix I: Technical Notes for further details.

# Burkina Faso

	Rank (out of 134)	Score
<b>Network Readiness Index</b>	<b>125</b>	<b>25.79</b>
<b>A. Technology pillar</b>	<b>132</b>	<b>10.53</b>
1st sub-pillar: Access	130	15.86
2nd sub-pillar: Content	129	6.15
3rd sub-pillar: Future Technologies	130	9.59
<b>B. People pillar</b>	<b>123</b>	<b>22.49</b>
1st sub-pillar: Individuals	133	12.00
2nd sub-pillar: Businesses	129	18.56
3rd sub-pillar: Governments	83	36.92
<b>C. Governance pillar</b>	<b>109</b>	<b>38.14</b>
1st sub-pillar: Trust	115	20.55
2nd sub-pillar: Regulation	100	53.63
3rd sub-pillar: Inclusion	114	40.25
<b>D. Impact pillar</b>	<b>126</b>	<b>31.97</b>
1st sub-pillar: Economy	125	9.88
2nd sub-pillar: Quality of Life	114	46.12
3rd sub-pillar: SDG Contribution	122	39.91



## The Network Readiness Index in detail

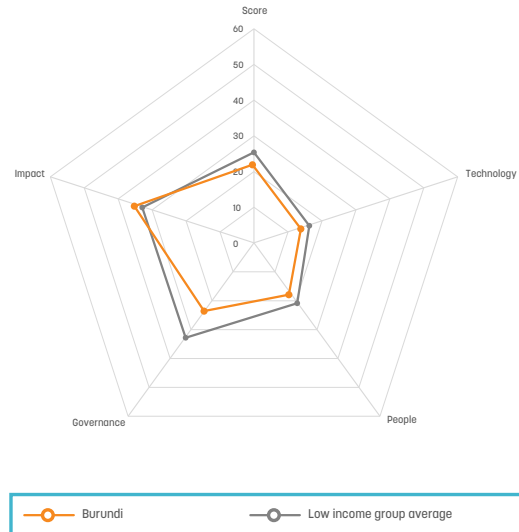
INDICATOR	RANK/134	SCORE
<b>A. Technology pillar</b>		
<b>1st sub-pillar: Access</b>		
1.1.1 Mobile tariffs	119	28.97
1.1.2 Handset prices	123	15.26
1.1.3 Households with internet access	119	12.66
1.1.4 4G mobile network coverage	130	0.00
1.1.5 Fixed-broadband subscriptions	122	0.00
1.1.6 International Internet bandwidth	119	53.95
1.1.7 Internet access in schools	70	0.14
<b>2nd sub-pillar: Content</b>		
1.2.1 GitHub commits	132	0.01
1.2.2 Wikipedia edits	n/a	n/a
1.2.3 Internet domain registrations*	-	-
1.2.4 Mobile apps development	128	18.40
<b>3rd sub-pillar: Future Technologies</b>		
1.3.1 Adoption of emerging technologies	127	2.44
1.3.2 Investment in emerging technology	109	23.92
1.3.3 ICT PCT patent applications	n/a	n/a
1.3.4 Computer software spending	111	2.43
1.3.5 Robot density	n/a	n/a
<b>B. People pillar</b>		
<b>1st sub-pillar: Individuals</b>		
2.1.1 Internet users	123	13.75
2.1.2 Active mobile-broadband subscriptions	118	10.55
2.1.3 Use of virtual social networks	123	5.98
2.1.4 Tertiary enrollment	118	4.18
2.1.5 Adult literacy rate	105	24.35
2.1.6 ICT skills	128	13.16
<b>2nd sub-pillar: Businesses</b>		
2.2.1 Firms with website	121	8.94
2.2.2 Ease of doing business	120	37.44
2.2.3 Professionals	104	12.75
2.2.4 Technicians and associate professionals	91	19.81
2.2.5 Business use of digital tools	127	13.89
2.2.6 R&D expenditure by businesses	n/a	n/a
<b>3rd sub-pillar: Governments</b>		
2.3.1 Government online services	109	44.85
2.3.2 Publication and use of open data	67	21.63
2.3.3 Government promotion of investment in emerging technologies	105	18.48
2.3.4 R&D expenditure by governments and higher education	17	62.72

INDICATOR	RANK/134	SCORE
<b>C. Governance pillar</b>		
<b>1st sub-pillar: Trust</b>		
3.1.1 Secure Internet servers	131	10.45
3.1.2 Cybersecurity	98	42.47
3.1.3 Online access to financial account	69	27.27
3.1.4 Internet shopping	119	2.00
<b>2nd sub-pillar: Regulation</b>		
3.2.1 Regulatory quality	99	42.90
3.2.2 ICT regulatory environment	65	84.56
3.2.3 Legal framework's adaptability to emerging technologies	115	12.07
3.2.4 E-commerce legislation	77	75.00
3.2.5 Privacy protection by law content	n/a	n/a
<b>3rd sub-pillar: Inclusion</b>		
3.3.1 E-Participation	97	49.38
3.3.2 Socioeconomic gap in use of digital payments	112	40.14
3.3.3 Availability of local online content	132	8.47
3.3.4 Gender gap in internet use	n/a	n/a
3.3.5 Rural gap in use of digital payments	76	63.01
<b>D. Impact pillar</b>		
<b>1st sub-pillar: Economy</b>		
4.1.1 Medium and high-tech industry	n/a	n/a
4.1.2 High-tech exports	72	11.28
4.1.3 PCT patent applications	n/a	n/a
4.1.4 Labour productivity per employee	114	1.57
4.1.5 Prevalence of gig economy	115	16.77
<b>2nd sub-pillar: Quality of Life</b>		
4.2.1 Happiness	108	40.25
4.2.2 Freedom to make life choices	115	51.46
4.2.3 Income inequality	54	71.39
4.2.4 Healthy life expectancy at birth	122	21.39
<b>3rd sub-pillar: SDG Contribution</b>		
4.3.1 SDG 3: Good Health and Well-Being	126	19.67
4.3.2 SDG 4: Quality Education	n/a	n/a
4.3.3 SDG 5: Gender Equality	115	43.11
4.3.4 SDG 7: Affordable and Clean Energy	92	69.51
4.3.5 SDG 11: Sustainable Cities and Communities	119	27.37

\* Data on indicator 1.2.3 is confidential, but has been included in the computation. Please see Appendix I: Technical Notes for further details.

# Burundi

	Rank (out of 134)	Score
<b>Network Readiness Index</b>	<b>130</b>	<b>22.62</b>
<b>A. Technology pillar</b>	<b>127</b>	<b>14.43</b>
1st sub-pillar: Access	131	15.43
2nd sub-pillar: Content	113	12.32
3rd sub-pillar: Future Technologies	119	15.54
<b>B. People pillar</b>	<b>130</b>	<b>17.58</b>
1st sub-pillar: Individuals	126	15.29
2nd sub-pillar: Businesses	130	16.02
3rd sub-pillar: Governments	118	21.41
<b>C. Governance pillar</b>	<b>131</b>	<b>23.28</b>
1st sub-pillar: Trust	129	13.26
2nd sub-pillar: Regulation	127	33.04
3rd sub-pillar: Inclusion	132	23.56
<b>D. Impact pillar</b>	<b>116</b>	<b>35.18</b>
1st sub-pillar: Economy	74	22.57
2nd sub-pillar: Quality of Life	126	37.63
3rd sub-pillar: SDG Contribution	114	45.32



## The Network Readiness Index in detail

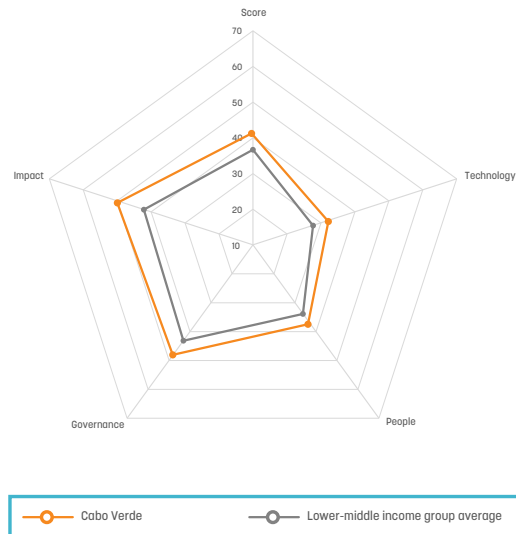
INDICATOR	RANK/134	SCORE
<b>A. Technology pillar</b>		
<b>1st sub-pillar: Access</b>		
1.1.1 Mobile tariffs	125	22.70
1.1.2 Handset prices	132	0.00
1.1.3 Households with internet access	134	0.00
1.1.4 4G mobile network coverage	121	20.93
1.1.5 Fixed-broadband subscriptions	112	2.24
1.1.6 International Internet bandwidth	99	62.11
1.1.7 Internet access in schools	71	0.00
<b>2nd sub-pillar: Content</b>		
1.2.1 GitHub commits	131	0.01
1.2.2 Wikipedia edits	n/a	n/a
1.2.3 Internet domain registrations*	-	-
1.2.4 Mobile apps development	110	36.88
<b>3rd sub-pillar: Future Technologies</b>		
1.3.1 Adoption of emerging technologies	118	17.31
1.3.2 Investment in emerging technology	111	23.48
1.3.3 ICT PCT patent applications	n/a	n/a
1.3.4 Computer software spending	97	5.82
1.3.5 Robot density	n/a	n/a
<b>B. People pillar</b>		
<b>1st sub-pillar: Individuals</b>		
2.1.1 Internet users	134	0.00
2.1.2 Active mobile-broadband subscriptions	131	3.04
2.1.3 Use of virtual social networks	131	2.58
2.1.4 Tertiary enrollment	119	3.85
2.1.5 Adult literacy rate	93	59.31
2.1.6 ICT skills	122	22.97
<b>2nd sub-pillar: Businesses</b>		
2.2.1 Firms with website	108	18.69
2.2.2 Ease of doing business	127	29.26
2.2.3 Professionals	125	0.00
2.2.4 Technicians and associate professionals	117	6.08
2.2.5 Business use of digital tools	120	26.07
2.2.6 R&D expenditure by businesses	n/a	n/a
<b>3rd sub-pillar: Governments</b>		
2.3.1 Government online services	120	33.33
2.3.2 Publication and use of open data	n/a	n/a
2.3.3 Government promotion of investment in emerging technologies	102	21.29
2.3.4 R&D expenditure by governments and higher education	91	9.62

INDICATOR	RANK/134	SCORE
<b>C. Governance pillar</b>		
<b>1st sub-pillar: Trust</b>		
3.1.1 Secure Internet servers	127	17.97
3.1.2 Cybersecurity	127	8.56
3.1.3 Online access to financial account	n/a	n/a
3.1.4 Internet shopping	n/a	n/a
<b>2nd sub-pillar: Regulation</b>		
3.2.1 Regulatory quality	125	29.77
3.2.2 ICT regulatory environment	114	61.39
3.2.3 Legal framework's adaptability to emerging technologies	108	15.98
3.2.4 E-commerce legislation	127	25.00
3.2.5 Privacy protection by law content	n/a	n/a
<b>3rd sub-pillar: Inclusion</b>		
3.3.1 E-Participation	119	30.86
3.3.2 Socioeconomic gap in use of digital payments	127	8.40
3.3.3 Availability of local online content	120	26.19
3.3.4 Gender gap in internet use	87	0.00
3.3.5 Rural gap in use of digital payments	101	52.33
<b>D. Impact pillar</b>		
<b>1st sub-pillar: Economy</b>		
4.1.1 Medium and high-tech industry	121	2.97
4.1.2 High-tech exports	26	32.30
4.1.3 PCT patent applications	n/a	n/a
4.1.4 Labour productivity per employee	n/a	n/a
4.1.5 Prevalence of gig economy	90	32.45
<b>2nd sub-pillar: Quality of Life</b>		
4.2.1 Happiness	126	21.27
4.2.2 Freedom to make life choices	122	46.17
4.2.3 Income inequality	70	62.89
4.2.4 Healthy life expectancy at birth	123	20.21
<b>3rd sub-pillar: SDG Contribution</b>		
4.3.1 SDG 3: Good Health and Well-Being	122	22.95
4.3.2 SDG 4: Quality Education	n/a	n/a
4.3.3 SDG 5: Gender Equality	17	86.47
4.3.4 SDG 7: Affordable and Clean Energy	120	51.23
4.3.5 SDG 11: Sustainable Cities and Communities	126	20.64

\* Data on indicator 1.2.3 is confidential, but has been included in the computation. Please see Appendix I: Technical Notes for further details.

# Cabo Verde

	Rank (out of 134)	Score
<b>Network Readiness Index</b>	<b>86</b>	<b>42.01</b>
<b>A. Technology pillar</b>	<b>86</b>	<b>32.90</b>
1st sub-pillar: Access	89	47.44
2nd sub-pillar: Content	99	19.37
3rd sub-pillar: Future Technologies	45	31.90
<b>B. People pillar</b>	<b>91</b>	<b>37.22</b>
1st sub-pillar: Individuals	89	46.33
2nd sub-pillar: Businesses	111	27.85
3rd sub-pillar: Governments	81	37.48
<b>C. Governance pillar</b>	<b>89</b>	<b>47.96</b>
1st sub-pillar: Trust	94	27.50
2nd sub-pillar: Regulation	70	65.59
3rd sub-pillar: Inclusion	100	50.80
<b>D. Impact pillar</b>	<b>76</b>	<b>49.97</b>
1st sub-pillar: Economy	71	23.45
2nd sub-pillar: Quality of Life	97	56.87
3rd sub-pillar: SDG Contribution	48	69.58



## The Network Readiness Index in detail

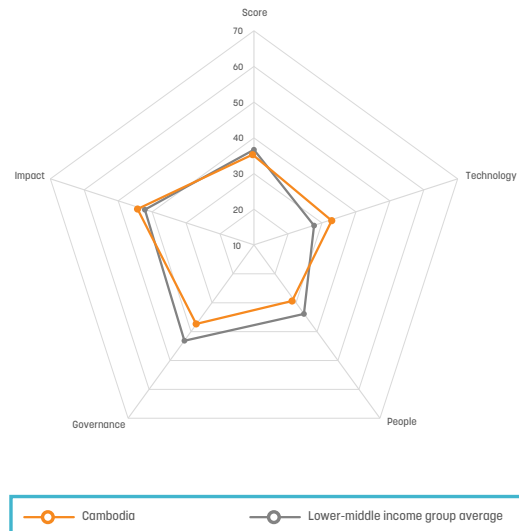
INDICATOR	RANK/134	SCORE
<b>A. Technology pillar</b>		
<b>1st sub-pillar: Access</b>		
1.1.1 Mobile tariffs	81	54.32
1.1.2 Handset prices	92	34.38
1.1.3 Households with internet access	64	70.01
1.1.4 4G mobile network coverage	130	0.00
1.1.5 Fixed-broadband subscriptions	23	93.61
1.1.6 International Internet bandwidth	85	63.88
1.1.7 Internet access in schools	56	15.85
<b>2nd sub-pillar: Content</b>		
1.2.1 GitHub commits	106	0.67
1.2.2 Wikipedia edits	n/a	n/a
1.2.3 Internet domain registrations*	-	-
1.2.4 Mobile apps development	83	55.41
<b>3rd sub-pillar: Future Technologies</b>		
1.3.1 Adoption of emerging technologies	102	29.74
1.3.2 Investment in emerging technology	84	34.06
1.3.3 ICT PCT patent applications	n/a	n/a
1.3.4 Computer software spending	n/a	n/a
1.3.5 Robot density	n/a	n/a
<b>B. People pillar</b>		
<b>1st sub-pillar: Individuals</b>		
2.1.1 Internet users	83	57.23
2.1.2 Active mobile-broadband subscriptions	81	25.55
2.1.3 Use of virtual social networks	81	48.45
2.1.4 Tertiary enrollment	89	16.79
2.1.5 Adult literacy rate	72	83.02
2.1.6 ICT skills	75	46.94
<b>2nd sub-pillar: Businesses</b>		
2.2.1 Firms with website	116	11.26
2.2.2 Ease of doing business	111	43.88
2.2.3 Professionals	75	19.47
2.2.4 Technicians and associate professionals	87	22.79
2.2.5 Business use of digital tools	106	41.86
2.2.6 R&D expenditure by businesses	n/a	n/a
<b>3rd sub-pillar: Governments</b>		
2.3.1 Government online services	104	48.49
2.3.2 Publication and use of open data	n/a	n/a
2.3.3 Government promotion of investment in emerging technologies	98	26.48
2.3.4 R&D expenditure by governments and higher education	n/a	n/a

INDICATOR	RANK/134	SCORE
<b>C. Governance pillar</b>		
<b>1st sub-pillar: Trust</b>		
3.1.1 Secure Internet servers	69	50.34
3.1.2 Cybersecurity	129	4.66
3.1.3 Online access to financial account	n/a	n/a
3.1.4 Internet shopping	n/a	n/a
<b>2nd sub-pillar: Regulation</b>		
3.2.1 Regulatory quality	89	46.10
3.2.2 ICT regulatory environment	76	81.47
3.2.3 Legal framework's adaptability to emerging technologies	94	26.27
3.2.4 E-commerce legislation	1	100.00
3.2.5 Privacy protection by law content	37	74.09
<b>3rd sub-pillar: Inclusion</b>		
3.3.1 E-Participation	109	39.51
3.3.2 Socioeconomic gap in use of digital payments	n/a	n/a
3.3.3 Availability of local online content	88	50.38
3.3.4 Gender gap in internet use	38	62.50
3.3.5 Rural gap in use of digital payments	n/a	n/a
<b>D. Impact pillar</b>		
<b>1st sub-pillar: Economy</b>		
4.1.1 Medium and high-tech industry	55	34.47
4.1.2 High-tech exports	129	0.00
4.1.3 PCT patent applications	n/a	n/a
4.1.4 Labour productivity per employee	n/a	n/a
4.1.5 Prevalence of gig economy	83	35.88
<b>2nd sub-pillar: Quality of Life</b>		
4.2.1 Happiness	n/a	n/a
4.2.2 Freedom to make life choices	n/a	n/a
4.2.3 Income inequality	90	53.09
4.2.4 Healthy life expectancy at birth	84	60.64
<b>3rd sub-pillar: SDG Contribution</b>		
4.3.1 SDG 3: Good Health and Well-Being	73	67.21
4.3.2 SDG 4: Quality Education	n/a	n/a
4.3.3 SDG 5: Gender Equality	43	79.92
4.3.4 SDG 7: Affordable and Clean Energy	15	90.39
4.3.5 SDG 11: Sustainable Cities and Communities	98	40.81

\* Data on indicator 1.2.3 is confidential, but has been included in the computation. Please see Appendix I: Technical Notes for further details.

# Cambodia

	Rank (out of 134)	Score
<b>Network Readiness Index</b>	<b>104</b>	<b>36.01</b>
<b>A. Technology pillar</b>	<b>83</b>	<b>33.59</b>
1st sub-pillar: Access	76	58.65
2nd sub-pillar: Content	104	16.15
3rd sub-pillar: Future Technologies	79	25.97
<b>B. People pillar</b>	<b>110</b>	<b>29.08</b>
1st sub-pillar: Individuals	96	40.97
2nd sub-pillar: Businesses	125	20.21
3rd sub-pillar: Governments	105	26.05
<b>C. Governance pillar</b>	<b>113</b>	<b>37.14</b>
1st sub-pillar: Trust	123	16.55
2nd sub-pillar: Regulation	119	43.92
3rd sub-pillar: Inclusion	99	50.94
<b>D. Impact pillar</b>	<b>93</b>	<b>44.24</b>
1st sub-pillar: Economy	127	8.80
2nd sub-pillar: Quality of Life	71	64.10
3rd sub-pillar: SDG Contribution	87	59.81



## The Network Readiness Index in detail

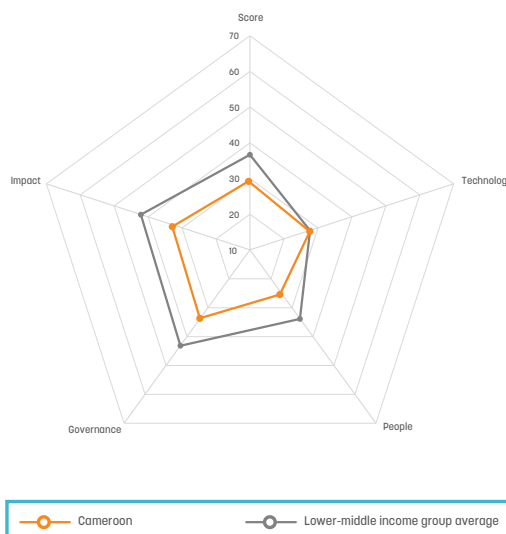
INDICATOR	RANK/134	SCORE
<b>A. Technology pillar</b>		
<b>1st sub-pillar: Access</b>		
1.1.1 Mobile tariffs	89	49.89
1.1.2 Handset prices	104	29.07
1.1.3 Households with internet access	87	39.84
1.1.4 4G mobile network coverage	79	80.30
1.1.5 Fixed-broadband subscriptions	42	85.21
1.1.6 International Internet bandwidth	73	67.63
1.1.7 Internet access in schools	n/a	n/a
<b>2nd sub-pillar: Content</b>		
1.2.1 GitHub commits	100	1.01
1.2.2 Wikipedia edits	113	11.64
1.2.3 Internet domain registrations*	-	-
1.2.4 Mobile apps development	94	51.54
<b>3rd sub-pillar: Future Technologies</b>		
1.3.1 Adoption of emerging technologies	99	32.06
1.3.2 Investment in emerging technology	55	43.85
1.3.3 ICT PCT patent applications	n/a	n/a
1.3.4 Computer software spending	113	2.01
1.3.5 Robot density	n/a	n/a
<b>B. People pillar</b>		
<b>1st sub-pillar: Individuals</b>		
2.1.1 Internet users	99	38.50
2.1.2 Active mobile-broadband subscriptions	55	32.05
2.1.3 Use of virtual social networks	59	57.73
2.1.4 Tertiary enrollment	99	9.47
2.1.5 Adult literacy rate	79	74.96
2.1.6 ICT skills	107	33.12
<b>2nd sub-pillar: Businesses</b>		
2.2.1 Firms with website	109	17.07
2.2.2 Ease of doing business	116	41.76
2.2.3 Professionals	114	7.43
2.2.4 Technicians and associate professionals	121	5.08
2.2.5 Business use of digital tools	91	49.53
2.2.6 R&D expenditure by businesses	82	0.40
<b>3rd sub-pillar: Governments</b>		
2.3.1 Government online services	111	43.63
2.3.2 Publication and use of open data	n/a	n/a
2.3.3 Government promotion of investment in emerging technologies	85	31.34
2.3.4 R&D expenditure by governments and higher education	107	3.17

INDICATOR	RANK/134	SCORE
<b>C. Governance pillar</b>		
<b>1st sub-pillar: Trust</b>		
3.1.1 Secure Internet servers	94	40.48
3.1.2 Cybersecurity	119	16.58
3.1.3 Online access to financial account	117	5.27
3.1.4 Internet shopping	101	3.88
<b>2nd sub-pillar: Regulation</b>		
3.2.1 Regulatory quality	104	40.29
3.2.2 ICT regulatory environment	111	62.93
3.2.3 Legal framework's adaptability to emerging technologies	100	22.46
3.2.4 E-commerce legislation	115	50.00
3.2.5 Privacy protection by law content	n/a	n/a
<b>3rd sub-pillar: Inclusion</b>		
3.3.1 E-Participation	109	39.51
3.3.2 Socioeconomic gap in use of digital payments	90	50.34
3.3.3 Availability of local online content	95	45.15
3.3.4 Gender gap in internet use	21	66.71
3.3.5 Rural gap in use of digital payments	96	52.97
<b>D. Impact pillar</b>		
<b>1st sub-pillar: Economy</b>		
4.1.1 Medium and high-tech industry	126	0.00
4.1.2 High-tech exports	108	2.66
4.1.3 PCT patent applications	n/a	n/a
4.1.4 Labour productivity per employee	108	3.44
4.1.5 Prevalence of gig economy	96	29.12
<b>2nd sub-pillar: Quality of Life</b>		
4.2.1 Happiness	96	45.31
4.2.2 Freedom to make life choices	3	98.89
4.2.3 Income inequality	n/a	n/a
4.2.4 Healthy life expectancy at birth	100	48.11
<b>3rd sub-pillar: SDG Contribution</b>		
4.3.1 SDG 3: Good Health and Well-Being	99	52.46
4.3.2 SDG 4: Quality Education	n/a	n/a
4.3.3 SDG 5: Gender Equality	104	58.10
4.3.4 SDG 7: Affordable and Clean Energy	93	69.00
4.3.5 SDG 11: Sustainable Cities and Communities	74	59.67

\* Data on indicator 1.2.3 is confidential, but has been included in the computation. Please see Appendix I: Technical Notes for further details.

# Cameroon

	Rank (out of 134)	Score
<b>Network Readiness Index</b>	<b>118</b>	<b>29.86</b>
<b>A. Technology pillar</b>	<b>95</b>	<b>28.27</b>
1st sub-pillar: Access	94	43.30
2nd sub-pillar: Content	110	13.76
3rd sub-pillar: Future Technologies	67	27.74
<b>B. People pillar</b>	<b>120</b>	<b>25.08</b>
1st sub-pillar: Individuals	113	27.29
2nd sub-pillar: Businesses	123	21.14
3rd sub-pillar: Governments	104	26.80
<b>C. Governance pillar</b>	<b>125</b>	<b>33.41</b>
1st sub-pillar: Trust	108	23.86
2nd sub-pillar: Regulation	118	44.09
3rd sub-pillar: Inclusion	126	32.27
<b>D. Impact pillar</b>	<b>123</b>	<b>32.70</b>
1st sub-pillar: Economy	85	20.13
2nd sub-pillar: Quality of Life	122	39.69
3rd sub-pillar: SDG Contribution	123	38.29



## The Network Readiness Index in detail

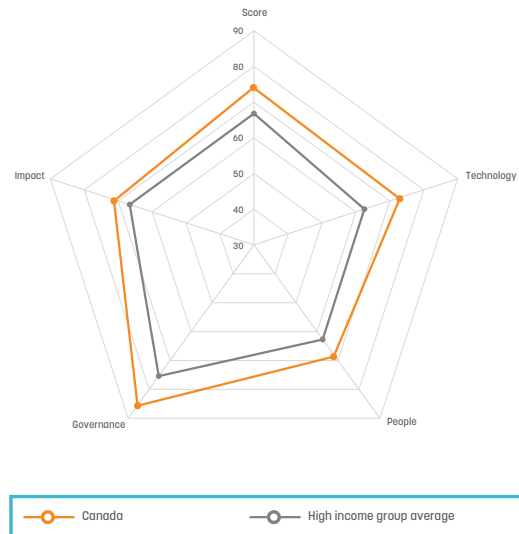
INDICATOR	RANK/134	SCORE
<b>A. Technology pillar</b>		
<b>1st sub-pillar: Access</b>		
1.1.1 Mobile tariffs	105	39.53
1.1.2 Handset prices	73	41.76
1.1.3 Households with internet access	109	21.49
1.1.4 4G mobile network coverage	95	65.48
1.1.5 Fixed-broadband subscriptions	n/a	n/a
1.1.6 International Internet bandwidth	128	48.25
1.1.7 Internet access in schools	n/a	n/a
<b>2nd sub-pillar: Content</b>		
1.2.1 GitHub commits	110	0.44
1.2.2 Wikipedia edits	114	8.17
1.2.3 Internet domain registrations*	-	-
1.2.4 Mobile apps development	116	32.67
<b>3rd sub-pillar: Future Technologies</b>		
1.3.1 Adoption of emerging technologies	92	36.36
1.3.2 Investment in emerging technology	88	33.24
1.3.3 ICT PCT patent applications	n/a	n/a
1.3.4 Computer software spending	77	13.62
1.3.5 Robot density	n/a	n/a
<b>B. People pillar</b>		
<b>1st sub-pillar: Individuals</b>		
2.1.1 Internet users	115	21.18
2.1.2 Active mobile-broadband subscriptions	121	8.01
2.1.3 Use of virtual social networks	115	12.37
2.1.4 Tertiary enrollment	101	8.79
2.1.5 Adult literacy rate	83	70.51
2.1.6 ICT skills	82	42.89
<b>2nd sub-pillar: Businesses</b>		
2.2.1 Firms with website	110	15.21
2.2.2 Ease of doing business	128	28.06
2.2.3 Professionals	108	11.51
2.2.4 Technicians and associate professionals	108	11.64
2.2.5 Business use of digital tools	107	39.27
2.2.6 R&D expenditure by businesses	n/a	n/a
<b>3rd sub-pillar: Governments</b>		
2.3.1 Government online services	108	45.46
2.3.2 Publication and use of open data	101	5.15
2.3.3 Government promotion of investment in emerging technologies	89	29.80
2.3.4 R&D expenditure by governments and higher education	n/a	n/a

INDICATOR	RANK/134	SCORE
<b>C. Governance pillar</b>		
<b>1st sub-pillar: Trust</b>		
3.1.1 Secure Internet servers	123	21.85
3.1.2 Cybersecurity	91	45.94
3.1.3 Online access to financial account	73	24.15
3.1.4 Internet shopping	105	3.51
<b>2nd sub-pillar: Regulation</b>		
3.2.1 Regulatory quality	118	33.81
3.2.2 ICT regulatory environment	114	61.39
3.2.3 Legal framework's adaptability to emerging technologies	93	26.29
3.2.4 E-commerce legislation	77	75.00
3.2.5 Privacy protection by law content	73	23.96
<b>3rd sub-pillar: Inclusion</b>		
3.3.1 E-Participation	109	39.51
3.3.2 Socioeconomic gap in use of digital payments	109	40.99
3.3.3 Availability of local online content	122	24.87
3.3.4 Gender gap in internet use	85	14.60
3.3.5 Rural gap in use of digital payments	112	41.37
<b>D. Impact pillar</b>		
<b>1st sub-pillar: Economy</b>		
4.1.1 Medium and high-tech industry	105	9.44
4.1.2 High-tech exports	83	9.31
4.1.3 PCT patent applications	n/a	n/a
4.1.4 Labour productivity per employee	110	2.83
4.1.5 Prevalence of gig economy	41	58.96
<b>2nd sub-pillar: Quality of Life</b>		
4.2.1 Happiness	102	44.10
4.2.2 Freedom to make life choices	106	57.23
4.2.3 Income inequality	107	42.27
4.2.4 Healthy life expectancy at birth	127	15.18
<b>3rd sub-pillar: SDG Contribution</b>		
4.3.1 SDG 3: Good Health and Well-Being	114	29.51
4.3.2 SDG 4: Quality Education	n/a	n/a
4.3.3 SDG 5: Gender Equality	118	41.16
4.3.4 SDG 7: Affordable and Clean Energy	76	75.22
4.3.5 SDG 11: Sustainable Cities and Communities	128	7.26

\* Data on indicator 1.2.3 is confidential, but has been included in the computation. Please see Appendix I: Technical Notes for further details.

# Canada

	Rank (out of 134)	Score
<b>Network Readiness Index</b>	<b>13</b>	<b>74.92</b>
<b>A. Technology pillar</b>	<b>12</b>	<b>73.59</b>
1st sub-pillar: Access	29	81.57
2nd sub-pillar: Content	13	73.74
3rd sub-pillar: Future Technologies	11	65.48
<b>B. People pillar</b>	<b>18</b>	<b>68.71</b>
1st sub-pillar: Individuals	38	63.08
2nd sub-pillar: Businesses	26	64.18
3rd sub-pillar: Governments	7	78.88
<b>C. Governance pillar</b>	<b>9</b>	<b>85.85</b>
1st sub-pillar: Trust	7	87.24
2nd sub-pillar: Regulation	28	80.57
3rd sub-pillar: Inclusion	1	89.74
<b>D. Impact pillar</b>	<b>16</b>	<b>71.53</b>
1st sub-pillar: Economy	21	48.19
2nd sub-pillar: Quality of Life	15	85.80
3rd sub-pillar: SDG Contribution	17	80.59



## The Network Readiness Index in detail

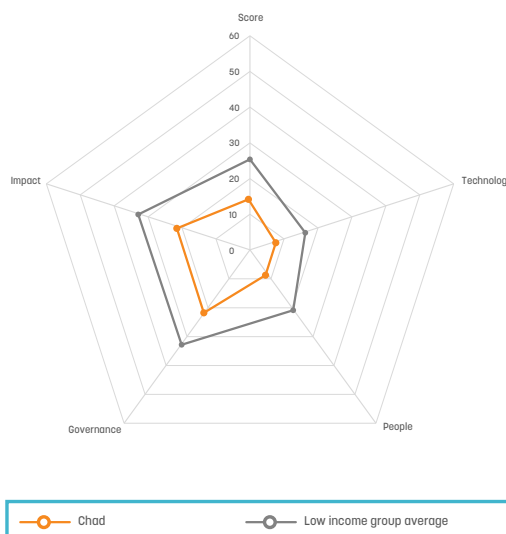
INDICATOR	RANK/134	SCORE
<b>A. Technology pillar</b>		
<b>1st sub-pillar: Access</b>		
1.1.1 Mobile tariffs	40	72.45
1.1.2 Handset prices	17	69.66
1.1.3 Households with internet access	16	91.21
1.1.4 4G mobile network coverage	24	99.00
1.1.5 Fixed-broadband subscriptions	40	86.69
1.1.6 International Internet bandwidth	47	70.38
1.1.7 Internet access in schools	n/a	n/a
<b>2nd sub-pillar: Content</b>		
1.2.1 GitHub commits	9	70.30
1.2.2 Wikipedia edits	27	78.23
1.2.3 Internet domain registrations*	-	-
1.2.4 Mobile apps development	20	85.63
<b>3rd sub-pillar: Future Technologies</b>		
1.3.1 Adoption of emerging technologies	11	85.04
1.3.2 Investment in emerging technology	20	68.25
1.3.3 ICT PCT patent applications	14	63.16
1.3.4 Computer software spending	6	60.08
1.3.5 Robot density	14	50.86
<b>B. People pillar</b>		
<b>1st sub-pillar: Individuals</b>		
2.1.1 Internet users	14	91.08
2.1.2 Active mobile-broadband subscriptions	64	29.57
2.1.3 Use of virtual social networks	34	67.01
2.1.4 Tertiary enrollment	31	50.15
2.1.5 Adult literacy rate	n/a	n/a
2.1.6 ICT skills	19	77.60
<b>2nd sub-pillar: Businesses</b>		
2.2.1 Firms with website	22	80.11
2.2.2 Ease of doing business	22	87.40
2.2.3 Professionals	29	45.30
2.2.4 Technicians and associate professionals	15	72.80
2.2.5 Business use of digital tools	31	78.84
2.2.6 R&D expenditure by businesses	25	20.64
<b>3rd sub-pillar: Governments</b>		
2.3.1 Government online services	31	83.64
2.3.2 Publication and use of open data	2	89.54
2.3.3 Government promotion of investment in emerging technologies	12	74.43
2.3.4 R&D expenditure by governments and higher education	14	67.91

INDICATOR	RANK/134	SCORE
<b>C. Governance pillar</b>		
<b>1st sub-pillar: Trust</b>		
3.1.1 Secure Internet servers	19	83.69
3.1.2 Cybersecurity	9	95.77
3.1.3 Online access to financial account	10	81.53
3.1.4 Internet shopping	9	87.95
<b>2nd sub-pillar: Regulation</b>		
3.2.1 Regulatory quality	14	88.09
3.2.2 ICT regulatory environment	57	86.30
3.2.3 Legal framework's adaptability to emerging technologies	10	77.69
3.2.4 E-commerce legislation	1	100.00
3.2.5 Privacy protection by law content	56	50.75
<b>3rd sub-pillar: Inclusion</b>		
3.3.1 E-Participation	16	93.83
3.3.2 Socioeconomic gap in use of digital payments	3	99.49
3.3.3 Availability of local online content	14	88.53
3.3.4 Gender gap in internet use	n/a	n/a
3.3.5 Rural gap in use of digital payments	16	77.09
<b>D. Impact pillar</b>		
<b>1st sub-pillar: Economy</b>		
4.1.1 Medium and high-tech industry	47	38.92
4.1.2 High-tech exports	29	31.62
4.1.3 PCT patent applications	21	22.68
4.1.4 Labour productivity per employee	24	61.67
4.1.5 Prevalence of gig economy	8	86.07
<b>2nd sub-pillar: Quality of Life</b>		
4.2.1 Happiness	14	86.80
4.2.2 Freedom to make life choices	21	91.20
4.2.3 Income inequality	43	75.26
4.2.4 Healthy life expectancy at birth	7	89.94
<b>3rd sub-pillar: SDG Contribution</b>		
4.3.1 SDG 3: Good Health and Well-Being	1	100.00
4.3.2 SDG 4: Quality Education	10	70.19
4.3.3 SDG 5: Gender Equality	32	81.68
4.3.4 SDG 7: Affordable and Clean Energy	113	56.94
4.3.5 SDG 11: Sustainable Cities and Communities	9	94.15

\* Data on indicator 1.2.3 is confidential, but has been included in the computation. Please see Appendix I: Technical Notes for further details.

# Chad

	Rank (out of 134)	Score
<b>Network Readiness Index</b>	<b>134</b>	<b>14.80</b>
<b>A. Technology pillar</b>	<b>133</b>	<b>8.16</b>
1st sub-pillar: Access	133	11.69
2nd sub-pillar: Content	131	4.70
3rd sub-pillar: Future Technologies	133	8.08
<b>B. People pillar</b>	<b>134</b>	<b>8.25</b>
1st sub-pillar: Individuals	134	3.14
2nd sub-pillar: Businesses	134	3.95
3rd sub-pillar: Governments	126	17.67
<b>C. Governance pillar</b>	<b>133</b>	<b>21.47</b>
1st sub-pillar: Trust	134	3.95
2nd sub-pillar: Regulation	131	28.01
3rd sub-pillar: Inclusion	124	32.44
<b>D. Impact pillar</b>	<b>134</b>	<b>21.32</b>
1st sub-pillar: Economy	133	6.52
2nd sub-pillar: Quality of Life	132	27.80
3rd sub-pillar: SDG Contribution	132	29.64



## The Network Readiness Index in detail

INDICATOR	RANK/134	SCORE
<b>A. Technology pillar</b>		
<b>1st sub-pillar: Access</b>		
1.1.1 Mobile tariffs	129	8.42
1.1.2 Handset prices	131	1.63
1.1.3 Households with internet access	132	3.17
1.1.4 4G mobile network coverage	124	12.00
1.1.5 Fixed-broadband subscriptions	122	0.00
1.1.6 International Internet bandwidth	131	44.91
1.1.7 Internet access in schools	n/a	n/a
<b>2nd sub-pillar: Content</b>		
1.2.1 GitHub commits	133	0.00
1.2.2 Wikipedia edits	n/a	n/a
1.2.3 Internet domain registrations*	-	-
1.2.4 Mobile apps development	130	14.07
<b>3rd sub-pillar: Future Technologies</b>		
1.3.1 Adoption of emerging technologies	126	3.37
1.3.2 Investment in emerging technology	125	12.79
1.3.3 ICT PCT patent applications	n/a	n/a
1.3.4 Computer software spending	n/a	n/a
1.3.5 Robot density	n/a	n/a
<b>B. People pillar</b>		
<b>1st sub-pillar: Individuals</b>		
2.1.1 Internet users	133	3.96
2.1.2 Active mobile-broadband subscriptions	134	0.00
2.1.3 Use of virtual social networks	134	0.00
2.1.4 Tertiary enrollment	125	1.79
2.1.5 Adult literacy rate	108	0.00
2.1.6 ICT skills	129	13.08
<b>2nd sub-pillar: Businesses</b>		
2.2.1 Firms with website	124	0.00
2.2.2 Ease of doing business	131	11.85
2.2.3 Professionals	n/a	n/a
2.2.4 Technicians and associate professionals	n/a	n/a
2.2.5 Business use of digital tools	128	0.00
2.2.6 R&D expenditure by businesses	n/a	n/a
<b>3rd sub-pillar: Governments</b>		
2.3.1 Government online services	130	17.58
2.3.2 Publication and use of open data	n/a	n/a
2.3.3 Government promotion of investment in emerging technologies	118	9.22
2.3.4 R&D expenditure by governments and higher education	64	26.21

INDICATOR	RANK/134	SCORE
<b>C. Governance pillar</b>		
<b>1st sub-pillar: Trust</b>		
3.1.1 Secure Internet servers	134	0.00
3.1.2 Cybersecurity	125	9.75
3.1.3 Online access to financial account	n/a	n/a
3.1.4 Internet shopping	117	2.10
<b>2nd sub-pillar: Regulation</b>		
3.2.1 Regulatory quality	128	26.92
3.2.2 ICT regulatory environment	122	54.82
3.2.3 Legal framework's adaptability to emerging technologies	126	5.30
3.2.4 E-commerce legislation	127	25.00
3.2.5 Privacy protection by law content	n/a	n/a
<b>3rd sub-pillar: Inclusion</b>		
3.3.1 E-Participation	128	23.46
3.3.2 Socioeconomic gap in use of digital payments	104	41.85
3.3.3 Availability of local online content	133	0.00
3.3.4 Gender gap in internet use	n/a	n/a
3.3.5 Rural gap in use of digital payments	70	64.45
<b>D. Impact pillar</b>		
<b>1st sub-pillar: Economy</b>		
4.1.1 Medium and high-tech industry	n/a	n/a
4.1.2 High-tech exports	n/a	n/a
4.1.3 PCT patent applications	n/a	n/a
4.1.4 Labour productivity per employee	115	1.52
4.1.5 Prevalence of gig economy	120	11.52
<b>2nd sub-pillar: Quality of Life</b>		
4.2.1 Happiness	119	30.61
4.2.2 Freedom to make life choices	130	27.63
4.2.3 Income inequality	95	50.77
4.2.4 Healthy life expectancy at birth	132	2.19
<b>3rd sub-pillar: SDG Contribution</b>		
4.3.1 SDG 3: Good Health and Well-Being	132	0.00
4.3.2 SDG 4: Quality Education	n/a	n/a
4.3.3 SDG 5: Gender Equality	132	9.30
4.3.4 SDG 7: Affordable and Clean Energy	25	88.51
4.3.5 SDG 11: Sustainable Cities and Communities	125	20.74

\* Data on indicator 1.2.3 is confidential, but has been included in the computation. Please see Appendix I: Technical Notes for further details.



# Chile

	Rank (out of 134)	Score
<b>Network Readiness Index</b>	<b>50</b>	<b>54.06</b>
<b>A. Technology pillar</b>	<b>50</b>	<b>45.92</b>
1st sub-pillar: Access	43	76.39
2nd sub-pillar: Content	51	35.63
3rd sub-pillar: Future Technologies	81	25.74
<b>B. People pillar</b>	<b>38</b>	<b>56.15</b>
1st sub-pillar: Individuals	24	68.47
2nd sub-pillar: Businesses	44	53.23
3rd sub-pillar: Governments	54	46.75
<b>C. Governance pillar</b>	<b>46</b>	<b>64.60</b>
1st sub-pillar: Trust	52	48.27
2nd sub-pillar: Regulation	41	76.51
3rd sub-pillar: Inclusion	50	69.03
<b>D. Impact pillar</b>	<b>77</b>	<b>49.57</b>
1st sub-pillar: Economy	72	23.07
2nd sub-pillar: Quality of Life	90	59.60
3rd sub-pillar: SDG Contribution	69	66.03



## The Network Readiness Index in detail

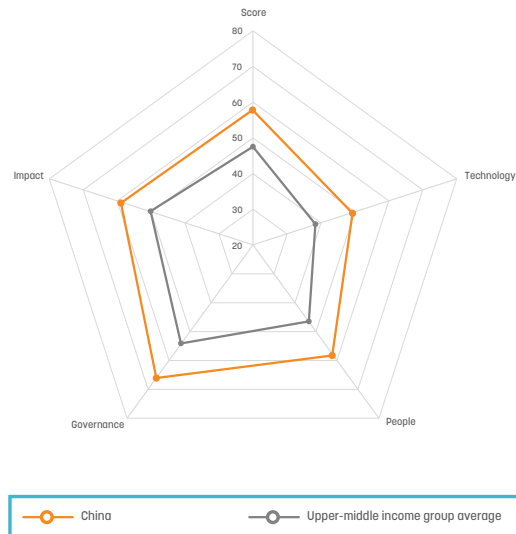
INDICATOR	RANK/134	SCORE
<b>A. Technology pillar</b>		
<b>1st sub-pillar: Access</b>		
1.1.1 Mobile tariffs	65	63.29
1.1.2 Handset prices	25	65.32
1.1.3 Households with internet access	26	87.50
1.1.4 4G mobile network coverage	72	88.00
1.1.5 Fixed-broadband subscriptions	47	80.46
1.1.6 International Internet bandwidth	27	73.76
1.1.7 Internet access in schools	n/a	n/a
<b>2nd sub-pillar: Content</b>		
1.2.1 GitHub commits	55	7.29
1.2.2 Wikipedia edits	50	59.41
1.2.3 Internet domain registrations*	-	-
1.2.4 Mobile apps development	60	66.59
<b>3rd sub-pillar: Future Technologies</b>		
1.3.1 Adoption of emerging technologies	36	61.55
1.3.2 Investment in emerging technology	69	38.42
1.3.3 ICT PCT patent applications	60	3.00
1.3.4 Computer software spending	44	25.04
1.3.5 Robot density	57	0.70
<b>B. People pillar</b>		
<b>1st sub-pillar: Individuals</b>		
2.1.1 Internet users	31	82.14
2.1.2 Active mobile-broadband subscriptions	41	35.61
2.1.3 Use of virtual social networks	10	79.38
2.1.4 Tertiary enrollment	6	64.55
2.1.5 Adult literacy rate	39	95.40
2.1.6 ICT skills	61	53.72
<b>2nd sub-pillar: Businesses</b>		
2.2.1 Firms with website	20	80.34
2.2.2 Ease of doing business	57	74.91
2.2.3 Professionals	50	31.43
2.2.4 Technicians and associate professionals	39	50.23
2.2.5 Business use of digital tools	30	78.94
2.2.6 R&D expenditure by businesses	56	3.55
<b>3rd sub-pillar: Governments</b>		
2.3.1 Government online services	24	84.84
2.3.2 Publication and use of open data	27	47.41
2.3.3 Government promotion of investment in emerging technologies	63	38.19
2.3.4 R&D expenditure by governments and higher education	79	16.56

INDICATOR	RANK/134	SCORE
<b>C. Governance pillar</b>		
<b>1st sub-pillar: Trust</b>		
3.1.1 Secure Internet servers	38	74.26
3.1.2 Cybersecurity	83	50.05
3.1.3 Online access to financial account	48	39.41
3.1.4 Internet shopping	46	29.38
<b>2nd sub-pillar: Regulation</b>		
3.2.1 Regulatory quality	20	81.00
3.2.2 ICT regulatory environment	84	78.77
3.2.3 Legal framework's adaptability to emerging technologies	45	49.56
3.2.4 E-commerce legislation	1	100.00
3.2.5 Privacy protection by law content	38	73.21
<b>3rd sub-pillar: Inclusion</b>		
3.3.1 E-Participation	29	85.18
3.3.2 Socioeconomic gap in use of digital payments	51	75.11
3.3.3 Availability of local online content	54	66.30
3.3.4 Gender gap in internet use	51	59.87
3.3.5 Rural gap in use of digital payments	82	58.69
<b>D. Impact pillar</b>		
<b>1st sub-pillar: Economy</b>		
4.1.1 Medium and high-tech industry	84	22.58
4.1.2 High-tech exports	67	13.15
4.1.3 PCT patent applications	41	2.54
4.1.4 Labour productivity per employee	52	34.61
4.1.5 Prevalence of gig economy	64	42.48
<b>2nd sub-pillar: Quality of Life</b>		
4.2.1 Happiness	60	63.87
4.2.2 Freedom to make life choices	119	48.34
4.2.3 Income inequality	100	47.94
4.2.4 Healthy life expectancy at birth	30	78.27
<b>3rd sub-pillar: SDG Contribution</b>		
4.3.1 SDG 3: Good Health and Well-Being	69	68.85
4.3.2 SDG 4: Quality Education	58	34.66
4.3.3 SDG 5: Gender Equality	80	72.52
4.3.4 SDG 7: Affordable and Clean Energy	50	82.73
4.3.5 SDG 11: Sustainable Cities and Communities	54	71.40

\* Data on indicator 1.2.3 is confidential, but has been included in the computation. Please see Appendix I: Technical Notes for further details.

# China

	Rank (out of 134)	Score
<b>Network Readiness Index</b>	<b>40</b>	<b>58.44</b>
<b>A. Technology pillar</b>	<b>44</b>	<b>49.80</b>
1st sub-pillar: Access	42	77.74
2nd sub-pillar: Content	83	23.79
3rd sub-pillar: Future Technologies	24	47.88
<b>B. People pillar</b>	<b>35</b>	<b>58.47</b>
1st sub-pillar: Individuals	47	60.09
2nd sub-pillar: Businesses	25	64.21
3rd sub-pillar: Governments	43	51.10
<b>C. Governance pillar</b>	<b>43</b>	<b>66.33</b>
1st sub-pillar: Trust	36	64.27
2nd sub-pillar: Regulation	75	64.15
3rd sub-pillar: Inclusion	45	70.55
<b>D. Impact pillar</b>	<b>41</b>	<b>59.17</b>
1st sub-pillar: Economy	39	35.12
2nd sub-pillar: Quality of Life	52	69.96
3rd sub-pillar: SDG Contribution	44	72.43



## The Network Readiness Index in detail

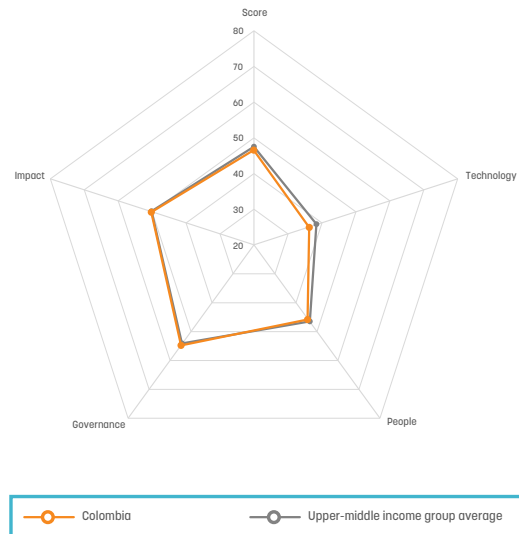
INDICATOR	RANK/134	SCORE
<b>A. Technology pillar</b>		
<b>1st sub-pillar: Access</b>		
1.1.1 Mobile tariffs	26	79.82
1.1.2 Handset prices	63	46.73
1.1.3 Households with internet access	77	59.46
1.1.4 4G mobile network coverage	21	99.40
1.1.5 Fixed-broadband subscriptions	7	98.47
1.1.6 International Internet bandwidth	83	64.08
1.1.7 Internet access in schools	29	96.25
<b>2nd sub-pillar: Content</b>		
1.2.1 GitHub commits	67	3.39
1.2.2 Wikipedia edits	n/a	n/a
1.2.3 Internet domain registrations*	-	-
1.2.4 Mobile apps development	69	62.76
<b>3rd sub-pillar: Future Technologies</b>		
1.3.1 Adoption of emerging technologies	n/a	n/a
1.3.2 Investment in emerging technology	33	59.71
1.3.3 ICT PCT patent applications	20	58.38
1.3.4 Computer software spending	23	33.77
1.3.5 Robot density	21	39.65
<b>B. People pillar</b>		
<b>1st sub-pillar: Individuals</b>		
2.1.1 Internet users	89	53.24
2.1.2 Active mobile-broadband subscriptions	35	37.16
2.1.3 Use of virtual social networks	20	72.16
2.1.4 Tertiary enrollment	59	36.66
2.1.5 Adult literacy rate	38	95.97
2.1.6 ICT skills	43	65.37
<b>2nd sub-pillar: Businesses</b>		
2.2.1 Firms with website	46	65.71
2.2.2 Ease of doing business	30	84.37
2.2.3 Professionals	n/a	n/a
2.2.4 Technicians and associate professionals	n/a	n/a
2.2.5 Business use of digital tools	n/a	n/a
2.2.6 R&D expenditure by businesses	12	42.53
<b>3rd sub-pillar: Governments</b>		
2.3.1 Government online services	12	90.30
2.3.2 Publication and use of open data	71	19.64
2.3.3 Government promotion of investment in emerging technologies	n/a	n/a
2.3.4 R&D expenditure by governments and higher education	42	43.37

INDICATOR	RANK/134	SCORE
<b>C. Governance pillar</b>		
<b>1st sub-pillar: Trust</b>		
3.1.1 Secure Internet servers	66	52.67
3.1.2 Cybersecurity	29	88.84
3.1.3 Online access to financial account	26	57.53
3.1.4 Internet shopping	28	58.06
<b>2nd sub-pillar: Regulation</b>		
3.2.1 Regulatory quality	81	48.44
3.2.2 ICT regulatory environment	126	44.02
3.2.3 Legal framework's adaptability to emerging technologies	n/a	n/a
3.2.4 E-commerce legislation	1	100.00
3.2.5 Privacy protection by law content	n/a	n/a
<b>3rd sub-pillar: Inclusion</b>		
3.3.1 E-Participation	9	96.30
3.3.2 Socioeconomic gap in use of digital payments	80	58.25
3.3.3 Availability of local online content	60	63.41
3.3.4 Gender gap in internet use	n/a	n/a
3.3.5 Rural gap in use of digital payments	71	64.25
<b>D. Impact pillar</b>		
<b>1st sub-pillar: Economy</b>		
4.1.1 Medium and high-tech industry	26	52.90
4.1.2 High-tech exports	9	59.57
4.1.3 PCT patent applications	29	9.90
4.1.4 Labour productivity per employee	82	18.11
4.1.5 Prevalence of gig economy	n/a	n/a
<b>2nd sub-pillar: Quality of Life</b>		
4.2.1 Happiness	87	48.18
4.2.2 Freedom to make life choices	11	93.89
4.2.3 Income inequality	69	63.14
4.2.4 Healthy life expectancy at birth	35	74.65
<b>3rd sub-pillar: SDG Contribution</b>		
4.3.1 SDG 3: Good Health and Well-Being	25	83.61
4.3.2 SDG 4: Quality Education	1	100.00
4.3.3 SDG 5: Gender Equality	81	72.13
4.3.4 SDG 7: Affordable and Clean Energy	103	65.90
4.3.5 SDG 11: Sustainable Cities and Communities	100	40.53

\* Data on indicator 1.2.3 is confidential, but has been included in the computation. Please see Appendix I: Technical Notes for further details.

# Colombia

	Rank (out of 134)	Score
<b>Network Readiness Index</b>	<b>72</b>	<b>46.81</b>
<b>A. Technology pillar</b>	<b>77</b>	<b>36.44</b>
1st sub-pillar: Access	75	59.74
2nd sub-pillar: Content	63	28.89
3rd sub-pillar: Future Technologies	94	20.68
<b>B. People pillar</b>	<b>72</b>	<b>45.78</b>
1st sub-pillar: Individuals	72	53.99
2nd sub-pillar: Businesses	73	40.59
3rd sub-pillar: Governments	69	42.77
<b>C. Governance pillar</b>	<b>70</b>	<b>54.76</b>
1st sub-pillar: Trust	73	35.36
2nd sub-pillar: Regulation	65	66.69
3rd sub-pillar: Inclusion	74	62.25
<b>D. Impact pillar</b>	<b>71</b>	<b>50.27</b>
1st sub-pillar: Economy	83	20.25
2nd sub-pillar: Quality of Life	79	62.37
3rd sub-pillar: SDG Contribution	52	68.20



## The Network Readiness Index in detail

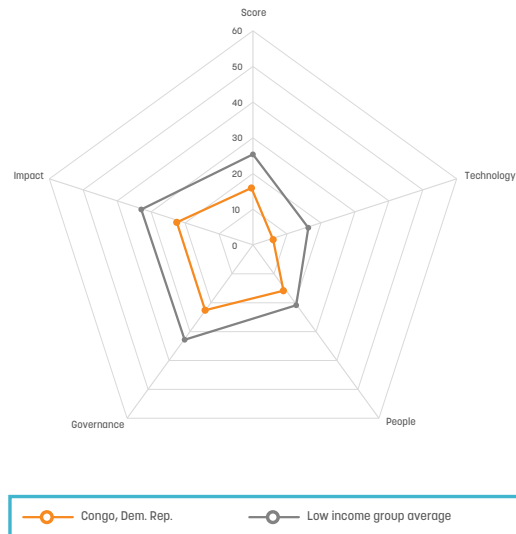
INDICATOR	RANK/134	SCORE
<b>A. Technology pillar</b>		
<b>1st sub-pillar: Access</b>		
1.1.1 Mobile tariffs	91	49.55
1.1.2 Handset prices	56	49.24
1.1.3 Households with internet access	82	49.82
1.1.4 4G mobile network coverage	38	98.00
1.1.5 Fixed-broadband subscriptions	69	53.44
1.1.6 International Internet bandwidth	17	75.08
1.1.7 Internet access in schools	45	43.05
<b>2nd sub-pillar: Content</b>		
1.2.1 GitHub commits	59	4.40
1.2.2 Wikipedia edits	68	43.36
1.2.3 Internet domain registrations*	-	-
1.2.4 Mobile apps development	86	54.02
<b>3rd sub-pillar: Future Technologies</b>		
1.3.1 Adoption of emerging technologies	67	46.99
1.3.2 Investment in emerging technology	67	38.85
1.3.3 ICT PCT patent applications	59	3.02
1.3.4 Computer software spending	75	14.34
1.3.5 Robot density	62	0.19
<b>B. People pillar</b>		
<b>1st sub-pillar: Individuals</b>		
2.1.1 Internet users	78	61.45
2.1.2 Active mobile-broadband subscriptions	98	19.65
2.1.3 Use of virtual social networks	27	69.07
2.1.4 Tertiary enrollment	51	40.14
2.1.5 Adult literacy rate	48	93.71
2.1.6 ICT skills	89	39.91
<b>2nd sub-pillar: Businesses</b>		
2.2.1 Firms with website	42	67.70
2.2.2 Ease of doing business	63	70.45
2.2.3 Professionals	118	4.49
2.2.4 Technicians and associate professionals	56	37.56
2.2.5 Business use of digital tools	64	60.64
2.2.6 R&D expenditure by businesses	63	2.71
<b>3rd sub-pillar: Governments</b>		
2.3.1 Government online services	48	75.76
2.3.2 Publication and use of open data	24	51.65
2.3.3 Government promotion of investment in emerging technologies	64	38.11
2.3.4 R&D expenditure by governments and higher education	100	5.56

INDICATOR	RANK/134	SCORE
<b>C. Governance pillar</b>		
<b>1st sub-pillar: Trust</b>		
3.1.1 Secure Internet servers	64	53.15
3.1.2 Cybersecurity	75	60.35
3.1.3 Online access to financial account	86	17.15
3.1.4 Internet shopping	73	10.78
<b>2nd sub-pillar: Regulation</b>		
3.2.1 Regulatory quality	54	58.63
3.2.2 ICT regulatory environment	84	78.77
3.2.3 Legal framework's adaptability to emerging technologies	69	39.33
3.2.4 E-commerce legislation	1	100.00
3.2.5 Privacy protection by law content	52	56.70
<b>3rd sub-pillar: Inclusion</b>		
3.3.1 E-Participation	27	86.42
3.3.2 Socioeconomic gap in use of digital payments	84	55.86
3.3.3 Availability of local online content	78	53.85
3.3.4 Gender gap in internet use	8	69.45
3.3.5 Rural gap in use of digital payments	108	45.66
<b>D. Impact pillar</b>		
<b>1st sub-pillar: Economy</b>		
4.1.1 Medium and high-tech industry	66	28.92
4.1.2 High-tech exports	63	13.77
4.1.3 PCT patent applications	56	0.79
4.1.4 Labour productivity per employee	76	20.73
4.1.5 Prevalence of gig economy	80	37.01
<b>2nd sub-pillar: Quality of Life</b>		
4.2.1 Happiness	35	71.89
4.2.2 Freedom to make life choices	66	75.91
4.2.3 Income inequality	112	32.47
4.2.4 Healthy life expectancy at birth	52	69.19
<b>3rd sub-pillar: SDG Contribution</b>		
4.3.1 SDG 3: Good Health and Well-Being	39	78.69
4.3.2 SDG 4: Quality Education	69	24.72
4.3.3 SDG 5: Gender Equality	36	80.75
4.3.4 SDG 7: Affordable and Clean Energy	10	92.05
4.3.5 SDG 11: Sustainable Cities and Communities	67	64.80

\* Data on indicator 1.2.3 is confidential, but has been included in the computation. Please see Appendix I: Technical Notes for further details.

# Congo, Dem. Rep.

	Rank (out of 134)	Score
<b>Network Readiness Index</b>	<b>133</b>	<b>16.60</b>
<b>A. Technology pillar</b>	<b>134</b>	<b>6.45</b>
1st sub-pillar: Access	134	3.87
2nd sub-pillar: Content	134	0.01
3rd sub-pillar: Future Technologies	121	15.48
<b>B. People pillar</b>	<b>132</b>	<b>15.44</b>
1st sub-pillar: Individuals	125	16.44
2nd sub-pillar: Businesses	133	13.37
3rd sub-pillar: Governments	128	16.51
<b>C. Governance pillar</b>	<b>132</b>	<b>22.29</b>
1st sub-pillar: Trust	131	11.36
2nd sub-pillar: Regulation	132	26.74
3rd sub-pillar: Inclusion	129	28.78
<b>D. Impact pillar</b>	<b>133</b>	<b>22.23</b>
1st sub-pillar: Economy	130	7.49
2nd sub-pillar: Quality of Life	121	40.43
3rd sub-pillar: SDG Contribution	134	18.77



## The Network Readiness Index in detail

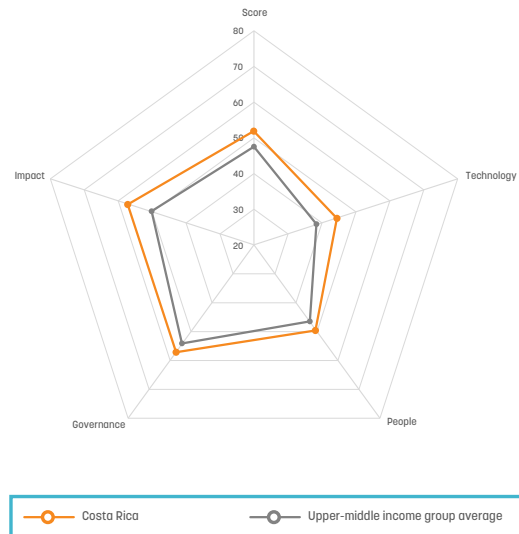
INDICATOR	RANK/134	SCORE
<b>A. Technology pillar</b>		
<b>1st sub-pillar: Access</b>		
1.1.1 Mobile tariffs	133	0.00
1.1.2 Handset prices	116	20.27
1.1.3 Households with internet access	133	2.94
1.1.4 4G mobile network coverage	130	0.00
1.1.5 Fixed-broadband subscriptions	n/a	n/a
1.1.6 International Internet bandwidth	134	0.00
1.1.7 Internet access in schools	71	0.00
<b>2nd sub-pillar: Content</b>		
1.2.1 GitHub commits	134	0.00
1.2.2 Wikipedia edits	n/a	n/a
1.2.3 Internet domain registrations*	-	-
1.2.4 Mobile apps development	133	0.03
<b>3rd sub-pillar: Future Technologies</b>		
1.3.1 Adoption of emerging technologies	124	13.47
1.3.2 Investment in emerging technology	122	17.50
1.3.3 ICT PCT patent applications	n/a	n/a
1.3.4 Computer software spending	n/a	n/a
1.3.5 Robot density	n/a	n/a
<b>B. People pillar</b>		
<b>1st sub-pillar: Individuals</b>		
2.1.1 Internet users	132	6.14
2.1.2 Active mobile-broadband subscriptions	128	4.85
2.1.3 Use of virtual social networks	132	1.55
2.1.4 Tertiary enrollment	117	4.26
2.1.5 Adult literacy rate	84	70.47
2.1.6 ICT skills	131	11.36
<b>2nd sub-pillar: Businesses</b>		
2.2.1 Firms with website	122	8.71
2.2.2 Ease of doing business	n/a	n/a
2.2.3 Professionals	117	5.01
2.2.4 Technicians and associate professionals	85	23.37
2.2.5 Business use of digital tools	125	16.41
2.2.6 R&D expenditure by businesses	n/a	n/a
<b>3rd sub-pillar: Governments</b>		
2.3.1 Government online services	132	10.30
2.3.2 Publication and use of open data	87	12.38
2.3.3 Government promotion of investment in emerging technologies	121	8.01
2.3.4 R&D expenditure by governments and higher education	52	35.36

INDICATOR	RANK/134	SCORE
<b>C. Governance pillar</b>		
<b>1st sub-pillar: Trust</b>		
3.1.1 Secure Internet servers	132	9.62
3.1.2 Cybersecurity	133	0.00
3.1.3 Online access to financial account	57	33.51
3.1.4 Internet shopping	115	2.31
<b>2nd sub-pillar: Regulation</b>		
3.2.1 Regulatory quality	131	18.95
3.2.2 ICT regulatory environment	83	79.15
3.2.3 Legal framework's adaptability to emerging technologies	123	8.86
3.2.4 E-commerce legislation	131	0.00
3.2.5 Privacy protection by law content	n/a	n/a
<b>3rd sub-pillar: Inclusion</b>		
3.3.1 E-Participation	131	17.29
3.3.2 Socioeconomic gap in use of digital payments	88	54.09
3.3.3 Availability of local online content	131	10.40
3.3.4 Gender gap in internet use	n/a	n/a
3.3.5 Rural gap in use of digital payments	117	33.34
<b>D. Impact pillar</b>		
<b>1st sub-pillar: Economy</b>		
4.1.1 Medium and high-tech industry	n/a	n/a
4.1.2 High-tech exports	n/a	n/a
4.1.3 PCT patent applications	n/a	n/a
4.1.4 Labour productivity per employee	118	0.88
4.1.5 Prevalence of gig economy	118	14.10
<b>2nd sub-pillar: Quality of Life</b>		
4.2.1 Happiness	118	31.80
4.2.2 Freedom to make life choices	111	56.00
4.2.3 Income inequality	88	53.87
4.2.4 Healthy life expectancy at birth	124	20.05
<b>3rd sub-pillar: SDG Contribution</b>		
4.3.1 SDG 3: Good Health and Well-Being	125	21.31
4.3.2 SDG 4: Quality Education	n/a	n/a
4.3.3 SDG 5: Gender Equality	123	32.77
4.3.4 SDG 7: Affordable and Clean Energy	131	0.00
4.3.5 SDG 11: Sustainable Cities and Communities	123	20.98

\* Data on indicator 1.2.3 is confidential, but has been included in the computation. Please see Appendix I: Technical Notes for further details.

# Costa Rica

	Rank (out of 134)	Score
<b>Network Readiness Index</b>	<b>54</b>	<b>52.15</b>
<b>A. Technology pillar</b>	<b>54</b>	<b>44.64</b>
1st sub-pillar: Access	67	63.69
2nd sub-pillar: Content	50	35.98
3rd sub-pillar: Future Technologies	43	34.25
<b>B. People pillar</b>	<b>60</b>	<b>49.59</b>
1st sub-pillar: Individuals	30	65.70
2nd sub-pillar: Businesses	59	46.34
3rd sub-pillar: Governments	85	36.75
<b>C. Governance pillar</b>	<b>62</b>	<b>57.13</b>
1st sub-pillar: Trust	78	33.24
2nd sub-pillar: Regulation	42	74.88
3rd sub-pillar: Inclusion	67	63.28
<b>D. Impact pillar</b>	<b>46</b>	<b>57.24</b>
1st sub-pillar: Economy	61	28.01
2nd sub-pillar: Quality of Life	37	74.78
3rd sub-pillar: SDG Contribution	49	68.94



## The Network Readiness Index in detail

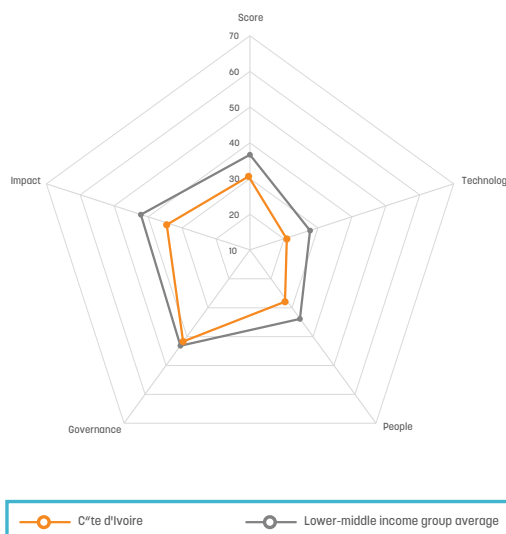
INDICATOR	RANK/134	SCORE
<b>A. Technology pillar</b>		
<b>1st sub-pillar: Access</b>		
1.1.1 Mobile tariffs	35	74.54
1.1.2 Handset prices	51	52.49
1.1.3 Households with internet access	57	73.01
1.1.4 4G mobile network coverage	69	89.90
1.1.5 Fixed-broadband subscriptions	88	23.71
1.1.6 International Internet bandwidth	32	72.96
1.1.7 Internet access in schools	39	59.24
<b>2nd sub-pillar: Content</b>		
1.2.1 GitHub commits	47	10.05
1.2.2 Wikipedia edits	52	57.36
1.2.3 Internet domain registrations*	-	-
1.2.4 Mobile apps development	50	69.46
<b>3rd sub-pillar: Future Technologies</b>		
1.3.1 Adoption of emerging technologies	43	57.76
1.3.2 Investment in emerging technology	48	48.38
1.3.3 ICT PCT patent applications	52	6.78
1.3.4 Computer software spending	47	24.10
1.3.5 Robot density	n/a	n/a
<b>B. People pillar</b>		
<b>1st sub-pillar: Individuals</b>		
2.1.1 Internet users	55	73.64
2.1.2 Active mobile-broadband subscriptions	32	37.89
2.1.3 Use of virtual social networks	17	73.20
2.1.4 Tertiary enrollment	52	40.05
2.1.5 Adult literacy rate	32	97.28
2.1.6 ICT skills	32	72.12
<b>2nd sub-pillar: Businesses</b>		
2.2.1 Firms with website	62	51.66
2.2.2 Ease of doing business	69	69.00
2.2.3 Professionals	64	25.53
2.2.4 Technicians and associate professionals	34	55.11
2.2.5 Business use of digital tools	37	73.40
2.2.6 R&D expenditure by businesses	59	3.33
<b>3rd sub-pillar: Governments</b>		
2.3.1 Government online services	71	67.28
2.3.2 Publication and use of open data	70	19.87
2.3.3 Government promotion of investment in emerging technologies	73	34.44
2.3.4 R&D expenditure by governments and higher education	65	25.40

INDICATOR	RANK/134	SCORE
<b>C. Governance pillar</b>		
<b>1st sub-pillar: Trust</b>		
3.1.1 Secure Internet servers	62	57.28
3.1.2 Cybersecurity	111	23.08
3.1.3 Online access to financial account	65	29.47
3.1.4 Internet shopping	55	23.13
<b>2nd sub-pillar: Regulation</b>		
3.2.1 Regulatory quality	47	61.97
3.2.2 ICT regulatory environment	61	85.72
3.2.3 Legal framework's adaptability to emerging technologies	60	43.34
3.2.4 E-commerce legislation	1	100.00
3.2.5 Privacy protection by law content	20	83.34
<b>3rd sub-pillar: Inclusion</b>		
3.3.1 E-Participation	76	64.20
3.3.2 Socioeconomic gap in use of digital payments	59	70.91
3.3.3 Availability of local online content	67	60.19
3.3.4 Gender gap in internet use	10	68.61
3.3.5 Rural gap in use of digital payments	98	52.52
<b>D. Impact pillar</b>		
<b>1st sub-pillar: Economy</b>		
4.1.1 Medium and high-tech industry	77	26.40
4.1.2 High-tech exports	24	35.00
4.1.3 PCT patent applications	48	1.08
4.1.4 Labour productivity per employee	56	29.51
4.1.5 Prevalence of gig economy	51	48.05
<b>2nd sub-pillar: Quality of Life</b>		
4.2.1 Happiness	17	84.61
4.2.2 Freedom to make life choices	12	93.80
4.2.3 Income inequality	109	38.66
4.2.4 Healthy life expectancy at birth	28	82.05
<b>3rd sub-pillar: SDG Contribution</b>		
4.3.1 SDG 3: Good Health and Well-Being	34	80.33
4.3.2 SDG 4: Quality Education	63	29.00
4.3.3 SDG 5: Gender Equality	51	77.66
4.3.4 SDG 7: Affordable and Clean Energy	16	90.10
4.3.5 SDG 11: Sustainable Cities and Communities	61	67.61

\* Data on indicator 1.2.3 is confidential, but has been included in the computation. Please see Appendix I: Technical Notes for further details.

# Côte d'Ivoire

	Rank (out of 134)	Score
<b>Network Readiness Index</b>	<b>115</b>	<b>31.23</b>
<b>A. Technology pillar</b>	<b>115</b>	<b>21.41</b>
1st sub-pillar: Access	108	35.24
2nd sub-pillar: Content	127	6.63
3rd sub-pillar: Future Technologies	89	22.37
<b>B. People pillar</b>	<b>117</b>	<b>27.60</b>
1st sub-pillar: Individuals	112	27.39
2nd sub-pillar: Businesses	107	30.06
3rd sub-pillar: Governments	110	25.36
<b>C. Governance pillar</b>	<b>104</b>	<b>41.55</b>
1st sub-pillar: Trust	99	26.72
2nd sub-pillar: Regulation	86	59.25
3rd sub-pillar: Inclusion	118	38.70
<b>D. Impact pillar</b>	<b>119</b>	<b>34.35</b>
1st sub-pillar: Economy	91	18.77
2nd sub-pillar: Quality of Life	116	43.88
3rd sub-pillar: SDG Contribution	121	40.39



## The Network Readiness Index in detail

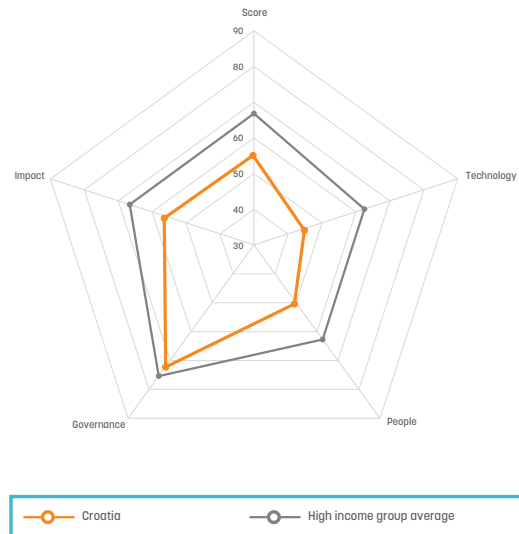
INDICATOR	RANK/134	SCORE
<b>A. Technology pillar</b>		
<b>1st sub-pillar: Access</b>		
1.1.1 Mobile tariffs	97	48.05
1.1.2 Handset prices	97	32.38
1.1.3 Households with internet access	116	15.62
1.1.4 4G mobile network coverage	101	55.00
1.1.5 Fixed-broadband subscriptions	106	6.15
1.1.6 International Internet bandwidth	117	54.23
1.1.7 Internet access in schools	n/a	n/a
<b>2nd sub-pillar: Content</b>		
1.2.1 GitHub commits	119	0.16
1.2.2 Wikipedia edits	115	8.12
1.2.3 Internet domain registrations*	-	-
1.2.4 Mobile apps development	129	17.97
<b>3rd sub-pillar: Future Technologies</b>		
1.3.1 Adoption of emerging technologies	88	37.49
1.3.2 Investment in emerging technology	99	28.47
1.3.3 ICT PCT patent applications	n/a	n/a
1.3.4 Computer software spending	119	1.15
1.3.5 Robot density	n/a	n/a
<b>B. People pillar</b>		
<b>1st sub-pillar: Individuals</b>		
2.1.1 Internet users	95	45.53
2.1.2 Active mobile-broadband subscriptions	85	23.42
2.1.3 Use of virtual social networks	110	17.53
2.1.4 Tertiary enrollment	110	6.27
2.1.5 Adult literacy rate	103	32.00
2.1.6 ICT skills	90	39.57
<b>2nd sub-pillar: Businesses</b>		
2.2.1 Firms with website	120	9.98
2.2.2 Ease of doing business	96	53.87
2.2.3 Professionals	110	10.78
2.2.4 Technicians and associate professionals	97	17.96
2.2.5 Business use of digital tools	70	57.73
2.2.6 R&D expenditure by businesses	n/a	n/a
<b>3rd sub-pillar: Governments</b>		
2.3.1 Government online services	111	43.63
2.3.2 Publication and use of open data	90	11.48
2.3.3 Government promotion of investment in emerging technologies	57	39.78
2.3.4 R&D expenditure by governments and higher education	98	6.55

INDICATOR	RANK/134	SCORE
<b>C. Governance pillar</b>		
<b>1st sub-pillar: Trust</b>		
3.1.1 Secure Internet servers	113	30.35
3.1.2 Cybersecurity	86	48.54
3.1.3 Online access to financial account	74	23.87
3.1.4 Internet shopping	99	4.12
<b>2nd sub-pillar: Regulation</b>		
3.2.1 Regulatory quality	84	47.21
3.2.2 ICT regulatory environment	118	58.88
3.2.3 Legal framework's adaptability to emerging technologies	83	30.90
3.2.4 E-commerce legislation	1	100.00
3.2.5 Privacy protection by law content	n/a	n/a
<b>3rd sub-pillar: Inclusion</b>		
3.3.1 E-Participation	113	38.28
3.3.2 Socioeconomic gap in use of digital payments	71	62.90
3.3.3 Availability of local online content	110	33.20
3.3.4 Gender gap in internet use	86	4.57
3.3.5 Rural gap in use of digital payments	90	54.56
<b>D. Impact pillar</b>		
<b>1st sub-pillar: Economy</b>		
4.1.1 Medium and high-tech industry	90	18.92
4.1.2 High-tech exports	70	12.90
4.1.3 PCT patent applications	n/a	n/a
4.1.4 Labour productivity per employee	120	0.32
4.1.5 Prevalence of gig economy	63	42.96
<b>2nd sub-pillar: Quality of Life</b>		
4.2.1 Happiness	81	53.05
4.2.2 Freedom to make life choices	96	61.34
4.2.3 Income inequality	86	55.41
4.2.4 Healthy life expectancy at birth	131	5.71
<b>3rd sub-pillar: SDG Contribution</b>		
4.3.1 SDG 3: Good Health and Well-Being	112	31.15
4.3.2 SDG 4: Quality Education	n/a	n/a
4.3.3 SDG 5: Gender Equality	131	16.65
4.3.4 SDG 7: Affordable and Clean Energy	105	64.38
4.3.5 SDG 11: Sustainable Cities and Communities	84	49.39

\* Data on indicator 1.2.3 is confidential, but has been included in the computation. Please see Appendix I: Technical Notes for further details.

# Croatia

	Rank (out of 134)	Score
<b>Network Readiness Index</b>	<b>43</b>	<b>55.94</b>
<b>A. Technology pillar</b>	<b>52</b>	<b>45.34</b>
1st sub-pillar: Access	49	74.74
2nd sub-pillar: Content	38	44.80
3rd sub-pillar: Future Technologies	118	16.47
<b>B. People pillar</b>	<b>58</b>	<b>49.96</b>
1st sub-pillar: Individuals	62	56.53
2nd sub-pillar: Businesses	43	53.43
3rd sub-pillar: Governments	77	39.91
<b>C. Governance pillar</b>	<b>36</b>	<b>72.04</b>
1st sub-pillar: Trust	38	63.01
2nd sub-pillar: Regulation	38	77.22
3rd sub-pillar: Inclusion	33	75.89
<b>D. Impact pillar</b>	<b>50</b>	<b>56.41</b>
1st sub-pillar: Economy	65	25.55
2nd sub-pillar: Quality of Life	53	69.83
3rd sub-pillar: SDG Contribution	38	73.87



## The Network Readiness Index in detail

INDICATOR	RANK/134	SCORE
<b>A. Technology pillar</b>		
<b>1st sub-pillar: Access</b>		
1.1.1 Mobile tariffs	44	70.84
1.1.2 Handset prices	61	46.85
1.1.3 Households with internet access	42	81.47
1.1.4 4G mobile network coverage	35	98.50
1.1.5 Fixed-broadband subscriptions	53	76.31
1.1.6 International Internet bandwidth	20	74.45
1.1.7 Internet access in schools	n/a	n/a
<b>2nd sub-pillar: Content</b>		
1.2.1 GitHub commits	35	21.73
1.2.2 Wikipedia edits	40	68.23
1.2.3 Internet domain registrations*	-	-
1.2.4 Mobile apps development	41	74.70
<b>3rd sub-pillar: Future Technologies</b>		
1.3.1 Adoption of emerging technologies	57	49.87
1.3.2 Investment in emerging technology	107	25.34
1.3.3 ICT PCT patent applications	75	0.60
1.3.4 Computer software spending	99	4.55
1.3.5 Robot density	46	2.01
<b>B. People pillar</b>		
<b>1st sub-pillar: Individuals</b>		
2.1.1 Internet users	58	72.20
2.1.2 Active mobile-broadband subscriptions	60	30.68
2.1.3 Use of virtual social networks	74	50.52
2.1.4 Tertiary enrollment	34	49.38
2.1.5 Adult literacy rate	16	98.91
2.1.6 ICT skills	96	37.51
<b>2nd sub-pillar: Businesses</b>		
2.2.1 Firms with website	29	75.93
2.2.2 Ease of doing business	50	76.75
2.2.3 Professionals	34	43.54
2.2.4 Technicians and associate professionals	25	61.01
2.2.5 Business use of digital tools	83	52.68
2.2.6 R&D expenditure by businesses	40	10.69
<b>3rd sub-pillar: Governments</b>		
2.3.1 Government online services	51	74.54
2.3.2 Publication and use of open data	58	26.75
2.3.3 Government promotion of investment in emerging technologies	106	18.29
2.3.4 R&D expenditure by governments and higher education	46	40.07

INDICATOR	RANK/134	SCORE
<b>C. Governance pillar</b>		
<b>1st sub-pillar: Trust</b>		
3.1.1 Secure Internet servers	25	80.05
3.1.2 Cybersecurity	26	90.14
3.1.3 Online access to financial account	40	43.89
3.1.4 Internet shopping	38	37.96
<b>2nd sub-pillar: Regulation</b>		
3.2.1 Regulatory quality	49	61.27
3.2.2 ICT regulatory environment	11	96.14
3.2.3 Legal framework's adaptability to emerging technologies	79	33.24
3.2.4 E-commerce legislation	1	100.00
3.2.5 Privacy protection by law content	6	95.45
<b>3rd sub-pillar: Inclusion</b>		
3.3.1 E-Participation	23	88.89
3.3.2 Socioeconomic gap in use of digital payments	28	86.57
3.3.3 Availability of local online content	55	65.84
3.3.4 Gender gap in internet use	63	57.70
3.3.5 Rural gap in use of digital payments	6	80.46
<b>D. Impact pillar</b>		
<b>1st sub-pillar: Economy</b>		
4.1.1 Medium and high-tech industry	46	39.18
4.1.2 High-tech exports	55	16.85
4.1.3 PCT patent applications	43	2.34
4.1.4 Labour productivity per employee	42	44.45
4.1.5 Prevalence of gig economy	103	24.91
<b>2nd sub-pillar: Quality of Life</b>		
4.2.1 Happiness	72	57.64
4.2.2 Freedom to make life choices	93	61.95
4.2.3 Income inequality	20	84.02
4.2.4 Healthy life expectancy at birth	33	75.70
<b>3rd sub-pillar: SDG Contribution</b>		
4.3.1 SDG 3: Good Health and Well-Being	67	70.49
4.3.2 SDG 4: Quality Education	39	52.24
4.3.3 SDG 5: Gender Equality	33	81.52
4.3.4 SDG 7: Affordable and Clean Energy	49	82.80
4.3.5 SDG 11: Sustainable Cities and Communities	33	82.28

\* Data on indicator 1.2.3 is confidential, but has been included in the computation. Please see Appendix I: Technical Notes for further details.

# Cyprus

	Rank (out of 134)	Score
<b>Network Readiness Index</b>	<b>36</b>	<b>60.67</b>
<b>A. Technology pillar</b>	<b>37</b>	<b>52.89</b>
1st sub-pillar: Access	47	75.04
2nd sub-pillar: Content	29	54.98
3rd sub-pillar: Future Technologies	61	28.63
<b>B. People pillar</b>	<b>37</b>	<b>57.33</b>
1st sub-pillar: Individuals	13	72.71
2nd sub-pillar: Businesses	45	51.97
3rd sub-pillar: Governments	51	47.30
<b>C. Governance pillar</b>	<b>39</b>	<b>71.16</b>
1st sub-pillar: Trust	44	56.32
2nd sub-pillar: Regulation	31	79.79
3rd sub-pillar: Inclusion	24	77.36
<b>D. Impact pillar</b>	<b>37</b>	<b>61.31</b>
1st sub-pillar: Economy	50	31.85
2nd sub-pillar: Quality of Life	34	75.41
3rd sub-pillar: SDG Contribution	33	76.67



## The Network Readiness Index in detail

INDICATOR	RANK/134	SCORE
<b>A. Technology pillar</b>		
<b>1st sub-pillar: Access</b>		
1.1.1 Mobile tariffs	75	57.37
1.1.2 Handset prices	43	56.98
1.1.3 Households with internet access	31	86.13
1.1.4 4G mobile network coverage	44	97.53
1.1.5 Fixed-broadband subscriptions	58	72.66
1.1.6 International Internet bandwidth	11	79.59
1.1.7 Internet access in schools	n/a	n/a
<b>2nd sub-pillar: Content</b>		
1.2.1 GitHub commits	39	14.04
1.2.2 Wikipedia edits	35	72.39
1.2.3 Internet domain registrations*	-	-
1.2.4 Mobile apps development	12	89.13
<b>3rd sub-pillar: Future Technologies</b>		
1.3.1 Adoption of emerging technologies	72	44.07
1.3.2 Investment in emerging technology	92	31.37
1.3.3 ICT PCT patent applications	34	23.65
1.3.4 Computer software spending	71	15.46
1.3.5 Robot density	n/a	n/a
<b>B. People pillar</b>		
<b>1st sub-pillar: Individuals</b>		
2.1.1 Internet users	29	84.31
2.1.2 Active mobile-broadband subscriptions	21	43.58
2.1.3 Use of virtual social networks	7	83.51
2.1.4 Tertiary enrollment	24	55.32
2.1.5 Adult literacy rate	24	98.33
2.1.6 ICT skills	33	71.23
<b>2nd sub-pillar: Businesses</b>		
2.2.1 Firms with website	36	71.98
2.2.2 Ease of doing business	53	76.27
2.2.3 Professionals	26	46.00
2.2.4 Technicians and associate professionals	37	53.04
2.2.5 Business use of digital tools	66	59.38
2.2.6 R&D expenditure by businesses	52	5.16
<b>3rd sub-pillar: Governments</b>		
2.3.1 Government online services	20	86.67
2.3.2 Publication and use of open data	n/a	n/a
2.3.3 Government promotion of investment in emerging technologies	87	30.46
2.3.4 R&D expenditure by governments and higher education	66	24.78

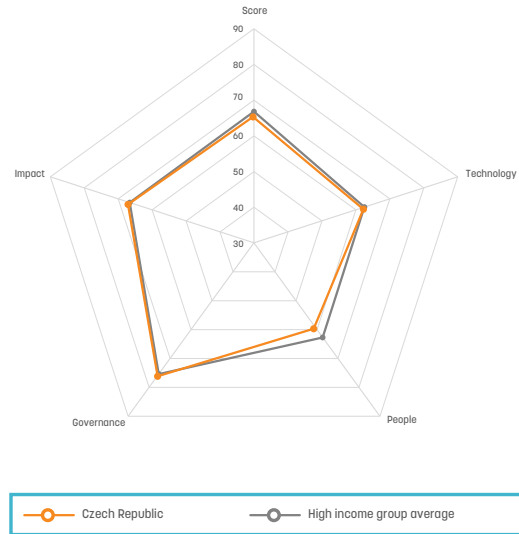
INDICATOR	RANK/134	SCORE
<b>C. Governance pillar</b>		
<b>1st sub-pillar: Trust</b>		
3.1.1 Secure Internet servers	41	71.93
3.1.2 Cybersecurity	57	69.77
3.1.3 Online access to financial account	44	42.11
3.1.4 Internet shopping	36	41.45
<b>2nd sub-pillar: Regulation</b>		
3.2.1 Regulatory quality	32	73.82
3.2.2 ICT regulatory environment	56	86.49
3.2.3 Legal framework's adaptability to emerging technologies	49	48.15
3.2.4 E-commerce legislation	1	100.00
3.2.5 Privacy protection by law content	9	90.50
<b>3rd sub-pillar: Inclusion</b>		
3.3.1 E-Participation	14	95.06
3.3.2 Socioeconomic gap in use of digital payments	37	82.14
3.3.3 Availability of local online content	43	72.24
3.3.4 Gender gap in internet use	18	67.33
3.3.5 Rural gap in use of digital payments	56	70.01
<b>D. Impact pillar</b>		
<b>1st sub-pillar: Economy</b>		
4.1.1 Medium and high-tech industry	62	32.27
4.1.2 High-tech exports	22	37.22
4.1.3 PCT patent applications	39	2.88
4.1.4 Labour productivity per employee	32	51.43
4.1.5 Prevalence of gig economy	86	35.44
<b>2nd sub-pillar: Quality of Life</b>		
4.2.1 Happiness	45	67.69
4.2.2 Freedom to make life choices	92	62.08
4.2.3 Income inequality	23	81.44
4.2.4 Healthy life expectancy at birth	6	90.41
<b>3rd sub-pillar: SDG Contribution</b>		
4.3.1 SDG 3: Good Health and Well-Being	30	81.97
4.3.2 SDG 4: Quality Education	44	47.16
4.3.3 SDG 5: Gender Equality	44	79.67
4.3.4 SDG 7: Affordable and Clean Energy	31	86.71
4.3.5 SDG 11: Sustainable Cities and Communities	25	87.87

\* Data on indicator 1.2.3 is confidential, but has been included in the computation. Please see Appendix I: Technical Notes for further details.



# Czech Republic

	Rank (out of 134)	Score
<b>Network Readiness Index</b>	<b>28</b>	<b>66.33</b>
<b>A. Technology pillar</b>	<b>26</b>	<b>62.90</b>
1st sub-pillar: Access	33	80.34
2nd sub-pillar: Content	20	64.33
3rd sub-pillar: Future Technologies	32	44.04
<b>B. People pillar</b>	<b>32</b>	<b>59.30</b>
1st sub-pillar: Individuals	61	56.54
2nd sub-pillar: Businesses	24	64.94
3rd sub-pillar: Governments	33	56.43
<b>C. Governance pillar</b>	<b>24</b>	<b>75.92</b>
1st sub-pillar: Trust	22	73.25
2nd sub-pillar: Regulation	24	82.07
3rd sub-pillar: Inclusion	41	72.44
<b>D. Impact pillar</b>	<b>26</b>	<b>67.22</b>
1st sub-pillar: Economy	31	42.06
2nd sub-pillar: Quality of Life	18	82.69
3rd sub-pillar: SDG Contribution	32	76.90



## The Network Readiness Index in detail

INDICATOR	RANK/134	SCORE
<b>A. Technology pillar</b>		
<b>1st sub-pillar: Access</b>		
1.1.1 Mobile tariffs	27	79.73
1.1.2 Handset prices	29	64.40
1.1.3 Households with internet access	45	80.43
1.1.4 4G mobile network coverage	12	99.80
1.1.5 Fixed-broadband subscriptions	34	88.76
1.1.6 International Internet bandwidth	60	68.91
1.1.7 Internet access in schools	n/a	n/a
<b>2nd sub-pillar: Content</b>		
1.2.1 GitHub commits	18	49.05
1.2.2 Wikipedia edits	13	85.14
1.2.3 Internet domain registrations*	-	-
1.2.4 Mobile apps development	29	81.91
<b>3rd sub-pillar: Future Technologies</b>		
1.3.1 Adoption of emerging technologies	24	72.11
1.3.2 Investment in emerging technology	36	55.17
1.3.3 ICT PCT patent applications	32	25.85
1.3.4 Computer software spending	36	27.00
1.3.5 Robot density	20	40.05
<b>B. People pillar</b>		
<b>1st sub-pillar: Individuals</b>		
2.1.1 Internet users	37	80.45
2.1.2 Active mobile-broadband subscriptions	45	34.19
2.1.3 Use of virtual social networks	68	52.58
2.1.4 Tertiary enrollment	40	46.59
2.1.5 Adult literacy rate	n/a	n/a
2.1.6 ICT skills	39	68.87
<b>2nd sub-pillar: Businesses</b>		
2.2.1 Firms with website	12	85.69
2.2.2 Ease of doing business	40	81.56
2.2.3 Professionals	41	38.85
2.2.4 Technicians and associate professionals	13	74.12
2.2.5 Business use of digital tools	26	80.65
2.2.6 R&D expenditure by businesses	18	28.76
<b>3rd sub-pillar: Governments</b>		
2.3.1 Government online services	60	71.51
2.3.2 Publication and use of open data	31	44.44
2.3.3 Government promotion of investment in emerging technologies	39	49.33
2.3.4 R&D expenditure by governments and higher education	19	60.45

INDICATOR	RANK/134	SCORE
<b>C. Governance pillar</b>		
<b>1st sub-pillar: Trust</b>		
3.1.1 Secure Internet servers	12	87.27
3.1.2 Cybersecurity	73	60.78
3.1.3 Online access to financial account	12	75.65
3.1.4 Internet shopping	19	69.31
<b>2nd sub-pillar: Regulation</b>		
3.2.1 Regulatory quality	23	79.20
3.2.2 ICT regulatory environment	33	90.35
3.2.3 Legal framework's adaptability to emerging technologies	33	59.08
3.2.4 E-commerce legislation	1	100.00
3.2.5 Privacy protection by law content	23	81.72
<b>3rd sub-pillar: Inclusion</b>		
3.3.1 E-Participation	64	71.61
3.3.2 Socioeconomic gap in use of digital payments	50	76.14
3.3.3 Availability of local online content	18	86.28
3.3.4 Gender gap in internet use	59	58.09
3.3.5 Rural gap in use of digital payments	55	70.07
<b>D. Impact pillar</b>		
<b>1st sub-pillar: Economy</b>		
4.1.1 Medium and high-tech industry	11	66.96
4.1.2 High-tech exports	20	39.23
4.1.3 PCT patent applications	32	5.43
4.1.4 Labour productivity per employee	33	51.02
4.1.5 Prevalence of gig economy	53	47.65
<b>2nd sub-pillar: Quality of Life</b>		
4.2.1 Happiness	16	85.33
4.2.2 Freedom to make life choices	76	70.59
4.2.3 Income inequality	2	98.20
4.2.4 Healthy life expectancy at birth	32	76.66
<b>3rd sub-pillar: SDG Contribution</b>		
4.3.1 SDG 3: Good Health and Well-Being	39	78.69
4.3.2 SDG 4: Quality Education	20	65.48
4.3.3 SDG 5: Gender Equality	45	79.64
4.3.4 SDG 7: Affordable and Clean Energy	84	73.05
4.3.5 SDG 11: Sustainable Cities and Communities	26	87.63

\* Data on indicator 1.2.3 is confidential, but has been included in the computation. Please see Appendix I: Technical Notes for further details.

# Denmark

	Rank (out of 134)	Score
<b>Network Readiness Index</b>	<b>2</b>	<b>82.19</b>
<b>A. Technology pillar</b>	<b>5</b>	<b>79.71</b>
1st sub-pillar: Access	13	86.73
2nd sub-pillar: Content	5	82.48
3rd sub-pillar: Future Technologies	9	69.92
<b>B. People pillar</b>	<b>1</b>	<b>80.81</b>
1st sub-pillar: Individuals	7	73.90
2nd sub-pillar: Businesses	4	79.36
3rd sub-pillar: Governments	1	89.16
<b>C. Governance pillar</b>	<b>2</b>	<b>89.80</b>
1st sub-pillar: Trust	1	97.17
2nd sub-pillar: Regulation	8	88.61
3rd sub-pillar: Inclusion	13	83.61
<b>D. Impact pillar</b>	<b>5</b>	<b>78.45</b>
1st sub-pillar: Economy	12	58.05
2nd sub-pillar: Quality of Life	4	92.99
3rd sub-pillar: SDG Contribution	6	84.32



## The Network Readiness Index in detail

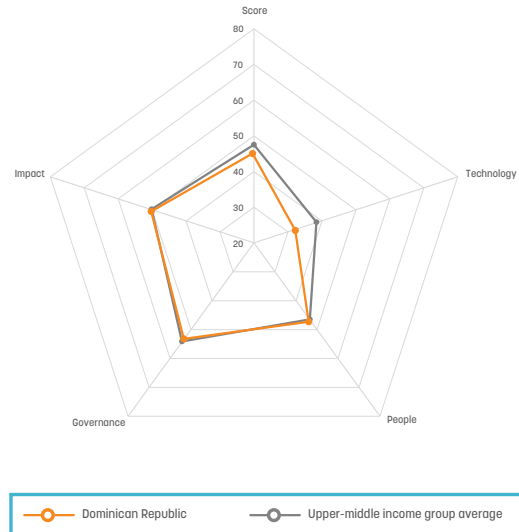
INDICATOR	RANK/134	SCORE
<b>A. Technology pillar</b>		
<b>1st sub-pillar: Access</b>		
1.1.1 Mobile tariffs	31	77.33
1.1.2 Handset prices	20	67.49
1.1.3 Households with internet access	8	96.99
1.1.4 4G mobile network coverage	1	100.00
1.1.5 Fixed-broadband subscriptions	22	93.95
1.1.6 International Internet bandwidth	41	71.35
1.1.7 Internet access in schools	1	100.00
<b>2nd sub-pillar: Content</b>		
1.2.1 GitHub commits	7	71.76
1.2.2 Wikipedia edits	17	82.34
1.2.3 Internet domain registrations*	-	-
1.2.4 Mobile apps development	7	92.35
<b>3rd sub-pillar: Future Technologies</b>		
1.3.1 Adoption of emerging technologies	13	84.22
1.3.2 Investment in emerging technology	14	76.91
1.3.3 ICT PCT patent applications	15	63.12
1.3.4 Computer software spending	12	54.50
1.3.5 Robot density	7	70.85
<b>B. People pillar</b>		
<b>1st sub-pillar: Individuals</b>		
2.1.1 Internet users	6	97.93
2.1.2 Active mobile-broadband subscriptions	10	53.95
2.1.3 Use of virtual social networks	22	71.13
2.1.4 Tertiary enrollment	18	58.77
2.1.5 Adult literacy rate	n/a	n/a
2.1.6 ICT skills	9	87.71
<b>2nd sub-pillar: Businesses</b>		
2.2.1 Firms with website	2	98.01
2.2.2 Ease of doing business	4	97.39
2.2.3 Professionals	3	67.43
2.2.4 Technicians and associate professionals	9	77.58
2.2.5 Business use of digital tools	15	85.44
2.2.6 R&D expenditure by businesses	9	50.33
<b>3rd sub-pillar: Governments</b>		
2.3.1 Government online services	3	96.97
2.3.2 Publication and use of open data	13	70.52
2.3.3 Government promotion of investment in emerging technologies	n/a	n/a
2.3.4 R&D expenditure by governments and higher education	1	100.00

INDICATOR	RANK/134	SCORE
<b>C. Governance pillar</b>		
<b>1st sub-pillar: Trust</b>		
3.1.1 Secure Internet servers	1	100.00
3.1.2 Cybersecurity	23	91.44
3.1.3 Online access to financial account	2	97.24
3.1.4 Internet shopping	1	100.00
<b>2nd sub-pillar: Regulation</b>		
3.2.1 Regulatory quality	13	88.35
3.2.2 ICT regulatory environment	43	88.81
3.2.3 Legal framework's adaptability to emerging technologies	n/a	n/a
3.2.4 E-commerce legislation	1	100.00
3.2.5 Privacy protection by law content	30	77.29
<b>3rd sub-pillar: Inclusion</b>		
3.3.1 E-Participation	9	96.30
3.3.2 Socioeconomic gap in use of digital payments	2	99.79
3.3.3 Availability of local online content	33	79.08
3.3.4 Gender gap in internet use	26	66.36
3.3.5 Rural gap in use of digital payments	19	76.53
<b>D. Impact pillar</b>		
<b>1st sub-pillar: Economy</b>		
4.1.1 Medium and high-tech industry	8	69.29
4.1.2 High-tech exports	34	26.32
4.1.3 PCT patent applications	8	63.69
4.1.4 Labour productivity per employee	11	72.88
4.1.5 Prevalence of gig economy	n/a	n/a
<b>2nd sub-pillar: Quality of Life</b>		
4.2.1 Happiness	3	98.28
4.2.2 Freedom to make life choices	1	100.00
4.2.3 Income inequality	15	88.40
4.2.4 Healthy life expectancy at birth	24	85.28
<b>3rd sub-pillar: SDG Contribution</b>		
4.3.1 SDG 3: Good Health and Well-Being	22	86.89
4.3.2 SDG 4: Quality Education	11	69.21
4.3.3 SDG 5: Gender Equality	48	78.78
4.3.4 SDG 7: Affordable and Clean Energy	11	91.98
4.3.5 SDG 11: Sustainable Cities and Communities	8	94.73

\* Data on indicator 1.2.3 is confidential, but has been included in the computation. Please see Appendix I: Technical Notes for further details.

# Dominican Republic

	Rank (out of 134)	Score
<b>Network Readiness Index</b>	<b>75</b>	<b>45.77</b>
<b>A. Technology pillar</b>	<b>87</b>	<b>32.78</b>
1st sub-pillar: Access	86	49.37
2nd sub-pillar: Content	86	22.80
3rd sub-pillar: Future Technologies	77	26.18
<b>B. People pillar</b>	<b>68</b>	<b>47.06</b>
1st sub-pillar: Individuals	69	54.24
2nd sub-pillar: Businesses	75	40.41
3rd sub-pillar: Governments	58	46.53
<b>C. Governance pillar</b>	<b>75</b>	<b>53.08</b>
1st sub-pillar: Trust	100	26.49
2nd sub-pillar: Regulation	50	70.56
3rd sub-pillar: Inclusion	75	62.20
<b>D. Impact pillar</b>	<b>73</b>	<b>50.17</b>
1st sub-pillar: Economy	63	26.16
2nd sub-pillar: Quality of Life	66	65.82
3rd sub-pillar: SDG Contribution	90	58.54



## The Network Readiness Index in detail

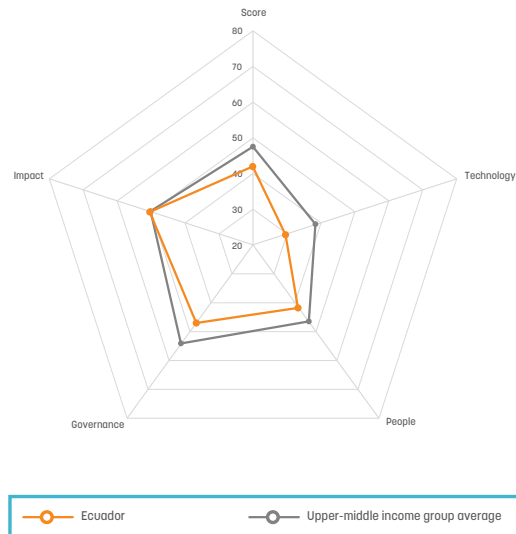
INDICATOR	RANK/134	SCORE
<b>A. Technology pillar</b>		
<b>1st sub-pillar: Access</b>		
1.1.1 Mobile tariffs	96	48.79
1.1.2 Handset prices	65	46.33
1.1.3 Households with internet access	94	31.43
1.1.4 4G mobile network coverage	58	93.72
1.1.5 Fixed-broadband subscriptions	82	34.39
1.1.6 International Internet bandwidth	71	67.74
1.1.7 Internet access in schools	54	23.16
<b>2nd sub-pillar: Content</b>		
1.2.1 GitHub commits	73	2.94
1.2.2 Wikipedia edits	84	33.24
1.2.3 Internet domain registrations*	-	-
1.2.4 Mobile apps development	90	53.06
<b>3rd sub-pillar: Future Technologies</b>		
1.3.1 Adoption of emerging technologies	62	48.00
1.3.2 Investment in emerging technology	97	29.14
1.3.3 ICT PCT patent applications	n/a	n/a
1.3.4 Computer software spending	116	1.40
1.3.5 Robot density	n/a	n/a
<b>B. People pillar</b>		
<b>1st sub-pillar: Individuals</b>		
2.1.1 Internet users	51	74.40
2.1.2 Active mobile-broadband subscriptions	86	23.11
2.1.3 Use of virtual social networks	55	58.76
2.1.4 Tertiary enrollment	48	43.52
2.1.5 Adult literacy rate	55	92.02
2.1.6 ICT skills	106	33.61
<b>2nd sub-pillar: Businesses</b>		
2.2.1 Firms with website	83	37.73
2.2.2 Ease of doing business	98	52.63
2.2.3 Professionals	76	19.30
2.2.4 Technicians and associate professionals	80	25.10
2.2.5 Business use of digital tools	52	67.26
2.2.6 R&D expenditure by businesses	n/a	n/a
<b>3rd sub-pillar: Governments</b>		
2.3.1 Government online services	48	75.76
2.3.2 Publication and use of open data	51	32.21
2.3.3 Government promotion of investment in emerging technologies	84	31.62
2.3.4 R&D expenditure by governments and higher education	n/a	n/a

INDICATOR	RANK/134	SCORE
<b>C. Governance pillar</b>		
<b>1st sub-pillar: Trust</b>		
3.1.1 Secure Internet servers	97	37.75
3.1.2 Cybersecurity	92	45.72
3.1.3 Online access to financial account	99	12.98
3.1.4 Internet shopping	76	9.51
<b>2nd sub-pillar: Regulation</b>		
3.2.1 Regulatory quality	77	49.71
3.2.2 ICT regulatory environment	8	96.72
3.2.3 Legal framework's adaptability to emerging technologies	75	35.81
3.2.4 E-commerce legislation	1	100.00
3.2.5 Privacy protection by law content	n/a	n/a
<b>3rd sub-pillar: Inclusion</b>		
3.3.1 E-Participation	50	76.54
3.3.2 Socioeconomic gap in use of digital payments	93	49.80
3.3.3 Availability of local online content	68	59.97
3.3.4 Gender gap in internet use	14	67.65
3.3.5 Rural gap in use of digital payments	86	57.03
<b>D. Impact pillar</b>		
<b>1st sub-pillar: Economy</b>		
4.1.1 Medium and high-tech industry	n/a	n/a
4.1.2 High-tech exports	56	16.24
4.1.3 PCT patent applications	n/a	n/a
4.1.4 Labour productivity per employee	71	24.79
4.1.5 Prevalence of gig economy	78	37.45
<b>2nd sub-pillar: Quality of Life</b>		
4.2.1 Happiness	55	65.08
4.2.2 Freedom to make life choices	42	85.41
4.2.3 Income inequality	97	49.74
4.2.4 Healthy life expectancy at birth	81	63.03
<b>3rd sub-pillar: SDG Contribution</b>		
4.3.1 SDG 3: Good Health and Well-Being	54	75.41
4.3.2 SDG 4: Quality Education	80	0.00
4.3.3 SDG 5: Gender Equality	16	86.51
4.3.4 SDG 7: Affordable and Clean Energy	7	93.35
4.3.5 SDG 11: Sustainable Cities and Communities	107	37.41

\* Data on indicator 1.2.3 is confidential, but has been included in the computation. Please see Appendix I: Technical Notes for further details.

# Ecuador

	Rank (out of 134)	Score
<b>Network Readiness Index</b>	<b>85</b>	<b>42.20</b>
<b>A. Technology pillar</b>	<b>94</b>	<b>29.71</b>
1st sub-pillar: Access	95	43.17
2nd sub-pillar: Content	77	25.36
3rd sub-pillar: Future Technologies	95	20.58
<b>B. People pillar</b>	<b>81</b>	<b>41.70</b>
1st sub-pillar: Individuals	82	51.35
2nd sub-pillar: Businesses	82	37.40
3rd sub-pillar: Governments	88	36.34
<b>C. Governance pillar</b>	<b>91</b>	<b>46.97</b>
1st sub-pillar: Trust	104	25.57
2nd sub-pillar: Regulation	81	62.04
3rd sub-pillar: Inclusion	94	53.29
<b>D. Impact pillar</b>	<b>70</b>	<b>50.43</b>
1st sub-pillar: Economy	121	11.22
2nd sub-pillar: Quality of Life	74	63.96
3rd sub-pillar: SDG Contribution	34	76.13



## The Network Readiness Index in detail

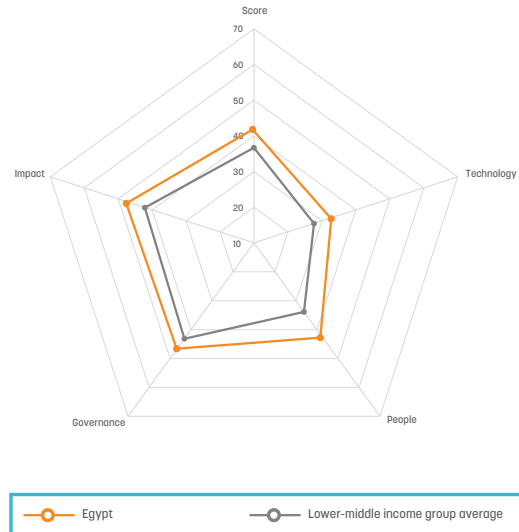
INDICATOR	RANK/134	SCORE
<b>A. Technology pillar</b>		
<b>1st sub-pillar: Access</b>		
1.1.1 Mobile tariffs	103	44.80
1.1.2 Handset prices	90	34.65
1.1.3 Households with internet access	88	37.03
1.1.4 4G mobile network coverage	89	70.87
1.1.5 Fixed-broadband subscriptions	87	24.75
1.1.6 International Internet bandwidth	127	50.81
1.1.7 Internet access in schools	49	39.28
<b>2nd sub-pillar: Content</b>		
1.2.1 GitHub commits	77	2.46
1.2.2 Wikipedia edits	72	40.84
1.2.3 Internet domain registrations*	-	-
1.2.4 Mobile apps development	79	56.50
<b>3rd sub-pillar: Future Technologies</b>		
1.3.1 Adoption of emerging technologies	82	38.94
1.3.2 Investment in emerging technology	112	23.33
1.3.3 ICT PCT patent applications	76	0.53
1.3.4 Computer software spending	65	19.55
1.3.5 Robot density	n/a	n/a
<b>B. People pillar</b>		
<b>1st sub-pillar: Individuals</b>		
2.1.1 Internet users	85	56.31
2.1.2 Active mobile-broadband subscriptions	95	20.62
2.1.3 Use of virtual social networks	27	69.07
2.1.4 Tertiary enrollment	67	32.46
2.1.5 Adult literacy rate	60	90.80
2.1.6 ICT skills	93	38.86
<b>2nd sub-pillar: Businesses</b>		
2.2.1 Firms with website	23	79.87
2.2.2 Ease of doing business	108	48.62
2.2.3 Professionals	81	17.81
2.2.4 Technicians and associate professionals	95	18.35
2.2.5 Business use of digital tools	79	54.99
2.2.6 R&D expenditure by businesses	54	4.78
<b>3rd sub-pillar: Governments</b>		
2.3.1 Government online services	40	80.61
2.3.2 Publication and use of open data	68	21.62
2.3.3 Government promotion of investment in emerging technologies	101	21.83
2.3.4 R&D expenditure by governments and higher education	71	21.32

INDICATOR	RANK/134	SCORE
<b>C. Governance pillar</b>		
<b>1st sub-pillar: Trust</b>		
3.1.1 Secure Internet servers	81	45.87
3.1.2 Cybersecurity	100	38.89
3.1.3 Online access to financial account	109	9.80
3.1.4 Internet shopping	82	7.70
<b>2nd sub-pillar: Regulation</b>		
3.2.1 Regulatory quality	122	31.81
3.2.2 ICT regulatory environment	57	86.30
3.2.3 Legal framework's adaptability to emerging technologies	86	30.08
3.2.4 E-commerce legislation	1	100.00
3.2.5 Privacy protection by law content	n/a	n/a
<b>3rd sub-pillar: Inclusion</b>		
3.3.1 E-Participation	48	79.01
3.3.2 Socioeconomic gap in use of digital payments	119	32.57
3.3.3 Availability of local online content	101	39.20
3.3.4 Gender gap in internet use	34	63.21
3.3.5 Rural gap in use of digital payments	99	52.47
<b>D. Impact pillar</b>		
<b>1st sub-pillar: Economy</b>		
4.1.1 Medium and high-tech industry	96	15.17
4.1.2 High-tech exports	77	10.00
4.1.3 PCT patent applications	78	0.09
4.1.4 Labour productivity per employee	86	15.37
4.1.5 Prevalence of gig economy	116	15.46
<b>2nd sub-pillar: Quality of Life</b>		
4.2.1 Happiness	66	61.25
4.2.2 Freedom to make life choices	62	77.28
4.2.3 Income inequality	104	45.36
4.2.4 Healthy life expectancy at birth	45	71.94
<b>3rd sub-pillar: SDG Contribution</b>		
4.3.1 SDG 3: Good Health and Well-Being	34	80.33
4.3.2 SDG 4: Quality Education	n/a	n/a
4.3.3 SDG 5: Gender Equality	49	78.58
4.3.4 SDG 7: Affordable and Clean Energy	37	85.62
4.3.5 SDG 11: Sustainable Cities and Communities	73	59.99

\* Data on indicator 1.2.3 is confidential, but has been included in the computation. Please see Appendix I: Technical Notes for further details.

# Egypt

	Rank (out of 134)	Score
<b>Network Readiness Index</b>	<b>84</b>	<b>42.56</b>
<b>A. Technology pillar</b>	<b>85</b>	<b>33.46</b>
1st sub-pillar: Access	80	53.81
2nd sub-pillar: Content	96	20.32
3rd sub-pillar: Future Technologies	76	26.24
<b>B. People pillar</b>	<b>80</b>	<b>42.64</b>
1st sub-pillar: Individuals	93	43.30
2nd sub-pillar: Businesses	78	39.28
3rd sub-pillar: Governments	60	45.35
<b>C. Governance pillar</b>	<b>93</b>	<b>46.52</b>
1st sub-pillar: Trust	85	31.33
2nd sub-pillar: Regulation	88	58.52
3rd sub-pillar: Inclusion	102	49.70
<b>D. Impact pillar</b>	<b>84</b>	<b>47.61</b>
1st sub-pillar: Economy	60	28.18
2nd sub-pillar: Quality of Life	96	57.56
3rd sub-pillar: SDG Contribution	93	57.09



## The Network Readiness Index in detail

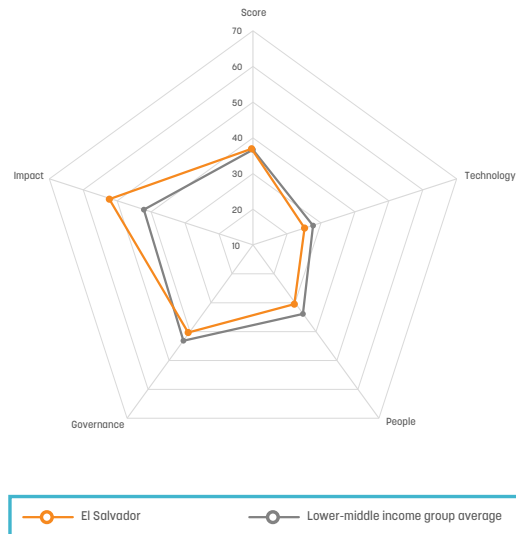
INDICATOR	RANK/134	SCORE
<b>A. Technology pillar</b>		
<b>1st sub-pillar: Access</b>		
1.1.1 Mobile tariffs	32	77.03
1.1.2 Handset prices	93	34.14
1.1.3 Households with internet access	80	50.91
1.1.4 4G mobile network coverage	70	89.00
1.1.5 Fixed-broadband subscriptions	98	14.60
1.1.6 International Internet bandwidth	88	63.40
1.1.7 Internet access in schools	43	47.58
<b>2nd sub-pillar: Content</b>		
1.2.1 GitHub commits	96	1.23
1.2.2 Wikipedia edits	86	32.37
1.2.3 Internet domain registrations*	-	-
1.2.4 Mobile apps development	98	47.13
<b>3rd sub-pillar: Future Technologies</b>		
1.3.1 Adoption of emerging technologies	48	54.92
1.3.2 Investment in emerging technology	74	37.05
1.3.3 ICT PCT patent applications	71	1.01
1.3.4 Computer software spending	21	38.02
1.3.5 Robot density	61	0.22
<b>B. People pillar</b>		
<b>1st sub-pillar: Individuals</b>		
2.1.1 Internet users	94	45.64
2.1.2 Active mobile-broadband subscriptions	97	20.30
2.1.3 Use of virtual social networks	94	40.21
2.1.4 Tertiary enrollment	77	25.29
2.1.5 Adult literacy rate	92	62.91
2.1.6 ICT skills	42	65.44
<b>2nd sub-pillar: Businesses</b>		
2.2.1 Firms with website	65	48.99
2.2.2 Ease of doing business	97	52.75
2.2.3 Professionals	57	28.28
2.2.4 Technicians and associate professionals	59	34.36
2.2.5 Business use of digital tools	48	70.60
2.2.6 R&D expenditure by businesses	79	0.71
<b>3rd sub-pillar: Governments</b>		
2.3.1 Government online services	92	55.76
2.3.2 Publication and use of open data	83	13.89
2.3.3 Government promotion of investment in emerging technologies	43	47.93
2.3.4 R&D expenditure by governments and higher education	16	63.81

INDICATOR	RANK/134	SCORE
<b>C. Governance pillar</b>		
<b>1st sub-pillar: Trust</b>		
3.1.1 Secure Internet servers	116	28.51
3.1.2 Cybersecurity	25	90.36
3.1.3 Online access to financial account	121	3.38
3.1.4 Internet shopping	112	3.09
<b>2nd sub-pillar: Regulation</b>		
3.2.1 Regulatory quality	120	32.32
3.2.2 ICT regulatory environment	78	80.89
3.2.3 Legal framework's adaptability to emerging technologies	55	45.87
3.2.4 E-commerce legislation	77	75.00
3.2.5 Privacy protection by law content	n/a	n/a
<b>3rd sub-pillar: Inclusion</b>		
3.3.1 E-Participation	97	49.38
3.3.2 Socioeconomic gap in use of digital payments	115	37.66
3.3.3 Availability of local online content	34	78.50
3.3.4 Gender gap in internet use	82	29.83
3.3.5 Rural gap in use of digital payments	95	53.11
<b>D. Impact pillar</b>		
<b>1st sub-pillar: Economy</b>		
4.1.1 Medium and high-tech industry	93	17.62
4.1.2 High-tech exports	101	4.43
4.1.3 PCT patent applications	76	0.12
4.1.4 Labour productivity per employee	58	29.29
4.1.5 Prevalence of gig economy	6	89.46
<b>2nd sub-pillar: Quality of Life</b>		
4.2.1 Happiness	116	32.13
4.2.2 Freedom to make life choices	83	67.84
4.2.3 Income inequality	24	81.19
4.2.4 Healthy life expectancy at birth	99	49.08
<b>3rd sub-pillar: SDG Contribution</b>		
4.3.1 SDG 3: Good Health and Well-Being	79	65.57
4.3.2 SDG 4: Quality Education	n/a	n/a
4.3.3 SDG 5: Gender Equality	114	44.33
4.3.4 SDG 7: Affordable and Clean Energy	42	84.61
4.3.5 SDG 11: Sustainable Cities and Communities	115	33.84

\* Data on indicator 1.2.3 is confidential, but has been included in the computation. Please see Appendix I: Technical Notes for further details.

# El Salvador

	Rank (out of 134)	Score
<b>Network Readiness Index</b>	<b>95</b>	<b>37.33</b>
<b>A. Technology pillar</b>	<b>106</b>	<b>25.81</b>
1st sub-pillar: Access	104	38.13
2nd sub-pillar: Content	82	23.81
3rd sub-pillar: Future Technologies	122	15.48
<b>B. People pillar</b>	<b>105</b>	<b>30.62</b>
1st sub-pillar: Individuals	98	39.98
2nd sub-pillar: Businesses	105	30.44
3rd sub-pillar: Governments	117	21.43
<b>C. Governance pillar</b>	<b>106</b>	<b>40.55</b>
1st sub-pillar: Trust	121	17.26
2nd sub-pillar: Regulation	97	54.54
3rd sub-pillar: Inclusion	101	49.84
<b>D. Impact pillar</b>	<b>63</b>	<b>52.35</b>
1st sub-pillar: Economy	112	13.56
2nd sub-pillar: Quality of Life	47	71.55
3rd sub-pillar: SDG Contribution	45	71.93



## The Network Readiness Index in detail

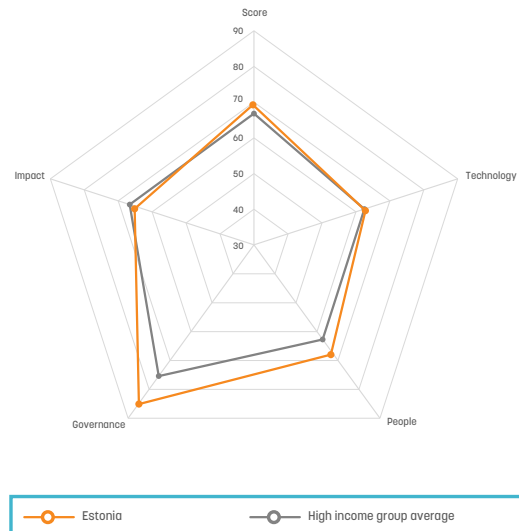
INDICATOR	RANK/134	SCORE
<b>A. Technology pillar</b>		
<b>1st sub-pillar: Access</b>		
1.1.1 Mobile tariffs	104	39.95
1.1.2 Handset prices	69	43.74
1.1.3 Households with internet access	115	16.84
1.1.4 4G mobile network coverage	93	68.00
1.1.5 Fixed-broadband subscriptions	115	1.06
1.1.6 International Internet bandwidth	23	74.10
1.1.7 Internet access in schools	53	23.24
<b>2nd sub-pillar: Content</b>		
1.2.1 GitHub commits	81	2.17
1.2.2 Wikipedia edits	79	35.57
1.2.3 Internet domain registrations*	-	-
1.2.4 Mobile apps development	81	55.93
<b>3rd sub-pillar: Future Technologies</b>		
1.3.1 Adoption of emerging technologies	91	36.60
1.3.2 Investment in emerging technology	121	18.90
1.3.3 ICT PCT patent applications	61	2.90
1.3.4 Computer software spending	104	3.50
1.3.5 Robot density	n/a	n/a
<b>B. People pillar</b>		
<b>1st sub-pillar: Individuals</b>		
2.1.1 Internet users	106	32.13
2.1.2 Active mobile-broadband subscriptions	93	21.07
2.1.3 Use of virtual social networks	55	58.76
2.1.4 Tertiary enrollment	82	21.03
2.1.5 Adult literacy rate	65	85.88
2.1.6 ICT skills	124	21.02
<b>2nd sub-pillar: Businesses</b>		
2.2.1 Firms with website	81	38.31
2.2.2 Ease of doing business	85	61.94
2.2.3 Professionals	92	15.78
2.2.4 Technicians and associate professionals	100	17.07
2.2.5 Business use of digital tools	94	48.13
2.2.6 R&D expenditure by businesses	70	1.43
<b>3rd sub-pillar: Governments</b>		
2.3.1 Government online services	91	56.37
2.3.2 Publication and use of open data	84	13.88
2.3.3 Government promotion of investment in emerging technologies	124	5.95
2.3.4 R&D expenditure by governments and higher education	92	9.51

INDICATOR	RANK/134	SCORE
<b>C. Governance pillar</b>		
<b>1st sub-pillar: Trust</b>		
3.1.1 Secure Internet servers	101	36.30
3.1.2 Cybersecurity	124	12.57
3.1.3 Online access to financial account	91	16.25
3.1.4 Internet shopping	100	3.91
<b>2nd sub-pillar: Regulation</b>		
3.2.1 Regulatory quality	71	50.56
3.2.2 ICT regulatory environment	94	72.40
3.2.3 Legal framework's adaptability to emerging technologies	103	20.21
3.2.4 E-commerce legislation	77	75.00
3.2.5 Privacy protection by law content	n/a	n/a
<b>3rd sub-pillar: Inclusion</b>		
3.3.1 E-Participation	74	66.67
3.3.2 Socioeconomic gap in use of digital payments	108	41.00
3.3.3 Availability of local online content	107	35.79
3.3.4 Gender gap in internet use	67	54.81
3.3.5 Rural gap in use of digital payments	102	50.94
<b>D. Impact pillar</b>		
<b>1st sub-pillar: Economy</b>		
4.1.1 Medium and high-tech industry	80	24.23
4.1.2 High-tech exports	79	9.71
4.1.3 PCT patent applications	80	0.04
4.1.4 Labour productivity per employee	n/a	n/a
4.1.5 Prevalence of gig economy	110	20.27
<b>2nd sub-pillar: Quality of Life</b>		
4.2.1 Happiness	29	73.94
4.2.2 Freedom to make life choices	43	85.41
4.2.3 Income inequality	70	62.89
4.2.4 Healthy life expectancy at birth	76	63.98
<b>3rd sub-pillar: SDG Contribution</b>		
4.3.1 SDG 3: Good Health and Well-Being	39	78.69
4.3.2 SDG 4: Quality Education	n/a	n/a
4.3.3 SDG 5: Gender Equality	64	75.02
4.3.4 SDG 7: Affordable and Clean Energy	54	81.86
4.3.5 SDG 11: Sustainable Cities and Communities	80	52.13

\* Data on indicator 1.2.3 is confidential, but has been included in the computation. Please see Appendix I: Technical Notes for further details.

# Estonia

	Rank (out of 134)	Score
<b>Network Readiness Index</b>	<b>23</b>	<b>70.32</b>
<b>A. Technology pillar</b>	<b>24</b>	<b>63.55</b>
1st sub-pillar: Access	26	82.71
2nd sub-pillar: Content	17	69.53
3rd sub-pillar: Future Technologies	38	38.40
<b>B. People pillar</b>	<b>21</b>	<b>67.59</b>
1st sub-pillar: Individuals	8	73.78
2nd sub-pillar: Businesses	21	66.89
3rd sub-pillar: Governments	23	62.10
<b>C. Governance pillar</b>	<b>11</b>	<b>84.93</b>
1st sub-pillar: Trust	13	82.57
2nd sub-pillar: Regulation	11	87.31
3rd sub-pillar: Inclusion	8	84.91
<b>D. Impact pillar</b>	<b>29</b>	<b>65.20</b>
1st sub-pillar: Economy	35	37.90
2nd sub-pillar: Quality of Life	28	77.42
3rd sub-pillar: SDG Contribution	19	80.29



## The Network Readiness Index in detail

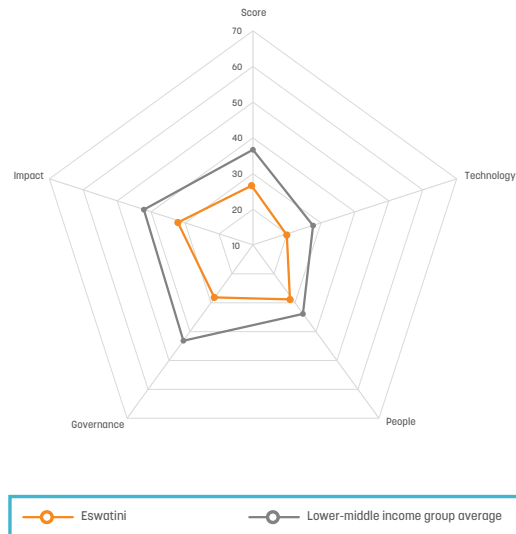
INDICATOR	RANK/134	SCORE
<b>A. Technology pillar</b>		
<b>1st sub-pillar: Access</b>		
1.1.1 Mobile tariffs	33	75.27
1.1.2 Handset prices	46	55.61
1.1.3 Households with internet access	17	90.46
1.1.4 4G mobile network coverage	24	99.00
1.1.5 Fixed-broadband subscriptions	43	85.12
1.1.6 International Internet bandwidth	28	73.48
1.1.7 Internet access in schools	1	100.00
<b>2nd sub-pillar: Content</b>		
1.2.1 GitHub commits	11	63.17
1.2.2 Wikipedia edits	2	99.44
1.2.3 Internet domain registrations*	-	-
1.2.4 Mobile apps development	22	85.56
<b>3rd sub-pillar: Future Technologies</b>		
1.3.1 Adoption of emerging technologies	22	73.19
1.3.2 Investment in emerging technology	35	58.91
1.3.3 ICT PCT patent applications	25	42.59
1.3.4 Computer software spending	81	11.68
1.3.5 Robot density	40	5.63
<b>B. People pillar</b>		
<b>1st sub-pillar: Individuals</b>		
2.1.1 Internet users	19	89.38
2.1.2 Active mobile-broadband subscriptions	5	58.01
2.1.3 Use of virtual social networks	61	56.70
2.1.4 Tertiary enrollment	30	50.68
2.1.5 Adult literacy rate	3	99.89
2.1.6 ICT skills	8	88.00
<b>2nd sub-pillar: Businesses</b>		
2.2.1 Firms with website	16	83.22
2.2.2 Ease of doing business	17	89.12
2.2.3 Professionals	18	51.96
2.2.4 Technicians and associate professionals	22	62.92
2.2.5 Business use of digital tools	4	98.58
2.2.6 R&D expenditure by businesses	35	15.54
<b>3rd sub-pillar: Governments</b>		
2.3.1 Government online services	2	99.39
2.3.2 Publication and use of open data	44	36.31
2.3.3 Government promotion of investment in emerging technologies	34	52.05
2.3.4 R&D expenditure by governments and higher education	18	60.65

INDICATOR	RANK/134	SCORE
<b>C. Governance pillar</b>		
<b>1st sub-pillar: Trust</b>		
3.1.1 Secure Internet servers	7	90.41
3.1.2 Cybersecurity	5	97.18
3.1.3 Online access to financial account	8	82.82
3.1.4 Internet shopping	24	59.87
<b>2nd sub-pillar: Regulation</b>		
3.2.1 Regulatory quality	17	85.83
3.2.2 ICT regulatory environment	46	88.03
3.2.3 Legal framework's adaptability to emerging technologies	15	74.05
3.2.4 E-commerce legislation	1	100.00
3.2.5 Privacy protection by law content	11	88.64
<b>3rd sub-pillar: Inclusion</b>		
3.3.1 E-Participation	1	100.00
3.3.2 Socioeconomic gap in use of digital payments	16	95.47
3.3.3 Availability of local online content	19	85.94
3.3.4 Gender gap in internet use	23	66.52
3.3.5 Rural gap in use of digital payments	18	76.59
<b>D. Impact pillar</b>		
<b>1st sub-pillar: Economy</b>		
4.1.1 Medium and high-tech industry	53	35.38
4.1.2 High-tech exports	32	29.40
4.1.3 PCT patent applications	26	10.38
4.1.4 Labour productivity per employee	39	47.83
4.1.5 Prevalence of gig economy	26	66.54
<b>2nd sub-pillar: Quality of Life</b>		
4.2.1 Happiness	52	65.68
4.2.2 Freedom to make life choices	35	86.95
4.2.3 Income inequality	20	84.02
4.2.4 Healthy life expectancy at birth	41	73.03
<b>3rd sub-pillar: SDG Contribution</b>		
4.3.1 SDG 3: Good Health and Well-Being	50	77.05
4.3.2 SDG 4: Quality Education	6	74.47
4.3.3 SDG 5: Gender Equality	7	90.68
4.3.4 SDG 7: Affordable and Clean Energy	104	65.82
4.3.5 SDG 11: Sustainable Cities and Communities	13	93.42

\* Data on indicator 1.2.3 is confidential, but has been included in the computation. Please see Appendix I: Technical Notes for further details.

# Eswatini

	Rank (out of 134)	Score
<b>Network Readiness Index</b>	<b>122</b>	<b>27.21</b>
<b>A. Technology pillar</b>	<b>116</b>	<b>20.50</b>
1st sub-pillar: Access	116	29.17
2nd sub-pillar: Content	106	15.06
3rd sub-pillar: Future Technologies	114	17.26
<b>B. People pillar</b>	<b>114</b>	<b>28.55</b>
1st sub-pillar: Individuals	107	31.98
2nd sub-pillar: Businesses	97	32.67
3rd sub-pillar: Governments	120	20.98
<b>C. Governance pillar</b>	<b>128</b>	<b>27.88</b>
1st sub-pillar: Trust	106	24.88
2nd sub-pillar: Regulation	133	26.40
3rd sub-pillar: Inclusion	125	32.35
<b>D. Impact pillar</b>	<b>127</b>	<b>31.92</b>
1st sub-pillar: Economy	134	4.37
2nd sub-pillar: Quality of Life	133	26.23
3rd sub-pillar: SDG Contribution	74	65.16



## The Network Readiness Index in detail

INDICATOR	RANK/134	SCORE
<b>A. Technology pillar</b>		
<b>1st sub-pillar: Access</b>		
1.1.1 Mobile tariffs	107	38.10
1.1.2 Handset prices	120	17.24
1.1.3 Households with internet access	98	26.80
1.1.4 4G mobile network coverage	102	54.00
1.1.5 Fixed-broadband subscriptions	120	0.09
1.1.6 International Internet bandwidth	124	52.40
1.1.7 Internet access in schools	57	15.59
<b>2nd sub-pillar: Content</b>		
1.2.1 GitHub commits	60	4.31
1.2.2 Wikipedia edits	n/a	n/a
1.2.3 Internet domain registrations*	-	-
1.2.4 Mobile apps development	106	40.25
<b>3rd sub-pillar: Future Technologies</b>		
1.3.1 Adoption of emerging technologies	115	22.76
1.3.2 Investment in emerging technology	128	11.76
1.3.3 ICT PCT patent applications	n/a	n/a
1.3.4 Computer software spending	n/a	n/a
1.3.5 Robot density	n/a	n/a
<b>B. People pillar</b>		
<b>1st sub-pillar: Individuals</b>		
2.1.1 Internet users	92	45.71
2.1.2 Active mobile-broadband subscriptions	127	4.86
2.1.3 Use of virtual social networks	105	21.65
2.1.4 Tertiary enrollment	115	4.36
2.1.5 Adult literacy rate	67	85.12
2.1.6 ICT skills	115	30.18
<b>2nd sub-pillar: Businesses</b>		
2.2.1 Firms with website	52	61.53
2.2.2 Ease of doing business	101	51.76
2.2.3 Professionals	56	28.54
2.2.4 Technicians and associate professionals	102	16.79
2.2.5 Business use of digital tools	108	37.38
2.2.6 R&D expenditure by businesses	90	0.04
<b>3rd sub-pillar: Governments</b>		
2.3.1 Government online services	106	47.27
2.3.2 Publication and use of open data	107	0.28
2.3.3 Government promotion of investment in emerging technologies	103	20.41
2.3.4 R&D expenditure by governments and higher education	82	15.98

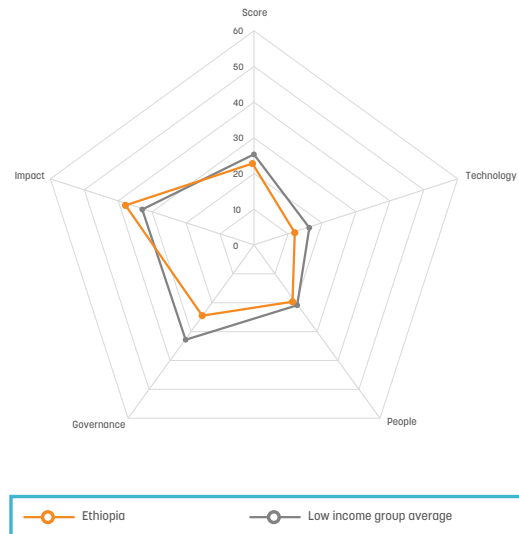
INDICATOR	RANK/134	SCORE
<b>C. Governance pillar</b>		
<b>1st sub-pillar: Trust</b>		
3.1.1 Secure Internet servers	104	36.21
3.1.2 Cybersecurity	122	13.54
3.1.3 Online access to financial account	n/a	n/a
3.1.4 Internet shopping	n/a	n/a
<b>2nd sub-pillar: Regulation</b>		
3.2.1 Regulatory quality	107	38.11
3.2.2 ICT regulatory environment	121	55.98
3.2.3 Legal framework's adaptability to emerging technologies	116	11.50
3.2.4 E-commerce legislation	131	0.00
3.2.5 Privacy protection by law content	n/a	n/a
<b>3rd sub-pillar: Inclusion</b>		
3.3.1 E-Participation	105	43.21
3.3.2 Socioeconomic gap in use of digital payments	n/a	n/a
3.3.3 Availability of local online content	126	21.50
3.3.4 Gender gap in internet use	n/a	n/a
3.3.5 Rural gap in use of digital payments	n/a	n/a
<b>D. Impact pillar</b>		
<b>1st sub-pillar: Economy</b>		
4.1.1 Medium and high-tech industry	124	1.79
4.1.2 High-tech exports	122	0.52
4.1.3 PCT patent applications	n/a	n/a
4.1.4 Labour productivity per employee	n/a	n/a
4.1.5 Prevalence of gig economy	121	10.79
<b>2nd sub-pillar: Quality of Life</b>		
4.2.1 Happiness	113	33.47
4.2.2 Freedom to make life choices	128	37.73
4.2.3 Income inequality	118	21.65
4.2.4 Healthy life expectancy at birth	129	12.05
<b>3rd sub-pillar: SDG Contribution</b>		
4.3.1 SDG 3: Good Health and Well-Being	92	57.38
4.3.2 SDG 4: Quality Education	n/a	n/a
4.3.3 SDG 5: Gender Equality	79	72.65
4.3.4 SDG 7: Affordable and Clean Energy	55	81.72
4.3.5 SDG 11: Sustainable Cities and Communities	85	48.89

\* Data on indicator 1.2.3 is confidential, but has been included in the computation. Please see Appendix I: Technical Notes for further details.



# Ethiopia

	Rank (out of 134)	Score
<b>Network Readiness Index</b>	<b>129</b>	<b>23.49</b>
<b>A. Technology pillar</b>	<b>129</b>	<b>12.62</b>
1st sub-pillar: Access	129	16.24
2nd sub-pillar: Content	133	3.59
3rd sub-pillar: Future Technologies	108	18.02
<b>B. People pillar</b>	<b>126</b>	<b>19.32</b>
1st sub-pillar: Individuals	123	17.92
2nd sub-pillar: Businesses	131	14.43
3rd sub-pillar: Governments	109	25.61
<b>C. Governance pillar</b>	<b>130</b>	<b>24.22</b>
1st sub-pillar: Trust	132	8.47
2nd sub-pillar: Regulation	129	31.44
3rd sub-pillar: Inclusion	123	32.75
<b>D. Impact pillar</b>	<b>112</b>	<b>37.79</b>
1st sub-pillar: Economy	37	37.33
2nd sub-pillar: Quality of Life	105	50.26
3rd sub-pillar: SDG Contribution	133	25.77



## The Network Readiness Index in detail

INDICATOR	RANK/134	SCORE
<b>A. Technology pillar</b>		
<b>1st sub-pillar: Access</b>		
1.1.1 Mobile tariffs	124	24.34
1.1.2 Handset prices	130	2.68
1.1.3 Households with internet access	111	17.76
1.1.4 4G mobile network coverage	128	7.00
1.1.5 Fixed-broadband subscriptions	110	3.08
1.1.6 International Internet bandwidth	132	42.59
1.1.7 Internet access in schools	n/a	n/a
<b>2nd sub-pillar: Content</b>		
1.2.1 GitHub commits	125	0.06
1.2.2 Wikipedia edits	n/a	n/a
1.2.3 Internet domain registrations*	-	-
1.2.4 Mobile apps development	131	10.71
<b>3rd sub-pillar: Future Technologies</b>		
1.3.1 Adoption of emerging technologies	113	25.79
1.3.2 Investment in emerging technology	101	28.27
1.3.3 ICT PCT patent applications	n/a	n/a
1.3.4 Computer software spending	125	0.00
1.3.5 Robot density	n/a	n/a
<b>B. People pillar</b>		
<b>1st sub-pillar: Individuals</b>		
2.1.1 Internet users	120	16.45
2.1.2 Active mobile-broadband subscriptions	125	5.64
2.1.3 Use of virtual social networks	129	3.61
2.1.4 Tertiary enrollment	113	5.36
2.1.5 Adult literacy rate	101	37.93
2.1.6 ICT skills	95	38.52
<b>2nd sub-pillar: Businesses</b>		
2.2.1 Firms with website	96	29.37
2.2.2 Ease of doing business	125	31.38
2.2.3 Professionals	116	5.40
2.2.4 Technicians and associate professionals	123	4.67
2.2.5 Business use of digital tools	126	15.60
2.2.6 R&D expenditure by businesses	87	0.15
<b>3rd sub-pillar: Governments</b>		
2.3.1 Government online services	117	34.55
2.3.2 Publication and use of open data	80	16.14
2.3.3 Government promotion of investment in emerging technologies	91	29.66
2.3.4 R&D expenditure by governments and higher education	69	22.11

INDICATOR	RANK/134	SCORE
<b>C. Governance pillar</b>		
<b>1st sub-pillar: Trust</b>		
3.1.1 Secure Internet servers	133	4.61
3.1.2 Cybersecurity	104	29.25
3.1.3 Online access to financial account	122	0.00
3.1.4 Internet shopping	124	0.00
<b>2nd sub-pillar: Regulation</b>		
3.2.1 Regulatory quality	124	29.97
3.2.2 ICT regulatory environment	132	20.85
3.2.3 Legal framework's adaptability to emerging technologies	95	24.93
3.2.4 E-commerce legislation	115	50.00
3.2.5 Privacy protection by law content	n/a	n/a
<b>3rd sub-pillar: Inclusion</b>		
3.3.1 E-Participation	119	30.86
3.3.2 Socioeconomic gap in use of digital payments	124	19.44
3.3.3 Availability of local online content	112	30.50
3.3.4 Gender gap in internet use	n/a	n/a
3.3.5 Rural gap in use of digital payments	103	50.20
<b>D. Impact pillar</b>		
<b>1st sub-pillar: Economy</b>		
4.1.1 Medium and high-tech industry	86	20.30
4.1.2 High-tech exports	4	98.08
4.1.3 PCT patent applications	n/a	n/a
4.1.4 Labour productivity per employee	116	1.43
4.1.5 Prevalence of gig economy	95	29.51
<b>2nd sub-pillar: Quality of Life</b>		
4.2.1 Happiness	122	27.64
4.2.2 Freedom to make life choices	90	64.37
4.2.3 Income inequality	53	72.16
4.2.4 Healthy life expectancy at birth	108	36.87
<b>3rd sub-pillar: SDG Contribution</b>		
4.3.1 SDG 3: Good Health and Well-Being	129	18.03
4.3.2 SDG 4: Quality Education	n/a	n/a
4.3.3 SDG 5: Gender Equality	124	32.72
4.3.4 SDG 7: Affordable and Clean Energy	129	16.33
4.3.5 SDG 11: Sustainable Cities and Communities	111	36.01

\* Data on indicator 1.2.3 is confidential, but has been included in the computation. Please see Appendix I: Technical Notes for further details.

# Finland

	Rank (out of 134)	Score
<b>Network Readiness Index</b>	<b>6</b>	<b>80.16</b>
<b>A. Technology pillar</b>	<b>9</b>	<b>78.24</b>
1st sub-pillar: Access	15	86.55
2nd sub-pillar: Content	11	74.64
3rd sub-pillar: Future Technologies	6	73.53
<b>B. People pillar</b>	<b>3</b>	<b>78.19</b>
1st sub-pillar: Individuals	4	75.00
2nd sub-pillar: Businesses	5	78.84
3rd sub-pillar: Governments	5	80.73
<b>C. Governance pillar</b>	<b>5</b>	<b>88.61</b>
1st sub-pillar: Trust	6	87.81
2nd sub-pillar: Regulation	2	93.60
3rd sub-pillar: Inclusion	9	84.42
<b>D. Impact pillar</b>	<b>9</b>	<b>75.59</b>
1st sub-pillar: Economy	17	54.76
2nd sub-pillar: Quality of Life	3	93.46
3rd sub-pillar: SDG Contribution	28	78.54



## The Network Readiness Index in detail

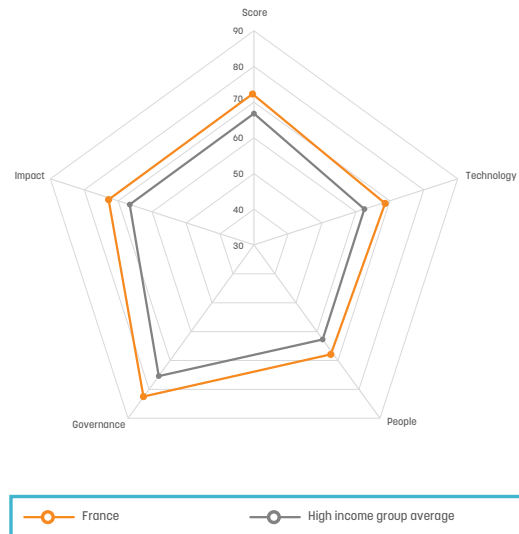
INDICATOR	RANK/134	SCORE
<b>A. Technology pillar</b>		
<b>1st sub-pillar: Access</b>		
1.1.1 Mobile tariffs	22	82.27
1.1.2 Handset prices	16	70.36
1.1.3 Households with internet access	20	88.92
1.1.4 4G mobile network coverage	9	99.90
1.1.5 Fixed-broadband subscriptions	26	93.26
1.1.6 International Internet bandwidth	44	71.12
1.1.7 Internet access in schools	1	100.00
<b>2nd sub-pillar: Content</b>		
1.2.1 GitHub commits	4	83.27
1.2.2 Wikipedia edits	6	92.98
1.2.3 Internet domain registrations*	-	-
1.2.4 Mobile apps development	23	84.79
<b>3rd sub-pillar: Future Technologies</b>		
1.3.1 Adoption of emerging technologies	3	96.95
1.3.2 Investment in emerging technology	6	87.87
1.3.3 ICT PCT patent applications	2	92.91
1.3.4 Computer software spending	17	48.39
1.3.5 Robot density	19	41.52
<b>B. People pillar</b>		
<b>1st sub-pillar: Individuals</b>		
2.1.1 Internet users	20	88.90
2.1.2 Active mobile-broadband subscriptions	4	61.97
2.1.3 Use of virtual social networks	52	59.79
2.1.4 Tertiary enrollment	7	64.35
2.1.5 Adult literacy rate	n/a	n/a
2.1.6 ICT skills	1	100.00
<b>2nd sub-pillar: Businesses</b>		
2.2.1 Firms with website	1	100.00
2.2.2 Ease of doing business	19	88.35
2.2.3 Professionals	8	63.92
2.2.4 Technicians and associate professionals	7	83.80
2.2.5 Business use of digital tools	7	90.99
2.2.6 R&D expenditure by businesses	10	45.98
<b>3rd sub-pillar: Governments</b>		
2.3.1 Government online services	3	96.97
2.3.2 Publication and use of open data	21	55.89
2.3.3 Government promotion of investment in emerging technologies	6	83.43
2.3.4 R&D expenditure by governments and higher education	4	86.63

INDICATOR	RANK/134	SCORE
<b>C. Governance pillar</b>		
<b>1st sub-pillar: Trust</b>		
3.1.1 Secure Internet servers	11	87.48
3.1.2 Cybersecurity	21	91.87
3.1.3 Online access to financial account	3	93.95
3.1.4 Internet shopping	12	77.92
<b>2nd sub-pillar: Regulation</b>		
3.2.1 Regulatory quality	7	90.76
3.2.2 ICT regulatory environment	23	93.83
3.2.3 Legal framework's adaptability to emerging technologies	1	100.00
3.2.4 E-commerce legislation	1	100.00
3.2.5 Privacy protection by law content	19	83.42
<b>3rd sub-pillar: Inclusion</b>		
3.3.1 E-Participation	14	95.06
3.3.2 Socioeconomic gap in use of digital payments	5	98.64
3.3.3 Availability of local online content	12	89.99
3.3.4 Gender gap in internet use	44	61.70
3.3.5 Rural gap in use of digital payments	17	76.73
<b>D. Impact pillar</b>		
<b>1st sub-pillar: Economy</b>		
4.1.1 Medium and high-tech industry	27	52.82
4.1.2 High-tech exports	54	16.92
4.1.3 PCT patent applications	5	70.76
4.1.4 Labour productivity per employee	17	65.14
4.1.5 Prevalence of gig economy	22	68.15
<b>2nd sub-pillar: Quality of Life</b>		
4.2.1 Happiness	1	100.00
4.2.2 Freedom to make life choices	6	97.33
4.2.3 Income inequality	9	91.75
4.2.4 Healthy life expectancy at birth	25	84.77
<b>3rd sub-pillar: SDG Contribution</b>		
4.3.1 SDG 3: Good Health and Well-Being	30	81.97
4.3.2 SDG 4: Quality Education	14	68.42
4.3.3 SDG 5: Gender Equality	30	81.94
4.3.4 SDG 7: Affordable and Clean Energy	106	63.80
4.3.5 SDG 11: Sustainable Cities and Communities	4	96.57

\* Data on indicator 1.2.3 is confidential, but has been included in the computation. Please see Appendix I: Technical Notes for further details.

# France

	Rank (out of 134)	Score
<b>Network Readiness Index</b>	<b>17</b>	<b>73.18</b>
<b>A. Technology pillar</b>	<b>18</b>	<b>69.52</b>
1st sub-pillar: Access	22	84.00
2nd sub-pillar: Content	22	62.38
3rd sub-pillar: Future Technologies	16	62.17
<b>B. People pillar</b>	<b>20</b>	<b>67.77</b>
1st sub-pillar: Individuals	60	57.08
2nd sub-pillar: Businesses	18	67.46
3rd sub-pillar: Governments	8	78.78
<b>C. Governance pillar</b>	<b>15</b>	<b>82.56</b>
1st sub-pillar: Trust	16	78.12
2nd sub-pillar: Regulation	9	88.36
3rd sub-pillar: Inclusion	17	81.20
<b>D. Impact pillar</b>	<b>12</b>	<b>72.85</b>
1st sub-pillar: Economy	14	57.04
2nd sub-pillar: Quality of Life	20	81.74
3rd sub-pillar: SDG Contribution	22	79.78



## The Network Readiness Index in detail

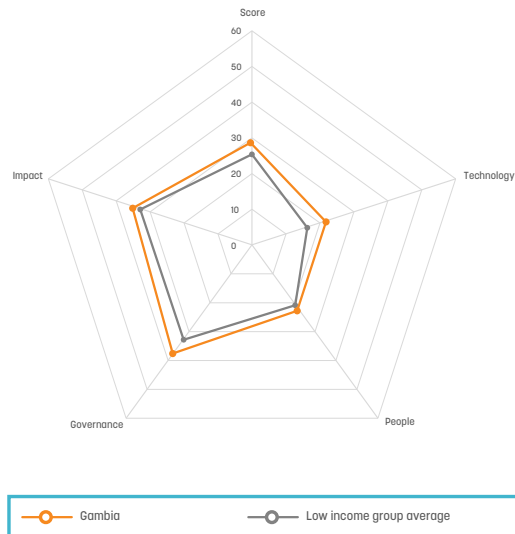
INDICATOR	RANK/134	SCORE
<b>A. Technology pillar</b>		
<b>1st sub-pillar: Access</b>		
1.1.1 Mobile tariffs	61	65.09
1.1.2 Handset prices	7	81.65
1.1.3 Households with internet access	40	82.32
1.1.4 4G mobile network coverage	24	99.00
1.1.5 Fixed-broadband subscriptions	24	93.56
1.1.6 International Internet bandwidth	63	68.39
1.1.7 Internet access in schools	27	98.00
<b>2nd sub-pillar: Content</b>		
1.2.1 GitHub commits	19	48.41
1.2.2 Wikipedia edits	12	85.30
1.2.3 Internet domain registrations*	-	-
1.2.4 Mobile apps development	27	82.63
<b>3rd sub-pillar: Future Technologies</b>		
1.3.1 Adoption of emerging technologies	14	83.82
1.3.2 Investment in emerging technology	22	67.30
1.3.3 ICT PCT patent applications	18	59.66
1.3.4 Computer software spending	11	54.56
1.3.5 Robot density	17	45.52
<b>B. People pillar</b>		
<b>1st sub-pillar: Individuals</b>		
2.1.1 Internet users	32	81.84
2.1.2 Active mobile-broadband subscriptions	40	35.62
2.1.3 Use of virtual social networks	52	59.79
2.1.4 Tertiary enrollment	38	47.73
2.1.5 Adult literacy rate	n/a	n/a
2.1.6 ICT skills	51	60.43
<b>2nd sub-pillar: Businesses</b>		
2.2.1 Firms with website	35	72.02
2.2.2 Ease of doing business	31	82.38
2.2.3 Professionals	28	45.85
2.2.4 Technicians and associate professionals	5	86.43
2.2.5 Business use of digital tools	23	81.81
2.2.6 R&D expenditure by businesses	13	36.28
<b>3rd sub-pillar: Governments</b>		
2.3.1 Government online services	18	87.88
2.3.2 Publication and use of open data	3	85.13
2.3.3 Government promotion of investment in emerging technologies	11	75.02
2.3.4 R&D expenditure by governments and higher education	15	67.07

INDICATOR	RANK/134	SCORE
<b>C. Governance pillar</b>		
<b>1st sub-pillar: Trust</b>		
3.1.1 Secure Internet servers	21	82.10
3.1.2 Cybersecurity	3	98.59
3.1.3 Online access to financial account	21	60.62
3.1.4 Internet shopping	16	71.18
<b>2nd sub-pillar: Regulation</b>		
3.2.1 Regulatory quality	27	77.25
3.2.2 ICT regulatory environment	11	96.14
3.2.3 Legal framework's adaptability to emerging technologies	9	77.92
3.2.4 E-commerce legislation	1	100.00
3.2.5 Privacy protection by law content	10	90.47
<b>3rd sub-pillar: Inclusion</b>		
3.3.1 E-Participation	18	90.13
3.3.2 Socioeconomic gap in use of digital payments	12	96.36
3.3.3 Availability of local online content	27	83.71
3.3.4 Gender gap in internet use	52	59.65
3.3.5 Rural gap in use of digital payments	22	76.15
<b>D. Impact pillar</b>		
<b>1st sub-pillar: Economy</b>		
4.1.1 Medium and high-tech industry	13	63.98
4.1.2 High-tech exports	12	49.12
4.1.3 PCT patent applications	16	31.14
4.1.4 Labour productivity per employee	13	70.88
4.1.5 Prevalence of gig economy	20	70.10
<b>2nd sub-pillar: Quality of Life</b>		
4.2.1 Happiness	24	78.56
4.2.2 Freedom to make life choices	63	76.89
4.2.3 Income inequality	25	80.93
4.2.4 Healthy life expectancy at birth	5	90.58
<b>3rd sub-pillar: SDG Contribution</b>		
4.3.1 SDG 3: Good Health and Well-Being	30	81.97
4.3.2 SDG 4: Quality Education	24	63.95
4.3.3 SDG 5: Gender Equality	39	80.11
4.3.4 SDG 7: Affordable and Clean Energy	53	81.94
4.3.5 SDG 11: Sustainable Cities and Communities	18	90.92

\* Data on indicator 1.2.3 is confidential, but has been included in the computation. Please see Appendix I: Technical Notes for further details.

# Gambia

	Rank (out of 134)	Score
<b>Network Readiness Index</b>	<b>119</b>	<b>29.40</b>
<b>A. Technology pillar</b>	<b>114</b>	<b>22.51</b>
1st sub-pillar: Access	126	22.31
2nd sub-pillar: Content	122	9.34
3rd sub-pillar: Future Technologies	42	35.89
<b>B. People pillar</b>	<b>122</b>	<b>22.52</b>
1st sub-pillar: Individuals	121	21.74
2nd sub-pillar: Businesses	106	30.17
3rd sub-pillar: Governments	130	15.65
<b>C. Governance pillar</b>	<b>111</b>	<b>37.47</b>
1st sub-pillar: Trust	97	27.15
2nd sub-pillar: Regulation	66	66.47
3rd sub-pillar: Inclusion	134	18.80
<b>D. Impact pillar</b>	<b>117</b>	<b>35.08</b>
1st sub-pillar: Economy	106	14.78
2nd sub-pillar: Quality of Life	108	49.03
3rd sub-pillar: SDG Contribution	119	41.42



## The Network Readiness Index in detail

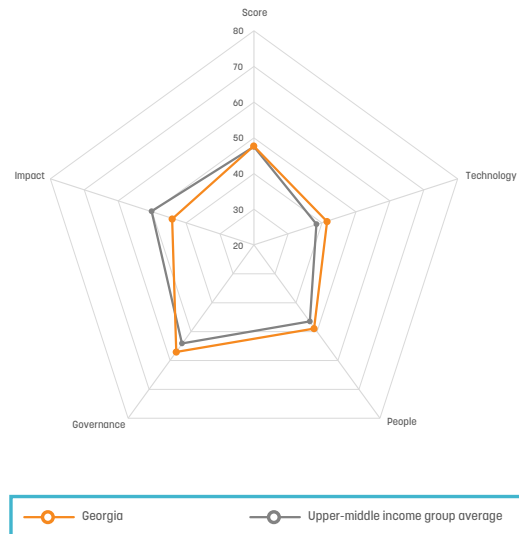
INDICATOR	RANK/134	SCORE
<b>A. Technology pillar</b>		
<b>1st sub-pillar: Access</b>		
1.1.1 Mobile tariffs	117	30.31
1.1.2 Handset prices	124	13.78
1.1.3 Households with internet access	118	13.61
1.1.4 4G mobile network coverage	127	7.20
1.1.5 Fixed-broadband subscriptions	100	9.99
1.1.6 International Internet bandwidth	109	58.98
1.1.7 Internet access in schools	n/a	n/a
<b>2nd sub-pillar: Content</b>		
1.2.1 GitHub commits	117	0.20
1.2.2 Wikipedia edits	n/a	n/a
1.2.3 Internet domain registrations*	-	-
1.2.4 Mobile apps development	120	27.64
<b>3rd sub-pillar: Future Technologies</b>		
1.3.1 Adoption of emerging technologies	94	35.57
1.3.2 Investment in emerging technology	76	36.20
1.3.3 ICT PCT patent applications	n/a	n/a
1.3.4 Computer software spending	n/a	n/a
1.3.5 Robot density	n/a	n/a
<b>B. People pillar</b>		
<b>1st sub-pillar: Individuals</b>		
2.1.1 Internet users	119	17.71
2.1.2 Active mobile-broadband subscriptions	112	13.33
2.1.3 Use of virtual social networks	113	14.43
2.1.4 Tertiary enrollment	126	1.40
2.1.5 Adult literacy rate	102	36.65
2.1.6 ICT skills	76	46.90
<b>2nd sub-pillar: Businesses</b>		
2.2.1 Firms with website	112	14.98
2.2.2 Ease of doing business	122	35.48
2.2.3 Professionals	61	26.20
2.2.4 Technicians and associate professionals	81	24.46
2.2.5 Business use of digital tools	90	49.72
2.2.6 R&D expenditure by businesses	n/a	n/a
<b>3rd sub-pillar: Governments</b>		
2.3.1 Government online services	133	0.00
2.3.2 Publication and use of open data	n/a	n/a
2.3.3 Government promotion of investment in emerging technologies	86	31.30
2.3.4 R&D expenditure by governments and higher education	n/a	n/a

INDICATOR	RANK/134	SCORE
<b>C. Governance pillar</b>		
<b>1st sub-pillar: Trust</b>		
3.1.1 Secure Internet servers	118	24.83
3.1.2 Cybersecurity	103	29.47
3.1.3 Online access to financial account	n/a	n/a
3.1.4 Internet shopping	n/a	n/a
<b>2nd sub-pillar: Regulation</b>		
3.2.1 Regulatory quality	109	37.50
3.2.2 ICT regulatory environment	93	72.59
3.2.3 Legal framework's adaptability to emerging technologies	66	40.81
3.2.4 E-commerce legislation	1	100.00
3.2.5 Privacy protection by law content	24	81.44
<b>3rd sub-pillar: Inclusion</b>		
3.3.1 E-Participation	133	0.00
3.3.2 Socioeconomic gap in use of digital payments	n/a	n/a
3.3.3 Availability of local online content	104	37.61
3.3.4 Gender gap in internet use	n/a	n/a
3.3.5 Rural gap in use of digital payments	n/a	n/a
<b>D. Impact pillar</b>		
<b>1st sub-pillar: Economy</b>		
4.1.1 Medium and high-tech industry	116	4.67
4.1.2 High-tech exports	125	0.29
4.1.3 PCT patent applications	n/a	n/a
4.1.4 Labour productivity per employee	n/a	n/a
4.1.5 Prevalence of gig economy	73	39.39
<b>2nd sub-pillar: Quality of Life</b>		
4.2.1 Happiness	86	48.56
4.2.2 Freedom to make life choices	116	51.30
4.2.3 Income inequality	57	69.85
4.2.4 Healthy life expectancy at birth	118	26.42
<b>3rd sub-pillar: SDG Contribution</b>		
4.3.1 SDG 3: Good Health and Well-Being	120	26.23
4.3.2 SDG 4: Quality Education	n/a	n/a
4.3.3 SDG 5: Gender Equality	126	28.75
4.3.4 SDG 7: Affordable and Clean Energy	69	78.54
4.3.5 SDG 11: Sustainable Cities and Communities	117	32.17

\* Data on indicator 1.2.3 is confidential, but has been included in the computation. Please see Appendix I: Technical Notes for further details.

# Georgia

	Rank (out of 134)	Score
<b>Network Readiness Index</b>	<b>68</b>	<b>47.95</b>
<b>A. Technology pillar</b>	<b>59</b>	<b>41.73</b>
1st sub-pillar: Access	44	76.35
2nd sub-pillar: Content	53	35.18
3rd sub-pillar: Future Technologies	125	13.65
<b>B. People pillar</b>	<b>63</b>	<b>48.93</b>
1st sub-pillar: Individuals	67	54.91
2nd sub-pillar: Businesses	47	51.34
3rd sub-pillar: Governments	75	40.54
<b>C. Governance pillar</b>	<b>64</b>	<b>57.04</b>
1st sub-pillar: Trust	63	44.17
2nd sub-pillar: Regulation	45	72.15
3rd sub-pillar: Inclusion	86	54.80
<b>D. Impact pillar</b>	<b>94</b>	<b>44.10</b>
1st sub-pillar: Economy	126	9.76
2nd sub-pillar: Quality of Life	83	61.95
3rd sub-pillar: SDG Contribution	85	60.58



## The Network Readiness Index in detail

INDICATOR	RANK/134	SCORE
<b>A. Technology pillar</b>		
<b>1st sub-pillar: Access</b>		
1.1.1 Mobile tariffs	34	74.78
1.1.2 Handset prices	81	38.69
1.1.3 Households with internet access	66	69.44
1.1.4 4G mobile network coverage	15	99.72
1.1.5 Fixed-broadband subscriptions	50	77.49
1.1.6 International Internet bandwidth	21	74.35
1.1.7 Internet access in schools	1	100.00
<b>2nd sub-pillar: Content</b>		
1.2.1 GitHub commits	92	1.48
1.2.2 Wikipedia edits	37	69.07
1.2.3 Internet domain registrations*	-	-
1.2.4 Mobile apps development	59	66.74
<b>3rd sub-pillar: Future Technologies</b>		
1.3.1 Adoption of emerging technologies	n/a	n/a
1.3.2 Investment in emerging technology	96	29.90
1.3.3 ICT PCT patent applications	63	2.51
1.3.4 Computer software spending	89	8.53
1.3.5 Robot density	n/a	n/a
<b>B. People pillar</b>		
<b>1st sub-pillar: Individuals</b>		
2.1.1 Internet users	77	63.21
2.1.2 Active mobile-broadband subscriptions	104	16.79
2.1.3 Use of virtual social networks	31	68.04
2.1.4 Tertiary enrollment	42	46.47
2.1.5 Adult literacy rate	13	99.21
2.1.6 ICT skills	102	35.76
<b>2nd sub-pillar: Businesses</b>		
2.2.1 Firms with website	68	48.41
2.2.2 Ease of doing business	7	94.64
2.2.3 Professionals	52	29.88
2.2.4 Technicians and associate professionals	65	32.43
2.2.5 Business use of digital tools	n/a	n/a
2.2.6 R&D expenditure by businesses	n/a	n/a
<b>3rd sub-pillar: Governments</b>		
2.3.1 Government online services	86	57.57
2.3.2 Publication and use of open data	40	37.44
2.3.3 Government promotion of investment in emerging technologies	n/a	n/a
2.3.4 R&D expenditure by governments and higher education	63	26.60

INDICATOR	RANK/134	SCORE
<b>C. Governance pillar</b>		
<b>1st sub-pillar: Trust</b>		
3.1.1 Secure Internet servers	51	63.27
3.1.2 Cybersecurity	20	91.98
3.1.3 Online access to financial account	93	15.90
3.1.4 Internet shopping	91	5.54
<b>2nd sub-pillar: Regulation</b>		
3.2.1 Regulatory quality	28	76.14
3.2.2 ICT regulatory environment	21	94.41
3.2.3 Legal framework's adaptability to emerging technologies	n/a	n/a
3.2.4 E-commerce legislation	115	50.00
3.2.5 Privacy protection by law content	42	68.03
<b>3rd sub-pillar: Inclusion</b>		
3.3.1 E-Participation	79	62.97
3.3.2 Socioeconomic gap in use of digital payments	87	54.31
3.3.3 Availability of local online content	81	51.78
3.3.4 Gender gap in internet use	62	57.81
3.3.5 Rural gap in use of digital payments	107	47.13
<b>D. Impact pillar</b>		
<b>1st sub-pillar: Economy</b>		
4.1.1 Medium and high-tech industry	98	14.46
4.1.2 High-tech exports	98	4.87
4.1.3 PCT patent applications	61	0.59
4.1.4 Labour productivity per employee	79	19.11
4.1.5 Prevalence of gig economy	n/a	n/a
<b>2nd sub-pillar: Quality of Life</b>		
4.2.1 Happiness	104	43.22
4.2.2 Freedom to make life choices	71	74.05
4.2.3 Income inequality	61	68.56
4.2.4 Healthy life expectancy at birth	82	61.97
<b>3rd sub-pillar: SDG Contribution</b>		
4.3.1 SDG 3: Good Health and Well-Being	85	62.30
4.3.2 SDG 4: Quality Education	66	27.22
4.3.3 SDG 5: Gender Equality	50	78.23
4.3.4 SDG 7: Affordable and Clean Energy	94	68.93
4.3.5 SDG 11: Sustainable Cities and Communities	65	66.22

\* Data on indicator 1.2.3 is confidential, but has been included in the computation. Please see Appendix I: Technical Notes for further details.

# Germany

	Rank (out of 134)	Score
<b>Network Readiness Index</b>	<b>9</b>	<b>77.48</b>
<b>A. Technology pillar</b>	<b>7</b>	<b>79.18</b>
1st sub-pillar: Access	27	82.00
2nd sub-pillar: Content	10	77.14
3rd sub-pillar: Future Technologies	3	78.40
<b>B. People pillar</b>	<b>12</b>	<b>70.54</b>
1st sub-pillar: Individuals	53	58.83
2nd sub-pillar: Businesses	6	77.32
3rd sub-pillar: Governments	14	75.47
<b>C. Governance pillar</b>	<b>12</b>	<b>83.52</b>
1st sub-pillar: Trust	10	84.48
2nd sub-pillar: Regulation	7	89.01
3rd sub-pillar: Inclusion	27	77.08
<b>D. Impact pillar</b>	<b>7</b>	<b>76.69</b>
1st sub-pillar: Economy	7	64.09
2nd sub-pillar: Quality of Life	17	84.14
3rd sub-pillar: SDG Contribution	12	81.84



## The Network Readiness Index in detail

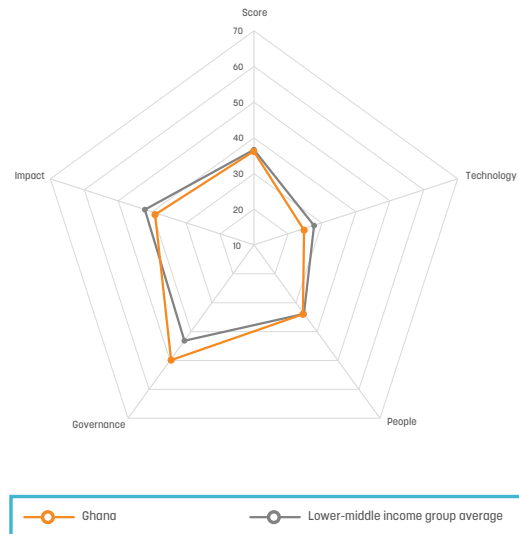
INDICATOR	RANK/134	SCORE
<b>A. Technology pillar</b>		
<b>1st sub-pillar: Access</b>		
1.1.1 Mobile tariffs	11	90.26
1.1.2 Handset prices	41	58.03
1.1.3 Households with internet access	18	89.87
1.1.4 4G mobile network coverage	45	97.50
1.1.5 Fixed-broadband subscriptions	35	88.06
1.1.6 International Internet bandwidth	64	68.29
1.1.7 Internet access in schools	n/a	n/a
<b>2nd sub-pillar: Content</b>		
1.2.1 GitHub commits	15	58.66
1.2.2 Wikipedia edits	11	85.62
1.2.3 Internet domain registrations*	-	-
1.2.4 Mobile apps development	21	85.62
<b>3rd sub-pillar: Future Technologies</b>		
1.3.1 Adoption of emerging technologies	9	85.48
1.3.2 Investment in emerging technology	7	86.85
1.3.3 ICT PCT patent applications	9	71.72
1.3.4 Computer software spending	18	47.94
1.3.5 Robot density	1	100.00
<b>B. People pillar</b>		
<b>1st sub-pillar: Individuals</b>		
2.1.1 Internet users	16	89.78
2.1.2 Active mobile-broadband subscriptions	57	31.54
2.1.3 Use of virtual social networks	85	44.33
2.1.4 Tertiary enrollment	29	51.13
2.1.5 Adult literacy rate	n/a	n/a
2.1.6 ICT skills	20	77.38
<b>2nd sub-pillar: Businesses</b>		
2.2.1 Firms with website	8	91.38
2.2.2 Ease of doing business	21	87.52
2.2.3 Professionals	33	43.82
2.2.4 Technicians and associate professionals	1	100.00
2.2.5 Business use of digital tools	10	87.66
2.2.6 R&D expenditure by businesses	7	53.53
<b>3rd sub-pillar: Governments</b>		
2.3.1 Government online services	58	72.73
2.3.2 Publication and use of open data	16	69.52
2.3.3 Government promotion of investment in emerging technologies	13	73.72
2.3.4 R&D expenditure by governments and higher education	6	85.92

INDICATOR	RANK/134	SCORE
<b>C. Governance pillar</b>		
<b>1st sub-pillar: Trust</b>		
3.1.1 Secure Internet servers	8	89.88
3.1.2 Cybersecurity	24	91.12
3.1.3 Online access to financial account	14	71.20
3.1.4 Internet shopping	11	85.73
<b>2nd sub-pillar: Regulation</b>		
3.2.1 Regulatory quality	12	89.94
3.2.2 ICT regulatory environment	16	95.56
3.2.3 Legal framework's adaptability to emerging technologies	11	77.61
3.2.4 E-commerce legislation	1	100.00
3.2.5 Privacy protection by law content	22	81.94
<b>3rd sub-pillar: Inclusion</b>		
3.3.1 E-Participation	56	74.07
3.3.2 Socioeconomic gap in use of digital payments	13	96.12
3.3.3 Availability of local online content	25	84.39
3.3.4 Gender gap in internet use	66	55.63
3.3.5 Rural gap in use of digital payments	32	75.20
<b>D. Impact pillar</b>		
<b>1st sub-pillar: Economy</b>		
4.1.1 Medium and high-tech industry	4	78.58
4.1.2 High-tech exports	31	31.02
4.1.3 PCT patent applications	7	64.46
4.1.4 Labour productivity per employee	20	64.33
4.1.5 Prevalence of gig economy	12	82.07
<b>2nd sub-pillar: Quality of Life</b>		
4.2.1 Happiness	15	85.36
4.2.2 Freedom to make life choices	37	86.66
4.2.3 Income inequality	28	80.15
4.2.4 Healthy life expectancy at birth	27	84.41
<b>3rd sub-pillar: SDG Contribution</b>		
4.3.1 SDG 3: Good Health and Well-Being	13	90.16
4.3.2 SDG 4: Quality Education	18	65.70
4.3.3 SDG 5: Gender Equality	65	74.59
4.3.4 SDG 7: Affordable and Clean Energy	39	85.33
4.3.5 SDG 11: Sustainable Cities and Communities	14	93.39

\* Data on indicator 1.2.3 is confidential, but has been included in the computation. Please see Appendix I: Technical Notes for further details.

# Ghana

	Rank (out of 134)	Score
<b>Network Readiness Index</b>	<b>98</b>	<b>36.97</b>
<b>A. Technology pillar</b>	<b>109</b>	<b>25.03</b>
1st sub-pillar: Access	109	34.92
2nd sub-pillar: Content	112	12.78
3rd sub-pillar: Future Technologies	69	27.39
<b>B. People pillar</b>	<b>100</b>	<b>33.74</b>
1st sub-pillar: Individuals	101	37.97
2nd sub-pillar: Businesses	116	26.09
3rd sub-pillar: Governments	82	37.16
<b>C. Governance pillar</b>	<b>86</b>	<b>49.77</b>
1st sub-pillar: Trust	93	28.66
2nd sub-pillar: Regulation	72	64.68
3rd sub-pillar: Inclusion	84	55.96
<b>D. Impact pillar</b>	<b>107</b>	<b>39.34</b>
1st sub-pillar: Economy	104	15.05
2nd sub-pillar: Quality of Life	106	49.56
3rd sub-pillar: SDG Contribution	100	53.41



## The Network Readiness Index in detail

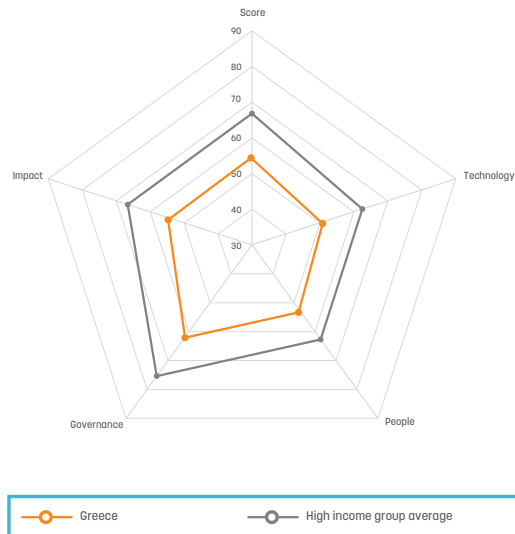
INDICATOR	RANK/134	SCORE
<b>A. Technology pillar</b>		
<b>1st sub-pillar: Access</b>		
1.1.1 Mobile tariffs	60	65.34
1.1.2 Handset prices	79	39.03
1.1.3 Households with internet access	89	35.37
1.1.4 4G mobile network coverage	113	34.86
1.1.5 Fixed-broadband subscriptions	121	0.06
1.1.6 International Internet bandwidth	104	61.35
1.1.7 Internet access in schools	63	8.41
<b>2nd sub-pillar: Content</b>		
1.2.1 GitHub commits	103	0.75
1.2.2 Wikipedia edits	108	14.94
1.2.3 Internet domain registrations*	-	-
1.2.4 Mobile apps development	114	35.12
<b>3rd sub-pillar: Future Technologies</b>		
1.3.1 Adoption of emerging technologies	98	32.17
1.3.2 Investment in emerging technology	45	49.40
1.3.3 ICT PCT patent applications	n/a	n/a
1.3.4 Computer software spending	123	0.62
1.3.5 Robot density	n/a	n/a
<b>B. People pillar</b>		
<b>1st sub-pillar: Individuals</b>		
2.1.1 Internet users	101	37.47
2.1.2 Active mobile-broadband subscriptions	39	35.68
2.1.3 Use of virtual social networks	108	18.56
2.1.4 Tertiary enrollment	97	10.95
2.1.5 Adult literacy rate	80	73.04
2.1.6 ICT skills	66	52.14
<b>2nd sub-pillar: Businesses</b>		
2.2.1 Firms with website	98	27.51
2.2.2 Ease of doing business	100	52.58
2.2.3 Professionals	84	17.48
2.2.4 Technicians and associate professionals	113	10.14
2.2.5 Business use of digital tools	93	48.81
2.2.6 R&D expenditure by businesses	94	0.01
<b>3rd sub-pillar: Governments</b>		
2.3.1 Government online services	79	62.43
2.3.2 Publication and use of open data	62	25.96
2.3.3 Government promotion of investment in emerging technologies	97	26.86
2.3.4 R&D expenditure by governments and higher education	54	33.39

INDICATOR	RANK/134	SCORE
<b>C. Governance pillar</b>		
<b>1st sub-pillar: Trust</b>		
3.1.1 Secure Internet servers	112	30.43
3.1.2 Cybersecurity	89	46.48
3.1.3 Online access to financial account	59	32.31
3.1.4 Internet shopping	93	5.41
<b>2nd sub-pillar: Regulation</b>		
3.2.1 Regulatory quality	78	49.65
3.2.2 ICT regulatory environment	41	89.19
3.2.3 Legal framework's adaptability to emerging technologies	89	29.16
3.2.4 E-commerce legislation	1	100.00
3.2.5 Privacy protection by law content	53	55.38
<b>3rd sub-pillar: Inclusion</b>		
3.3.1 E-Participation	81	61.73
3.3.2 Socioeconomic gap in use of digital payments	60	70.42
3.3.3 Availability of local online content	105	37.56
3.3.4 Gender gap in internet use	n/a	n/a
3.3.5 Rural gap in use of digital payments	92	54.14
<b>D. Impact pillar</b>		
<b>1st sub-pillar: Economy</b>		
4.1.1 Medium and high-tech industry	125	0.69
4.1.2 High-tech exports	57	15.65
4.1.3 PCT patent applications	n/a	n/a
4.1.4 Labour productivity per employee	106	5.26
4.1.5 Prevalence of gig economy	74	38.59
<b>2nd sub-pillar: Quality of Life</b>		
4.2.1 Happiness	100	44.69
4.2.2 Freedom to make life choices	77	70.13
4.2.3 Income inequality	96	50.26
4.2.4 Healthy life expectancy at birth	111	33.15
<b>3rd sub-pillar: SDG Contribution</b>		
4.3.1 SDG 3: Good Health and Well-Being	112	31.15
4.3.2 SDG 4: Quality Education	n/a	n/a
4.3.3 SDG 5: Gender Equality	105	55.71
4.3.4 SDG 7: Affordable and Clean Energy	36	85.77
4.3.5 SDG 11: Sustainable Cities and Communities	97	41.02

\* Data on indicator 1.2.3 is confidential, but has been included in the computation. Please see Appendix I: Technical Notes for further details.

# Greece

	Rank (out of 134)	Score
<b>Network Readiness Index</b>	<b>45</b>	<b>55.20</b>
<b>A. Technology pillar</b>	<b>39</b>	<b>51.37</b>
1st sub-pillar: Access	37	78.91
2nd sub-pillar: Content	36	46.79
3rd sub-pillar: Future Technologies	62	28.42
<b>B. People pillar</b>	<b>46</b>	<b>52.95</b>
1st sub-pillar: Individuals	25	68.24
2nd sub-pillar: Businesses	61	46.02
3rd sub-pillar: Governments	64	44.59
<b>C. Governance pillar</b>	<b>49</b>	<b>61.80</b>
1st sub-pillar: Trust	62	44.55
2nd sub-pillar: Regulation	44	72.95
3rd sub-pillar: Inclusion	54	67.91
<b>D. Impact pillar</b>	<b>55</b>	<b>54.67</b>
1st sub-pillar: Economy	67	25.29
2nd sub-pillar: Quality of Life	63	66.08
3rd sub-pillar: SDG Contribution	42	72.64



## The Network Readiness Index in detail

INDICATOR	RANK/134	SCORE
<b>A. Technology pillar</b>		
<b>1st sub-pillar: Access</b>		
1.1.1 Mobile tariffs	48	69.95
1.1.2 Handset prices	26	65.09
1.1.3 Households with internet access	63	70.88
1.1.4 4G mobile network coverage	34	98.80
1.1.5 Fixed-broadband subscriptions	17	95.64
1.1.6 International Internet bandwidth	31	73.10
1.1.7 Internet access in schools	n/a	n/a
<b>2nd sub-pillar: Content</b>		
1.2.1 GitHub commits	36	18.23
1.2.2 Wikipedia edits	31	73.44
1.2.3 Internet domain registrations*	-	-
1.2.4 Mobile apps development	36	77.90
<b>3rd sub-pillar: Future Technologies</b>		
1.3.1 Adoption of emerging technologies	85	38.50
1.3.2 Investment in emerging technology	110	23.53
1.3.3 ICT PCT patent applications	36	20.42
1.3.4 Computer software spending	13	52.90
1.3.5 Robot density	37	6.74
<b>B. People pillar</b>		
<b>1st sub-pillar: Individuals</b>		
2.1.1 Internet users	57	72.47
2.1.2 Active mobile-broadband subscriptions	56	31.71
2.1.3 Use of virtual social networks	55	58.76
2.1.4 Tertiary enrollment	1	100.00
2.1.5 Adult literacy rate	31	97.38
2.1.6 ICT skills	72	49.14
<b>2nd sub-pillar: Businesses</b>		
2.2.1 Firms with website	55	57.81
2.2.2 Ease of doing business	74	67.55
2.2.3 Professionals	25	46.57
2.2.4 Technicians and associate professionals	61	33.96
2.2.5 Business use of digital tools	76	56.17
2.2.6 R&D expenditure by businesses	36	14.04
<b>3rd sub-pillar: Governments</b>		
2.3.1 Government online services	64	69.70
2.3.2 Publication and use of open data	36	38.94
2.3.3 Government promotion of investment in emerging technologies	107	17.92
2.3.4 R&D expenditure by governments and higher education	30	51.79

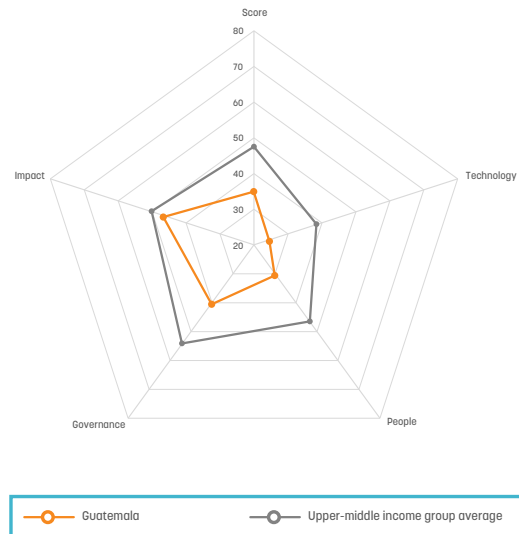
INDICATOR	RANK/134	SCORE
<b>C. Governance pillar</b>		
<b>1st sub-pillar: Trust</b>		
3.1.1 Secure Internet servers	45	70.24
3.1.2 Cybersecurity	78	56.23
3.1.3 Online access to financial account	76	23.33
3.1.4 Internet shopping	47	28.40
<b>2nd sub-pillar: Regulation</b>		
3.2.1 Regulatory quality	56	57.91
3.2.2 ICT regulatory environment	28	93.05
3.2.3 Legal framework's adaptability to emerging technologies	78	33.58
3.2.4 E-commerce legislation	1	100.00
3.2.5 Privacy protection by law content	27	80.19
<b>3rd sub-pillar: Inclusion</b>		
3.3.1 E-participation	49	77.78
3.3.2 Socioeconomic gap in use of digital payments	45	78.80
3.3.3 Availability of local online content	63	61.34
3.3.4 Gender gap in internet use	61	57.88
3.3.5 Rural gap in use of digital payments	74	63.76
<b>D. Impact pillar</b>		
<b>1st sub-pillar: Economy</b>		
4.1.1 Medium and high-tech industry	76	26.53
4.1.2 High-tech exports	38	23.54
4.1.3 PCT patent applications	37	3.17
4.1.4 Labour productivity per employee	37	48.81
4.1.5 Prevalence of gig economy	104	24.40
<b>2nd sub-pillar: Quality of Life</b>		
4.2.1 Happiness	59	64.06
4.2.2 Freedom to make life choices	127	40.60
4.2.3 Income inequality	47	73.71
4.2.4 Healthy life expectancy at birth	21	85.96
<b>3rd sub-pillar: SDG Contribution</b>		
4.3.1 SDG 3: Good Health and Well-Being	50	77.05
4.3.2 SDG 4: Quality Education	43	47.42
4.3.3 SDG 5: Gender Equality	78	72.80
4.3.4 SDG 7: Affordable and Clean Energy	41	84.68
4.3.5 SDG 11: Sustainable Cities and Communities	35	81.27

\* Data on indicator 1.2.3 is confidential, but has been included in the computation. Please see Appendix I: Technical Notes for further details.



# Guatemala

	Rank (out of 134)	Score
<b>Network Readiness Index</b>	<b>106</b>	<b>35.51</b>
<b>A. Technology pillar</b>	<b>110</b>	<b>24.72</b>
1st sub-pillar: Access	110	34.53
2nd sub-pillar: Content	97	19.74
3rd sub-pillar: Future Technologies	97	19.91
<b>B. People pillar</b>	<b>107</b>	<b>30.17</b>
1st sub-pillar: Individuals	100	38.61
2nd sub-pillar: Businesses	99	31.31
3rd sub-pillar: Governments	121	20.59
<b>C. Governance pillar</b>	<b>107</b>	<b>40.26</b>
1st sub-pillar: Trust	118	19.18
2nd sub-pillar: Regulation	109	50.49
3rd sub-pillar: Inclusion	98	51.11
<b>D. Impact pillar</b>	<b>87</b>	<b>46.90</b>
1st sub-pillar: Economy	109	14.30
2nd sub-pillar: Quality of Life	70	64.25
3rd sub-pillar: SDG Contribution	82	62.16



## The Network Readiness Index in detail

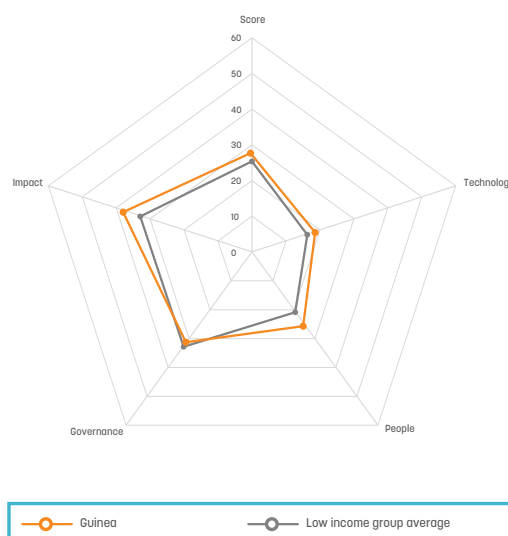
INDICATOR	RANK/134	SCORE
<b>A. Technology pillar</b>		
<b>1st sub-pillar: Access</b>		
1.1.1 Mobile tariffs	118	29.41
1.1.2 Handset prices	64	46.42
1.1.3 Households with internet access	106	23.40
1.1.4 4G mobile network coverage	108	40.35
1.1.5 Fixed-broadband subscriptions	n/a	n/a
1.1.6 International Internet bandwidth	112	58.48
1.1.7 Internet access in schools	62	9.12
<b>2nd sub-pillar: Content</b>		
1.2.1 GitHub commits	95	1.35
1.2.2 Wikipedia edits	92	26.31
1.2.3 Internet domain registrations*	-	-
1.2.4 Mobile apps development	97	48.99
<b>3rd sub-pillar: Future Technologies</b>		
1.3.1 Adoption of emerging technologies	78	41.14
1.3.2 Investment in emerging technology	72	37.54
1.3.3 ICT PCT patent applications	82	0.00
1.3.4 Computer software spending	120	0.95
1.3.5 Robot density	n/a	n/a
<b>B. People pillar</b>		
<b>1st sub-pillar: Individuals</b>		
2.1.1 Internet users	71	64.27
2.1.2 Active mobile-broadband subscriptions	126	5.08
2.1.3 Use of virtual social networks	85	44.33
2.1.4 Tertiary enrollment	92	15.44
2.1.5 Adult literacy rate	78	75.94
2.1.6 ICT skills	120	26.58
<b>2nd sub-pillar: Businesses</b>		
2.2.1 Firms with website	59	56.31
2.2.2 Ease of doing business	88	57.24
2.2.3 Professionals	102	12.93
2.2.4 Technicians and associate professionals	111	10.57
2.2.5 Business use of digital tools	88	50.73
2.2.6 R&D expenditure by businesses	89	0.07
<b>3rd sub-pillar: Governments</b>		
2.3.1 Government online services	102	49.70
2.3.2 Publication and use of open data	63	23.72
2.3.3 Government promotion of investment in emerging technologies	119	8.94
2.3.4 R&D expenditure by governments and higher education	112	0.00

INDICATOR	RANK/134	SCORE
<b>C. Governance pillar</b>		
<b>1st sub-pillar: Trust</b>		
3.1.1 Secure Internet servers	102	36.27
3.1.2 Cybersecurity	110	26.33
3.1.3 Online access to financial account	113	7.65
3.1.4 Internet shopping	87	6.47
<b>2nd sub-pillar: Regulation</b>		
3.2.1 Regulatory quality	85	47.11
3.2.2 ICT regulatory environment	125	48.85
3.2.3 Legal framework's adaptability to emerging technologies	82	30.99
3.2.4 E-commerce legislation	77	75.00
3.2.5 Privacy protection by law content	n/a	n/a
<b>3rd sub-pillar: Inclusion</b>		
3.3.1 E-Participation	100	48.15
3.3.2 Socioeconomic gap in use of digital payments	89	53.69
3.3.3 Availability of local online content	102	38.74
3.3.4 Gender gap in internet use	n/a	n/a
3.3.5 Rural gap in use of digital payments	73	63.86
<b>D. Impact pillar</b>		
<b>1st sub-pillar: Economy</b>		
4.1.1 Medium and high-tech industry	67	28.43
4.1.2 High-tech exports	82	9.32
4.1.3 PCT patent applications	83	0.03
4.1.4 Labour productivity per employee	90	12.86
4.1.5 Prevalence of gig economy	109	20.84
<b>2nd sub-pillar: Quality of Life</b>		
4.2.1 Happiness	38	70.15
4.2.2 Freedom to make life choices	30	89.36
4.2.3 Income inequality	110	37.89
4.2.4 Healthy life expectancy at birth	85	59.60
<b>3rd sub-pillar: SDG Contribution</b>		
4.3.1 SDG 3: Good Health and Well-Being	103	44.26
4.3.2 SDG 4: Quality Education	n/a	n/a
4.3.3 SDG 5: Gender Equality	88	66.15
4.3.4 SDG 7: Affordable and Clean Energy	74	76.08
4.3.5 SDG 11: Sustainable Cities and Communities	69	62.13

\* Data on indicator 1.2.3 is confidential, but has been included in the computation. Please see Appendix I: Technical Notes for further details.

# Guinea

	Rank (out of 134)	Score
<b>Network Readiness Index</b>	<b>120</b>	<b>28.42</b>
<b>A. Technology pillar</b>	<b>119</b>	<b>19.27</b>
1st sub-pillar: Access	122	25.19
2nd sub-pillar: Content	132	4.38
3rd sub-pillar: Future Technologies	65	28.23
<b>B. People pillar</b>	<b>119</b>	<b>25.43</b>
1st sub-pillar: Individuals	127	14.53
2nd sub-pillar: Businesses	86	35.99
3rd sub-pillar: Governments	108	25.76
<b>C. Governance pillar</b>	<b>126</b>	<b>31.07</b>
1st sub-pillar: Trust	128	13.36
2nd sub-pillar: Regulation	112	48.19
3rd sub-pillar: Inclusion	128	31.65
<b>D. Impact pillar</b>	<b>111</b>	<b>37.91</b>
1st sub-pillar: Economy	53	31.58
2nd sub-pillar: Quality of Life	111	47.25
3rd sub-pillar: SDG Contribution	128	34.90



## The Network Readiness Index in detail

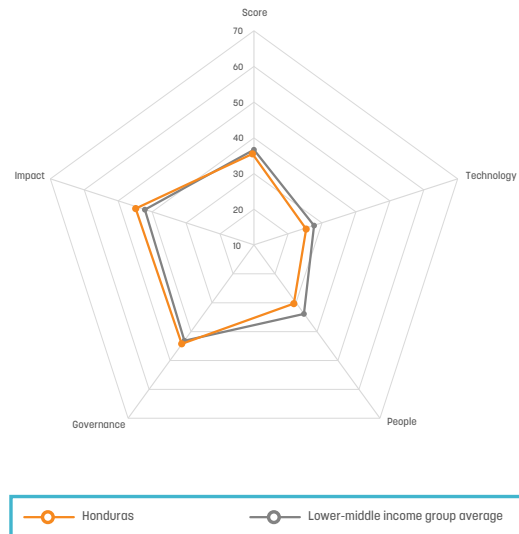
INDICATOR	RANK/134	SCORE
<b>A. Technology pillar</b>		
<b>1st sub-pillar: Access</b>		
1.1.1 Mobile tariffs	90	49.79
1.1.2 Handset prices	105	28.83
1.1.3 Households with internet access	126	8.69
1.1.4 4G mobile network coverage	125	10.30
1.1.5 Fixed-broadband subscriptions	n/a	n/a
1.1.6 International Internet bandwidth	121	53.52
1.1.7 Internet access in schools	71	0.00
<b>2nd sub-pillar: Content</b>		
1.2.1 GitHub commits	130	0.03
1.2.2 Wikipedia edits	103	17.48
1.2.3 Internet domain registrations*	-	-
1.2.4 Mobile apps development	134	0.00
<b>3rd sub-pillar: Future Technologies</b>		
1.3.1 Adoption of emerging technologies	93	36.01
1.3.2 Investment in emerging technology	53	45.81
1.3.3 ICT PCT patent applications	n/a	n/a
1.3.4 Computer software spending	108	2.85
1.3.5 Robot density	n/a	n/a
<b>B. People pillar</b>		
<b>1st sub-pillar: Individuals</b>		
2.1.1 Internet users	121	15.81
2.1.2 Active mobile-broadband subscriptions	116	10.74
2.1.3 Use of virtual social networks	114	13.40
2.1.4 Tertiary enrollment	104	7.91
2.1.5 Adult literacy rate	107	12.48
2.1.6 ICT skills	119	26.85
<b>2nd sub-pillar: Businesses</b>		
2.2.1 Firms with website	118	11.03
2.2.2 Ease of doing business	123	33.95
2.2.3 Professionals	n/a	n/a
2.2.4 Technicians and associate professionals	n/a	n/a
2.2.5 Business use of digital tools	57	63.00
2.2.6 R&D expenditure by businesses	n/a	n/a
<b>3rd sub-pillar: Governments</b>		
2.3.1 Government online services	129	19.39
2.3.2 Publication and use of open data	n/a	n/a
2.3.3 Government promotion of investment in emerging technologies	82	32.13
2.3.4 R&D expenditure by governments and higher education	n/a	n/a

INDICATOR	RANK/134	SCORE
<b>C. Governance pillar</b>		
<b>1st sub-pillar: Trust</b>		
3.1.1 Secure Internet servers	129	13.22
3.1.2 Cybersecurity	115	19.83
3.1.3 Online access to financial account	87	16.91
3.1.4 Internet shopping	106	3.47
<b>2nd sub-pillar: Regulation</b>		
3.2.1 Regulatory quality	116	34.28
3.2.2 ICT regulatory environment	105	66.41
3.2.3 Legal framework's adaptability to emerging technologies	107	17.06
3.2.4 E-commerce legislation	77	75.00
3.2.5 Privacy protection by law content	n/a	n/a
<b>3rd sub-pillar: Inclusion</b>		
3.3.1 E-Participation	124	28.39
3.3.2 Socioeconomic gap in use of digital payments	67	65.68
3.3.3 Availability of local online content	130	10.64
3.3.4 Gender gap in internet use	n/a	n/a
3.3.5 Rural gap in use of digital payments	122	21.90
<b>D. Impact pillar</b>		
<b>1st sub-pillar: Economy</b>		
4.1.1 Medium and high-tech industry	n/a	n/a
4.1.2 High-tech exports	114	1.82
4.1.3 PCT patent applications	n/a	n/a
4.1.4 Labour productivity per employee	n/a	n/a
4.1.5 Prevalence of gig economy	34	61.34
<b>2nd sub-pillar: Quality of Life</b>		
4.2.1 Happiness	106	40.78
4.2.2 Freedom to make life choices	114	53.82
4.2.3 Income inequality	41	75.52
4.2.4 Healthy life expectancy at birth	126	18.89
<b>3rd sub-pillar: SDG Contribution</b>		
4.3.1 SDG 3: Good Health and Well-Being	131	14.75
4.3.2 SDG 4: Quality Education	n/a	n/a
4.3.3 SDG 5: Gender Equality	129	19.96
4.3.4 SDG 7: Affordable and Clean Energy	110	62.86
4.3.5 SDG 11: Sustainable Cities and Communities	95	42.03

\* Data on indicator 1.2.3 is confidential, but has been included in the computation. Please see Appendix I: Technical Notes for further details.

# Honduras

	Rank (out of 134)	Score
<b>Network Readiness Index</b>	<b>102</b>	<b>36.23</b>
<b>A. Technology pillar</b>	<b>103</b>	<b>26.02</b>
1st sub-pillar: Access	113	33.07
2nd sub-pillar: Content	102	16.62
3rd sub-pillar: Future Technologies	63	28.36
<b>B. People pillar</b>	<b>108</b>	<b>30.02</b>
1st sub-pillar: Individuals	104	36.65
2nd sub-pillar: Businesses	104	30.76
3rd sub-pillar: Governments	115	22.66
<b>C. Governance pillar</b>	<b>100</b>	<b>44.10</b>
1st sub-pillar: Trust	127	13.64
2nd sub-pillar: Regulation	43	74.44
3rd sub-pillar: Inclusion	110	44.20
<b>D. Impact pillar</b>	<b>92</b>	<b>44.77</b>
1st sub-pillar: Economy	132	7.39
2nd sub-pillar: Quality of Life	88	60.04
3rd sub-pillar: SDG Contribution	65	66.88



## The Network Readiness Index in detail

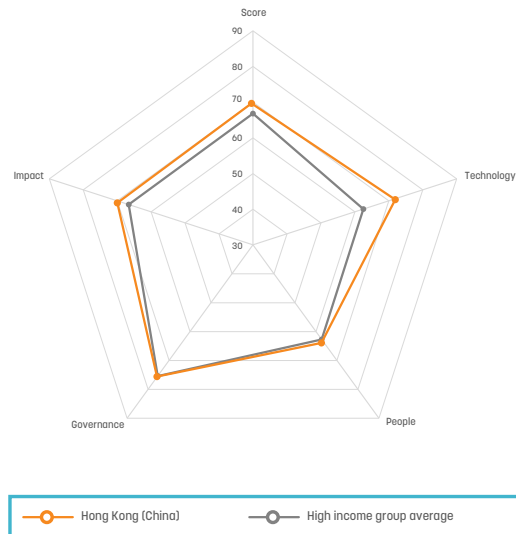
INDICATOR	RANK/134	SCORE
<b>A. Technology pillar</b>		
<b>1st sub-pillar: Access</b>		
1.1.1 Mobile tariffs	127	19.07
1.1.2 Handset prices	100	31.21
1.1.3 Households with internet access	99	26.28
1.1.4 4G mobile network coverage	94	67.46
1.1.5 Fixed-broadband subscriptions	109	3.60
1.1.6 International Internet bandwidth	72	67.69
1.1.7 Internet access in schools	55	16.14
<b>2nd sub-pillar: Content</b>		
1.2.1 GitHub commits	97	1.19
1.2.2 Wikipedia edits	101	18.71
1.2.3 Internet domain registrations*	-	-
1.2.4 Mobile apps development	99	46.12
<b>3rd sub-pillar: Future Technologies</b>		
1.3.1 Adoption of emerging technologies	n/a	n/a
1.3.2 Investment in emerging technology	78	35.90
1.3.3 ICT PCT patent applications	n/a	n/a
1.3.4 Computer software spending	60	20.82
1.3.5 Robot density	n/a	n/a
<b>B. People pillar</b>		
<b>1st sub-pillar: Individuals</b>		
2.1.1 Internet users	107	29.94
2.1.2 Active mobile-broadband subscriptions	114	11.45
2.1.3 Use of virtual social networks	91	41.24
2.1.4 Tertiary enrollment	87	18.66
2.1.5 Adult literacy rate	69	83.56
2.1.6 ICT skills	104	35.04
<b>2nd sub-pillar: Businesses</b>		
2.2.1 Firms with website	79	39.47
2.2.2 Ease of doing business	110	46.05
2.2.3 Professionals	107	11.63
2.2.4 Technicians and associate professionals	78	25.90
2.2.5 Business use of digital tools	n/a	n/a
2.2.6 R&D expenditure by businesses	n/a	n/a
<b>3rd sub-pillar: Governments</b>		
2.3.1 Government online services	109	44.85
2.3.2 Publication and use of open data	n/a	n/a
2.3.3 Government promotion of investment in emerging technologies	n/a	n/a
2.3.4 R&D expenditure by governments and higher education	111	0.46

INDICATOR	RANK/134	SCORE
<b>C. Governance pillar</b>		
<b>1st sub-pillar: Trust</b>		
3.1.1 Secure Internet servers	103	36.23
3.1.2 Cybersecurity	131	3.90
3.1.3 Online access to financial account	108	9.92
3.1.4 Internet shopping	98	4.53
<b>2nd sub-pillar: Regulation</b>		
3.2.1 Regulatory quality	102	41.09
3.2.2 ICT regulatory environment	72	82.24
3.2.3 Legal framework's adaptability to emerging technologies	n/a	n/a
3.2.4 E-commerce legislation	1	100.00
3.2.5 Privacy protection by law content	n/a	n/a
<b>3rd sub-pillar: Inclusion</b>		
3.3.1 E-Participation	102	46.91
3.3.2 Socioeconomic gap in use of digital payments	97	47.39
3.3.3 Availability of local online content	97	43.45
3.3.4 Gender gap in internet use	n/a	n/a
3.3.5 Rural gap in use of digital payments	113	39.05
<b>D. Impact pillar</b>		
<b>1st sub-pillar: Economy</b>		
4.1.1 Medium and high-tech industry	108	8.86
4.1.2 High-tech exports	95	5.93
4.1.3 PCT patent applications	n/a	n/a
4.1.4 Labour productivity per employee	n/a	n/a
4.1.5 Prevalence of gig economy	n/a	n/a
<b>2nd sub-pillar: Quality of Life</b>		
4.2.1 Happiness	61	63.63
4.2.2 Freedom to make life choices	57	80.11
4.2.3 Income inequality	114	28.09
4.2.4 Healthy life expectancy at birth	57	68.32
<b>3rd sub-pillar: SDG Contribution</b>		
4.3.1 SDG 3: Good Health and Well-Being	88	60.66
4.3.2 SDG 4: Quality Education	n/a	n/a
4.3.3 SDG 5: Gender Equality	62	75.39
4.3.4 SDG 7: Affordable and Clean Energy	100	66.98
4.3.5 SDG 11: Sustainable Cities and Communities	68	64.48

\* Data on indicator 1.2.3 is confidential, but has been included in the computation. Please see Appendix I: Technical Notes for further details.

# Hong Kong (China)

	Rank (out of 134)	Score
<b>Network Readiness Index</b>	<b>22</b>	<b>70.52</b>
<b>A. Technology pillar</b>	<b>13</b>	<b>72.84</b>
1st sub-pillar: Access	9	88.55
2nd sub-pillar: Content	18	64.79
3rd sub-pillar: Future Technologies	12	65.17
<b>B. People pillar</b>	<b>25</b>	<b>63.76</b>
1st sub-pillar: Individuals	15	72.14
2nd sub-pillar: Businesses	32	58.45
3rd sub-pillar: Governments	26	60.69
<b>C. Governance pillar</b>	<b>26</b>	<b>75.55</b>
1st sub-pillar: Trust	35	64.98
2nd sub-pillar: Regulation	15	85.72
3rd sub-pillar: Inclusion	32	75.96
<b>D. Impact pillar</b>	<b>22</b>	<b>69.94</b>
1st sub-pillar: Economy	6	64.79
2nd sub-pillar: Quality of Life	92	59.07
3rd sub-pillar: SDG Contribution	3	85.96



## The Network Readiness Index in detail

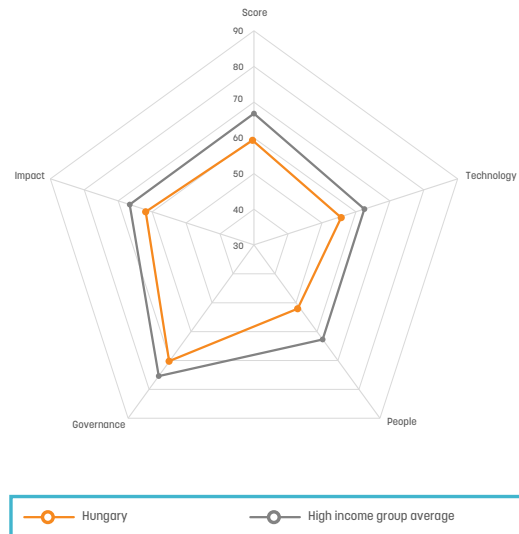
INDICATOR	RANK/134	SCORE
<b>A. Technology pillar</b>		
<b>1st sub-pillar: Access</b>		
1.1.1 Mobile tariffs	9	91.69
1.1.2 Handset prices	23	66.04
1.1.3 Households with internet access	46	80.13
1.1.4 4G mobile network coverage	24	99.00
1.1.5 Fixed-broadband subscriptions	44	83.86
1.1.6 International Internet bandwidth	2	99.90
1.1.7 Internet access in schools	25	99.22
<b>2nd sub-pillar: Content</b>		
1.2.1 GitHub commits	32	26.97
1.2.2 Wikipedia edits	10	86.96
1.2.3 Internet domain registrations*	-	-
1.2.4 Mobile apps development	3	96.38
<b>3rd sub-pillar: Future Technologies</b>		
1.3.1 Adoption of emerging technologies	19	76.65
1.3.2 Investment in emerging technology	15	74.83
1.3.3 ICT PCT patent applications	10	69.94
1.3.4 Computer software spending	27	31.90
1.3.5 Robot density	6	72.54
<b>B. People pillar</b>		
<b>1st sub-pillar: Individuals</b>		
2.1.1 Internet users	18	89.45
2.1.2 Active mobile-broadband subscriptions	8	54.20
2.1.3 Use of virtual social networks	12	78.35
2.1.4 Tertiary enrollment	23	56.05
2.1.5 Adult literacy rate	n/a	n/a
2.1.6 ICT skills	16	82.65
<b>2nd sub-pillar: Businesses</b>		
2.2.1 Firms with website	n/a	n/a
2.2.2 Ease of doing business	3	97.44
2.2.3 Professionals	82	17.79
2.2.4 Technicians and associate professionals	6	85.56
2.2.5 Business use of digital tools	24	81.61
2.2.6 R&D expenditure by businesses	42	9.87
<b>3rd sub-pillar: Governments</b>		
2.3.1 Government online services	n/a	n/a
2.3.2 Publication and use of open data	n/a	n/a
2.3.3 Government promotion of investment in emerging technologies	8	78.59
2.3.4 R&D expenditure by governments and higher education	43	42.78

INDICATOR	RANK/134	SCORE
<b>C. Governance pillar</b>		
<b>1st sub-pillar: Trust</b>		
3.1.1 Secure Internet servers	10	87.86
3.1.2 Cybersecurity	n/a	n/a
3.1.3 Online access to financial account	29	52.51
3.1.4 Internet shopping	30	54.55
<b>2nd sub-pillar: Regulation</b>		
3.2.1 Regulatory quality	1	100.00
3.2.2 ICT regulatory environment	66	84.36
3.2.3 Legal framework's adaptability to emerging technologies	16	72.79
3.2.4 E-commerce legislation	n/a	n/a
3.2.5 Privacy protection by law content	n/a	n/a
<b>3rd sub-pillar: Inclusion</b>		
3.3.1 E-Participation	n/a	n/a
3.3.2 Socioeconomic gap in use of digital payments	44	79.28
3.3.3 Availability of local online content	7	93.10
3.3.4 Gender gap in internet use	47	61.23
3.3.5 Rural gap in use of digital payments	54	70.25
<b>D. Impact pillar</b>		
<b>1st sub-pillar: Economy</b>		
4.1.1 Medium and high-tech industry	37	47.67
4.1.2 High-tech exports	1	100.00
4.1.3 PCT patent applications	18	27.78
4.1.4 Labour productivity per employee	9	76.01
4.1.5 Prevalence of gig economy	17	72.50
<b>2nd sub-pillar: Quality of Life</b>		
4.2.1 Happiness	70	58.30
4.2.2 Freedom to make life choices	99	59.84
4.2.3 Income inequality	n/a	n/a
4.2.4 Healthy life expectancy at birth	n/a	n/a
<b>3rd sub-pillar: SDG Contribution</b>		
4.3.1 SDG 3: Good Health and Well-Being	n/a	n/a
4.3.2 SDG 4: Quality Education	3	84.89
4.3.3 SDG 5: Gender Equality	76	73.00
4.3.4 SDG 7: Affordable and Clean Energy	1	100.00
4.3.5 SDG 11: Sustainable Cities and Communities	n/a	n/a

\* Data on indicator 1.2.3 is confidential, but has been included in the computation. Please see Appendix I: Technical Notes for further details.

# Hungary

	Rank (out of 134)	Score
<b>Network Readiness Index</b>	<b>39</b>	<b>60.05</b>
<b>A. Technology pillar</b>	<b>31</b>	<b>56.43</b>
1st sub-pillar: Access	21	84.18
2nd sub-pillar: Content	32	52.04
3rd sub-pillar: Future Technologies	44	33.06
<b>B. People pillar</b>	<b>51</b>	<b>51.81</b>
1st sub-pillar: Individuals	59	57.09
2nd sub-pillar: Businesses	41	54.67
3rd sub-pillar: Governments	66	43.68
<b>C. Governance pillar</b>	<b>40</b>	<b>70.16</b>
1st sub-pillar: Trust	39	62.24
2nd sub-pillar: Regulation	23	82.71
3rd sub-pillar: Inclusion	59	65.55
<b>D. Impact pillar</b>	<b>36</b>	<b>61.79</b>
1st sub-pillar: Economy	36	37.55
2nd sub-pillar: Quality of Life	46	72.23
3rd sub-pillar: SDG Contribution	35	75.59



## The Network Readiness Index in detail

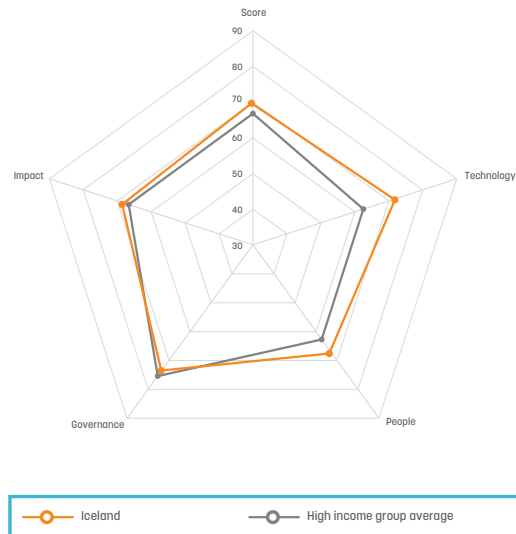
INDICATOR	RANK/134	SCORE
<b>A. Technology pillar</b>		
<b>1st sub-pillar: Access</b>		
1.1.1 Mobile tariffs	23	81.93
1.1.2 Handset prices	35	62.46
1.1.3 Households with internet access	38	83.26
1.1.4 4G mobile network coverage	22	99.20
1.1.5 Fixed-broadband subscriptions	25	93.29
1.1.6 International Internet bandwidth	59	69.09
1.1.7 Internet access in schools	1	100.00
<b>2nd sub-pillar: Content</b>		
1.2.1 GitHub commits	33	23.88
1.2.2 Wikipedia edits	18	82.02
1.2.3 Internet domain registrations*	-	-
1.2.4 Mobile apps development	38	76.43
<b>3rd sub-pillar: Future Technologies</b>		
1.3.1 Adoption of emerging technologies	63	47.82
1.3.2 Investment in emerging technology	100	28.34
1.3.3 ICT PCT patent applications	27	37.47
1.3.4 Computer software spending	38	26.73
1.3.5 Robot density	23	24.95
<b>B. People pillar</b>		
<b>1st sub-pillar: Individuals</b>		
2.1.1 Internet users	50	75.69
2.1.2 Active mobile-broadband subscriptions	78	25.95
2.1.3 Use of virtual social networks	47	61.86
2.1.4 Tertiary enrollment	63	35.11
2.1.5 Adult literacy rate	17	98.87
2.1.6 ICT skills	80	45.07
<b>2nd sub-pillar: Businesses</b>		
2.2.1 Firms with website	53	61.49
2.2.2 Ease of doing business	51	76.39
2.2.3 Professionals	39	40.43
2.2.4 Technicians and associate professionals	23	62.51
2.2.5 Business use of digital tools	61	61.99
2.2.6 R&D expenditure by businesses	22	25.19
<b>3rd sub-pillar: Governments</b>		
2.3.1 Government online services	54	73.94
2.3.2 Publication and use of open data	64	23.30
2.3.3 Government promotion of investment in emerging technologies	46	46.68
2.3.4 R&D expenditure by governments and higher education	58	30.79

INDICATOR	RANK/134	SCORE
<b>C. Governance pillar</b>		
<b>1st sub-pillar: Trust</b>		
3.1.1 Secure Internet servers	23	81.19
3.1.2 Cybersecurity	33	87.11
3.1.3 Online access to financial account	41	43.79
3.1.4 Internet shopping	39	36.86
<b>2nd sub-pillar: Regulation</b>		
3.2.1 Regulatory quality	41	64.68
3.2.2 ICT regulatory environment	2	99.62
3.2.3 Legal framework's adaptability to emerging technologies	37	54.01
3.2.4 E-commerce legislation	1	100.00
3.2.5 Privacy protection by law content	7	95.22
<b>3rd sub-pillar: Inclusion</b>		
3.3.1 E-Participation	74	66.67
3.3.2 Socioeconomic gap in use of digital payments	41	79.36
3.3.3 Availability of local online content	57	65.42
3.3.4 Gender gap in internet use	49	60.87
3.3.5 Rural gap in use of digital payments	88	55.43
<b>D. Impact pillar</b>		
<b>1st sub-pillar: Economy</b>		
4.1.1 Medium and high-tech industry	5	76.36
4.1.2 High-tech exports	25	33.23
4.1.3 PCT patent applications	30	6.42
4.1.4 Labour productivity per employee	44	42.95
4.1.5 Prevalence of gig economy	98	28.80
<b>2nd sub-pillar: Quality of Life</b>		
4.2.1 Happiness	56	65.01
4.2.2 Freedom to make life choices	74	71.93
4.2.3 Income inequality	22	83.51
4.2.4 Healthy life expectancy at birth	54	68.48
<b>3rd sub-pillar: SDG Contribution</b>		
4.3.1 SDG 3: Good Health and Well-Being	54	75.41
4.3.2 SDG 4: Quality Education	35	58.58
4.3.3 SDG 5: Gender Equality	42	79.92
4.3.4 SDG 7: Affordable and Clean Energy	63	80.20
4.3.5 SDG 11: Sustainable Cities and Communities	31	83.85

\* Data on indicator 1.2.3 is confidential, but has been included in the computation. Please see Appendix I: Technical Notes for further details.

# Iceland

	Rank (out of 134)	Score
<b>Network Readiness Index</b>	<b>21</b>	<b>70.55</b>
<b>A. Technology pillar</b>	<b>14</b>	<b>72.76</b>
1st sub-pillar: Access	7	88.85
2nd sub-pillar: Content	4	85.04
3rd sub-pillar: Future Technologies	31	44.40
<b>B. People pillar</b>	<b>22</b>	<b>67.49</b>
1st sub-pillar: Individuals	3	75.76
2nd sub-pillar: Businesses	17	68.24
3rd sub-pillar: Governments	28	58.47
<b>C. Governance pillar</b>	<b>31</b>	<b>73.45</b>
1st sub-pillar: Trust	26	68.44
2nd sub-pillar: Regulation	37	77.29
3rd sub-pillar: Inclusion	39	74.62
<b>D. Impact pillar</b>	<b>23</b>	<b>68.50</b>
1st sub-pillar: Economy	28	45.37
2nd sub-pillar: Quality of Life	1	94.29
3rd sub-pillar: SDG Contribution	71	65.84



## The Network Readiness Index in detail

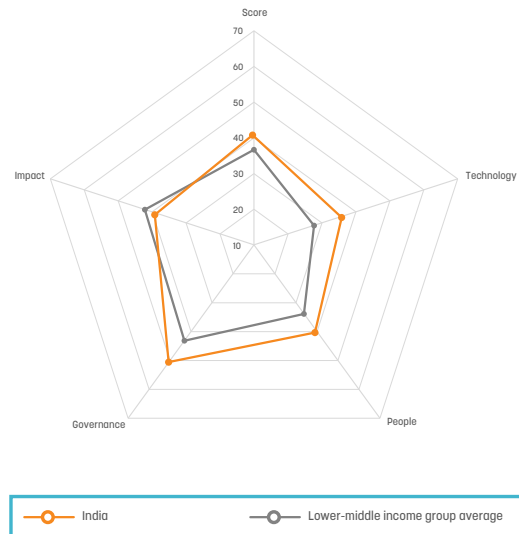
INDICATOR	RANK/134	SCORE
<b>A. Technology pillar</b>		
<b>1st sub-pillar: Access</b>		
1.1.1 Mobile tariffs	24	80.30
1.1.2 Handset prices	10	75.04
1.1.3 Households with internet access	5	97.85
1.1.4 4G mobile network coverage	36	98.20
1.1.5 Fixed-broadband subscriptions	3	99.46
1.1.6 International Internet bandwidth	5	82.23
1.1.7 Internet access in schools	n/a	n/a
<b>2nd sub-pillar: Content</b>		
1.2.1 GitHub commits	12	62.66
1.2.2 Wikipedia edits	8	88.41
1.2.3 Internet domain registrations*	-	-
1.2.4 Mobile apps development	11	89.69
<b>3rd sub-pillar: Future Technologies</b>		
1.3.1 Adoption of emerging technologies	16	78.69
1.3.2 Investment in emerging technology	25	65.70
1.3.3 ICT PCT patent applications	24	44.03
1.3.4 Computer software spending	35	27.50
1.3.5 Robot density	39	6.06
<b>B. People pillar</b>		
<b>1st sub-pillar: Individuals</b>		
2.1.1 Internet users	3	99.34
2.1.2 Active mobile-broadband subscriptions	15	49.38
2.1.3 Use of virtual social networks	8	82.47
2.1.4 Tertiary enrollment	26	52.31
2.1.5 Adult literacy rate	n/a	n/a
2.1.6 ICT skills	2	95.31
<b>2nd sub-pillar: Businesses</b>		
2.2.1 Firms with website	15	84.83
2.2.2 Ease of doing business	25	86.20
2.2.3 Professionals	9	63.78
2.2.4 Technicians and associate professionals	31	55.77
2.2.5 Business use of digital tools	18	83.67
2.2.6 R&D expenditure by businesses	15	35.17
<b>3rd sub-pillar: Governments</b>		
2.3.1 Government online services	42	78.79
2.3.2 Publication and use of open data	37	38.87
2.3.3 Government promotion of investment in emerging technologies	45	47.15
2.3.4 R&D expenditure by governments and higher education	13	69.07

INDICATOR	RANK/134	SCORE
<b>C. Governance pillar</b>		
<b>1st sub-pillar: Trust</b>		
3.1.1 Secure Internet servers	9	89.11
3.1.2 Cybersecurity	87	47.78
3.1.3 Online access to financial account	n/a	n/a
3.1.4 Internet shopping	n/a	n/a
<b>2nd sub-pillar: Regulation</b>		
3.2.1 Regulatory quality	19	82.64
3.2.2 ICT regulatory environment	51	86.88
3.2.3 Legal framework's adaptability to emerging technologies	24	64.65
3.2.4 E-commerce legislation	77	75.00
3.2.5 Privacy protection by law content	n/a	n/a
<b>3rd sub-pillar: Inclusion</b>		
3.3.1 E-Participation	50	76.54
3.3.2 Socioeconomic gap in use of digital payments	n/a	n/a
3.3.3 Availability of local online content	32	79.20
3.3.4 Gender gap in internet use	13	68.13
3.3.5 Rural gap in use of digital payments	n/a	n/a
<b>D. Impact pillar</b>		
<b>1st sub-pillar: Economy</b>		
4.1.1 Medium and high-tech industry	95	16.42
4.1.2 High-tech exports	14	44.48
4.1.3 PCT patent applications	15	35.94
4.1.4 Labour productivity per employee	18	64.73
4.1.5 Prevalence of gig economy	28	65.25
<b>2nd sub-pillar: Quality of Life</b>		
4.2.1 Happiness	4	95.13
4.2.2 Freedom to make life choices	2	99.35
4.2.3 Income inequality	7	93.30
4.2.4 Healthy life expectancy at birth	10	89.40
<b>3rd sub-pillar: SDG Contribution</b>		
4.3.1 SDG 3: Good Health and Well-Being	10	91.80
4.3.2 SDG 4: Quality Education	25	63.87
4.3.3 SDG 5: Gender Equality	70	73.91
4.3.4 SDG 7: Affordable and Clean Energy	130	6.50
4.3.5 SDG 11: Sustainable Cities and Communities	15	93.10

\* Data on indicator 1.2.3 is confidential, but has been included in the computation. Please see Appendix I: Technical Notes for further details.

# India

	Rank (out of 134)	Score
<b>Network Readiness Index</b>	<b>88</b>	<b>41.57</b>
<b>A. Technology pillar</b>	<b>76</b>	<b>36.58</b>
1st sub-pillar: Access	74	59.96
2nd sub-pillar: Content	95	20.66
3rd sub-pillar: Future Technologies	59	29.13
<b>B. People pillar</b>	<b>84</b>	<b>40.15</b>
1st sub-pillar: Individuals	103	36.67
2nd sub-pillar: Businesses	92	34.58
3rd sub-pillar: Governments	45	49.21
<b>C. Governance pillar</b>	<b>84</b>	<b>50.45</b>
1st sub-pillar: Trust	77	33.56
2nd sub-pillar: Regulation	96	54.95
3rd sub-pillar: Inclusion	71	62.83
<b>D. Impact pillar</b>	<b>108</b>	<b>39.08</b>
1st sub-pillar: Economy	70	23.46
2nd sub-pillar: Quality of Life	104	50.94
3rd sub-pillar: SDG Contribution	117	42.84



## The Network Readiness Index in detail

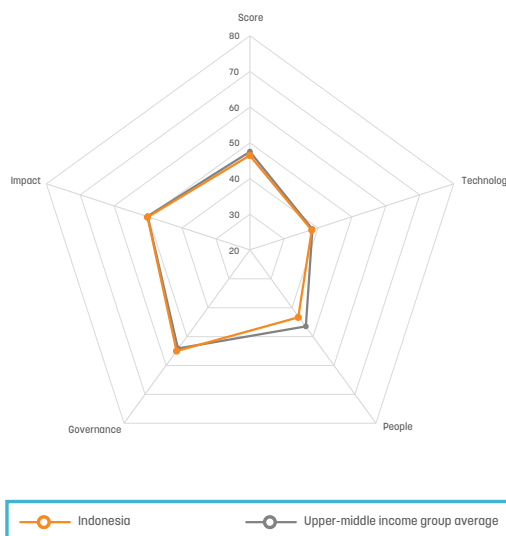
INDICATOR	RANK/134	SCORE
<b>A. Technology pillar</b>		
<b>1st sub-pillar: Access</b>		
1.1.1 Mobile tariffs	38	74.13
1.1.2 Handset prices	55	49.67
1.1.3 Households with internet access	100	25.18
1.1.4 4G mobile network coverage	55	94.00
1.1.5 Fixed-broadband subscriptions	70	53.11
1.1.6 International Internet bandwidth	87	63.66
1.1.7 Internet access in schools	n/a	n/a
<b>2nd sub-pillar: Content</b>		
1.2.1 GitHub commits	85	1.89
1.2.2 Wikipedia edits	97	24.24
1.2.3 Internet domain registrations*	-	-
1.2.4 Mobile apps development	82	55.66
<b>3rd sub-pillar: Future Technologies</b>		
1.3.1 Adoption of emerging technologies	53	51.54
1.3.2 Investment in emerging technology	27	64.29
1.3.3 ICT PCT patent applications	49	8.94
1.3.4 Computer software spending	64	19.79
1.3.5 Robot density	52	1.09
<b>B. People pillar</b>		
<b>1st sub-pillar: Individuals</b>		
2.1.1 Internet users	103	32.78
2.1.2 Active mobile-broadband subscriptions	111	13.65
2.1.3 Use of virtual social networks	103	27.84
2.1.4 Tertiary enrollment	84	20.06
2.1.5 Adult literacy rate	88	67.04
2.1.6 ICT skills	56	58.68
<b>2nd sub-pillar: Businesses</b>		
2.2.1 Firms with website	71	45.74
2.2.2 Ease of doing business	61	72.19
2.2.3 Professionals	111	9.33
2.2.4 Technicians and associate professionals	101	16.80
2.2.5 Business use of digital tools	67	58.48
2.2.6 R&D expenditure by businesses	53	4.94
<b>3rd sub-pillar: Governments</b>		
2.3.1 Government online services	24	84.84
2.3.2 Publication and use of open data	33	42.80
2.3.3 Government promotion of investment in emerging technologies	69	35.62
2.3.4 R&D expenditure by governments and higher education	53	33.56

INDICATOR	RANK/134	SCORE
<b>C. Governance pillar</b>		
<b>1st sub-pillar: Trust</b>		
3.1.1 Secure Internet servers	74	47.60
3.1.2 Cybersecurity	49	77.03
3.1.3 Online access to financial account	116	5.99
3.1.4 Internet shopping	102	3.63
<b>2nd sub-pillar: Regulation</b>		
3.2.1 Regulatory quality	83	47.37
3.2.2 ICT regulatory environment	88	74.71
3.2.3 Legal framework's adaptability to emerging technologies	63	42.78
3.2.4 E-commerce legislation	77	75.00
3.2.5 Privacy protection by law content	64	34.87
<b>3rd sub-pillar: Inclusion</b>		
3.3.1 E-Participation	29	85.18
3.3.2 Socioeconomic gap in use of digital payments	91	50.15
3.3.3 Availability of local online content	72	58.20
3.3.4 Gender gap in internet use	n/a	n/a
3.3.5 Rural gap in use of digital payments	83	57.80
<b>D. Impact pillar</b>		
<b>1st sub-pillar: Economy</b>		
4.1.1 Medium and high-tech industry	33	49.44
4.1.2 High-tech exports	53	17.07
4.1.3 PCT patent applications	63	0.52
4.1.4 Labour productivity per employee	93	10.70
4.1.5 Prevalence of gig economy	70	39.56
<b>2nd sub-pillar: Quality of Life</b>		
4.2.1 Happiness	132	10.92
4.2.2 Freedom to make life choices	45	85.09
4.2.3 Income inequality	68	64.95
4.2.4 Healthy life expectancy at birth	102	42.82
<b>3rd sub-pillar: SDG Contribution</b>		
4.3.1 SDG 3: Good Health and Well-Being	103	44.26
4.3.2 SDG 4: Quality Education	n/a	n/a
4.3.3 SDG 5: Gender Equality	127	27.58
4.3.4 SDG 7: Affordable and Clean Energy	68	78.68
4.3.5 SDG 11: Sustainable Cities and Communities	124	20.84

\* Data on indicator 1.2.3 is confidential, but has been included in the computation. Please see Appendix I: Technical Notes for further details.

# Indonesia

	Rank (out of 134)	Score
<b>Network Readiness Index</b>	<b>73</b>	<b>46.71</b>
<b>A. Technology pillar</b>	<b>72</b>	<b>38.38</b>
1st sub-pillar: Access	68	63.24
2nd sub-pillar: Content	92	21.31
3rd sub-pillar: Future Technologies	52	30.61
<b>B. People pillar</b>	<b>79</b>	<b>43.26</b>
1st sub-pillar: Individuals	81	52.06
2nd sub-pillar: Businesses	102	30.84
3rd sub-pillar: Governments	53	46.88
<b>C. Governance pillar</b>	<b>68</b>	<b>54.99</b>
1st sub-pillar: Trust	66	42.52
2nd sub-pillar: Regulation	80	62.08
3rd sub-pillar: Inclusion	80	60.38
<b>D. Impact pillar</b>	<b>72</b>	<b>50.20</b>
1st sub-pillar: Economy	57	29.70
2nd sub-pillar: Quality of Life	82	62.11
3rd sub-pillar: SDG Contribution	89	58.80



## The Network Readiness Index in detail

INDICATOR	RANK/134	SCORE
<b>A. Technology pillar</b>		
<b>1st sub-pillar: Access</b>		
1.1.1 Mobile tariffs	64	63.58
1.1.2 Handset prices	72	42.05
1.1.3 Households with internet access	70	66.13
1.1.4 4G mobile network coverage	62	92.70
1.1.5 Fixed-broadband subscriptions	73	48.04
1.1.6 International Internet bandwidth	76	66.91
1.1.7 Internet access in schools	n/a	n/a
<b>2nd sub-pillar: Content</b>		
1.2.1 GitHub commits	88	1.68
1.2.2 Wikipedia edits	91	27.98
1.2.3 Internet domain registrations*	-	-
1.2.4 Mobile apps development	85	54.47
<b>3rd sub-pillar: Future Technologies</b>		
1.3.1 Adoption of emerging technologies	41	59.47
1.3.2 Investment in emerging technology	28	62.78
1.3.3 ICT PCT patent applications	81	0.06
1.3.4 Computer software spending	32	29.17
1.3.5 Robot density	47	1.56
<b>B. People pillar</b>		
<b>1st sub-pillar: Individuals</b>		
2.1.1 Internet users	100	38.28
2.1.2 Active mobile-broadband subscriptions	50	33.85
2.1.3 Use of virtual social networks	55	58.76
2.1.4 Tertiary enrollment	74	26.14
2.1.5 Adult literacy rate	43	94.44
2.1.6 ICT skills	49	60.88
<b>2nd sub-pillar: Businesses</b>		
2.2.1 Firms with website	115	12.77
2.2.2 Ease of doing business	68	69.60
2.2.3 Professionals	99	13.78
2.2.4 Technicians and associate professionals	106	12.63
2.2.5 Business use of digital tools	35	75.86
2.2.6 R&D expenditure by businesses	81	0.42
<b>3rd sub-pillar: Governments</b>		
2.3.1 Government online services	71	67.28
2.3.2 Publication and use of open data	38	38.35
2.3.3 Government promotion of investment in emerging technologies	24	60.62
2.3.4 R&D expenditure by governments and higher education	72	21.25

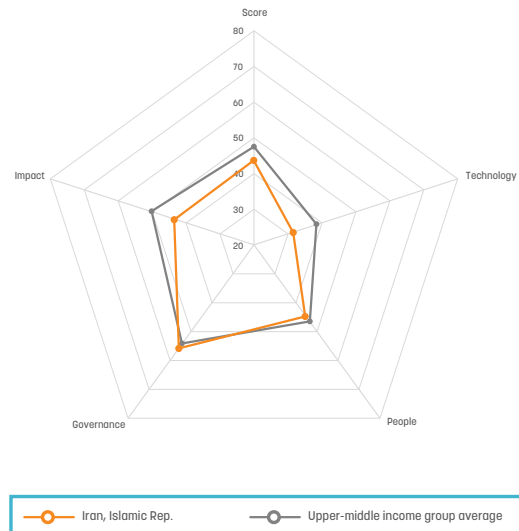
INDICATOR	RANK/134	SCORE
<b>C. Governance pillar</b>		
<b>1st sub-pillar: Trust</b>		
3.1.1 Secure Internet servers	60	59.28
3.1.2 Cybersecurity	43	83.21
3.1.3 Online access to financial account	94	14.96
3.1.4 Internet shopping	69	12.64
<b>2nd sub-pillar: Regulation</b>		
3.2.1 Regulatory quality	76	49.84
3.2.2 ICT regulatory environment	95	71.24
3.2.3 Legal framework's adaptability to emerging technologies	36	55.08
3.2.4 E-commerce legislation	1	100.00
3.2.5 Privacy protection by law content	65	34.22
<b>3rd sub-pillar: Inclusion</b>		
3.3.1 E-Participation	56	74.07
3.3.2 Socioeconomic gap in use of digital payments	105	41.34
3.3.3 Availability of local online content	45	70.21
3.3.4 Gender gap in internet use	78	46.95
3.3.5 Rural gap in use of digital payments	60	69.30
<b>D. Impact pillar</b>		
<b>1st sub-pillar: Economy</b>		
4.1.1 Medium and high-tech industry	40	44.72
4.1.2 High-tech exports	60	15.19
4.1.3 PCT patent applications	86	0.01
4.1.4 Labour productivity per employee	85	15.38
4.1.5 Prevalence of gig economy	16	73.20
<b>2nd sub-pillar: Quality of Life</b>		
4.2.1 Happiness	83	52.15
4.2.2 Freedom to make life choices	49	83.45
4.2.3 Income inequality	72	61.86
4.2.4 Healthy life expectancy at birth	97	50.97
<b>3rd sub-pillar: SDG Contribution</b>		
4.3.1 SDG 3: Good Health and Well-Being	101	47.54
4.3.2 SDG 4: Quality Education	72	20.12
4.3.3 SDG 5: Gender Equality	93	64.22
4.3.4 SDG 7: Affordable and Clean Energy	33	86.20
4.3.5 SDG 11: Sustainable Cities and Communities	45	75.94

\* Data on indicator 1.2.3 is confidential, but has been included in the computation. Please see Appendix I: Technical Notes for further details.



# Iran, Islamic Rep.

	Rank (out of 134)	Score
<b>Network Readiness Index</b>	<b>79</b>	<b>43.91</b>
<b>A. Technology pillar</b>	<b>88</b>	<b>31.70</b>
1st sub-pillar: Access	82	52.36
2nd sub-pillar: Content	80	24.50
3rd sub-pillar: Future Technologies	107	18.24
<b>B. People pillar</b>	<b>76</b>	<b>44.68</b>
1st sub-pillar: Individuals	78	52.47
2nd sub-pillar: Businesses	98	32.39
3rd sub-pillar: Governments	46	49.18
<b>C. Governance pillar</b>	<b>66</b>	<b>55.79</b>
1st sub-pillar: Trust	47	51.92
2nd sub-pillar: Regulation	102	52.45
3rd sub-pillar: Inclusion	69	62.99
<b>D. Impact pillar</b>	<b>96</b>	<b>43.49</b>
1st sub-pillar: Economy	73	22.79
2nd sub-pillar: Quality of Life	101	52.13
3rd sub-pillar: SDG Contribution	95	55.56



## The Network Readiness Index in detail

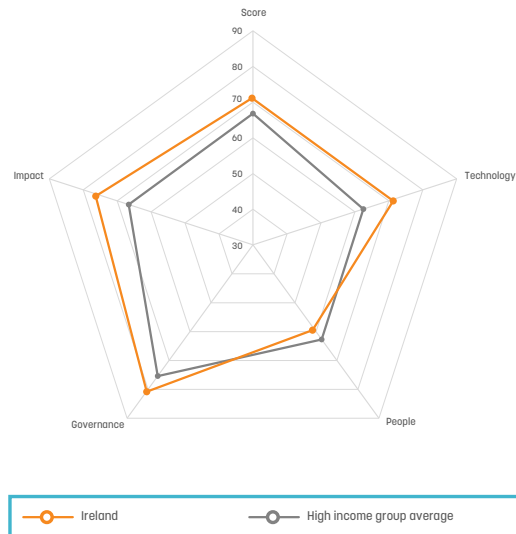
INDICATOR	RANK/134	SCORE
<b>A. Technology pillar</b>		
<b>1st sub-pillar: Access</b>		
1.1.1 Mobile tariffs	55	67.55
1.1.2 Handset prices	83	37.40
1.1.3 Households with internet access	47	79.51
1.1.4 4G mobile network coverage	71	88.02
1.1.5 Fixed-broadband subscriptions	92	20.27
1.1.6 International Internet bandwidth	90	63.23
1.1.7 Internet access in schools	61	10.55
<b>2nd sub-pillar: Content</b>		
1.2.1 GitHub commits	91	1.48
1.2.2 Wikipedia edits	58	48.11
1.2.3 Internet domain registrations*	-	-
1.2.4 Mobile apps development	103	43.84
<b>3rd sub-pillar: Future Technologies</b>		
1.3.1 Adoption of emerging technologies	81	39.26
1.3.2 Investment in emerging technology	102	27.77
1.3.3 ICT PCT patent applications	62	2.79
1.3.4 Computer software spending	58	21.24
1.3.5 Robot density	65	0.12
<b>B. People pillar</b>		
<b>1st sub-pillar: Individuals</b>		
2.1.1 Internet users	66	69.43
2.1.2 Active mobile-broadband subscriptions	77	26.11
2.1.3 Use of virtual social networks	96	39.18
2.1.4 Tertiary enrollment	32	49.56
2.1.5 Adult literacy rate	74	81.42
2.1.6 ICT skills	73	49.10
<b>2nd sub-pillar: Businesses</b>		
2.2.1 Firms with website	n/a	n/a
2.2.2 Ease of doing business	107	50.08
2.2.3 Professionals	62	26.13
2.2.4 Technicians and associate professionals	83	23.66
2.2.5 Business use of digital tools	73	56.75
2.2.6 R&D expenditure by businesses	51	5.32
<b>3rd sub-pillar: Governments</b>		
2.3.1 Government online services	86	57.57
2.3.2 Publication and use of open data	n/a	n/a
2.3.3 Government promotion of investment in emerging technologies	75	33.90
2.3.4 R&D expenditure by governments and higher education	25	56.05

INDICATOR	RANK/134	SCORE
<b>C. Governance pillar</b>		
<b>1st sub-pillar: Trust</b>		
3.1.1 Secure Internet servers	63	55.40
3.1.2 Cybersecurity	63	68.58
3.1.3 Online access to financial account	33	50.73
3.1.4 Internet shopping	41	32.95
<b>2nd sub-pillar: Regulation</b>		
3.2.1 Regulatory quality	130	22.86
3.2.2 ICT regulatory environment	72	82.24
3.2.3 Legal framework's adaptability to emerging technologies	88	29.70
3.2.4 E-commerce legislation	77	75.00
3.2.5 Privacy protection by law content	n/a	n/a
<b>3rd sub-pillar: Inclusion</b>		
3.3.1 E-Participation	104	44.45
3.3.2 Socioeconomic gap in use of digital payments	18	95.17
3.3.3 Availability of local online content	92	47.81
3.3.4 Gender gap in internet use	75	48.78
3.3.5 Rural gap in use of digital payments	12	78.75
<b>D. Impact pillar</b>		
<b>1st sub-pillar: Economy</b>		
4.1.1 Medium and high-tech industry	19	57.67
4.1.2 High-tech exports	109	2.54
4.1.3 PCT patent applications	65	0.40
4.1.4 Labour productivity per employee	69	25.79
4.1.5 Prevalence of gig economy	100	27.55
<b>2nd sub-pillar: Quality of Life</b>		
4.2.1 Happiness	95	45.46
4.2.2 Freedom to make life choices	126	42.25
4.2.3 Income inequality	81	57.22
4.2.4 Healthy life expectancy at birth	78	63.58
<b>3rd sub-pillar: SDG Contribution</b>		
4.3.1 SDG 3: Good Health and Well-Being	65	72.13
4.3.2 SDG 4: Quality Education	n/a	n/a
4.3.3 SDG 5: Gender Equality	116	42.87
4.3.4 SDG 7: Affordable and Clean Energy	111	60.55
4.3.5 SDG 11: Sustainable Cities and Communities	88	46.67

\* Data on indicator 1.2.3 is confidential, but has been included in the computation. Please see Appendix I: Technical Notes for further details.

# Ireland

	Rank (out of 134)	Score
<b>Network Readiness Index</b>	<b>19</b>	<b>72.13</b>
<b>A. Technology pillar</b>	<b>15</b>	<b>72.10</b>
1st sub-pillar: Access	11	87.61
2nd sub-pillar: Content	16	69.79
3rd sub-pillar: Future Technologies	19	58.89
<b>B. People pillar</b>	<b>33</b>	<b>59.17</b>
1st sub-pillar: Individuals	35	64.34
2nd sub-pillar: Businesses	28	61.07
3rd sub-pillar: Governments	40	52.11
<b>C. Governance pillar</b>	<b>18</b>	<b>80.71</b>
1st sub-pillar: Trust	19	75.69
2nd sub-pillar: Regulation	12	86.58
3rd sub-pillar: Inclusion	19	79.84
<b>D. Impact pillar</b>	<b>8</b>	<b>76.54</b>
1st sub-pillar: Economy	10	61.38
2nd sub-pillar: Quality of Life	16	85.44
3rd sub-pillar: SDG Contribution	10	82.81



## The Network Readiness Index in detail

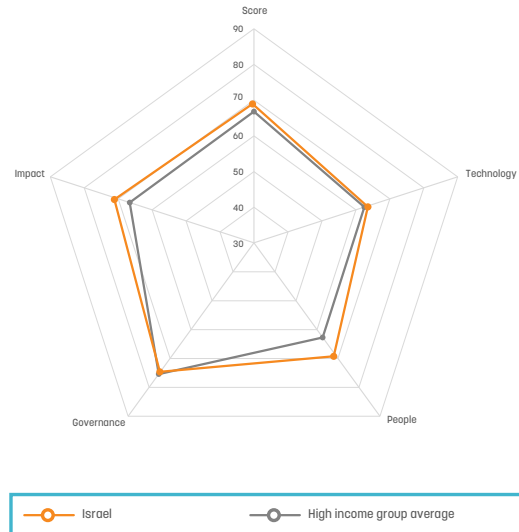
INDICATOR	RANK/134	SCORE
<b>A. Technology pillar</b>		
<b>1st sub-pillar: Access</b>		
1.1.1 Mobile tariffs	4	97.63
1.1.2 Handset prices	3	90.84
1.1.3 Households with internet access	19	89.06
1.1.4 4G mobile network coverage	67	90.00
1.1.5 Fixed-broadband subscriptions	39	87.40
1.1.6 International Internet bandwidth	45	70.71
1.1.7 Internet access in schools	n/a	n/a
<b>2nd sub-pillar: Content</b>		
1.2.1 GitHub commits	14	60.58
1.2.2 Wikipedia edits	28	77.98
1.2.3 Internet domain registrations*	-	-
1.2.4 Mobile apps development	4	95.51
<b>3rd sub-pillar: Future Technologies</b>		
1.3.1 Adoption of emerging technologies	26	71.34
1.3.2 Investment in emerging technology	18	70.53
1.3.3 ICT PCT patent applications	12	68.82
1.3.4 Computer software spending	2	71.61
1.3.5 Robot density	32	12.16
<b>B. People pillar</b>		
<b>1st sub-pillar: Individuals</b>		
2.1.1 Internet users	28	84.40
2.1.2 Active mobile-broadband subscriptions	26	40.55
2.1.3 Use of virtual social networks	40	64.95
2.1.4 Tertiary enrollment	22	56.68
2.1.5 Adult literacy rate	n/a	n/a
2.1.6 ICT skills	25	75.12
<b>2nd sub-pillar: Businesses</b>		
2.2.1 Firms with website	21	80.32
2.2.2 Ease of doing business	23	87.28
2.2.3 Professionals	13	58.49
2.2.4 Technicians and associate professionals	41	48.87
2.2.5 Business use of digital tools	42	72.69
2.2.6 R&D expenditure by businesses	28	18.78
<b>3rd sub-pillar: Governments</b>		
2.3.1 Government online services	46	76.37
2.3.2 Publication and use of open data	26	47.44
2.3.3 Government promotion of investment in emerging technologies	26	57.98
2.3.4 R&D expenditure by governments and higher education	62	26.66

INDICATOR	RANK/134	SCORE
<b>C. Governance pillar</b>		
<b>1st sub-pillar: Trust</b>		
3.1.1 Secure Internet servers	6	91.48
3.1.2 Cybersecurity	40	84.07
3.1.3 Online access to financial account	32	50.93
3.1.4 Internet shopping	13	76.29
<b>2nd sub-pillar: Regulation</b>		
3.2.1 Regulatory quality	15	86.55
3.2.2 ICT regulatory environment	2	99.62
3.2.3 Legal framework's adaptability to emerging technologies	32	60.15
3.2.4 E-commerce legislation	1	100.00
3.2.5 Privacy protection by law content	n/a	n/a
<b>3rd sub-pillar: Inclusion</b>		
3.3.1 E-Participation	29	85.18
3.3.2 Socioeconomic gap in use of digital payments	24	90.83
3.3.3 Availability of local online content	37	77.00
3.3.4 Gender gap in internet use	6	71.73
3.3.5 Rural gap in use of digital payments	37	74.48
<b>D. Impact pillar</b>		
<b>1st sub-pillar: Economy</b>		
4.1.1 Medium and high-tech industry	7	69.46
4.1.2 High-tech exports	13	46.77
4.1.3 PCT patent applications	19	26.10
4.1.4 Labour productivity per employee	2	99.90
4.1.5 Prevalence of gig economy	30	64.67
<b>2nd sub-pillar: Quality of Life</b>		
4.2.1 Happiness	9	89.67
4.2.2 Freedom to make life choices	33	87.96
4.2.3 Income inequality	33	77.84
4.2.4 Healthy life expectancy at birth	19	86.29
<b>3rd sub-pillar: SDG Contribution</b>		
4.3.1 SDG 3: Good Health and Well-Being	39	78.69
4.3.2 SDG 4: Quality Education	19	65.54
4.3.3 SDG 5: Gender Equality	55	76.91
4.3.4 SDG 7: Affordable and Clean Energy	3	96.97
4.3.5 SDG 11: Sustainable Cities and Communities	6	95.92

\* Data on indicator 1.2.3 is confidential, but has been included in the computation. Please see Appendix I: Technical Notes for further details.

# Israel

	Rank (out of 134)	Score
<b>Network Readiness Index</b>	<b>24</b>	<b>69.81</b>
<b>A. Technology pillar</b>	<b>23</b>	<b>64.38</b>
1st sub-pillar: Access	53	72.11
2nd sub-pillar: Content	24	58.24
3rd sub-pillar: Future Technologies	15	62.78
<b>B. People pillar</b>	<b>17</b>	<b>69.14</b>
1st sub-pillar: Individuals	29	65.84
2nd sub-pillar: Businesses	7	77.22
3rd sub-pillar: Governments	19	64.37
<b>C. Governance pillar</b>	<b>29</b>	<b>74.60</b>
1st sub-pillar: Trust	33	67.09
2nd sub-pillar: Regulation	25	81.71
3rd sub-pillar: Inclusion	35	75.01
<b>D. Impact pillar</b>	<b>19</b>	<b>71.12</b>
1st sub-pillar: Economy	9	62.00
2nd sub-pillar: Quality of Life	39	73.41
3rd sub-pillar: SDG Contribution	29	77.95



## The Network Readiness Index in detail

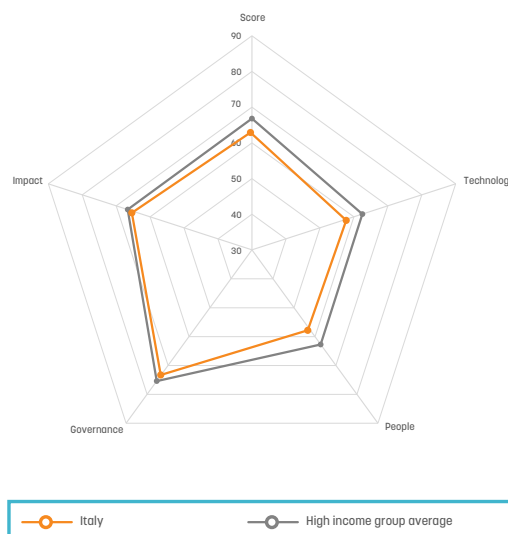
INDICATOR	RANK/134	SCORE
<b>A. Technology pillar</b>		
<b>1st sub-pillar: Access</b>		
1.1.1 Mobile tariffs	13	88.73
1.1.2 Handset prices	30	64.37
1.1.3 Households with internet access	56	73.99
1.1.4 4G mobile network coverage	77	82.00
1.1.5 Fixed-broadband subscriptions	78	42.00
1.1.6 International Internet bandwidth	61	68.69
1.1.7 Internet access in schools	33	85.00
<b>2nd sub-pillar: Content</b>		
1.2.1 GitHub commits	29	29.61
1.2.2 Wikipedia edits	3	94.66
1.2.3 Internet domain registrations*	-	-
1.2.4 Mobile apps development	8	91.79
<b>3rd sub-pillar: Future Technologies</b>		
1.3.1 Adoption of emerging technologies	4	96.84
1.3.2 Investment in emerging technology	2	96.21
1.3.3 ICT PCT patent applications	5	85.83
1.3.4 Computer software spending	57	21.36
1.3.5 Robot density	30	13.65
<b>B. People pillar</b>		
<b>1st sub-pillar: Individuals</b>		
2.1.1 Internet users	33	81.37
2.1.2 Active mobile-broadband subscriptions	24	41.52
2.1.3 Use of virtual social networks	24	70.10
2.1.4 Tertiary enrollment	43	46.05
2.1.5 Adult literacy rate	n/a	n/a
2.1.6 ICT skills	6	90.16
<b>2nd sub-pillar: Businesses</b>		
2.2.1 Firms with website	44	66.99
2.2.2 Ease of doing business	34	82.15
2.2.3 Professionals	10	62.24
2.2.4 Technicians and associate professionals	33	55.43
2.2.5 Business use of digital tools	5	96.50
2.2.6 R&D expenditure by businesses	1	100.00
<b>3rd sub-pillar: Governments</b>		
2.3.1 Government online services	54	73.94
2.3.2 Publication and use of open data	28	46.26
2.3.3 Government promotion of investment in emerging technologies	5	83.60
2.3.4 R&D expenditure by governments and higher education	27	53.68

INDICATOR	RANK/134	SCORE
<b>C. Governance pillar</b>		
<b>1st sub-pillar: Trust</b>		
3.1.1 Secure Internet servers	37	74.34
3.1.2 Cybersecurity	41	83.97
3.1.3 Online access to financial account	25	58.49
3.1.4 Internet shopping	33	51.57
<b>2nd sub-pillar: Regulation</b>		
3.2.1 Regulatory quality	24	78.89
3.2.2 ICT regulatory environment	98	70.08
3.2.3 Legal framework's adaptability to emerging technologies	6	85.12
3.2.4 E-commerce legislation	1	100.00
3.2.5 Privacy protection by law content	35	74.44
<b>3rd sub-pillar: Inclusion</b>		
3.3.1 E-Participation	65	70.37
3.3.2 Socioeconomic gap in use of digital payments	38	81.31
3.3.3 Availability of local online content	4	95.79
3.3.4 Gender gap in internet use	42	62.00
3.3.5 Rural gap in use of digital payments	69	65.55
<b>D. Impact pillar</b>		
<b>1st sub-pillar: Economy</b>		
4.1.1 Medium and high-tech industry	24	54.12
4.1.2 High-tech exports	17	43.26
4.1.3 PCT patent applications	6	69.05
4.1.4 Labour productivity per employee	27	55.13
4.1.5 Prevalence of gig economy	7	88.42
<b>2nd sub-pillar: Quality of Life</b>		
4.2.1 Happiness	19	83.23
4.2.2 Freedom to make life choices	102	59.47
4.2.3 Income inequality	72	61.86
4.2.4 Healthy life expectancy at birth	13	89.09
<b>3rd sub-pillar: SDG Contribution</b>		
4.3.1 SDG 3: Good Health and Well-Being	18	88.52
4.3.2 SDG 4: Quality Education	40	51.80
4.3.3 SDG 5: Gender Equality	59	75.78
4.3.4 SDG 7: Affordable and Clean Energy	34	86.13
4.3.5 SDG 11: Sustainable Cities and Communities	27	87.54

\* Data on indicator 1.2.3 is confidential, but has been included in the computation. Please see Appendix I: Technical Notes for further details.

# Italy

	Rank (out of 134)	Score
<b>Network Readiness Index</b>	<b>32</b>	<b>63.69</b>
<b>A. Technology pillar</b>	<b>30</b>	<b>58.55</b>
1st sub-pillar: Access	45	75.92
2nd sub-pillar: Content	35	49.04
3rd sub-pillar: Future Technologies	21	50.69
<b>B. People pillar</b>	<b>36</b>	<b>57.63</b>
1st sub-pillar: Individuals	44	60.57
2nd sub-pillar: Businesses	37	57.49
3rd sub-pillar: Governments	36	54.82
<b>C. Governance pillar</b>	<b>33</b>	<b>73.25</b>
1st sub-pillar: Trust	34	65.95
2nd sub-pillar: Regulation	39	77.06
3rd sub-pillar: Inclusion	29	76.75
<b>D. Impact pillar</b>	<b>28</b>	<b>65.31</b>
1st sub-pillar: Economy	30	43.18
2nd sub-pillar: Quality of Life	42	72.59
3rd sub-pillar: SDG Contribution	21	80.16



## The Network Readiness Index in detail

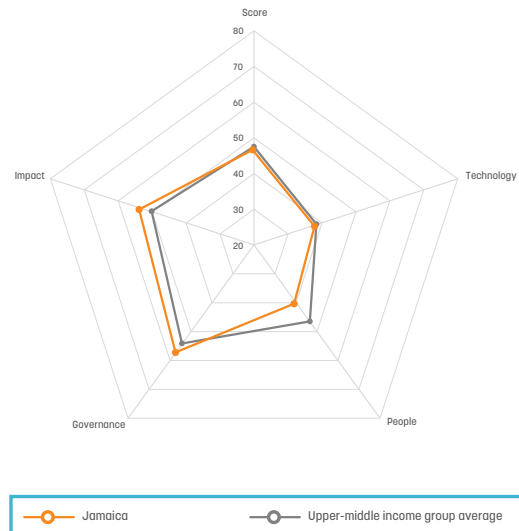
INDICATOR	RANK/134	SCORE
<b>A. Technology pillar</b>		
<b>1st sub-pillar: Access</b>		
1.1.1 Mobile tariffs	15	86.45
1.1.2 Handset prices	24	65.86
1.1.3 Households with internet access	62	71.62
1.1.4 4G mobile network coverage	24	99.00
1.1.5 Fixed-broadband subscriptions	56	73.12
1.1.6 International Internet bandwidth	80	65.38
1.1.7 Internet access in schools	37	70.00
<b>2nd sub-pillar: Content</b>		
1.2.1 GitHub commits	46	12.39
1.2.2 Wikipedia edits	30	77.03
1.2.3 Internet domain registrations*	-	-
1.2.4 Mobile apps development	30	80.99
<b>3rd sub-pillar: Future Technologies</b>		
1.3.1 Adoption of emerging technologies	32	65.18
1.3.2 Investment in emerging technology	61	41.08
1.3.3 ICT PCT patent applications	28	35.51
1.3.4 Computer software spending	14	52.55
1.3.5 Robot density	9	59.11
<b>B. People pillar</b>		
<b>1st sub-pillar: Individuals</b>		
2.1.1 Internet users	53	73.95
2.1.2 Active mobile-broadband subscriptions	36	36.80
2.1.3 Use of virtual social networks	59	57.73
2.1.4 Tertiary enrollment	45	45.01
2.1.5 Adult literacy rate	15	98.95
2.1.6 ICT skills	69	51.01
<b>2nd sub-pillar: Businesses</b>		
2.2.1 Firms with website	33	72.66
2.2.2 Ease of doing business	56	75.39
2.2.3 Professionals	44	36.91
2.2.4 Technicians and associate professionals	10	75.97
2.2.5 Business use of digital tools	60	62.78
2.2.6 R&D expenditure by businesses	23	21.22
<b>3rd sub-pillar: Governments</b>		
2.3.1 Government online services	36	82.42
2.3.2 Publication and use of open data	20	55.93
2.3.3 Government promotion of investment in emerging technologies	68	35.87
2.3.4 R&D expenditure by governments and higher education	40	45.06

INDICATOR	RANK/134	SCORE
<b>C. Governance pillar</b>		
<b>1st sub-pillar: Trust</b>		
3.1.1 Secure Internet servers	35	76.82
3.1.2 Cybersecurity	27	89.82
3.1.3 Online access to financial account	70	26.71
3.1.4 Internet shopping	17	70.45
<b>2nd sub-pillar: Regulation</b>		
3.2.1 Regulatory quality	40	66.20
3.2.2 ICT regulatory environment	1	100.00
3.2.3 Legal framework's adaptability to emerging technologies	39	51.95
3.2.4 E-commerce legislation	1	100.00
3.2.5 Privacy protection by law content	44	67.13
<b>3rd sub-pillar: Inclusion</b>		
3.3.1 E-Participation	41	81.48
3.3.2 Socioeconomic gap in use of digital payments	22	92.79
3.3.3 Availability of local online content	40	74.99
3.3.4 Gender gap in internet use	68	54.74
3.3.5 Rural gap in use of digital payments	8	79.77
<b>D. Impact pillar</b>		
<b>1st sub-pillar: Economy</b>		
4.1.1 Medium and high-tech industry	22	54.80
4.1.2 High-tech exports	58	15.35
4.1.3 PCT patent applications	24	16.52
4.1.4 Labour productivity per employee	19	64.73
4.1.5 Prevalence of gig economy	31	64.53
<b>2nd sub-pillar: Quality of Life</b>		
4.2.1 Happiness	31	73.76
4.2.2 Freedom to make life choices	108	56.89
4.2.3 Income inequality	57	69.85
4.2.4 Healthy life expectancy at birth	8	89.87
<b>3rd sub-pillar: SDG Contribution</b>		
4.3.1 SDG 3: Good Health and Well-Being	18	88.52
4.3.2 SDG 4: Quality Education	30	60.64
4.3.3 SDG 5: Gender Equality	67	74.33
4.3.4 SDG 7: Affordable and Clean Energy	19	89.23
4.3.5 SDG 11: Sustainable Cities and Communities	24	88.07

\* Data on indicator 1.2.3 is confidential, but has been included in the computation. Please see Appendix I: Technical Notes for further details.

# Jamaica

	Rank (out of 134)	Score
<b>Network Readiness Index</b>	<b>70</b>	<b>47.36</b>
<b>A. Technology pillar</b>	<b>71</b>	<b>38.48</b>
1st sub-pillar: Access	66	64.01
2nd sub-pillar: Content	85	23.13
3rd sub-pillar: Future Technologies	64	28.30
<b>B. People pillar</b>	<b>85</b>	<b>40.06</b>
1st sub-pillar: Individuals	92	43.62
2nd sub-pillar: Businesses	71	40.70
3rd sub-pillar: Governments	89	35.85
<b>C. Governance pillar</b>	<b>63</b>	<b>57.11</b>
1st sub-pillar: Trust	67	41.46
2nd sub-pillar: Regulation	71	64.92
3rd sub-pillar: Inclusion	64	64.95
<b>D. Impact pillar</b>	<b>59</b>	<b>53.77</b>
1st sub-pillar: Economy	98	17.49
2nd sub-pillar: Quality of Life	48	71.35
3rd sub-pillar: SDG Contribution	43	72.48



## The Network Readiness Index in detail

INDICATOR	RANK/134	SCORE
<b>A. Technology pillar</b>		
<b>1st sub-pillar: Access</b>		
1.1.1 Mobile tariffs	73	59.04
1.1.2 Handset prices	71	42.46
1.1.3 Households with internet access	78	52.76
1.1.4 4G mobile network coverage	87	73.00
1.1.5 Fixed-broadband subscriptions	62	68.63
1.1.6 International Internet bandwidth	68	67.88
1.1.7 Internet access in schools	34	84.31
<b>2nd sub-pillar: Content</b>		
1.2.1 GitHub commits	74	2.86
1.2.2 Wikipedia edits	80	35.20
1.2.3 Internet domain registrations*	-	-
1.2.4 Mobile apps development	91	52.96
<b>3rd sub-pillar: Future Technologies</b>		
1.3.1 Adoption of emerging technologies	75	43.00
1.3.2 Investment in emerging technology	71	38.07
1.3.3 ICT PCT patent applications	82	0.00
1.3.4 Computer software spending	26	32.12
1.3.5 Robot density	n/a	n/a
<b>B. People pillar</b>		
<b>1st sub-pillar: Individuals</b>		
2.1.1 Internet users	88	54.04
2.1.2 Active mobile-broadband subscriptions	100	19.19
2.1.3 Use of virtual social networks	87	43.30
2.1.4 Tertiary enrollment	86	19.37
2.1.5 Adult literacy rate	68	84.71
2.1.6 ICT skills	88	41.12
<b>2nd sub-pillar: Businesses</b>		
2.2.1 Firms with website	93	31.23
2.2.2 Ease of doing business	66	69.78
2.2.3 Professionals	74	21.07
2.2.4 Technicians and associate professionals	84	23.57
2.2.5 Business use of digital tools	69	57.87
2.2.6 R&D expenditure by businesses	n/a	n/a
<b>3rd sub-pillar: Governments</b>		
2.3.1 Government online services	116	36.97
2.3.2 Publication and use of open data	42	36.95
2.3.3 Government promotion of investment in emerging technologies	77	33.63
2.3.4 R&D expenditure by governments and higher education	n/a	n/a

INDICATOR	RANK/134	SCORE
<b>C. Governance pillar</b>		
<b>1st sub-pillar: Trust</b>		
3.1.1 Secure Internet servers	96	39.70
3.1.2 Cybersecurity	94	43.23
3.1.3 Online access to financial account	n/a	n/a
3.1.4 Internet shopping	n/a	n/a
<b>2nd sub-pillar: Regulation</b>		
3.2.1 Regulatory quality	58	57.55
3.2.2 ICT regulatory environment	86	78.19
3.2.3 Legal framework's adaptability to emerging technologies	98	23.96
3.2.4 E-commerce legislation	1	100.00
3.2.5 Privacy protection by law content	n/a	n/a
<b>3rd sub-pillar: Inclusion</b>		
3.3.1 E-Participation	114	34.56
3.3.2 Socioeconomic gap in use of digital payments	82	57.26
3.3.3 Availability of local online content	65	60.38
3.3.4 Gender gap in internet use	2	92.90
3.3.5 Rural gap in use of digital payments	9	79.63
<b>D. Impact pillar</b>		
<b>1st sub-pillar: Economy</b>		
4.1.1 Medium and high-tech industry	81	23.77
4.1.2 High-tech exports	106	3.99
4.1.3 PCT patent applications	77	0.09
4.1.4 Labour productivity per employee	91	12.67
4.1.5 Prevalence of gig economy	56	46.94
<b>2nd sub-pillar: Quality of Life</b>		
4.2.1 Happiness	64	62.83
4.2.2 Freedom to make life choices	50	82.57
4.2.3 Income inequality	n/a	n/a
4.2.4 Healthy life expectancy at birth	53	68.64
<b>3rd sub-pillar: SDG Contribution</b>		
4.3.1 SDG 3: Good Health and Well-Being	88	60.66
4.3.2 SDG 4: Quality Education	n/a	n/a
4.3.3 SDG 5: Gender Equality	38	80.66
4.3.4 SDG 7: Affordable and Clean Energy	82	73.48
4.3.5 SDG 11: Sustainable Cities and Communities	49	75.11

\* Data on indicator 1.2.3 is confidential, but has been included in the computation. Please see Appendix I: Technical Notes for further details.

# Japan

	Rank (out of 134)	Score
<b>Network Readiness Index</b>	<b>15</b>	<b>73.54</b>
<b>A. Technology pillar</b>	<b>21</b>	<b>65.55</b>
1st sub-pillar: Access	36	79.62
2nd sub-pillar: Content	40	42.10
3rd sub-pillar: Future Technologies	4	74.93
<b>B. People pillar</b>	<b>6</b>	<b>76.79</b>
1st sub-pillar: Individuals	17	70.82
2nd sub-pillar: Businesses	1	85.66
3rd sub-pillar: Governments	16	73.90
<b>C. Governance pillar</b>	<b>23</b>	<b>77.53</b>
1st sub-pillar: Trust	29	67.66
2nd sub-pillar: Regulation	27	80.60
3rd sub-pillar: Inclusion	10	84.33
<b>D. Impact pillar</b>	<b>11</b>	<b>74.29</b>
1st sub-pillar: Economy	11	61.20
2nd sub-pillar: Quality of Life	29	77.38
3rd sub-pillar: SDG Contribution	7	84.29



## The Network Readiness Index in detail

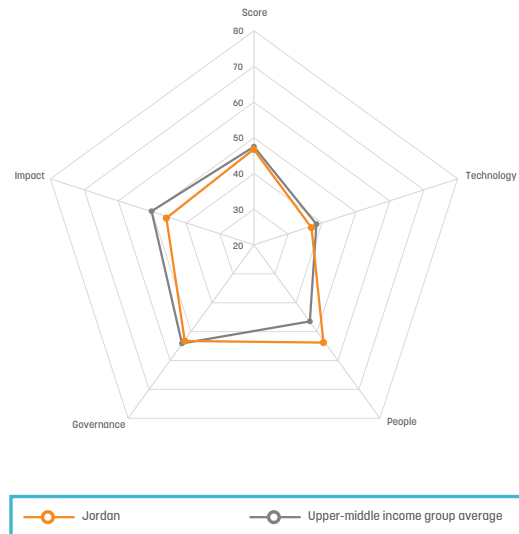
INDICATOR	RANK/134	SCORE
<b>A. Technology pillar</b>		
<b>1st sub-pillar: Access</b>		
1.1.1 Mobile tariffs	83	53.59
1.1.2 Handset prices	13	71.50
1.1.3 Households with internet access	3	98.53
1.1.4 4G mobile network coverage	24	99.00
1.1.5 Fixed-broadband subscriptions	33	91.19
1.1.6 International Internet bandwidth	84	63.89
1.1.7 Internet access in schools	n/a	n/a
<b>2nd sub-pillar: Content</b>		
1.2.1 GitHub commits	40	14.00
1.2.2 Wikipedia edits	48	63.41
1.2.3 Internet domain registrations*	-	-
1.2.4 Mobile apps development	31	80.31
<b>3rd sub-pillar: Future Technologies</b>		
1.3.1 Adoption of emerging technologies	10	85.26
1.3.2 Investment in emerging technology	9	79.99
1.3.3 ICT PCT patent applications	4	88.14
1.3.4 Computer software spending	46	24.50
1.3.5 Robot density	4	96.78
<b>B. People pillar</b>		
<b>1st sub-pillar: Individuals</b>		
2.1.1 Internet users	27	84.47
2.1.2 Active mobile-broadband subscriptions	2	75.16
2.1.3 Use of virtual social networks	40	64.95
2.1.4 Tertiary enrollment	n/a	n/a
2.1.5 Adult literacy rate	n/a	n/a
2.1.6 ICT skills	55	58.68
<b>2nd sub-pillar: Businesses</b>		
2.2.1 Firms with website	3	96.24
2.2.2 Ease of doing business	28	84.49
2.2.3 Professionals	n/a	n/a
2.2.4 Technicians and associate professionals	2	99.01
2.2.5 Business use of digital tools	17	83.87
2.2.6 R&D expenditure by businesses	3	64.69
<b>3rd sub-pillar: Governments</b>		
2.3.1 Government online services	12	90.30
2.3.2 Publication and use of open data	8	75.16
2.3.3 Government promotion of investment in emerging technologies	15	71.92
2.3.4 R&D expenditure by governments and higher education	20	58.23

INDICATOR	RANK/134	SCORE
<b>C. Governance pillar</b>		
<b>1st sub-pillar: Trust</b>		
3.1.1 Secure Internet servers	33	78.49
3.1.2 Cybersecurity	15	94.47
3.1.3 Online access to financial account	49	38.84
3.1.4 Internet shopping	26	58.85
<b>2nd sub-pillar: Regulation</b>		
3.2.1 Regulatory quality	22	80.69
3.2.2 ICT regulatory environment	95	71.24
3.2.3 Legal framework's adaptability to emerging technologies	27	63.37
3.2.4 E-commerce legislation	1	100.00
3.2.5 Privacy protection by law content	13	87.72
<b>3rd sub-pillar: Inclusion</b>		
3.3.1 E-Participation	4	98.77
3.3.2 Socioeconomic gap in use of digital payments	14	95.69
3.3.3 Availability of local online content	2	97.51
3.3.4 Gender gap in internet use	60	57.98
3.3.5 Rural gap in use of digital payments	48	71.73
<b>D. Impact pillar</b>		
<b>1st sub-pillar: Economy</b>		
4.1.1 Medium and high-tech industry	6	71.85
4.1.2 High-tech exports	27	32.18
4.1.3 PCT patent applications	1	100.00
4.1.4 Labour productivity per employee	36	49.00
4.1.5 Prevalence of gig economy	49	52.99
<b>2nd sub-pillar: Quality of Life</b>		
4.2.1 Happiness	62	63.19
4.2.2 Freedom to make life choices	73	73.36
4.2.3 Income inequality	36	77.58
4.2.4 Healthy life expectancy at birth	2	95.40
<b>3rd sub-pillar: SDG Contribution</b>		
4.3.1 SDG 3: Good Health and Well-Being	13	90.16
4.3.2 SDG 4: Quality Education	4	75.81
4.3.3 SDG 5: Gender Equality	52	77.44
4.3.4 SDG 7: Affordable and Clean Energy	43	84.47
4.3.5 SDG 11: Sustainable Cities and Communities	12	93.59

\* Data on indicator 1.2.3 is confidential, but has been included in the computation. Please see Appendix I: Technical Notes for further details.

# Jordan

	Rank (out of 134)	Score
<b>Network Readiness Index</b>	<b>69</b>	<b>47.50</b>
<b>A. Technology pillar</b>	<b>75</b>	<b>37.23</b>
1st sub-pillar: Access	81	52.99
2nd sub-pillar: Content	67	28.27
3rd sub-pillar: Future Technologies	54	30.43
<b>B. People pillar</b>	<b>44</b>	<b>53.67</b>
1st sub-pillar: Individuals	55	58.55
2nd sub-pillar: Businesses	14	71.45
3rd sub-pillar: Governments	96	31.01
<b>C. Governance pillar</b>	<b>73</b>	<b>53.13</b>
1st sub-pillar: Trust	92	28.77
2nd sub-pillar: Regulation	69	65.63
3rd sub-pillar: Inclusion	63	64.98
<b>D. Impact pillar</b>	<b>90</b>	<b>45.99</b>
1st sub-pillar: Economy	66	25.51
2nd sub-pillar: Quality of Life	91	59.21
3rd sub-pillar: SDG Contribution	101	53.25



## The Network Readiness Index in detail

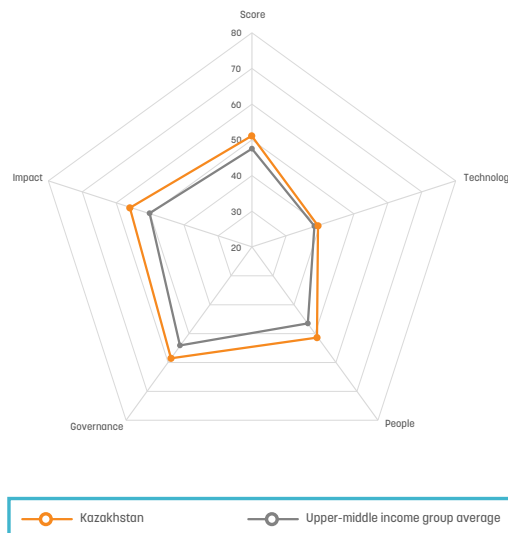
INDICATOR	RANK/134	SCORE
<b>A. Technology pillar</b>		
<b>1st sub-pillar: Access</b>		
1.1.1 Mobile tariffs	108	36.63
1.1.2 Handset prices	87	36.15
1.1.3 Households with internet access	39	82.83
1.1.4 4G mobile network coverage	67	90.00
1.1.5 Fixed-broadband subscriptions	77	44.83
1.1.6 International Internet bandwidth	70	67.77
1.1.7 Internet access in schools	58	12.74
<b>2nd sub-pillar: Content</b>		
1.2.1 GitHub commits	90	1.52
1.2.2 Wikipedia edits	62	45.81
1.2.3 Internet domain registrations*	-	-
1.2.4 Mobile apps development	66	63.29
<b>3rd sub-pillar: Future Technologies</b>		
1.3.1 Adoption of emerging technologies	59	49.03
1.3.2 Investment in emerging technology	46	49.20
1.3.3 ICT PCT patent applications	82	0.00
1.3.4 Computer software spending	50	23.48
1.3.5 Robot density	n/a	n/a
<b>B. People pillar</b>		
<b>1st sub-pillar: Individuals</b>		
2.1.1 Internet users	69	66.12
2.1.2 Active mobile-broadband subscriptions	48	34.00
2.1.3 Use of virtual social networks	63	55.67
2.1.4 Tertiary enrollment	79	24.74
2.1.5 Adult literacy rate	28	97.75
2.1.6 ICT skills	30	73.05
<b>2nd sub-pillar: Businesses</b>		
2.2.1 Firms with website	26	78.48
2.2.2 Ease of doing business	70	68.53
2.2.3 Professionals	n/a	n/a
2.2.4 Technicians and associate professionals	n/a	n/a
2.2.5 Business use of digital tools	51	67.36
2.2.6 R&D expenditure by businesses	n/a	n/a
<b>3rd sub-pillar: Governments</b>		
2.3.1 Government online services	119	33.94
2.3.2 Publication and use of open data	86	12.58
2.3.3 Government promotion of investment in emerging technologies	47	46.50
2.3.4 R&D expenditure by governments and higher education	n/a	n/a

INDICATOR	RANK/134	SCORE
<b>C. Governance pillar</b>		
<b>1st sub-pillar: Trust</b>		
3.1.1 Secure Internet servers	99	37.39
3.1.2 Cybersecurity	76	59.37
3.1.3 Online access to financial account	111	9.24
3.1.4 Internet shopping	78	9.08
<b>2nd sub-pillar: Regulation</b>		
3.2.1 Regulatory quality	65	53.25
3.2.2 ICT regulatory environment	64	85.14
3.2.3 Legal framework's adaptability to emerging technologies	46	49.14
3.2.4 E-commerce legislation	77	75.00
3.2.5 Privacy protection by law content	n/a	n/a
<b>3rd sub-pillar: Inclusion</b>		
3.3.1 E-Participation	119	30.86
3.3.2 Socioeconomic gap in use of digital payments	86	54.62
3.3.3 Availability of local online content	42	74.42
3.3.4 Gender gap in internet use	n/a	n/a
3.3.5 Rural gap in use of digital payments	1	100.00
<b>D. Impact pillar</b>		
<b>1st sub-pillar: Economy</b>		
4.1.1 Medium and high-tech industry	58	33.44
4.1.2 High-tech exports	96	5.47
4.1.3 PCT patent applications	72	0.27
4.1.4 Labour productivity per employee	63	28.12
4.1.5 Prevalence of gig economy	38	60.24
<b>2nd sub-pillar: Quality of Life</b>		
4.2.1 Happiness	111	34.58
4.2.2 Freedom to make life choices	100	59.65
4.2.3 Income inequality	41	75.52
4.2.4 Healthy life expectancy at birth	61	67.11
<b>3rd sub-pillar: SDG Contribution</b>		
4.3.1 SDG 3: Good Health and Well-Being	39	78.69
4.3.2 SDG 4: Quality Education	65	28.04
4.3.3 SDG 5: Gender Equality	119	40.95
4.3.4 SDG 7: Affordable and Clean Energy	73	76.73
4.3.5 SDG 11: Sustainable Cities and Communities	96	41.82

\* Data on indicator 1.2.3 is confidential, but has been included in the computation. Please see Appendix I: Technical Notes for further details.

# Kazakhstan

	Rank (out of 134)	Score
<b>Network Readiness Index</b>	<b>56</b>	<b>51.38</b>
<b>A. Technology pillar</b>	<b>67</b>	<b>39.64</b>
1st sub-pillar: Access	52	72.60
2nd sub-pillar: Content	74	26.82
3rd sub-pillar: Future Technologies	102	19.48
<b>B. People pillar</b>	<b>54</b>	<b>51.33</b>
1st sub-pillar: Individuals	43	61.66
2nd sub-pillar: Businesses	54	47.02
3rd sub-pillar: Governments	61	45.30
<b>C. Governance pillar</b>	<b>57</b>	<b>58.55</b>
1st sub-pillar: Trust	51	49.87
2nd sub-pillar: Regulation	95	55.55
3rd sub-pillar: Inclusion	48	70.22
<b>D. Impact pillar</b>	<b>52</b>	<b>56.01</b>
1st sub-pillar: Economy	59	28.81
2nd sub-pillar: Quality of Life	36	74.92
3rd sub-pillar: SDG Contribution	77	64.30



## The Network Readiness Index in detail

INDICATOR	RANK/134	SCORE
<b>A. Technology pillar</b>		
<b>1st sub-pillar: Access</b>		
1.1.1 Mobile tariffs	5	96.57
1.1.2 Handset prices	45	55.88
1.1.3 Households with internet access	25	87.55
1.1.4 4G mobile network coverage	83	75.30
1.1.5 Fixed-broadband subscriptions	72	51.83
1.1.6 International Internet bandwidth	62	68.45
1.1.7 Internet access in schools	n/a	n/a
<b>2nd sub-pillar: Content</b>		
1.2.1 GitHub commits	63	4.05
1.2.2 Wikipedia edits	69	42.51
1.2.3 Internet domain registrations*	-	-
1.2.4 Mobile apps development	74	58.47
<b>3rd sub-pillar: Future Technologies</b>		
1.3.1 Adoption of emerging technologies	84	38.60
1.3.2 Investment in emerging technology	75	37.04
1.3.3 ICT PCT patent applications	70	1.08
1.3.4 Computer software spending	118	1.22
1.3.5 Robot density	n/a	n/a
<b>B. People pillar</b>		
<b>1st sub-pillar: Individuals</b>		
2.1.1 Internet users	45	78.61
2.1.2 Active mobile-broadband subscriptions	63	29.92
2.1.3 Use of virtual social networks	74	50.52
2.1.4 Tertiary enrollment	46	44.87
2.1.5 Adult literacy rate	7	99.75
2.1.6 ICT skills	41	66.29
<b>2nd sub-pillar: Businesses</b>		
2.2.1 Firms with website	69	47.48
2.2.2 Ease of doing business	24	87.25
2.2.3 Professionals	37	41.08
2.2.4 Technicians and associate professionals	38	51.58
2.2.5 Business use of digital tools	80	53.36
2.2.6 R&D expenditure by businesses	72	1.34
<b>3rd sub-pillar: Governments</b>		
2.3.1 Government online services	11	92.12
2.3.2 Publication and use of open data	61	26.10
2.3.3 Government promotion of investment in emerging technologies	25	59.95
2.3.4 R&D expenditure by governments and higher education	108	3.05

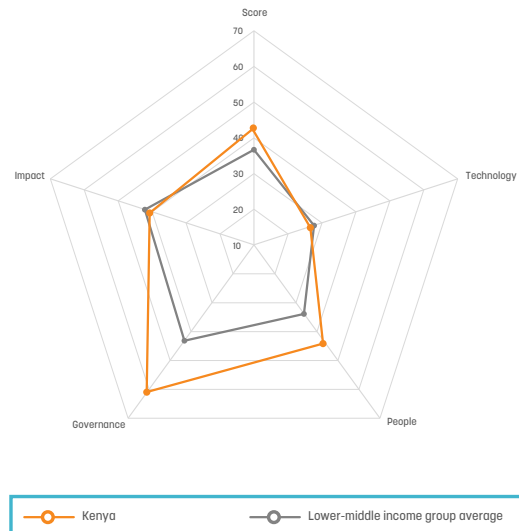
INDICATOR	RANK/134	SCORE
<b>C. Governance pillar</b>		
<b>1st sub-pillar: Trust</b>		
3.1.1 Secure Internet servers	55	61.97
3.1.2 Cybersecurity	42	83.42
3.1.3 Online access to financial account	53	35.30
3.1.4 Internet shopping	60	18.79
<b>2nd sub-pillar: Regulation</b>		
3.2.1 Regulatory quality	62	54.51
3.2.2 ICT regulatory environment	124	49.81
3.2.3 Legal framework's adaptability to emerging technologies	62	42.88
3.2.4 E-commerce legislation	77	75.00
3.2.5 Privacy protection by law content	n/a	n/a
<b>3rd sub-pillar: Inclusion</b>		
3.3.1 E-Participation	26	87.66
3.3.2 Socioeconomic gap in use of digital payments	64	68.23
3.3.3 Availability of local online content	70	59.91
3.3.4 Gender gap in internet use	40	62.14
3.3.5 Rural gap in use of digital payments	44	73.16
<b>D. Impact pillar</b>		
<b>1st sub-pillar: Economy</b>		
4.1.1 Medium and high-tech industry	92	17.90
4.1.2 High-tech exports	11	53.48
4.1.3 PCT patent applications	66	0.38
4.1.4 Labour productivity per employee	51	34.63
4.1.5 Prevalence of gig economy	77	37.65
<b>2nd sub-pillar: Quality of Life</b>		
4.2.1 Happiness	36	70.35
4.2.2 Freedom to make life choices	54	81.16
4.2.3 Income inequality	11	91.49
4.2.4 Healthy life expectancy at birth	91	56.69
<b>3rd sub-pillar: SDG Contribution</b>		
4.3.1 SDG 3: Good Health and Well-Being	39	78.69
4.3.2 SDG 4: Quality Education	53	36.82
4.3.3 SDG 5: Gender Equality	22	84.90
4.3.4 SDG 7: Affordable and Clean Energy	119	51.81
4.3.5 SDG 11: Sustainable Cities and Communities	59	69.30

\* Data on indicator 1.2.3 is confidential, but has been included in the computation. Please see Appendix I: Technical Notes for further details.



# Kenya

	Rank (out of 134)	Score
<b>Network Readiness Index</b>	<b>82</b>	<b>43.22</b>
<b>A. Technology pillar</b>	<b>99</b>	<b>27.26</b>
1st sub-pillar: Access	101	38.61
2nd sub-pillar: Content	115	11.97
3rd sub-pillar: Future Technologies	49	31.19
<b>B. People pillar</b>	<b>78</b>	<b>44.01</b>
1st sub-pillar: Individuals	106	32.11
2nd sub-pillar: Businesses	51	48.63
3rd sub-pillar: Governments	41	51.30
<b>C. Governance pillar</b>	<b>51</b>	<b>60.99</b>
1st sub-pillar: Trust	50	50.59
2nd sub-pillar: Regulation	58	68.20
3rd sub-pillar: Inclusion	65	64.17
<b>D. Impact pillar</b>	<b>104</b>	<b>40.62</b>
1st sub-pillar: Economy	94	18.12
2nd sub-pillar: Quality of Life	100	53.01
3rd sub-pillar: SDG Contribution	108	50.74



## The Network Readiness Index in detail

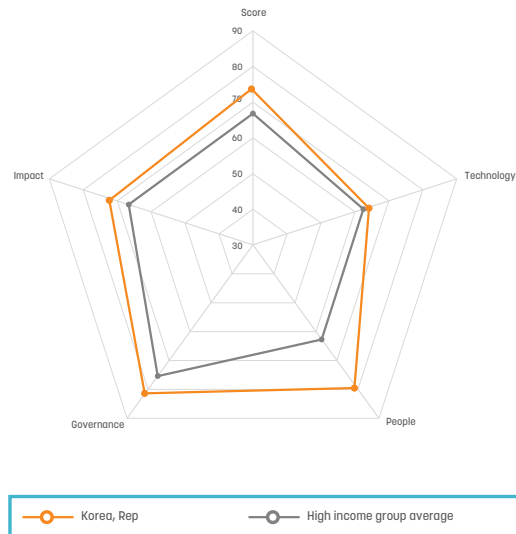
INDICATOR	RANK/134	SCORE
<b>A. Technology pillar</b>		
<b>1st sub-pillar: Access</b>		
1.1.1 Mobile tariffs	95	49.30
1.1.2 Handset prices	94	33.14
1.1.3 Households with internet access	91	33.47
1.1.4 4G mobile network coverage	111	35.00
1.1.5 Fixed-broadband subscriptions	122	0.00
1.1.6 International Internet bandwidth	7	80.73
1.1.7 Internet access in schools	n/a	n/a
<b>2nd sub-pillar: Content</b>		
1.2.1 GitHub commits	76	2.57
1.2.2 Wikipedia edits	120	0.12
1.2.3 Internet domain registrations*	-	-
1.2.4 Mobile apps development	102	44.28
<b>3rd sub-pillar: Future Technologies</b>		
1.3.1 Adoption of emerging technologies	55	50.77
1.3.2 Investment in emerging technology	32	60.12
1.3.3 ICT PCT patent applications	72	1.00
1.3.4 Computer software spending	78	12.89
1.3.5 Robot density	n/a	n/a
<b>B. People pillar</b>		
<b>1st sub-pillar: Individuals</b>		
2.1.1 Internet users	122	15.64
2.1.2 Active mobile-broadband subscriptions	107	15.43
2.1.3 Use of virtual social networks	111	15.46
2.1.4 Tertiary enrollment	105	7.84
2.1.5 Adult literacy rate	76	76.26
2.1.6 ICT skills	46	62.03
<b>2nd sub-pillar: Businesses</b>		
2.2.1 Firms with website	74	43.88
2.2.2 Ease of doing business	55	76.03
2.2.3 Professionals	n/a	n/a
2.2.4 Technicians and associate professionals	n/a	n/a
2.2.5 Business use of digital tools	38	72.88
2.2.6 R&D expenditure by businesses	68	1.73
<b>3rd sub-pillar: Governments</b>		
2.3.1 Government online services	74	66.67
2.3.2 Publication and use of open data	35	40.42
2.3.3 Government promotion of investment in emerging technologies	56	40.90
2.3.4 R&D expenditure by governments and higher education	23	57.21

INDICATOR	RANK/134	SCORE
<b>C. Governance pillar</b>		
<b>1st sub-pillar: Trust</b>		
3.1.1 Secure Internet servers	86	44.01
3.1.2 Cybersecurity	45	80.17
3.1.3 Online access to financial account	18	66.35
3.1.4 Internet shopping	70	11.83
<b>2nd sub-pillar: Regulation</b>		
3.2.1 Regulatory quality	88	46.42
3.2.2 ICT regulatory environment	44	88.61
3.2.3 Legal framework's adaptability to emerging technologies	74	37.75
3.2.4 E-commerce legislation	1	100.00
3.2.5 Privacy protection by law content	n/a	n/a
<b>3rd sub-pillar: Inclusion</b>		
3.3.1 E-Participation	86	58.02
3.3.2 Socioeconomic gap in use of digital payments	57	71.74
3.3.3 Availability of local online content	86	51.38
3.3.4 Gender gap in internet use	n/a	n/a
3.3.5 Rural gap in use of digital payments	27	75.56
<b>D. Impact pillar</b>		
<b>1st sub-pillar: Economy</b>		
4.1.1 Medium and high-tech industry	89	18.97
4.1.2 High-tech exports	92	6.86
4.1.3 PCT patent applications	82	0.04
4.1.4 Labour productivity per employee	105	5.63
4.1.5 Prevalence of gig economy	40	59.10
<b>2nd sub-pillar: Quality of Life</b>		
4.2.1 Happiness	110	37.85
4.2.2 Freedom to make life choices	67	75.28
4.2.3 Income inequality	81	57.22
4.2.4 Healthy life expectancy at birth	103	41.68
<b>3rd sub-pillar: SDG Contribution</b>		
4.3.1 SDG 3: Good Health and Well-Being	103	44.26
4.3.2 SDG 4: Quality Education	n/a	n/a
4.3.3 SDG 5: Gender Equality	98	62.89
4.3.4 SDG 7: Affordable and Clean Energy	114	55.56
4.3.5 SDG 11: Sustainable Cities and Communities	101	40.24

\* Data on indicator 1.2.3 is confidential, but has been included in the computation. Please see Appendix I: Technical Notes for further details.

# Korea, Rep.

	Rank (out of 134)	Score
<b>Network Readiness Index</b>	<b>14</b>	<b>74.60</b>
<b>A. Technology pillar</b>	<b>22</b>	<b>65.02</b>
1st sub-pillar: Access	20	84.49
2nd sub-pillar: Content	44	40.90
3rd sub-pillar: Future Technologies	10	69.69
<b>B. People pillar</b>	<b>2</b>	<b>79.60</b>
1st sub-pillar: Individuals	5	74.47
2nd sub-pillar: Businesses	3	79.42
3rd sub-pillar: Governments	2	84.91
<b>C. Governance pillar</b>	<b>17</b>	<b>81.44</b>
1st sub-pillar: Trust	11	84.12
2nd sub-pillar: Regulation	32	79.58
3rd sub-pillar: Inclusion	18	80.62
<b>D. Impact pillar</b>	<b>13</b>	<b>72.33</b>
1st sub-pillar: Economy	2	70.46
2nd sub-pillar: Quality of Life	45	72.43
3rd sub-pillar: SDG Contribution	37	74.10



## The Network Readiness Index in detail

INDICATOR	RANK/134	SCORE
<b>A. Technology pillar</b>		
<b>1st sub-pillar: Access</b>		
1.1.1 Mobile tariffs	71	60.65
1.1.2 Handset prices	32	63.16
1.1.3 Households with internet access	2	99.48
1.1.4 4G mobile network coverage	9	99.90
1.1.5 Fixed-broadband subscriptions	1	100.00
1.1.6 International Internet bandwidth	65	68.22
1.1.7 Internet access in schools	1	100.00
<b>2nd sub-pillar: Content</b>		
1.2.1 GitHub commits	43	13.50
1.2.2 Wikipedia edits	53	56.58
1.2.3 Internet domain registrations*	-	-
1.2.4 Mobile apps development	26	83.40
<b>3rd sub-pillar: Future Technologies</b>		
1.3.1 Adoption of emerging technologies	20	75.40
1.3.2 Investment in emerging technology	34	59.48
1.3.3 ICT PCT patent applications	3	92.85
1.3.4 Computer software spending	62	20.70
1.3.5 Robot density	1	100.00
<b>B. People pillar</b>		
<b>1st sub-pillar: Individuals</b>		
2.1.1 Internet users	9	96.13
2.1.2 Active mobile-broadband subscriptions	20	44.56
2.1.3 Use of virtual social networks	5	87.63
2.1.4 Tertiary enrollment	3	68.88
2.1.5 Adult literacy rate	n/a	n/a
2.1.6 ICT skills	24	75.16
<b>2nd sub-pillar: Businesses</b>		
2.2.1 Firms with website	47	64.94
2.2.2 Ease of doing business	5	95.11
2.2.3 Professionals	22	49.43
2.2.4 Technicians and associate professionals	11	75.43
2.2.5 Business use of digital tools	3	99.20
2.2.6 R&D expenditure by businesses	2	92.41
<b>3rd sub-pillar: Governments</b>		
2.3.1 Government online services	1	100.00
2.3.2 Publication and use of open data	5	81.16
2.3.3 Government promotion of investment in emerging technologies	9	77.75
2.3.4 R&D expenditure by governments and higher education	8	80.73

INDICATOR	RANK/134	SCORE
<b>C. Governance pillar</b>		
<b>1st sub-pillar: Trust</b>		
3.1.1 Secure Internet servers	48	67.20
3.1.2 Cybersecurity	17	93.72
3.1.3 Online access to financial account	9	82.64
3.1.4 Internet shopping	5	92.94
<b>2nd sub-pillar: Regulation</b>		
3.2.1 Regulatory quality	30	75.53
3.2.2 ICT regulatory environment	74	81.86
3.2.3 Legal framework's adaptability to emerging technologies	20	67.46
3.2.4 E-commerce legislation	1	100.00
3.2.5 Privacy protection by law content	39	73.04
<b>3rd sub-pillar: Inclusion</b>		
3.3.1 E-Participation	1	100.00
3.3.2 Socioeconomic gap in use of digital payments	21	93.01
3.3.3 Availability of local online content	31	81.00
3.3.4 Gender gap in internet use	39	62.42
3.3.5 Rural gap in use of digital payments	67	66.67
<b>D. Impact pillar</b>		
<b>1st sub-pillar: Economy</b>		
4.1.1 Medium and high-tech industry	3	81.42
4.1.2 High-tech exports	8	61.33
4.1.3 PCT patent applications	4	85.11
4.1.4 Labour productivity per employee	30	52.66
4.1.5 Prevalence of gig economy	19	71.77
<b>2nd sub-pillar: Quality of Life</b>		
4.2.1 Happiness	63	63.09
4.2.2 Freedom to make life choices	109	56.30
4.2.3 Income inequality	25	80.93
4.2.4 Healthy life expectancy at birth	9	89.40
<b>3rd sub-pillar: SDG Contribution</b>		
4.3.1 SDG 3: Good Health and Well-Being	6	95.08
4.3.2 SDG 4: Quality Education	5	75.42
4.3.3 SDG 5: Gender Equality	97	62.95
4.3.4 SDG 7: Affordable and Clean Energy	108	63.37
4.3.5 SDG 11: Sustainable Cities and Communities	52	73.69

\* Data on indicator 1.2.3 is confidential, but has been included in the computation. Please see Appendix I: Technical Notes for further details.

# Kuwait

	Rank (out of 134)	Score
<b>Network Readiness Index</b>	<b>53</b>	<b>52.27</b>
<b>A. Technology pillar</b>	<b>55</b>	<b>44.34</b>
1st sub-pillar: Access	34	79.83
2nd sub-pillar: Content	64	28.62
3rd sub-pillar: Future Technologies	83	24.58
<b>B. People pillar</b>	<b>43</b>	<b>53.82</b>
1st sub-pillar: Individuals	11	72.99
2nd sub-pillar: Businesses	57	46.55
3rd sub-pillar: Governments	70	41.94
<b>C. Governance pillar</b>	<b>72</b>	<b>53.70</b>
1st sub-pillar: Trust	65	43.15
2nd sub-pillar: Regulation	94	55.61
3rd sub-pillar: Inclusion	73	62.33
<b>D. Impact pillar</b>	<b>47</b>	<b>57.23</b>
1st sub-pillar: Economy	55	31.27
2nd sub-pillar: Quality of Life	44	72.51
3rd sub-pillar: SDG Contribution	54	67.92



## The Network Readiness Index in detail

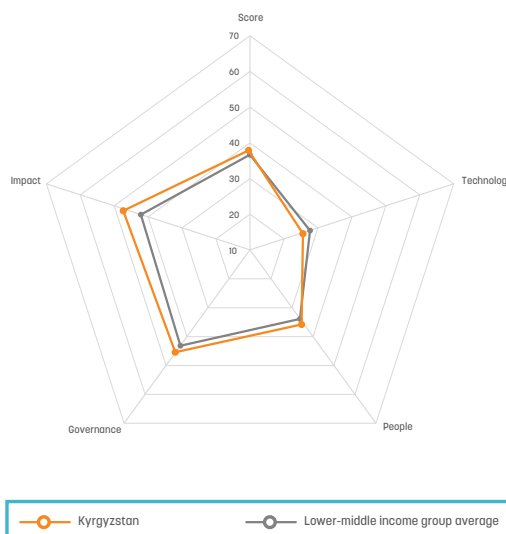
INDICATOR	RANK/134	SCORE
<b>A. Technology pillar</b>		
<b>1st sub-pillar: Access</b>		
1.1.1 Mobile tariffs	45	70.35
1.1.2 Handset prices	18	69.57
1.1.3 Households with internet access	1	100.00
1.1.4 4G mobile network coverage	1	100.00
1.1.5 Fixed-broadband subscriptions	64	67.67
1.1.6 International Internet bandwidth	40	71.36
1.1.7 Internet access in schools	n/a	n/a
<b>2nd sub-pillar: Content</b>		
1.2.1 GitHub commits	89	1.54
1.2.2 Wikipedia edits	77	39.20
1.2.3 Internet domain registrations*	-	-
1.2.4 Mobile apps development	52	69.08
<b>3rd sub-pillar: Future Technologies</b>		
1.3.1 Adoption of emerging technologies	76	42.95
1.3.2 Investment in emerging technology	57	42.57
1.3.3 ICT PCT patent applications	55	5.05
1.3.4 Computer software spending	25	32.28
1.3.5 Robot density	68	0.04
<b>B. People pillar</b>		
<b>1st sub-pillar: Individuals</b>		
2.1.1 Internet users	2	99.95
2.1.2 Active mobile-broadband subscriptions	11	51.57
2.1.3 Use of virtual social networks	1	100.00
2.1.4 Tertiary enrollment	55	39.43
2.1.5 Adult literacy rate	42	94.96
2.1.6 ICT skills	67	52.03
<b>2nd sub-pillar: Businesses</b>		
2.2.1 Firms with website	n/a	n/a
2.2.2 Ease of doing business	78	65.75
2.2.3 Professionals	65	24.87
2.2.4 Technicians and associate professionals	69	31.82
2.2.5 Business use of digital tools	56	63.75
2.2.6 R&D expenditure by businesses	n/a	n/a
<b>3rd sub-pillar: Governments</b>		
2.3.1 Government online services	31	83.64
2.3.2 Publication and use of open data	n/a	n/a
2.3.3 Government promotion of investment in emerging technologies	61	38.68
2.3.4 R&D expenditure by governments and higher education	105	3.50

INDICATOR	RANK/134	SCORE
<b>C. Governance pillar</b>		
<b>1st sub-pillar: Trust</b>		
3.1.1 Secure Internet servers	72	48.54
3.1.2 Cybersecurity	69	64.14
3.1.3 Online access to financial account	56	34.02
3.1.4 Internet shopping	51	25.89
<b>2nd sub-pillar: Regulation</b>		
3.2.1 Regulatory quality	70	50.63
3.2.2 ICT regulatory environment	116	60.23
3.2.3 Legal framework's adaptability to emerging technologies	71	38.64
3.2.4 E-commerce legislation	1	100.00
3.2.5 Privacy protection by law content	69	28.56
<b>3rd sub-pillar: Inclusion</b>		
3.3.1 E-Participation	18	90.13
3.3.2 Socioeconomic gap in use of digital payments	46	78.29
3.3.3 Availability of local online content	47	68.48
3.3.4 Gender gap in internet use	19	67.24
3.3.5 Rural gap in use of digital payments	126	7.53
<b>D. Impact pillar</b>		
<b>1st sub-pillar: Economy</b>		
4.1.1 Medium and high-tech industry	51	37.25
4.1.2 High-tech exports	89	7.81
4.1.3 PCT patent applications	67	0.38
4.1.4 Labour productivity per employee	28	54.98
4.1.5 Prevalence of gig economy	45	55.93
<b>2nd sub-pillar: Quality of Life</b>		
4.2.1 Happiness	47	67.09
4.2.2 Freedom to make life choices	48	83.69
4.2.3 Income inequality	n/a	n/a
4.2.4 Healthy life expectancy at birth	63	66.75
<b>3rd sub-pillar: SDG Contribution</b>		
4.3.1 SDG 3: Good Health and Well-Being	39	78.69
4.3.2 SDG 4: Quality Education	n/a	n/a
4.3.3 SDG 5: Gender Equality	21	85.12
4.3.4 SDG 7: Affordable and Clean Energy	89	72.11
4.3.5 SDG 11: Sustainable Cities and Communities	112	35.75

\* Data on indicator 1.2.3 is confidential, but has been included in the computation. Please see Appendix I: Technical Notes for further details.

# Kyrgyzstan

	Rank (out of 134)	Score
<b>Network Readiness Index</b>	<b>94</b>	<b>38.60</b>
<b>A. Technology pillar</b>	<b>102</b>	<b>26.22</b>
1st sub-pillar: Access	92	45.01
2nd sub-pillar: Content	98	19.52
3rd sub-pillar: Future Technologies	124	14.13
<b>B. People pillar</b>	<b>95</b>	<b>35.59</b>
1st sub-pillar: Individuals	88	47.01
2nd sub-pillar: Businesses	90	35.04
3rd sub-pillar: Governments	113	24.71
<b>C. Governance pillar</b>	<b>97</b>	<b>45.29</b>
1st sub-pillar: Trust	113	21.52
2nd sub-pillar: Regulation	106	51.42
3rd sub-pillar: Inclusion	70	62.93
<b>D. Impact pillar</b>	<b>85</b>	<b>47.31</b>
1st sub-pillar: Economy	110	14.19
2nd sub-pillar: Quality of Life	35	74.95
3rd sub-pillar: SDG Contribution	103	52.81



## The Network Readiness Index in detail

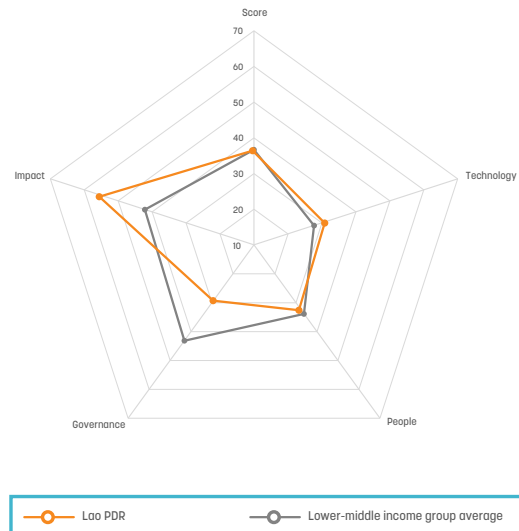
INDICATOR	RANK/134	SCORE
<b>A. Technology pillar</b>		
<b>1st sub-pillar: Access</b>		
1.1.1 Mobile tariffs	114	34.52
1.1.2 Handset prices	122	16.43
1.1.3 Households with internet access	110	20.89
1.1.4 4G mobile network coverage	90	70.00
1.1.5 Fixed-broadband subscriptions	65	64.27
1.1.6 International Internet bandwidth	74	67.56
1.1.7 Internet access in schools	46	41.37
<b>2nd sub-pillar: Content</b>		
1.2.1 GitHub commits	78	2.39
1.2.2 Wikipedia edits	96	24.83
1.2.3 Internet domain registrations*	-	-
1.2.4 Mobile apps development	96	50.30
<b>3rd sub-pillar: Future Technologies</b>		
1.3.1 Adoption of emerging technologies	122	15.66
1.3.2 Investment in emerging technology	119	19.32
1.3.3 ICT PCT patent applications	n/a	n/a
1.3.4 Computer software spending	91	7.40
1.3.5 Robot density	n/a	n/a
<b>B. People pillar</b>		
<b>1st sub-pillar: Individuals</b>		
2.1.1 Internet users	102	36.44
2.1.2 Active mobile-broadband subscriptions	37	36.60
2.1.3 Use of virtual social networks	97	38.14
2.1.4 Tertiary enrollment	69	29.79
2.1.5 Adult literacy rate	12	99.50
2.1.6 ICT skills	86	41.58
<b>2nd sub-pillar: Businesses</b>		
2.2.1 Firms with website	60	55.38
2.2.2 Ease of doing business	75	66.49
2.2.3 Professionals	71	22.22
2.2.4 Technicians and associate professionals	62	33.35
2.2.5 Business use of digital tools	117	32.03
2.2.6 R&D expenditure by businesses	78	0.79
<b>3rd sub-pillar: Governments</b>		
2.3.1 Government online services	78	63.64
2.3.2 Publication and use of open data	85	13.24
2.3.3 Government promotion of investment in emerging technologies	110	17.14
2.3.4 R&D expenditure by governments and higher education	102	4.82

INDICATOR	RANK/134	SCORE
<b>C. Governance pillar</b>		
<b>1st sub-pillar: Trust</b>		
3.1.1 Secure Internet servers	83	45.19
3.1.2 Cybersecurity	109	26.65
3.1.3 Online access to financial account	104	10.62
3.1.4 Internet shopping	103	3.62
<b>2nd sub-pillar: Regulation</b>		
3.2.1 Regulatory quality	96	43.71
3.2.2 ICT regulatory environment	91	73.55
3.2.3 Legal framework's adaptability to emerging technologies	113	13.42
3.2.4 E-commerce legislation	77	75.00
3.2.5 Privacy protection by law content	n/a	n/a
<b>3rd sub-pillar: Inclusion</b>		
3.3.1 E-Participation	65	70.37
3.3.2 Socioeconomic gap in use of digital payments	61	70.09
3.3.3 Availability of local online content	99	41.25
3.3.4 Gender gap in internet use	n/a	n/a
3.3.5 Rural gap in use of digital payments	57	70.01
<b>D. Impact pillar</b>		
<b>1st sub-pillar: Economy</b>		
4.1.1 Medium and high-tech industry	119	3.47
4.1.2 High-tech exports	59	15.26
4.1.3 PCT patent applications	n/a	n/a
4.1.4 Labour productivity per employee	98	8.00
4.1.5 Prevalence of gig economy	94	30.02
<b>2nd sub-pillar: Quality of Life</b>		
4.2.1 Happiness	68	58.81
4.2.2 Freedom to make life choices	15	92.72
4.2.3 Income inequality	13	90.98
4.2.4 Healthy life expectancy at birth	88	57.29
<b>3rd sub-pillar: SDG Contribution</b>		
4.3.1 SDG 3: Good Health and Well-Being	69	68.85
4.3.2 SDG 4: Quality Education	79	2.27
4.3.3 SDG 5: Gender Equality	82	71.66
4.3.4 SDG 7: Affordable and Clean Energy	117	52.96
4.3.5 SDG 11: Sustainable Cities and Communities	60	68.29

\* Data on indicator 1.2.3 is confidential, but has been included in the computation. Please see Appendix I: Technical Notes for further details.

# Lao PDR

	Rank (out of 134)	Score
<b>Network Readiness Index</b>	<b>97</b>	<b>37.12</b>
<b>A. Technology pillar</b>	<b>89</b>	<b>31.50</b>
1st sub-pillar: Access	112	34.34
2nd sub-pillar: Content	108	14.62
3rd sub-pillar: Future Technologies	26	45.55
<b>B. People pillar</b>	<b>103</b>	<b>32.34</b>
1st sub-pillar: Individuals	102	37.00
2nd sub-pillar: Businesses	112	27.58
3rd sub-pillar: Governments	93	32.45
<b>C. Governance pillar</b>	<b>127</b>	<b>29.01</b>
1st sub-pillar: Trust	125	15.01
2nd sub-pillar: Regulation	115	45.01
3rd sub-pillar: Inclusion	130	27.00
<b>D. Impact pillar</b>	<b>53</b>	<b>55.64</b>
1st sub-pillar: Economy	22	48.16
2nd sub-pillar: Quality of Life	84	61.54
3rd sub-pillar: SDG Contribution	92	57.20



## The Network Readiness Index in detail

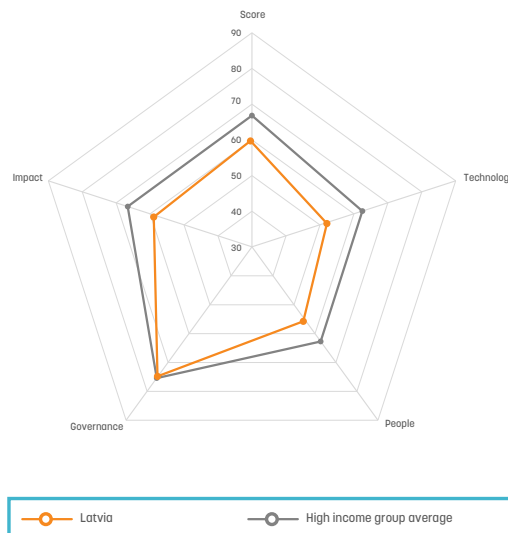
INDICATOR	RANK/134	SCORE
<b>A. Technology pillar</b>		
<b>1st sub-pillar: Access</b>		
1.1.1 Mobile tariffs	87	51.35
1.1.2 Handset prices	111	23.15
1.1.3 Households with internet access	101	24.25
1.1.4 4G mobile network coverage	107	43.00
1.1.5 Fixed-broadband subscriptions	111	2.93
1.1.6 International Internet bandwidth	103	61.35
1.1.7 Internet access in schools	n/a	n/a
<b>2nd sub-pillar: Content</b>		
1.2.1 GitHub commits	126	0.06
1.2.2 Wikipedia edits	n/a	n/a
1.2.3 Internet domain registrations*	-	-
1.2.4 Mobile apps development	105	41.39
<b>3rd sub-pillar: Future Technologies</b>		
1.3.1 Adoption of emerging technologies	69	44.69
1.3.2 Investment in emerging technology	51	46.40
1.3.3 ICT PCT patent applications	n/a	n/a
1.3.4 Computer software spending	n/a	n/a
1.3.5 Robot density	n/a	n/a
<b>B. People pillar</b>		
<b>1st sub-pillar: Individuals</b>		
2.1.1 Internet users	111	23.56
2.1.2 Active mobile-broadband subscriptions	106	15.46
2.1.3 Use of virtual social networks	88	42.27
2.1.4 Tertiary enrollment	98	10.42
2.1.5 Adult literacy rate	75	80.28
2.1.6 ICT skills	71	49.99
<b>2nd sub-pillar: Businesses</b>		
2.2.1 Firms with website	101	24.84
2.2.2 Ease of doing business	121	36.42
2.2.3 Professionals	78	18.50
2.2.4 Technicians and associate professionals	112	10.49
2.2.5 Business use of digital tools	95	47.65
2.2.6 R&D expenditure by businesses	n/a	n/a
<b>3rd sub-pillar: Governments</b>		
2.3.1 Government online services	131	16.97
2.3.2 Publication and use of open data	n/a	n/a
2.3.3 Government promotion of investment in emerging technologies	44	47.92
2.3.4 R&D expenditure by governments and higher education	n/a	n/a

INDICATOR	RANK/134	SCORE
<b>C. Governance pillar</b>		
<b>1st sub-pillar: Trust</b>		
3.1.1 Secure Internet servers	117	27.54
3.1.2 Cybersecurity	114	20.26
3.1.3 Online access to financial account	118	5.12
3.1.4 Internet shopping	83	7.11
<b>2nd sub-pillar: Regulation</b>		
3.2.1 Regulatory quality	117	33.97
3.2.2 ICT regulatory environment	129	29.73
3.2.3 Legal framework's adaptability to emerging technologies	65	41.33
3.2.4 E-commerce legislation	77	75.00
3.2.5 Privacy protection by law content	n/a	n/a
<b>3rd sub-pillar: Inclusion</b>		
3.3.1 E-Participation	130	18.52
3.3.2 Socioeconomic gap in use of digital payments	123	21.08
3.3.3 Availability of local online content	73	56.46
3.3.4 Gender gap in internet use	n/a	n/a
3.3.5 Rural gap in use of digital payments	125	11.95
<b>D. Impact pillar</b>		
<b>1st sub-pillar: Economy</b>		
4.1.1 Medium and high-tech industry	94	17.11
4.1.2 High-tech exports	7	70.36
4.1.3 PCT patent applications	n/a	n/a
4.1.4 Labour productivity per employee	n/a	n/a
4.1.5 Prevalence of gig economy	42	57.02
<b>2nd sub-pillar: Quality of Life</b>		
4.2.1 Happiness	84	49.21
4.2.2 Freedom to make life choices	24	90.29
4.2.3 Income inequality	61	68.56
4.2.4 Healthy life expectancy at birth	106	38.12
<b>3rd sub-pillar: SDG Contribution</b>		
4.3.1 SDG 3: Good Health and Well-Being	108	37.70
4.3.2 SDG 4: Quality Education	n/a	n/a
4.3.3 SDG 5: Gender Equality	100	61.55
4.3.4 SDG 7: Affordable and Clean Energy	97	68.06
4.3.5 SDG 11: Sustainable Cities and Communities	70	61.47

\* Data on indicator 1.2.3 is confidential, but has been included in the computation. Please see Appendix I: Technical Notes for further details.

# Latvia

	Rank (out of 134)	Score
<b>Network Readiness Index</b>	<b>37</b>	<b>60.47</b>
<b>A. Technology pillar</b>	<b>38</b>	<b>52.80</b>
1st sub-pillar: Access	40	78.29
2nd sub-pillar: Content	31	52.76
3rd sub-pillar: Future Technologies	70	27.34
<b>B. People pillar</b>	<b>39</b>	<b>55.51</b>
1st sub-pillar: Individuals	19	70.10
2nd sub-pillar: Businesses	35	57.60
3rd sub-pillar: Governments	79	38.83
<b>C. Governance pillar</b>	<b>28</b>	<b>74.78</b>
1st sub-pillar: Trust	27	68.19
2nd sub-pillar: Regulation	19	84.42
3rd sub-pillar: Inclusion	42	71.74
<b>D. Impact pillar</b>	<b>42</b>	<b>58.78</b>
1st sub-pillar: Economy	46	32.91
2nd sub-pillar: Quality of Life	72	64.04
3rd sub-pillar: SDG Contribution	26	79.40



## The Network Readiness Index in detail

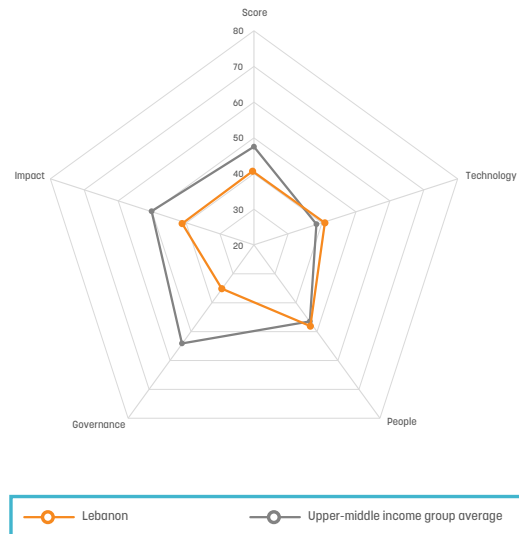
INDICATOR	RANK/134	SCORE
<b>A. Technology pillar</b>		
<b>1st sub-pillar: Access</b>		
1.1.1 Mobile tariffs	57	67.24
1.1.2 Handset prices	54	50.09
1.1.3 Households with internet access	41	81.53
1.1.4 4G mobile network coverage	54	95.00
1.1.5 Fixed-broadband subscriptions	48	80.11
1.1.6 International Internet bandwidth	25	74.08
1.1.7 Internet access in schools	1	100.00
<b>2nd sub-pillar: Content</b>		
1.2.1 GitHub commits	25	30.61
1.2.2 Wikipedia edits	20	80.43
1.2.3 Internet domain registrations*	-	-
1.2.4 Mobile apps development	35	78.03
<b>3rd sub-pillar: Future Technologies</b>		
1.3.1 Adoption of emerging technologies	38	61.35
1.3.2 Investment in emerging technology	54	44.86
1.3.3 ICT PCT patent applications	38	19.98
1.3.4 Computer software spending	86	9.06
1.3.5 Robot density	48	1.45
<b>B. People pillar</b>		
<b>1st sub-pillar: Individuals</b>		
2.1.1 Internet users	30	83.43
2.1.2 Active mobile-broadband subscriptions	12	51.31
2.1.3 Use of virtual social networks	68	52.58
2.1.4 Tertiary enrollment	9	64.25
2.1.5 Adult literacy rate	2	99.89
2.1.6 ICT skills	37	69.13
<b>2nd sub-pillar: Businesses</b>		
2.2.1 Firms with website	48	63.45
2.2.2 Ease of doing business	18	88.53
2.2.3 Professionals	35	42.37
2.2.4 Technicians and associate professionals	21	62.93
2.2.5 Business use of digital tools	16	84.81
2.2.6 R&D expenditure by businesses	57	3.54
<b>3rd sub-pillar: Governments</b>		
2.3.1 Government online services	88	56.98
2.3.2 Publication and use of open data	55	27.89
2.3.3 Government promotion of investment in emerging technologies	66	37.49
2.3.4 R&D expenditure by governments and higher education	55	32.96

INDICATOR	RANK/134	SCORE
<b>C. Governance pillar</b>		
<b>1st sub-pillar: Trust</b>		
3.1.1 Secure Internet servers	29	78.97
3.1.2 Cybersecurity	45	80.17
3.1.3 Online access to financial account	16	69.36
3.1.4 Internet shopping	34	44.25
<b>2nd sub-pillar: Regulation</b>		
3.2.1 Regulatory quality	26	77.62
3.2.2 ICT regulatory environment	29	92.09
3.2.3 Legal framework's adaptability to emerging technologies	35	55.58
3.2.4 E-commerce legislation	1	100.00
3.2.5 Privacy protection by law content	4	96.82
<b>3rd sub-pillar: Inclusion</b>		
3.3.1 E-Participation	88	56.79
3.3.2 Socioeconomic gap in use of digital payments	27	87.48
3.3.3 Availability of local online content	30	81.19
3.3.4 Gender gap in internet use	43	61.93
3.3.5 Rural gap in use of digital payments	52	71.31
<b>D. Impact pillar</b>		
<b>1st sub-pillar: Economy</b>		
4.1.1 Medium and high-tech industry	74	27.30
4.1.2 High-tech exports	30	31.45
4.1.3 PCT patent applications	34	4.34
4.1.4 Labour productivity per employee	45	42.20
4.1.5 Prevalence of gig economy	39	59.25
<b>2nd sub-pillar: Quality of Life</b>		
4.2.1 Happiness	58	64.41
4.2.2 Freedom to make life choices	112	54.93
4.2.3 Income inequality	55	70.62
4.2.4 Healthy life expectancy at birth	66	66.20
<b>3rd sub-pillar: SDG Contribution</b>		
4.3.1 SDG 3: Good Health and Well-Being	67	70.49
4.3.2 SDG 4: Quality Education	22	64.22
4.3.3 SDG 5: Gender Equality	3	95.62
4.3.4 SDG 7: Affordable and Clean Energy	47	83.38
4.3.5 SDG 11: Sustainable Cities and Communities	32	83.26

\* Data on indicator 1.2.3 is confidential, but has been included in the computation. Please see Appendix I: Technical Notes for further details.

# Lebanon

	Rank (out of 134)	Score
<b>Network Readiness Index</b>	<b>90</b>	<b>41.30</b>
<b>A. Technology pillar</b>	<b>61</b>	<b>41.55</b>
1st sub-pillar: Access	57	70.69
2nd sub-pillar: Content	60	30.56
3rd sub-pillar: Future Technologies	88	23.40
<b>B. People pillar</b>	<b>67</b>	<b>47.91</b>
1st sub-pillar: Individuals	33	64.99
2nd sub-pillar: Businesses	42	53.87
3rd sub-pillar: Governments	112	24.86
<b>C. Governance pillar</b>	<b>123</b>	<b>34.82</b>
1st sub-pillar: Trust	109	23.11
2nd sub-pillar: Regulation	125	35.33
3rd sub-pillar: Inclusion	105	46.02
<b>D. Impact pillar</b>	<b>100</b>	<b>40.94</b>
1st sub-pillar: Economy	86	19.90
2nd sub-pillar: Quality of Life	113	46.19
3rd sub-pillar: SDG Contribution	94	56.71



## The Network Readiness Index in detail

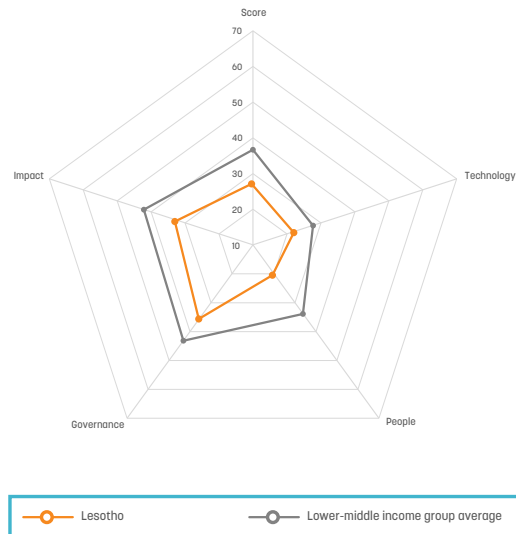
INDICATOR	RANK/134	SCORE
<b>A. Technology pillar</b>		
<b>1st sub-pillar: Access</b>		
1.1.1 Mobile tariffs	98	47.41
1.1.2 Handset prices	77	41.05
1.1.3 Households with internet access	34	84.32
1.1.4 4G mobile network coverage	36	98.20
1.1.5 Fixed-broadband subscriptions	n/a	n/a
1.1.6 International Internet bandwidth	89	63.26
1.1.7 Internet access in schools	31	89.88
<b>2nd sub-pillar: Content</b>		
1.2.1 GitHub commits	64	3.83
1.2.2 Wikipedia edits	65	44.02
1.2.3 Internet domain registrations*	-	-
1.2.4 Mobile apps development	46	71.13
<b>3rd sub-pillar: Future Technologies</b>		
1.3.1 Adoption of emerging technologies	79	40.87
1.3.2 Investment in emerging technology	62	40.91
1.3.3 ICT PCT patent applications	50	8.07
1.3.4 Computer software spending	102	3.76
1.3.5 Robot density	n/a	n/a
<b>B. People pillar</b>		
<b>1st sub-pillar: Individuals</b>		
2.1.1 Internet users	46	77.86
2.1.2 Active mobile-broadband subscriptions	105	16.78
2.1.3 Use of virtual social networks	52	59.79
2.1.4 Tertiary enrollment	n/a	n/a
2.1.5 Adult literacy rate	49	93.68
2.1.6 ICT skills	22	76.85
<b>2nd sub-pillar: Businesses</b>		
2.2.1 Firms with website	50	62.69
2.2.2 Ease of doing business	115	42.63
2.2.3 Professionals	n/a	n/a
2.2.4 Technicians and associate professionals	n/a	n/a
2.2.5 Business use of digital tools	74	56.29
2.2.6 R&D expenditure by businesses	n/a	n/a
<b>3rd sub-pillar: Governments</b>		
2.3.1 Government online services	114	40.00
2.3.2 Publication and use of open data	100	5.82
2.3.3 Government promotion of investment in emerging technologies	93	28.75
2.3.4 R&D expenditure by governments and higher education	n/a	n/a

INDICATOR	RANK/134	SCORE
<b>C. Governance pillar</b>		
<b>1st sub-pillar: Trust</b>		
3.1.1 Secure Internet servers	89	42.54
3.1.2 Cybersecurity	117	19.28
3.1.3 Online access to financial account	100	12.96
3.1.4 Internet shopping	64	17.64
<b>2nd sub-pillar: Regulation</b>		
3.2.1 Regulatory quality	95	43.89
3.2.2 ICT regulatory environment	131	23.94
3.2.3 Legal framework's adaptability to emerging technologies	77	33.80
3.2.4 E-commerce legislation	77	75.00
3.2.5 Privacy protection by law content	81	0.00
<b>3rd sub-pillar: Inclusion</b>		
3.3.1 E-Participation	119	30.86
3.3.2 Socioeconomic gap in use of digital payments	121	30.08
3.3.3 Availability of local online content	82	51.76
3.3.4 Gender gap in internet use	n/a	n/a
3.3.5 Rural gap in use of digital payments	51	71.37
<b>D. Impact pillar</b>		
<b>1st sub-pillar: Economy</b>		
4.1.1 Medium and high-tech industry	79	25.29
4.1.2 High-tech exports	100	4.46
4.1.3 PCT patent applications	59	0.66
4.1.4 Labour productivity per employee	61	28.76
4.1.5 Prevalence of gig economy	68	40.34
<b>2nd sub-pillar: Quality of Life</b>		
4.2.1 Happiness	123	26.16
4.2.2 Freedom to make life choices	131	12.31
4.2.3 Income inequality	27	80.41
4.2.4 Healthy life expectancy at birth	68	65.89
<b>3rd sub-pillar: SDG Contribution</b>		
4.3.1 SDG 3: Good Health and Well-Being	62	73.77
4.3.2 SDG 4: Quality Education	68	25.67
4.3.3 SDG 5: Gender Equality	111	48.46
4.3.4 SDG 7: Affordable and Clean Energy	58	81.43
4.3.5 SDG 11: Sustainable Cities and Communities	78	54.24

\* Data on indicator 1.2.3 is confidential, but has been included in the computation. Please see Appendix I: Technical Notes for further details.

# Lesotho

	Rank (out of 134)	Score
<b>Network Readiness Index</b>	<b>121</b>	<b>27.72</b>
<b>A. Technology pillar</b>	<b>113</b>	<b>22.60</b>
1st sub-pillar: Access	105	37.87
2nd sub-pillar: Content	114	11.99
3rd sub-pillar: Future Technologies	109	17.93
<b>B. People pillar</b>	<b>124</b>	<b>20.07</b>
1st sub-pillar: Individuals	111	29.29
2nd sub-pillar: Businesses	128	19.06
3rd sub-pillar: Governments	134	11.86
<b>C. Governance pillar</b>	<b>119</b>	<b>35.40</b>
1st sub-pillar: Trust	120	17.82
2nd sub-pillar: Regulation	116	44.74
3rd sub-pillar: Inclusion	111	43.63
<b>D. Impact pillar</b>	<b>122</b>	<b>32.82</b>
1st sub-pillar: Economy	96	17.75
2nd sub-pillar: Quality of Life	130	30.20
3rd sub-pillar: SDG Contribution	110	50.50



## The Network Readiness Index in detail

INDICATOR	RANK/134	SCORE
<b>A. Technology pillar</b>		
<b>1st sub-pillar: Access</b>		
1.1.1 Mobile tariffs	120	28.71
1.1.2 Handset prices	119	19.06
1.1.3 Households with internet access	95	30.23
1.1.4 4G mobile network coverage	84	75.00
1.1.5 Fixed-broadband subscriptions	93	20.17
1.1.6 International Internet bandwidth	118	54.05
1.1.7 Internet access in schools	n/a	n/a
<b>2nd sub-pillar: Content</b>		
1.2.1 GitHub commits	127	0.05
1.2.2 Wikipedia edits	n/a	n/a
1.2.3 Internet domain registrations*	-	-
1.2.4 Mobile apps development	113	35.62
<b>3rd sub-pillar: Future Technologies</b>		
1.3.1 Adoption of emerging technologies	128	0.00
1.3.2 Investment in emerging technology	79	35.86
1.3.3 ICT PCT patent applications	n/a	n/a
1.3.4 Computer software spending	n/a	n/a
1.3.5 Robot density	n/a	n/a
<b>B. People pillar</b>		
<b>1st sub-pillar: Individuals</b>		
2.1.1 Internet users	108	27.16
2.1.2 Active mobile-broadband subscriptions	89	22.36
2.1.3 Use of virtual social networks	108	18.56
2.1.4 Tertiary enrollment	106	6.90
2.1.5 Adult literacy rate	85	69.95
2.1.6 ICT skills	114	30.82
<b>2nd sub-pillar: Businesses</b>		
2.2.1 Firms with website	123	6.27
2.2.2 Ease of doing business	102	51.64
2.2.3 Professionals	123	2.00
2.2.4 Technicians and associate professionals	98	17.39
2.2.5 Business use of digital tools	124	18.00
2.2.6 R&D expenditure by businesses	n/a	n/a
<b>3rd sub-pillar: Governments</b>		
2.3.1 Government online services	120	33.33
2.3.2 Publication and use of open data	n/a	n/a
2.3.3 Government promotion of investment in emerging technologies	126	0.08
2.3.4 R&D expenditure by governments and higher education	109	2.17

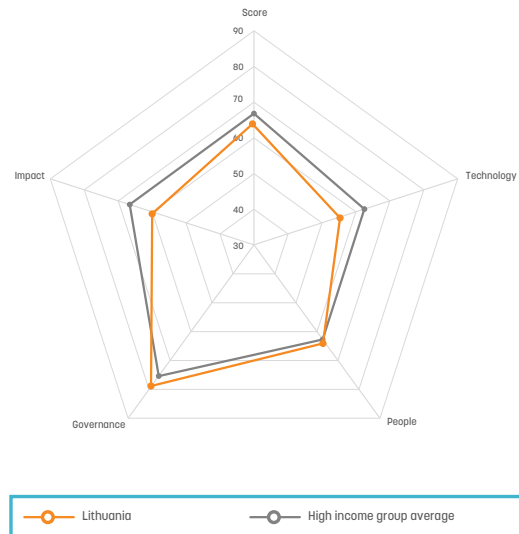
INDICATOR	RANK/134	SCORE
<b>C. Governance pillar</b>		
<b>1st sub-pillar: Trust</b>		
3.1.1 Secure Internet servers	109	33.11
3.1.2 Cybersecurity	129	4.66
3.1.3 Online access to financial account	61	30.94
3.1.4 Internet shopping	114	2.59
<b>2nd sub-pillar: Regulation</b>		
3.2.1 Regulatory quality	103	40.48
3.2.2 ICT regulatory environment	107	65.83
3.2.3 Legal framework's adaptability to emerging technologies	127	0.00
3.2.4 E-commerce legislation	115	50.00
3.2.5 Privacy protection by law content	43	67.41
<b>3rd sub-pillar: Inclusion</b>		
3.3.1 E-Participation	117	32.10
3.3.2 Socioeconomic gap in use of digital payments	101	43.06
3.3.3 Availability of local online content	119	26.44
3.3.4 Gender gap in internet use	n/a	n/a
3.3.5 Rural gap in use of digital payments	46	72.92
<b>D. Impact pillar</b>		
<b>1st sub-pillar: Economy</b>		
4.1.1 Medium and high-tech industry	n/a	n/a
4.1.2 High-tech exports	124	0.40
4.1.3 PCT patent applications	n/a	n/a
4.1.4 Labour productivity per employee	n/a	n/a
4.1.5 Prevalence of gig economy	87	35.11
<b>2nd sub-pillar: Quality of Life</b>		
4.2.1 Happiness	128	16.09
4.2.2 Freedom to make life choices	104	58.05
4.2.3 Income inequality	103	46.65
4.2.4 Healthy life expectancy at birth	133	0.00
<b>3rd sub-pillar: SDG Contribution</b>		
4.3.1 SDG 3: Good Health and Well-Being	109	32.79
4.3.2 SDG 4: Quality Education	n/a	n/a
4.3.3 SDG 5: Gender Equality	5	93.99
4.3.4 SDG 7: Affordable and Clean Energy	127	38.37
4.3.5 SDG 11: Sustainable Cities and Communities	110	36.85

\* Data on indicator 1.2.3 is confidential, but has been included in the computation. Please see Appendix I: Technical Notes for further details.



# Lithuania

	Rank (out of 134)	Score
<b>Network Readiness Index</b>	<b>29</b>	<b>64.70</b>
<b>A. Technology pillar</b>	<b>32</b>	<b>56.10</b>
1st sub-pillar: Access	30	81.53
2nd sub-pillar: Content	28	55.71
3rd sub-pillar: Future Technologies	50	31.07
<b>B. People pillar</b>	<b>23</b>	<b>63.97</b>
1st sub-pillar: Individuals	26	68.04
2nd sub-pillar: Businesses	27	61.44
3rd sub-pillar: Governments	20	62.42
<b>C. Governance pillar</b>	<b>21</b>	<b>78.87</b>
1st sub-pillar: Trust	21	73.42
2nd sub-pillar: Regulation	18	85.22
3rd sub-pillar: Inclusion	23	77.98
<b>D. Impact pillar</b>	<b>39</b>	<b>59.86</b>
1st sub-pillar: Economy	45	33.27
2nd sub-pillar: Quality of Life	61	66.82
3rd sub-pillar: SDG Contribution	25	79.49



## The Network Readiness Index in detail

INDICATOR	RANK/134	SCORE
<b>A. Technology pillar</b>		
<b>1st sub-pillar: Access</b>		
1.1.1 Mobile tariffs	19	84.23
1.1.2 Handset prices	49	53.94
1.1.3 Households with internet access	49	78.32
1.1.4 4G mobile network coverage	38	98.00
1.1.5 Fixed-broadband subscriptions	21	94.58
1.1.6 International Internet bandwidth	10	80.11
1.1.7 Internet access in schools	n/a	n/a
<b>2nd sub-pillar: Content</b>		
1.2.1 GitHub commits	24	32.39
1.2.2 Wikipedia edits	22	79.99
1.2.3 Internet domain registrations*	-	-
1.2.4 Mobile apps development	24	84.75
<b>3rd sub-pillar: Future Technologies</b>		
1.3.1 Adoption of emerging technologies	31	65.18
1.3.2 Investment in emerging technology	29	61.76
1.3.3 ICT PCT patent applications	42	18.58
1.3.4 Computer software spending	96	5.95
1.3.5 Robot density	44	3.88
<b>B. People pillar</b>		
<b>1st sub-pillar: Individuals</b>		
2.1.1 Internet users	42	79.45
2.1.2 Active mobile-broadband subscriptions	28	39.27
2.1.3 Use of virtual social networks	37	65.98
2.1.4 Tertiary enrollment	25	52.73
2.1.5 Adult literacy rate	4	99.80
2.1.6 ICT skills	34	71.03
<b>2nd sub-pillar: Businesses</b>		
2.2.1 Firms with website	18	81.80
2.2.2 Ease of doing business	11	90.90
2.2.3 Professionals	14	57.58
2.2.4 Technicians and associate professionals	51	41.33
2.2.5 Business use of digital tools	9	88.91
2.2.6 R&D expenditure by businesses	47	8.12
<b>3rd sub-pillar: Governments</b>		
2.3.1 Government online services	24	84.84
2.3.2 Publication and use of open data	n/a	n/a
2.3.3 Government promotion of investment in emerging technologies	37	50.80
2.3.4 R&D expenditure by governments and higher education	31	51.63

INDICATOR	RANK/134	SCORE
<b>C. Governance pillar</b>		
<b>1st sub-pillar: Trust</b>		
3.1.1 Secure Internet servers	20	82.66
3.1.2 Cybersecurity	4	97.51
3.1.3 Online access to financial account	20	60.65
3.1.4 Internet shopping	32	52.88
<b>2nd sub-pillar: Regulation</b>		
3.2.1 Regulatory quality	29	75.93
3.2.2 ICT regulatory environment	5	97.30
3.2.3 Legal framework's adaptability to emerging technologies	31	60.86
3.2.4 E-commerce legislation	1	100.00
3.2.5 Privacy protection by law content	8	92.00
<b>3rd sub-pillar: Inclusion</b>		
3.3.1 E-Participation	63	72.84
3.3.2 Socioeconomic gap in use of digital payments	35	82.71
3.3.3 Availability of local online content	15	87.56
3.3.4 Gender gap in internet use	16	67.59
3.3.5 Rural gap in use of digital payments	11	79.18
<b>D. Impact pillar</b>		
<b>1st sub-pillar: Economy</b>		
4.1.1 Medium and high-tech industry	52	35.50
4.1.2 High-tech exports	39	22.95
4.1.3 PCT patent applications	36	3.38
4.1.4 Labour productivity per employee	38	48.06
4.1.5 Prevalence of gig economy	43	56.48
<b>2nd sub-pillar: Quality of Life</b>		
4.2.1 Happiness	51	66.26
4.2.2 Freedom to make life choices	79	68.91
4.2.3 Income inequality	66	66.24
4.2.4 Healthy life expectancy at birth	69	65.85
<b>3rd sub-pillar: SDG Contribution</b>		
4.3.1 SDG 3: Good Health and Well-Being	62	73.77
4.3.2 SDG 4: Quality Education	34	58.62
4.3.3 SDG 5: Gender Equality	4	94.82
4.3.4 SDG 7: Affordable and Clean Energy	45	83.74
4.3.5 SDG 11: Sustainable Cities and Communities	28	86.51

\* Data on indicator 1.2.3 is confidential, but has been included in the computation. Please see Appendix I: Technical Notes for further details.

# Luxembourg

	Rank (out of 134)	Score
<b>Network Readiness Index</b>	<b>11</b>	<b>75.27</b>
<b>A. Technology pillar</b>	<b>6</b>	<b>79.28</b>
1st sub-pillar: Access	1	92.35
2nd sub-pillar: Content	7	81.28
3rd sub-pillar: Future Technologies	13	64.20
<b>B. People pillar</b>	<b>19</b>	<b>68.35</b>
1st sub-pillar: Individuals	56	58.47
2nd sub-pillar: Businesses	12	72.01
3rd sub-pillar: Governments	15	74.56
<b>C. Governance pillar</b>	<b>16</b>	<b>82.06</b>
1st sub-pillar: Trust	17	77.94
2nd sub-pillar: Regulation	6	89.83
3rd sub-pillar: Inclusion	22	78.43
<b>D. Impact pillar</b>	<b>17</b>	<b>71.39</b>
1st sub-pillar: Economy	26	46.12
2nd sub-pillar: Quality of Life	12	86.80
3rd sub-pillar: SDG Contribution	14	81.24



## The Network Readiness Index in detail

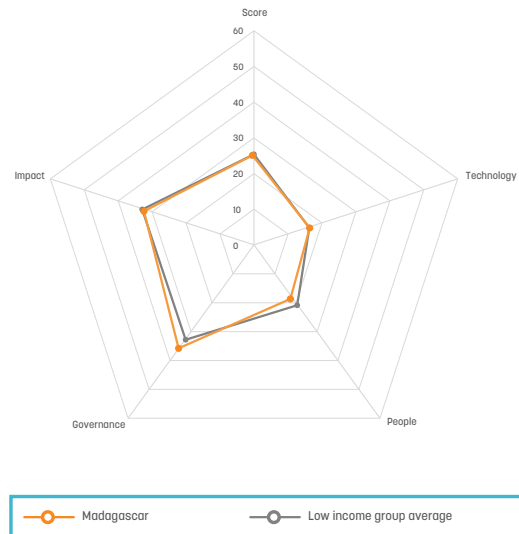
INDICATOR	RANK/134	SCORE
<b>A. Technology pillar</b>		
<b>1st sub-pillar: Access</b>		
1.1.1 Mobile tariffs	3	97.81
1.1.2 Handset prices	6	82.46
1.1.3 Households with internet access	15	92.97
1.1.4 4G mobile network coverage	46	97.00
1.1.5 Fixed-broadband subscriptions	45	83.86
1.1.6 International Internet bandwidth	1	100.00
1.1.7 Internet access in schools	n/a	n/a
<b>2nd sub-pillar: Content</b>		
1.2.1 GitHub commits	16	57.99
1.2.2 Wikipedia edits	9	87.14
1.2.3 Internet domain registrations*	-	-
1.2.4 Mobile apps development	10	90.21
<b>3rd sub-pillar: Future Technologies</b>		
1.3.1 Adoption of emerging technologies	7	92.18
1.3.2 Investment in emerging technology	10	79.58
1.3.3 ICT PCT patent applications	11	69.57
1.3.4 Computer software spending	70	15.49
1.3.5 Robot density	n/a	n/a
<b>B. People pillar</b>		
<b>1st sub-pillar: Individuals</b>		
2.1.1 Internet users	7	97.33
2.1.2 Active mobile-broadband subscriptions	38	36.59
2.1.3 Use of virtual social networks	44	63.92
2.1.4 Tertiary enrollment	95	13.50
2.1.5 Adult literacy rate	n/a	n/a
2.1.6 ICT skills	17	81.03
<b>2nd sub-pillar: Businesses</b>		
2.2.1 Firms with website	11	86.11
2.2.2 Ease of doing business	67	69.64
2.2.3 Professionals	1	100.00
2.2.4 Technicians and associate professionals	17	69.55
2.2.5 Business use of digital tools	8	89.47
2.2.6 R&D expenditure by businesses	29	17.32
<b>3rd sub-pillar: Governments</b>		
2.3.1 Government online services	48	75.76
2.3.2 Publication and use of open data	n/a	n/a
2.3.3 Government promotion of investment in emerging technologies	2	95.30
2.3.4 R&D expenditure by governments and higher education	28	52.64

INDICATOR	RANK/134	SCORE
<b>C. Governance pillar</b>		
<b>1st sub-pillar: Trust</b>		
3.1.1 Secure Internet servers	15	84.53
3.1.2 Cybersecurity	12	95.12
3.1.3 Online access to financial account	17	66.56
3.1.4 Internet shopping	20	65.55
<b>2nd sub-pillar: Regulation</b>		
3.2.1 Regulatory quality	11	90.12
3.2.2 ICT regulatory environment	67	83.40
3.2.3 Legal framework's adaptability to emerging technologies	2	90.97
3.2.4 E-commerce legislation	1	100.00
3.2.5 Privacy protection by law content	16	84.64
<b>3rd sub-pillar: Inclusion</b>		
3.3.1 E-Participation	69	69.14
3.3.2 Socioeconomic gap in use of digital payments	8	97.26
3.3.3 Availability of local online content	16	86.50
3.3.4 Gender gap in internet use	36	62.99
3.3.5 Rural gap in use of digital payments	21	76.25
<b>D. Impact pillar</b>		
<b>1st sub-pillar: Economy</b>		
4.1.1 Medium and high-tech industry	69	27.92
4.1.2 High-tech exports	66	13.21
4.1.3 PCT patent applications	14	36.62
4.1.4 Labour productivity per employee	1	100.00
4.1.5 Prevalence of gig economy	50	52.86
<b>2nd sub-pillar: Quality of Life</b>		
4.2.1 Happiness	7	92.60
4.2.2 Freedom to make life choices	10	94.40
4.2.3 Income inequality	52	72.42
4.2.4 Healthy life expectancy at birth	15	87.79
<b>3rd sub-pillar: SDG Contribution</b>		
4.3.1 SDG 3: Good Health and Well-Being	13	90.16
4.3.2 SDG 4: Quality Education	32	59.45
4.3.3 SDG 5: Gender Equality	63	75.34
4.3.4 SDG 7: Affordable and Clean Energy	14	90.75
4.3.5 SDG 11: Sustainable Cities and Communities	20	90.52

\* Data on indicator 1.2.3 is confidential, but has been included in the computation. Please see Appendix I: Technical Notes for further details.

# Madagascar

	Rank (out of 134)	Score
<b>Network Readiness Index</b>	<b>124</b>	<b>25.84</b>
<b>A. Technology pillar</b>	<b>125</b>	<b>17.06</b>
1st sub-pillar: Access	127	20.85
2nd sub-pillar: Content	118	10.82
3rd sub-pillar: Future Technologies	101	19.50
<b>B. People pillar</b>	<b>128</b>	<b>18.33</b>
1st sub-pillar: Individuals	122	18.29
2nd sub-pillar: Businesses	126	19.58
3rd sub-pillar: Governments	127	17.12
<b>C. Governance pillar</b>	<b>117</b>	<b>35.63</b>
1st sub-pillar: Trust	130	12.96
2nd sub-pillar: Regulation	99	54.22
3rd sub-pillar: Inclusion	115	39.70
<b>D. Impact pillar</b>	<b>124</b>	<b>32.33</b>
1st sub-pillar: Economy	113	12.94
2nd sub-pillar: Quality of Life	124	38.59
3rd sub-pillar: SDG Contribution	113	45.47



## The Network Readiness Index in detail

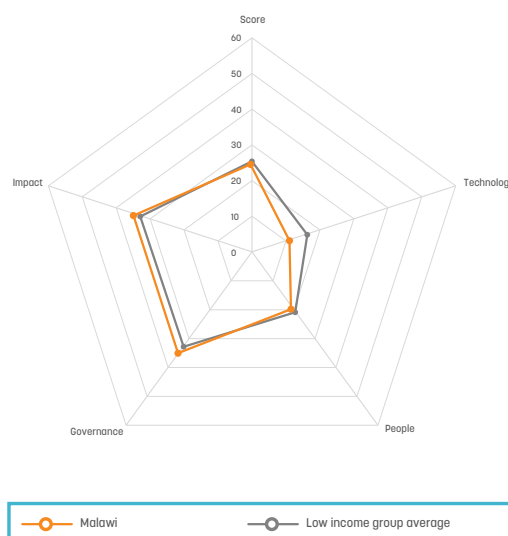
INDICATOR	RANK/134	SCORE
<b>A. Technology pillar</b>		
<b>1st sub-pillar: Access</b>		
1.1.1 Mobile tariffs	131	7.62
1.1.2 Handset prices	109	23.56
1.1.3 Households with internet access	127	7.95
1.1.4 4G mobile network coverage	119	25.00
1.1.5 Fixed-broadband subscriptions	86	27.87
1.1.6 International Internet bandwidth	120	53.56
1.1.7 Internet access in schools	69	0.41
<b>2nd sub-pillar: Content</b>		
1.2.1 GitHub commits	120	0.14
1.2.2 Wikipedia edits	116	7.31
1.2.3 Internet domain registrations*	-	-
1.2.4 Mobile apps development	112	35.75
<b>3rd sub-pillar: Future Technologies</b>		
1.3.1 Adoption of emerging technologies	116	22.75
1.3.2 Investment in emerging technology	86	33.88
1.3.3 ICT PCT patent applications	n/a	n/a
1.3.4 Computer software spending	114	1.87
1.3.5 Robot density	n/a	n/a
<b>B. People pillar</b>		
<b>1st sub-pillar: Individuals</b>		
2.1.1 Internet users	131	7.36
2.1.2 Active mobile-broadband subscriptions	129	4.73
2.1.3 Use of virtual social networks	121	6.60
2.1.4 Tertiary enrollment	120	3.33
2.1.5 Adult literacy rate	87	67.59
2.1.6 ICT skills	125	20.13
<b>2nd sub-pillar: Businesses</b>		
2.2.1 Firms with website	103	23.22
2.2.2 Ease of doing business	126	30.94
2.2.3 Professionals	119	4.15
2.2.4 Technicians and associate professionals	124	2.74
2.2.5 Business use of digital tools	109	36.83
2.2.6 R&D expenditure by businesses	n/a	n/a
<b>3rd sub-pillar: Governments</b>		
2.3.1 Government online services	126	26.66
2.3.2 Publication and use of open data	n/a	n/a
2.3.3 Government promotion of investment in emerging technologies	111	17.02
2.3.4 R&D expenditure by governments and higher education	94	7.69

INDICATOR	RANK/134	SCORE
<b>C. Governance pillar</b>		
<b>1st sub-pillar: Trust</b>		
3.1.1 Secure Internet servers	128	17.29
3.1.2 Cybersecurity	113	20.37
3.1.3 Online access to financial account	n/a	n/a
3.1.4 Internet shopping	121	1.24
<b>2nd sub-pillar: Regulation</b>		
3.2.1 Regulatory quality	114	35.26
3.2.2 ICT regulatory environment	104	67.76
3.2.3 Legal framework's adaptability to emerging technologies	112	13.85
3.2.4 E-commerce legislation	1	100.00
3.2.5 Privacy protection by law content	n/a	n/a
<b>3rd sub-pillar: Inclusion</b>		
3.3.1 E-Participation	127	27.16
3.3.2 Socioeconomic gap in use of digital payments	79	58.79
3.3.3 Availability of local online content	109	34.13
3.3.4 Gender gap in internet use	n/a	n/a
3.3.5 Rural gap in use of digital payments	114	38.73
<b>D. Impact pillar</b>		
<b>1st sub-pillar: Economy</b>		
4.1.1 Medium and high-tech industry	117	4.24
4.1.2 High-tech exports	121	0.58
4.1.3 PCT patent applications	n/a	n/a
4.1.4 Labour productivity per employee	119	0.54
4.1.5 Prevalence of gig economy	58	46.40
<b>2nd sub-pillar: Quality of Life</b>		
4.2.1 Happiness	115	32.35
4.2.2 Freedom to make life choices	129	29.72
4.2.3 Income inequality	91	52.58
4.2.4 Healthy life expectancy at birth	105	39.70
<b>3rd sub-pillar: SDG Contribution</b>		
4.3.1 SDG 3: Good Health and Well-Being	132	0.00
4.3.2 SDG 4: Quality Education	n/a	n/a
4.3.3 SDG 5: Gender Equality	87	67.30
4.3.4 SDG 7: Affordable and Clean Energy	87	72.54
4.3.5 SDG 11: Sustainable Cities and Communities	94	42.03

\* Data on indicator 1.2.3 is confidential, but has been included in the computation. Please see Appendix I: Technical Notes for further details.

# Malawi

	Rank (out of 134)	Score
<b>Network Readiness Index</b>	<b>127</b>	<b>25.23</b>
<b>A. Technology pillar</b>	<b>130</b>	<b>11.64</b>
1st sub-pillar: Access	128	17.47
2nd sub-pillar: Content	130	5.49
3rd sub-pillar: Future Technologies	127	11.96
<b>B. People pillar</b>	<b>125</b>	<b>19.55</b>
1st sub-pillar: Individuals	130	14.11
2nd sub-pillar: Businesses	119	23.99
3rd sub-pillar: Governments	122	20.54
<b>C. Governance pillar</b>	<b>122</b>	<b>34.90</b>
1st sub-pillar: Trust	114	21.33
2nd sub-pillar: Regulation	104	51.62
3rd sub-pillar: Inclusion	127	31.75
<b>D. Impact pillar</b>	<b>118</b>	<b>34.83</b>
1st sub-pillar: Economy	124	9.95
2nd sub-pillar: Quality of Life	120	42.27
3rd sub-pillar: SDG Contribution	106	52.27



## The Network Readiness Index in detail

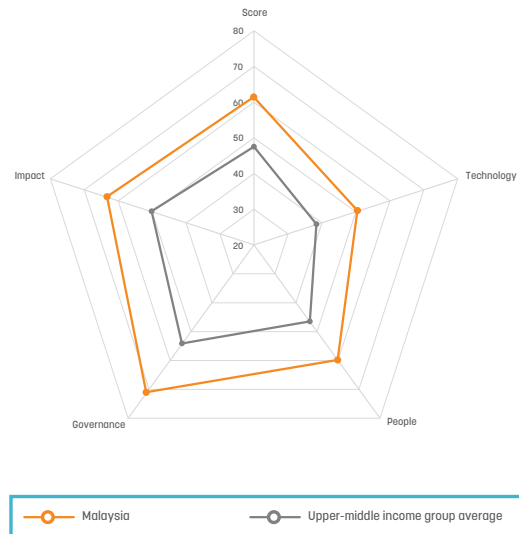
INDICATOR	RANK/134	SCORE
<b>A. Technology pillar</b>		
<b>1st sub-pillar: Access</b>		
1.1.1 Mobile tariffs	130	8.23
1.1.2 Handset prices	128	4.10
1.1.3 Households with internet access	122	10.82
1.1.4 4G mobile network coverage	118	30.00
1.1.5 Fixed-broadband subscriptions	116	0.77
1.1.6 International Internet bandwidth	126	50.88
1.1.7 Internet access in schools	n/a	n/a
<b>2nd sub-pillar: Content</b>		
1.2.1 GitHub commits	123	0.09
1.2.2 Wikipedia edits	112	12.47
1.2.3 Internet domain registrations*	-	-
1.2.4 Mobile apps development	132	9.33
<b>3rd sub-pillar: Future Technologies</b>		
1.3.1 Adoption of emerging technologies	125	13.46
1.3.2 Investment in emerging technology	117	19.79
1.3.3 ICT PCT patent applications	n/a	n/a
1.3.4 Computer software spending	110	2.63
1.3.5 Robot density	n/a	n/a
<b>B. People pillar</b>		
<b>1st sub-pillar: Individuals</b>		
2.1.1 Internet users	128	11.47
2.1.2 Active mobile-broadband subscriptions	120	9.45
2.1.3 Use of virtual social networks	133	0.72
2.1.4 Tertiary enrollment	127	0.00
2.1.5 Adult literacy rate	96	51.29
2.1.6 ICT skills	130	11.72
<b>2nd sub-pillar: Businesses</b>		
2.2.1 Firms with website	78	41.10
2.2.2 Ease of doing business	95	54.31
2.2.3 Professionals	115	6.39
2.2.4 Technicians and associate professionals	125	0.00
2.2.5 Business use of digital tools	123	18.14
2.2.6 R&D expenditure by businesses	n/a	n/a
<b>3rd sub-pillar: Governments</b>		
2.3.1 Government online services	113	40.60
2.3.2 Publication and use of open data	93	10.51
2.3.3 Government promotion of investment in emerging technologies	117	10.51
2.3.4 R&D expenditure by governments and higher education	n/a	n/a

INDICATOR	RANK/134	SCORE
<b>C. Governance pillar</b>		
<b>1st sub-pillar: Trust</b>		
3.1.1 Secure Internet servers	122	22.46
3.1.2 Cybersecurity	105	28.93
3.1.3 Online access to financial account	60	31.01
3.1.4 Internet shopping	113	2.93
<b>2nd sub-pillar: Regulation</b>		
3.2.1 Regulatory quality	112	36.64
3.2.2 ICT regulatory environment	46	88.03
3.2.3 Legal framework's adaptability to emerging technologies	122	8.87
3.2.4 E-commerce legislation	77	75.00
3.2.5 Privacy protection by law content	58	49.55
<b>3rd sub-pillar: Inclusion</b>		
3.3.1 E-Participation	109	39.51
3.3.2 Socioeconomic gap in use of digital payments	113	39.05
3.3.3 Availability of local online content	129	16.58
3.3.4 Gender gap in internet use	87	0.00
3.3.5 Rural gap in use of digital payments	75	63.63
<b>D. Impact pillar</b>		
<b>1st sub-pillar: Economy</b>		
4.1.1 Medium and high-tech industry	99	14.23
4.1.2 High-tech exports	42	21.81
4.1.3 PCT patent applications	n/a	n/a
4.1.4 Labour productivity per employee	121	0.00
4.1.5 Prevalence of gig economy	126	3.78
<b>2nd sub-pillar: Quality of Life</b>		
4.2.1 Happiness	124	23.11
4.2.2 Freedom to make life choices	87	66.29
4.2.3 Income inequality	102	47.16
4.2.4 Healthy life expectancy at birth	112	32.51
<b>3rd sub-pillar: SDG Contribution</b>		
4.3.1 SDG 3: Good Health and Well-Being	114	29.51
4.3.2 SDG 4: Quality Education	n/a	n/a
4.3.3 SDG 5: Gender Equality	99	61.75
4.3.4 SDG 7: Affordable and Clean Energy	61	80.64
4.3.5 SDG 11: Sustainable Cities and Communities	108	37.18

\* Data on indicator 1.2.3 is confidential, but has been included in the computation. Please see Appendix I: Technical Notes for further details.

# Malaysia

	Rank (out of 134)	Score
<b>Network Readiness Index</b>	<b>34</b>	<b>61.43</b>
<b>A. Technology pillar</b>	<b>41</b>	<b>50.70</b>
1st sub-pillar: Access	48	74.75
2nd sub-pillar: Content	58	32.53
3rd sub-pillar: Future Technologies	30	44.82
<b>B. People pillar</b>	<b>30</b>	<b>60.21</b>
1st sub-pillar: Individuals	18	70.11
2nd sub-pillar: Businesses	50	48.90
3rd sub-pillar: Governments	24	61.62
<b>C. Governance pillar</b>	<b>38</b>	<b>71.43</b>
1st sub-pillar: Trust	37	63.27
2nd sub-pillar: Regulation	29	80.51
3rd sub-pillar: Inclusion	47	70.52
<b>D. Impact pillar</b>	<b>34</b>	<b>63.36</b>
1st sub-pillar: Economy	13	57.53
2nd sub-pillar: Quality of Life	60	67.53
3rd sub-pillar: SDG Contribution	75	65.03



## The Network Readiness Index in detail

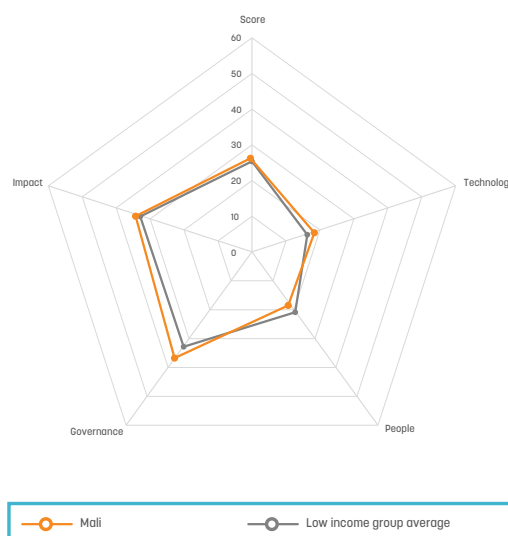
INDICATOR	RANK/134	SCORE
<b>A. Technology pillar</b>		
<b>1st sub-pillar: Access</b>		
1.1.1 Mobile tariffs	53	68.41
1.1.2 Handset prices	70	43.54
1.1.3 Households with internet access	28	86.95
1.1.4 4G mobile network coverage	61	93.00
1.1.5 Fixed-broadband subscriptions	66	64.04
1.1.6 International Internet bandwidth	51	70.15
1.1.7 Internet access in schools	28	97.18
<b>2nd sub-pillar: Content</b>		
1.2.1 GitHub commits	68	3.37
1.2.2 Wikipedia edits	56	49.92
1.2.3 Internet domain registrations*	-	-
1.2.4 Mobile apps development	47	70.92
<b>3rd sub-pillar: Future Technologies</b>		
1.3.1 Adoption of emerging technologies	25	71.90
1.3.2 Investment in emerging technology	12	78.89
1.3.3 ICT PCT patent applications	30	27.66
1.3.4 Computer software spending	28	30.32
1.3.5 Robot density	27	15.32
<b>B. People pillar</b>		
<b>1st sub-pillar: Individuals</b>		
2.1.1 Internet users	35	80.98
2.1.2 Active mobile-broadband subscriptions	18	45.82
2.1.3 Use of virtual social networks	9	81.44
2.1.4 Tertiary enrollment	66	32.63
2.1.5 Adult literacy rate	51	93.41
2.1.6 ICT skills	10	86.39
<b>2nd sub-pillar: Businesses</b>		
2.2.1 Firms with website	100	25.54
2.2.2 Ease of doing business	12	90.64
2.2.3 Professionals	53	29.56
2.2.4 Technicians and associate professionals	48	44.57
2.2.5 Business use of digital tools	22	82.30
2.2.6 R&D expenditure by businesses	24	20.77
<b>3rd sub-pillar: Governments</b>		
2.3.1 Government online services	24	84.84
2.3.2 Publication and use of open data	54	28.06
2.3.3 Government promotion of investment in emerging technologies	10	76.69
2.3.4 R&D expenditure by governments and higher education	24	56.89

INDICATOR	RANK/134	SCORE
<b>C. Governance pillar</b>		
<b>1st sub-pillar: Trust</b>		
3.1.1 Secure Internet servers	44	70.33
3.1.2 Cybersecurity	8	95.88
3.1.3 Online access to financial account	42	43.40
3.1.4 Internet shopping	35	43.46
<b>2nd sub-pillar: Regulation</b>		
3.2.1 Regulatory quality	39	66.44
3.2.2 ICT regulatory environment	46	88.03
3.2.3 Legal framework's adaptability to emerging technologies	19	67.58
3.2.4 E-commerce legislation	1	100.00
3.2.5 Privacy protection by law content	n/a	n/a
<b>3rd sub-pillar: Inclusion</b>		
3.3.1 E-Participation	29	85.18
3.3.2 Socioeconomic gap in use of digital payments	49	76.98
3.3.3 Availability of local online content	38	76.62
3.3.4 Gender gap in internet use	65	56.70
3.3.5 Rural gap in use of digital payments	85	57.10
<b>D. Impact pillar</b>		
<b>1st sub-pillar: Economy</b>		
4.1.1 Medium and high-tech industry	21	56.32
4.1.2 High-tech exports	1	100.00
4.1.3 PCT patent applications	45	2.18
4.1.4 Labour productivity per employee	46	38.94
4.1.5 Prevalence of gig economy	5	90.19
<b>2nd sub-pillar: Quality of Life</b>		
4.2.1 Happiness	80	53.76
4.2.2 Freedom to make life choices	18	91.93
4.2.3 Income inequality	83	56.70
4.2.4 Healthy life expectancy at birth	60	67.72
<b>3rd sub-pillar: SDG Contribution</b>		
4.3.1 SDG 3: Good Health and Well-Being	62	73.77
4.3.2 SDG 4: Quality Education	46	43.23
4.3.3 SDG 5: Gender Equality	60	75.77
4.3.4 SDG 7: Affordable and Clean Energy	72	77.38
4.3.5 SDG 11: Sustainable Cities and Communities	77	55.01

\* Data on indicator 1.2.3 is confidential, but has been included in the computation. Please see Appendix I: Technical Notes for further details.

# Mali

	Rank (out of 134)	Score
<b>Network Readiness Index</b>	<b>123</b>	<b>27.00</b>
<b>A. Technology pillar</b>	<b>121</b>	<b>19.04</b>
1st sub-pillar: Access	125	22.37
2nd sub-pillar: Content	100	17.29
3rd sub-pillar: Future Technologies	111	17.47
<b>B. People pillar</b>	<b>129</b>	<b>18.17</b>
1st sub-pillar: Individuals	131	13.62
2nd sub-pillar: Businesses	118	24.71
3rd sub-pillar: Governments	129	16.16
<b>C. Governance pillar</b>	<b>116</b>	<b>36.59</b>
1st sub-pillar: Trust	126	13.69
2nd sub-pillar: Regulation	108	50.50
3rd sub-pillar: Inclusion	107	45.58
<b>D. Impact pillar</b>	<b>120</b>	<b>34.21</b>
1st sub-pillar: Economy	114	12.69
2nd sub-pillar: Quality of Life	112	46.65
3rd sub-pillar: SDG Contribution	116	43.29



## The Network Readiness Index in detail

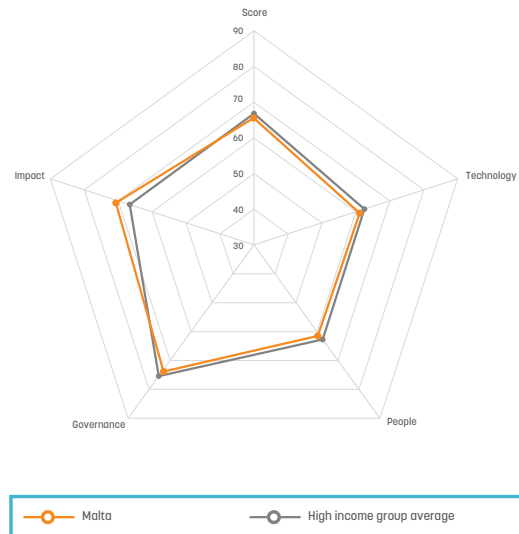
INDICATOR	RANK/134	SCORE
<b>A. Technology pillar</b>		
<b>1st sub-pillar: Access</b>		
1.1.1 Mobile tariffs	128	18.92
1.1.2 Handset prices	127	7.48
1.1.3 Households with internet access	114	17.15
1.1.4 4G mobile network coverage	116	31.00
1.1.5 Fixed-broadband subscriptions	105	6.25
1.1.6 International Internet bandwidth	122	53.43
1.1.7 Internet access in schools	n/a	n/a
<b>2nd sub-pillar: Content</b>		
1.2.1 GitHub commits	124	0.07
1.2.2 Wikipedia edits	111	12.67
1.2.3 Internet domain registrations*	-	-
1.2.4 Mobile apps development	108	39.14
<b>3rd sub-pillar: Future Technologies</b>		
1.3.1 Adoption of emerging technologies	120	16.80
1.3.2 Investment in emerging technology	89	33.17
1.3.3 ICT PCT patent applications	n/a	n/a
1.3.4 Computer software spending	112	2.43
1.3.5 Robot density	n/a	n/a
<b>B. People pillar</b>		
<b>1st sub-pillar: Individuals</b>		
2.1.1 Internet users	129	10.66
2.1.2 Active mobile-broadband subscriptions	117	10.70
2.1.3 Use of virtual social networks	119	6.70
2.1.4 Tertiary enrollment	122	2.72
2.1.5 Adult literacy rate	106	16.95
2.1.6 ICT skills	105	34.02
<b>2nd sub-pillar: Businesses</b>		
2.2.1 Firms with website	82	37.96
2.2.2 Ease of doing business	117	40.17
2.2.3 Professionals	121	3.99
2.2.4 Technicians and associate professionals	114	8.35
2.2.5 Business use of digital tools	114	33.07
2.2.6 R&D expenditure by businesses	n/a	n/a
<b>3rd sub-pillar: Governments</b>		
2.3.1 Government online services	122	32.73
2.3.2 Publication and use of open data	105	2.46
2.3.3 Government promotion of investment in emerging technologies	112	16.64
2.3.4 R&D expenditure by governments and higher education	86	12.82

INDICATOR	RANK/134	SCORE
<b>C. Governance pillar</b>		
<b>1st sub-pillar: Trust</b>		
3.1.1 Secure Internet servers	125	18.87
3.1.2 Cybersecurity	128	8.34
3.1.3 Online access to financial account	72	24.23
3.1.4 Internet shopping	108	3.32
<b>2nd sub-pillar: Regulation</b>		
3.2.1 Regulatory quality	106	39.31
3.2.2 ICT regulatory environment	81	80.31
3.2.3 Legal framework's adaptability to emerging technologies	124	7.40
3.2.4 E-commerce legislation	77	75.00
3.2.5 Privacy protection by law content	n/a	n/a
<b>3rd sub-pillar: Inclusion</b>		
3.3.1 E-Participation	123	29.63
3.3.2 Socioeconomic gap in use of digital payments	47	78.28
3.3.3 Availability of local online content	114	29.58
3.3.4 Gender gap in internet use	n/a	n/a
3.3.5 Rural gap in use of digital payments	109	44.85
<b>D. Impact pillar</b>		
<b>1st sub-pillar: Economy</b>		
4.1.1 Medium and high-tech industry	n/a	n/a
4.1.2 High-tech exports	111	2.36
4.1.3 PCT patent applications	n/a	n/a
4.1.4 Labour productivity per employee	109	3.12
4.1.5 Prevalence of gig economy	89	32.59
<b>2nd sub-pillar: Quality of Life</b>		
4.2.1 Happiness	98	45.11
4.2.2 Freedom to make life choices	117	50.25
4.2.3 Income inequality	37	77.32
4.2.4 Healthy life expectancy at birth	128	13.92
<b>3rd sub-pillar: SDG Contribution</b>		
4.3.1 SDG 3: Good Health and Well-Being	130	16.39
4.3.2 SDG 4: Quality Education	n/a	n/a
4.3.3 SDG 5: Gender Equality	128	20.31
4.3.4 SDG 7: Affordable and Clean Energy	13	91.62
4.3.5 SDG 11: Sustainable Cities and Communities	91	44.84

\* Data on indicator 1.2.3 is confidential, but has been included in the computation. Please see Appendix I: Technical Notes for further details.

# Malta

	Rank (out of 134)	Score
<b>Network Readiness Index</b>	<b>26</b>	<b>66.73</b>
<b>A. Technology pillar</b>	<b>28</b>	<b>61.60</b>
1st sub-pillar: Access	31	80.67
2nd sub-pillar: Content	21	62.87
3rd sub-pillar: Future Technologies	33	41.26
<b>B. People pillar</b>	<b>29</b>	<b>60.91</b>
1st sub-pillar: Individuals	22	69.29
2nd sub-pillar: Businesses	38	56.44
3rd sub-pillar: Governments	31	56.99
<b>C. Governance pillar</b>	<b>32</b>	<b>73.38</b>
1st sub-pillar: Trust	41	59.02
2nd sub-pillar: Regulation	13	86.29
3rd sub-pillar: Inclusion	37	74.83
<b>D. Impact pillar</b>	<b>20</b>	<b>71.03</b>
1st sub-pillar: Economy	27	45.53
2nd sub-pillar: Quality of Life	13	86.61
3rd sub-pillar: SDG Contribution	15	80.94



## The Network Readiness Index in detail

INDICATOR	RANK/134	SCORE
<b>A. Technology pillar</b>		
<b>1st sub-pillar: Access</b>		
1.1.1 Mobile tariffs	66	61.50
1.1.2 Handset prices	40	58.24
1.1.3 Households with internet access	33	84.34
1.1.4 4G mobile network coverage	1	100.00
1.1.5 Fixed-broadband subscriptions	2	99.73
1.1.6 International Internet bandwidth	9	80.19
1.1.7 Internet access in schools	n/a	n/a
<b>2nd sub-pillar: Content</b>		
1.2.1 GitHub commits	20	45.79
1.2.2 Wikipedia edits	44	64.81
1.2.3 Internet domain registrations*	-	-
1.2.4 Mobile apps development	15	87.62
<b>3rd sub-pillar: Future Technologies</b>		
1.3.1 Adoption of emerging technologies	37	61.51
1.3.2 Investment in emerging technology	38	53.67
1.3.3 ICT PCT patent applications	23	50.44
1.3.4 Computer software spending	33	29.12
1.3.5 Robot density	34	11.58
<b>B. People pillar</b>		
<b>1st sub-pillar: Individuals</b>		
2.1.1 Internet users	34	81.18
2.1.2 Active mobile-broadband subscriptions	23	43.31
2.1.3 Use of virtual social networks	4	91.75
2.1.4 Tertiary enrollment	56	39.36
2.1.5 Adult literacy rate	52	92.96
2.1.6 ICT skills	40	67.18
<b>2nd sub-pillar: Businesses</b>		
2.2.1 Firms with website	13	85.68
2.2.2 Ease of doing business	83	63.51
2.2.3 Professionals	27	45.92
2.2.4 Technicians and associate professionals	20	63.49
2.2.5 Business use of digital tools	45	71.44
2.2.6 R&D expenditure by businesses	46	8.61
<b>3rd sub-pillar: Governments</b>		
2.3.1 Government online services	40	80.61
2.3.2 Publication and use of open data	n/a	n/a
2.3.3 Government promotion of investment in emerging technologies	14	73.44
2.3.4 R&D expenditure by governments and higher education	78	16.93

INDICATOR	RANK/134	SCORE
<b>C. Governance pillar</b>		
<b>1st sub-pillar: Trust</b>		
3.1.1 Secure Internet servers	39	74.16
3.1.2 Cybersecurity	82	51.03
3.1.3 Online access to financial account	31	51.17
3.1.4 Internet shopping	25	59.74
<b>2nd sub-pillar: Regulation</b>		
3.2.1 Regulatory quality	21	80.86
3.2.2 ICT regulatory environment	5	97.30
3.2.3 Legal framework's adaptability to emerging technologies	21	67.02
3.2.4 E-commerce legislation	1	100.00
3.2.5 Privacy protection by law content	n/a	n/a
<b>3rd sub-pillar: Inclusion</b>		
3.3.1 E-Participation	38	82.71
3.3.2 Socioeconomic gap in use of digital payments	34	83.08
3.3.3 Availability of local online content	53	66.43
3.3.4 Gender gap in internet use	20	66.93
3.3.5 Rural gap in use of digital payments	34	74.97
<b>D. Impact pillar</b>		
<b>1st sub-pillar: Economy</b>		
4.1.1 Medium and high-tech industry	44	41.44
4.1.2 High-tech exports	10	55.79
4.1.3 PCT patent applications	27	10.33
4.1.4 Labour productivity per employee	26	57.58
4.1.5 Prevalence of gig economy	33	62.52
<b>2nd sub-pillar: Quality of Life</b>		
4.2.1 Happiness	22	79.41
4.2.2 Freedom to make life choices	14	93.32
4.2.3 Income inequality	17	87.11
4.2.4 Healthy life expectancy at birth	18	86.60
<b>3rd sub-pillar: SDG Contribution</b>		
4.3.1 SDG 3: Good Health and Well-Being	18	88.52
4.3.2 SDG 4: Quality Education	38	55.06
4.3.3 SDG 5: Gender Equality	73	73.42
4.3.4 SDG 7: Affordable and Clean Energy	2	99.57
4.3.5 SDG 11: Sustainable Cities and Communities	23	88.13

\* Data on indicator 1.2.3 is confidential, but has been included in the computation. Please see Appendix I: Technical Notes for further details.

# Mauritius

	Rank (out of 134)	Score
<b>Network Readiness Index</b>	<b>61</b>	<b>49.83</b>
<b>A. Technology pillar</b>	<b>56</b>	<b>42.81</b>
1st sub-pillar: Access	64	65.61
2nd sub-pillar: Content	56	33.59
3rd sub-pillar: Future Technologies	58	29.23
<b>B. People pillar</b>	<b>73</b>	<b>45.18</b>
1st sub-pillar: Individuals	71	54.15
2nd sub-pillar: Businesses	72	40.67
3rd sub-pillar: Governments	74	40.74
<b>C. Governance pillar</b>	<b>61</b>	<b>57.68</b>
1st sub-pillar: Trust	61	45.22
2nd sub-pillar: Regulation	73	64.58
3rd sub-pillar: Inclusion	68	63.25
<b>D. Impact pillar</b>	<b>61</b>	<b>53.63</b>
1st sub-pillar: Economy	79	21.06
2nd sub-pillar: Quality of Life	43	72.58
3rd sub-pillar: SDG Contribution	59	67.26



## The Network Readiness Index in detail

INDICATOR	RANK/134	SCORE
<b>A. Technology pillar</b>		
<b>1st sub-pillar: Access</b>		
1.1.1 Mobile tariffs	68	60.96
1.1.2 Handset prices	58	47.59
1.1.3 Households with internet access	65	69.65
1.1.4 4G mobile network coverage	24	99.00
1.1.5 Fixed-broadband subscriptions	46	80.82
1.1.6 International Internet bandwidth	22	74.22
1.1.7 Internet access in schools	52	27.04
<b>2nd sub-pillar: Content</b>		
1.2.1 GitHub commits	45	12.83
1.2.2 Wikipedia edits	59	47.16
1.2.3 Internet domain registrations*	-	-
1.2.4 Mobile apps development	63	65.49
<b>3rd sub-pillar: Future Technologies</b>		
1.3.1 Adoption of emerging technologies	86	38.18
1.3.2 Investment in emerging technology	81	34.96
1.3.3 ICT PCT patent applications	n/a	n/a
1.3.4 Computer software spending	74	14.55
1.3.5 Robot density	n/a	n/a
<b>B. People pillar</b>		
<b>1st sub-pillar: Individuals</b>		
2.1.1 Internet users	82	57.67
2.1.2 Active mobile-broadband subscriptions	83	24.92
2.1.3 Use of virtual social networks	31	68.04
2.1.4 Tertiary enrollment	70	29.29
2.1.5 Adult literacy rate	64	88.86
2.1.6 ICT skills	57	56.09
<b>2nd sub-pillar: Businesses</b>		
2.2.1 Firms with website	95	30.65
2.2.2 Ease of doing business	13	90.63
2.2.3 Professionals	69	23.20
2.2.4 Technicians and associate professionals	45	47.68
2.2.5 Business use of digital tools	85	51.57
2.2.6 R&D expenditure by businesses	83	0.29
<b>3rd sub-pillar: Governments</b>		
2.3.1 Government online services	68	69.09
2.3.2 Publication and use of open data	59	26.30
2.3.3 Government promotion of investment in emerging technologies	59	39.15
2.3.4 R&D expenditure by governments and higher education	60	28.41

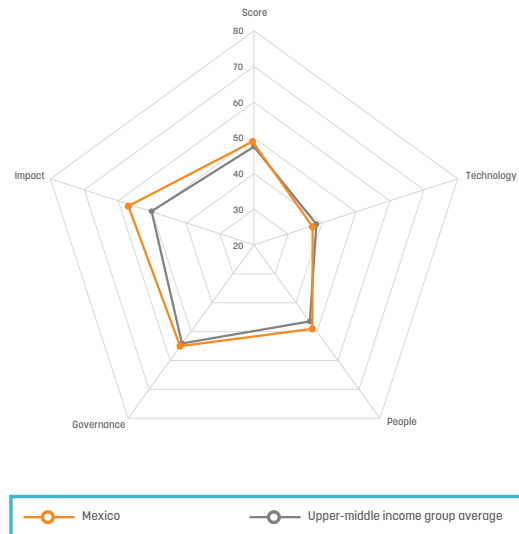
INDICATOR	RANK/134	SCORE
<b>C. Governance pillar</b>		
<b>1st sub-pillar: Trust</b>		
3.1.1 Secure Internet servers	70	49.83
3.1.2 Cybersecurity	15	94.47
3.1.3 Online access to financial account	83	18.11
3.1.4 Internet shopping	62	18.46
<b>2nd sub-pillar: Regulation</b>		
3.2.1 Regulatory quality	31	74.04
3.2.2 ICT regulatory environment	78	80.89
3.2.3 Legal framework's adaptability to emerging technologies	84	30.79
3.2.4 E-commerce legislation	77	75.00
3.2.5 Privacy protection by law content	49	62.18
<b>3rd sub-pillar: Inclusion</b>		
3.3.1 E-Participation	79	62.97
3.3.2 Socioeconomic gap in use of digital payments	53	73.97
3.3.3 Availability of local online content	77	54.02
3.3.4 Gender gap in internet use	70	53.85
3.3.5 Rural gap in use of digital payments	50	71.42
<b>D. Impact pillar</b>		
<b>1st sub-pillar: Economy</b>		
4.1.1 Medium and high-tech industry	102	12.23
4.1.2 High-tech exports	105	4.06
4.1.3 PCT patent applications	n/a	n/a
4.1.4 Labour productivity per employee	54	32.10
4.1.5 Prevalence of gig economy	84	35.85
<b>2nd sub-pillar: Quality of Life</b>		
4.2.1 Happiness	42	69.74
4.2.2 Freedom to make life choices	32	88.08
4.2.3 Income inequality	65	67.53
4.2.4 Healthy life expectancy at birth	72	64.96
<b>3rd sub-pillar: SDG Contribution</b>		
4.3.1 SDG 3: Good Health and Well-Being	92	57.38
4.3.2 SDG 4: Quality Education	55	35.64
4.3.3 SDG 5: Gender Equality	56	76.47
4.3.4 SDG 7: Affordable and Clean Energy	9	92.12
4.3.5 SDG 11: Sustainable Cities and Communities	50	74.72

\* Data on indicator 1.2.3 is confidential, but has been included in the computation. Please see Appendix I: Technical Notes for further details.



# Mexico

	Rank (out of 134)	Score
<b>Network Readiness Index</b>	<b>63</b>	<b>49.67</b>
<b>A. Technology pillar</b>	<b>73</b>	<b>37.92</b>
1st sub-pillar: Access	70	61.70
2nd sub-pillar: Content	76	25.69
3rd sub-pillar: Future Technologies	75	26.36
<b>B. People pillar</b>	<b>64</b>	<b>48.89</b>
1st sub-pillar: Individuals	73	53.82
2nd sub-pillar: Businesses	80	38.08
3rd sub-pillar: Governments	37	54.76
<b>C. Governance pillar</b>	<b>69</b>	<b>54.92</b>
1st sub-pillar: Trust	76	34.30
2nd sub-pillar: Regulation	40	76.65
3rd sub-pillar: Inclusion	90	53.80
<b>D. Impact pillar</b>	<b>48</b>	<b>56.96</b>
1st sub-pillar: Economy	44	33.36
2nd sub-pillar: Quality of Life	51	70.02
3rd sub-pillar: SDG Contribution	57	67.51



## The Network Readiness Index in detail

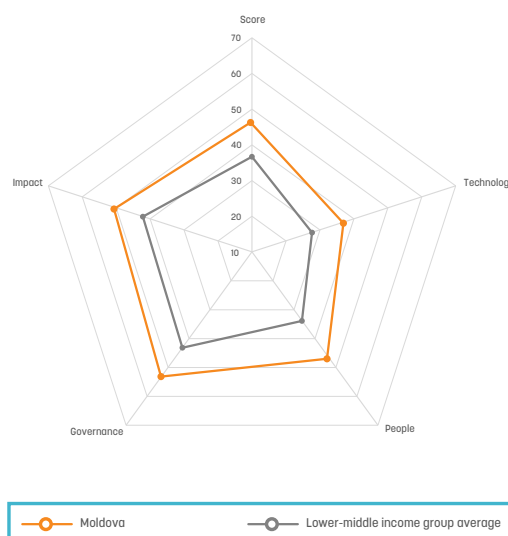
INDICATOR	RANK/134	SCORE
<b>A. Technology pillar</b>		
<b>1st sub-pillar: Access</b>		
1.1.1 Mobile tariffs	79	56.51
1.1.2 Handset prices	36	60.23
1.1.3 Households with internet access	79	52.74
1.1.4 4G mobile network coverage	88	70.91
1.1.5 Fixed-broadband subscriptions	41	86.62
1.1.6 International Internet bandwidth	78	66.04
1.1.7 Internet access in schools	50	38.88
<b>2nd sub-pillar: Content</b>		
1.2.1 GitHub commits	72	2.99
1.2.2 Wikipedia edits	78	37.04
1.2.3 Internet domain registrations*	-	-
1.2.4 Mobile apps development	72	58.98
<b>3rd sub-pillar: Future Technologies</b>		
1.3.1 Adoption of emerging technologies	47	55.16
1.3.2 Investment in emerging technology	65	39.74
1.3.3 ICT PCT patent applications	54	5.75
1.3.4 Computer software spending	66	19.14
1.3.5 Robot density	33	12.04
<b>B. People pillar</b>		
<b>1st sub-pillar: Individuals</b>		
2.1.1 Internet users	70	65.07
2.1.2 Active mobile-broadband subscriptions	75	26.82
2.1.3 Use of virtual social networks	27	69.07
2.1.4 Tertiary enrollment	71	29.02
2.1.5 Adult literacy rate	46	94.08
2.1.6 ICT skills	94	38.83
<b>2nd sub-pillar: Businesses</b>		
2.2.1 Firms with website	84	37.09
2.2.2 Ease of doing business	58	74.51
2.2.3 Professionals	70	22.34
2.2.4 Technicians and associate professionals	72	29.90
2.2.5 Business use of digital tools	62	60.88
2.2.6 R&D expenditure by businesses	55	3.79
<b>3rd sub-pillar: Governments</b>		
2.3.1 Government online services	38	81.82
2.3.2 Publication and use of open data	11	73.45
2.3.3 Government promotion of investment in emerging technologies	67	36.90
2.3.4 R&D expenditure by governments and higher education	61	26.86

INDICATOR	RANK/134	SCORE
<b>C. Governance pillar</b>		
<b>1st sub-pillar: Trust</b>		
3.1.1 Secure Internet servers	84	44.73
3.1.2 Cybersecurity	66	67.28
3.1.3 Online access to financial account	90	16.28
3.1.4 Internet shopping	79	8.94
<b>2nd sub-pillar: Regulation</b>		
3.2.1 Regulatory quality	61	54.74
3.2.2 ICT regulatory environment	31	91.51
3.2.3 Legal framework's adaptability to emerging technologies	42	50.43
3.2.4 E-commerce legislation	1	100.00
3.2.5 Privacy protection by law content	15	86.57
<b>3rd sub-pillar: Inclusion</b>		
3.3.1 E-Participation	41	81.48
3.3.2 Socioeconomic gap in use of digital payments	100	44.00
3.3.3 Availability of local online content	66	60.30
3.3.4 Gender gap in internet use	54	59.21
3.3.5 Rural gap in use of digital payments	120	24.03
<b>D. Impact pillar</b>		
<b>1st sub-pillar: Economy</b>		
4.1.1 Medium and high-tech industry	25	53.10
4.1.2 High-tech exports	21	39.21
4.1.3 PCT patent applications	60	0.64
4.1.4 Labour productivity per employee	59	29.01
4.1.5 Prevalence of gig economy	60	44.84
<b>2nd sub-pillar: Quality of Life</b>		
4.2.1 Happiness	32	73.49
4.2.2 Freedom to make life choices	27	89.82
4.2.3 Income inequality	104	45.36
4.2.4 Healthy life expectancy at birth	46	71.41
<b>3rd sub-pillar: SDG Contribution</b>		
4.3.1 SDG 3: Good Health and Well-Being	39	78.69
4.3.2 SDG 4: Quality Education	61	31.43
4.3.3 SDG 5: Gender Equality	83	70.95
4.3.4 SDG 7: Affordable and Clean Energy	38	85.48
4.3.5 SDG 11: Sustainable Cities and Communities	58	71.02

\* Data on indicator 1.2.3 is confidential, but has been included in the computation. Please see Appendix I: Technical Notes for further details.

# Moldova

	Rank (out of 134)	Score
<b>Network Readiness Index</b>	<b>71</b>	<b>47.09</b>
<b>A. Technology pillar</b>	<b>74</b>	<b>37.68</b>
1st sub-pillar: Access	56	71.39
2nd sub-pillar: Content	66	28.37
3rd sub-pillar: Future Technologies	126	13.28
<b>B. People pillar</b>	<b>69</b>	<b>46.90</b>
1st sub-pillar: Individuals	70	54.16
2nd sub-pillar: Businesses	68	41.93
3rd sub-pillar: Governments	63	44.63
<b>C. Governance pillar</b>	<b>74</b>	<b>53.13</b>
1st sub-pillar: Trust	56	46.81
2nd sub-pillar: Regulation	101	53.14
3rd sub-pillar: Inclusion	81	59.43
<b>D. Impact pillar</b>	<b>66</b>	<b>50.65</b>
1st sub-pillar: Economy	97	17.55
2nd sub-pillar: Quality of Life	50	71.04
3rd sub-pillar: SDG Contribution	79	63.35



## The Network Readiness Index in detail

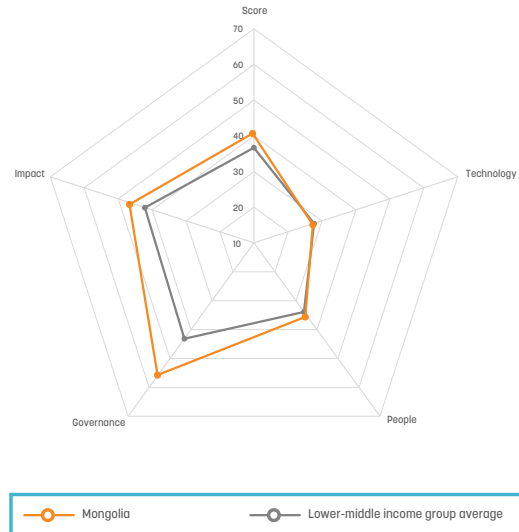
INDICATOR	RANK/134	SCORE
<b>A. Technology pillar</b>		
<b>1st sub-pillar: Access</b>		
1.1.1 Mobile tariffs	74	58.54
1.1.2 Handset prices	91	34.50
1.1.3 Households with internet access	81	50.40
1.1.4 4G mobile network coverage	46	97.00
1.1.5 Fixed-broadband subscriptions	18	95.63
1.1.6 International Internet bandwidth	30	73.12
1.1.7 Internet access in schools	30	90.56
<b>2nd sub-pillar: Content</b>		
1.2.1 GitHub commits	50	8.86
1.2.2 Wikipedia edits	76	39.88
1.2.3 Internet domain registrations*	-	-
1.2.4 Mobile apps development	71	60.72
<b>3rd sub-pillar: Future Technologies</b>		
1.3.1 Adoption of emerging technologies	89	37.40
1.3.2 Investment in emerging technology	118	19.51
1.3.3 ICT PCT patent applications	65	2.28
1.3.4 Computer software spending	93	7.09
1.3.5 Robot density	66	0.10
<b>B. People pillar</b>		
<b>1st sub-pillar: Individuals</b>		
2.1.1 Internet users	49	75.74
2.1.2 Active mobile-broadband subscriptions	72	27.96
2.1.3 Use of virtual social networks	100	34.02
2.1.4 Tertiary enrollment	72	28.72
2.1.5 Adult literacy rate	14	99.21
2.1.6 ICT skills	52	59.31
<b>2nd sub-pillar: Businesses</b>		
2.2.1 Firms with website	73	44.81
2.2.2 Ease of doing business	47	78.11
2.2.3 Professionals	36	41.55
2.2.4 Technicians and associate professionals	73	29.70
2.2.5 Business use of digital tools	75	56.25
2.2.6 R&D expenditure by businesses	74	1.13
<b>3rd sub-pillar: Governments</b>		
2.3.1 Government online services	51	74.54
2.3.2 Publication and use of open data	32	43.68
2.3.3 Government promotion of investment in emerging technologies	53	42.65
2.3.4 R&D expenditure by governments and higher education	77	17.63

INDICATOR	RANK/134	SCORE
<b>C. Governance pillar</b>		
<b>1st sub-pillar: Trust</b>		
3.1.1 Secure Internet servers	49	67.19
3.1.2 Cybersecurity	54	70.86
3.1.3 Online access to financial account	71	25.65
3.1.4 Internet shopping	54	23.53
<b>2nd sub-pillar: Regulation</b>		
3.2.1 Regulatory quality	74	50.33
3.2.2 ICT regulatory environment	35	89.77
3.2.3 Legal framework's adaptability to emerging technologies	70	39.00
3.2.4 E-commerce legislation	77	75.00
3.2.5 Privacy protection by law content	77	11.61
<b>3rd sub-pillar: Inclusion</b>		
3.3.1 E-Participation	54	75.31
3.3.2 Socioeconomic gap in use of digital payments	95	49.27
3.3.3 Availability of local online content	61	62.70
3.3.4 Gender gap in internet use	79	45.86
3.3.5 Rural gap in use of digital payments	72	64.02
<b>D. Impact pillar</b>		
<b>1st sub-pillar: Economy</b>		
4.1.1 Medium and high-tech industry	85	20.70
4.1.2 High-tech exports	99	4.80
4.1.3 PCT patent applications	68	0.36
4.1.4 Labour productivity per employee	83	17.68
4.1.5 Prevalence of gig economy	61	44.20
<b>2nd sub-pillar: Quality of Life</b>		
4.2.1 Happiness	67	61.14
4.2.2 Freedom to make life choices	78	69.49
4.2.3 Income inequality	5	96.13
4.2.4 Healthy life expectancy at birth	87	57.42
<b>3rd sub-pillar: SDG Contribution</b>		
4.3.1 SDG 3: Good Health and Well-Being	73	67.21
4.3.2 SDG 4: Quality Education	54	35.86
4.3.3 SDG 5: Gender Equality	13	87.75
4.3.4 SDG 7: Affordable and Clean Energy	124	45.74
4.3.5 SDG 11: Sustainable Cities and Communities	38	80.16

\* Data on indicator 1.2.3 is confidential, but has been included in the computation. Please see Appendix I: Technical Notes for further details.

# Mongolia

	Rank (out of 134)	Score
<b>Network Readiness Index</b>	<b>89</b>	<b>41.44</b>
<b>A. Technology pillar</b>	<b>96</b>	<b>27.98</b>
1st sub-pillar: Access	98	40.41
2nd sub-pillar: Content	75	26.03
3rd sub-pillar: Future Technologies	110	17.49
<b>B. People pillar</b>	<b>96</b>	<b>35.41</b>
1st sub-pillar: Individuals	83	51.20
2nd sub-pillar: Businesses	110	29.04
3rd sub-pillar: Governments	106	26.00
<b>C. Governance pillar</b>	<b>67</b>	<b>55.73</b>
1st sub-pillar: Trust	68	41.21
2nd sub-pillar: Regulation	103	52.05
3rd sub-pillar: Inclusion	40	73.92
<b>D. Impact pillar</b>	<b>88</b>	<b>46.64</b>
1st sub-pillar: Economy	118	11.88
2nd sub-pillar: Quality of Life	85	60.87
3rd sub-pillar: SDG Contribution	61	67.18



## The Network Readiness Index in detail

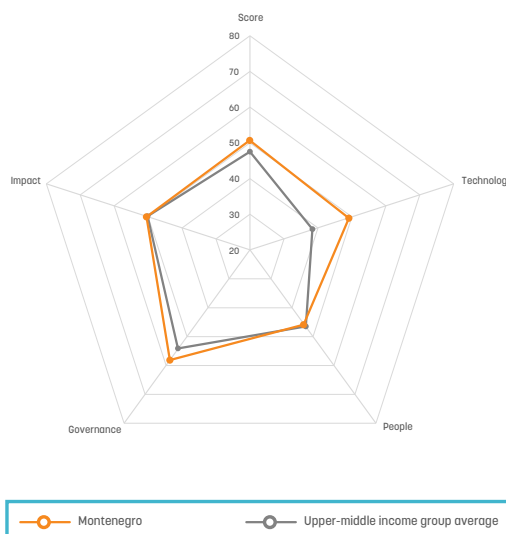
INDICATOR	RANK/134	SCORE
<b>A. Technology pillar</b>		
<b>1st sub-pillar: Access</b>		
1.1.1 Mobile tariffs	88	50.51
1.1.2 Handset prices	101	30.61
1.1.3 Households with internet access	107	22.78
1.1.4 4G mobile network coverage	105	45.00
1.1.5 Fixed-broadband subscriptions	119	0.58
1.1.6 International Internet bandwidth	96	62.72
1.1.7 Internet access in schools	36	70.66
<b>2nd sub-pillar: Content</b>		
1.2.1 GitHub commits	87	1.75
1.2.2 Wikipedia edits	81	34.67
1.2.3 Internet domain registrations*	-	-
1.2.4 Mobile apps development	62	66.05
<b>3rd sub-pillar: Future Technologies</b>		
1.3.1 Adoption of emerging technologies	112	25.94
1.3.2 Investment in emerging technology	90	32.94
1.3.3 ICT PCT patent applications	82	0.00
1.3.4 Computer software spending	82	11.06
1.3.5 Robot density	n/a	n/a
<b>B. People pillar</b>		
<b>1st sub-pillar: Individuals</b>		
2.1.1 Internet users	113	21.71
2.1.2 Active mobile-broadband subscriptions	54	32.41
2.1.3 Use of virtual social networks	31	68.04
2.1.4 Tertiary enrollment	39	47.70
2.1.5 Adult literacy rate	26	98.00
2.1.6 ICT skills	91	39.32
<b>2nd sub-pillar: Businesses</b>		
2.2.1 Firms with website	91	32.51
2.2.2 Ease of doing business	76	66.40
2.2.3 Professionals	38	40.81
2.2.4 Technicians and associate professionals	107	12.47
2.2.5 Business use of digital tools	121	21.86
2.2.6 R&D expenditure by businesses	84	0.22
<b>3rd sub-pillar: Governments</b>		
2.3.1 Government online services	96	51.51
2.3.2 Publication and use of open data	n/a	n/a
2.3.3 Government promotion of investment in emerging technologies	104	19.92
2.3.4 R&D expenditure by governments and higher education	97	6.57

INDICATOR	RANK/134	SCORE
<b>C. Governance pillar</b>		
<b>1st sub-pillar: Trust</b>		
3.1.1 Secure Internet servers	59	59.31
3.1.2 Cybersecurity	85	49.51
3.1.3 Online access to financial account	36	46.58
3.1.4 Internet shopping	77	9.46
<b>2nd sub-pillar: Regulation</b>		
3.2.1 Regulatory quality	69	50.76
3.2.2 ICT regulatory environment	102	67.96
3.2.3 Legal framework's adaptability to emerging technologies	110	14.50
3.2.4 E-commerce legislation	77	75.00
3.2.5 Privacy protection by law content	n/a	n/a
<b>3rd sub-pillar: Inclusion</b>		
3.3.1 E-Participation	84	59.26
3.3.2 Socioeconomic gap in use of digital payments	26	89.54
3.3.3 Availability of local online content	98	42.61
3.3.4 Gender gap in internet use	1	100.00
3.3.5 Rural gap in use of digital payments	13	78.22
<b>D. Impact pillar</b>		
<b>1st sub-pillar: Economy</b>		
4.1.1 Medium and high-tech industry	114	6.79
4.1.2 High-tech exports	81	9.41
4.1.3 PCT patent applications	75	0.13
4.1.4 Labour productivity per employee	n/a	n/a
4.1.5 Prevalence of gig economy	91	31.17
<b>2nd sub-pillar: Quality of Life</b>		
4.2.1 Happiness	73	56.41
4.2.2 Freedom to make life choices	107	57.09
4.2.3 Income inequality	31	78.09
4.2.4 Healthy life expectancy at birth	95	51.90
<b>3rd sub-pillar: SDG Contribution</b>		
4.3.1 SDG 3: Good Health and Well-Being	94	55.74
4.3.2 SDG 4: Quality Education	n/a	n/a
4.3.3 SDG 5: Gender Equality	2	95.66
4.3.4 SDG 7: Affordable and Clean Energy	99	67.34
4.3.5 SDG 11: Sustainable Cities and Communities	83	49.99

\* Data on indicator 1.2.3 is confidential, but has been included in the computation. Please see Appendix I: Technical Notes for further details.

# Montenegro

	Rank (out of 134)	Score
<b>Network Readiness Index</b>	<b>58</b>	<b>50.95</b>
<b>A. Technology pillar</b>	<b>47</b>	<b>49.37</b>
1st sub-pillar: Access	63	66.47
2nd sub-pillar: Content	39	44.30
3rd sub-pillar: Future Technologies	40	37.34
<b>B. People pillar</b>	<b>71</b>	<b>45.81</b>
1st sub-pillar: Individuals	50	59.28
2nd sub-pillar: Businesses	62	45.50
3rd sub-pillar: Governments	92	32.66
<b>C. Governance pillar</b>	<b>59</b>	<b>58.13</b>
1st sub-pillar: Trust	70	38.53
2nd sub-pillar: Regulation	61	67.72
3rd sub-pillar: Inclusion	53	68.15
<b>D. Impact pillar</b>	<b>68</b>	<b>50.50</b>
1st sub-pillar: Economy	68	24.03
2nd sub-pillar: Quality of Life	86	60.47
3rd sub-pillar: SDG Contribution	63	66.98



## The Network Readiness Index in detail

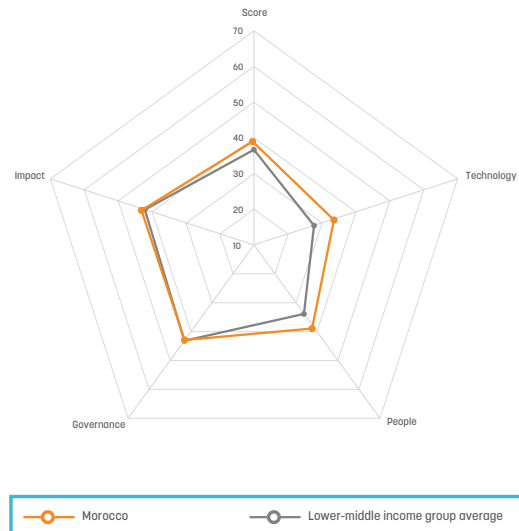
INDICATOR	RANK/134	SCORE
<b>A. Technology pillar</b>		
<b>1st sub-pillar: Access</b>		
1.1.1 Mobile tariffs	115	34.48
1.1.2 Handset prices	89	35.83
1.1.3 Households with internet access	60	72.10
1.1.4 4G mobile network coverage	38	98.00
1.1.5 Fixed-broadband subscriptions	54	75.33
1.1.6 International Internet bandwidth	4	83.09
1.1.7 Internet access in schools	n/a	n/a
<b>2nd sub-pillar: Content</b>		
1.2.1 GitHub commits	49	9.12
1.2.2 Wikipedia edits	51	58.96
1.2.3 Internet domain registrations*	-	-
1.2.4 Mobile apps development	64	64.82
<b>3rd sub-pillar: Future Technologies</b>		
1.3.1 Adoption of emerging technologies	70	44.68
1.3.2 Investment in emerging technology	87	33.65
1.3.3 ICT PCT patent applications	n/a	n/a
1.3.4 Computer software spending	24	33.70
1.3.5 Robot density	n/a	n/a
<b>B. People pillar</b>		
<b>1st sub-pillar: Individuals</b>		
2.1.1 Internet users	61	70.99
2.1.2 Active mobile-broadband subscriptions	71	28.30
2.1.3 Use of virtual social networks	47	61.86
2.1.4 Tertiary enrollment	50	40.70
2.1.5 Adult literacy rate	19	98.55
2.1.6 ICT skills	59	55.28
<b>2nd sub-pillar: Businesses</b>		
2.2.1 Firms with website	85	36.57
2.2.2 Ease of doing business	49	77.10
2.2.3 Professionals	32	44.11
2.2.4 Technicians and associate professionals	29	56.20
2.2.5 Business use of digital tools	72	57.67
2.2.6 R&D expenditure by businesses	71	1.35
<b>3rd sub-pillar: Governments</b>		
2.3.1 Government online services	94	52.73
2.3.2 Publication and use of open data	82	14.54
2.3.3 Government promotion of investment in emerging technologies	54	41.54
2.3.4 R&D expenditure by governments and higher education	70	21.83

INDICATOR	RANK/134	SCORE
<b>C. Governance pillar</b>		
<b>1st sub-pillar: Trust</b>		
3.1.1 Secure Internet servers	67	52.18
3.1.2 Cybersecurity	64	68.36
3.1.3 Online access to financial account	89	16.36
3.1.4 Internet shopping	65	17.23
<b>2nd sub-pillar: Regulation</b>		
3.2.1 Regulatory quality	53	59.40
3.2.2 ICT regulatory environment	11	96.14
3.2.3 Legal framework's adaptability to emerging technologies	68	40.33
3.2.4 E-commerce legislation	77	75.00
3.2.5 Privacy protection by law content	n/a	n/a
<b>3rd sub-pillar: Inclusion</b>		
3.3.1 E-Participation	93	53.09
3.3.2 Socioeconomic gap in use of digital payments	54	73.54
3.3.3 Availability of local online content	56	65.63
3.3.4 Gender gap in internet use	17	67.45
3.3.5 Rural gap in use of digital payments	5	81.06
<b>D. Impact pillar</b>		
<b>1st sub-pillar: Economy</b>		
4.1.1 Medium and high-tech industry	91	18.75
4.1.2 High-tech exports	94	6.00
4.1.3 PCT patent applications	n/a	n/a
4.1.4 Labour productivity per employee	65	27.67
4.1.5 Prevalence of gig economy	62	43.69
<b>2nd sub-pillar: Quality of Life</b>		
4.2.1 Happiness	82	52.93
4.2.2 Freedom to make life choices	113	54.29
4.2.3 Income inequality	72	61.86
4.2.4 Healthy life expectancy at birth	42	72.83
<b>3rd sub-pillar: SDG Contribution</b>		
4.3.1 SDG 3: Good Health and Well-Being	79	65.57
4.3.2 SDG 4: Quality Education	52	39.25
4.3.3 SDG 5: Gender Equality	71	73.74
4.3.4 SDG 7: Affordable and Clean Energy	59	81.07
4.3.5 SDG 11: Sustainable Cities and Communities	48	75.28

\* Data on indicator 1.2.3 is confidential, but has been included in the computation. Please see Appendix I: Technical Notes for further details.

# Morocco

	Rank (out of 134)	Score
<b>Network Readiness Index</b>	<b>93</b>	<b>39.71</b>
<b>A. Technology pillar</b>	<b>79</b>	<b>34.26</b>
1st sub-pillar: Access	71	61.67
2nd sub-pillar: Content	91	21.35
3rd sub-pillar: Future Technologies	99	19.75
<b>B. People pillar</b>	<b>87</b>	<b>38.75</b>
1st sub-pillar: Individuals	91	44.90
2nd sub-pillar: Businesses	91	34.75
3rd sub-pillar: Governments	86	36.60
<b>C. Governance pillar</b>	<b>102</b>	<b>42.77</b>
1st sub-pillar: Trust	107	24.60
2nd sub-pillar: Regulation	67	66.15
3rd sub-pillar: Inclusion	121	37.55
<b>D. Impact pillar</b>	<b>97</b>	<b>43.06</b>
1st sub-pillar: Economy	88	19.69
2nd sub-pillar: Quality of Life	94	58.79
3rd sub-pillar: SDG Contribution	109	50.70



## The Network Readiness Index in detail

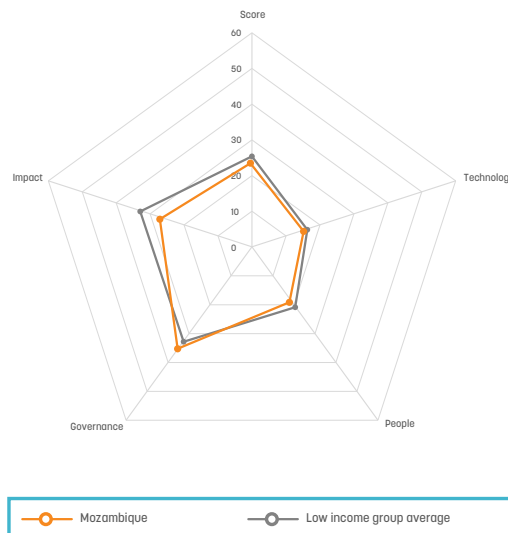
INDICATOR	RANK/134	SCORE
<b>A. Technology pillar</b>		
<b>1st sub-pillar: Access</b>		
1.1.1 Mobile tariffs	102	45.77
1.1.2 Handset prices	85	36.55
1.1.3 Households with internet access	55	74.10
1.1.4 4G mobile network coverage	52	96.00
1.1.5 Fixed-broadband subscriptions	83	30.87
1.1.6 International Internet bandwidth	57	69.46
1.1.7 Internet access in schools	35	78.96
<b>2nd sub-pillar: Content</b>		
1.2.1 GitHub commits	102	0.78
1.2.2 Wikipedia edits	89	29.83
1.2.3 Internet domain registrations*	-	-
1.2.4 Mobile apps development	88	53.44
<b>3rd sub-pillar: Future Technologies</b>		
1.3.1 Adoption of emerging technologies	90	37.16
1.3.2 Investment in emerging technology	82	34.94
1.3.3 ICT PCT patent applications	57	4.11
1.3.4 Computer software spending	59	21.14
1.3.5 Robot density	50	1.40
<b>B. People pillar</b>		
<b>1st sub-pillar: Individuals</b>		
2.1.1 Internet users	73	64.07
2.1.2 Active mobile-broadband subscriptions	88	22.40
2.1.3 Use of virtual social networks	81	48.45
2.1.4 Tertiary enrollment	75	25.86
2.1.5 Adult literacy rate	90	66.23
2.1.6 ICT skills	84	42.41
<b>2nd sub-pillar: Businesses</b>		
2.2.1 Firms with website	61	53.29
2.2.2 Ease of doing business	52	76.32
2.2.3 Professionals	122	3.53
2.2.4 Technicians and associate professionals	96	18.27
2.2.5 Business use of digital tools	84	51.62
2.2.6 R&D expenditure by businesses	50	5.46
<b>3rd sub-pillar: Governments</b>		
2.3.1 Government online services	97	50.91
2.3.2 Publication and use of open data	78	16.86
2.3.3 Government promotion of investment in emerging technologies	79	33.39
2.3.4 R&D expenditure by governments and higher education	39	45.26

INDICATOR	RANK/134	SCORE
<b>C. Governance pillar</b>		
<b>1st sub-pillar: Trust</b>		
3.1.1 Secure Internet servers	77	47.18
3.1.2 Cybersecurity	93	45.61
3.1.3 Online access to financial account	120	3.56
3.1.4 Internet shopping	118	2.04
<b>2nd sub-pillar: Regulation</b>		
3.2.1 Regulatory quality	90	46.06
3.2.2 ICT regulatory environment	35	89.77
3.2.3 Legal framework's adaptability to emerging technologies	90	28.78
3.2.4 E-commerce legislation	1	100.00
3.2.5 Privacy protection by law content	n/a	n/a
<b>3rd sub-pillar: Inclusion</b>		
3.3.1 E-Participation	97	49.38
3.3.2 Socioeconomic gap in use of digital payments	120	30.50
3.3.3 Availability of local online content	69	59.97
3.3.4 Gender gap in internet use	76	47.90
3.3.5 Rural gap in use of digital payments	128	0.00
<b>D. Impact pillar</b>		
<b>1st sub-pillar: Economy</b>		
4.1.1 Medium and high-tech industry	54	35.30
4.1.2 High-tech exports	90	7.58
4.1.3 PCT patent applications	71	0.28
4.1.4 Labour productivity per employee	88	13.55
4.1.5 Prevalence of gig economy	66	41.75
<b>2nd sub-pillar: Quality of Life</b>		
4.2.1 Happiness	92	46.46
4.2.2 Freedom to make life choices	89	64.92
4.2.3 Income inequality	75	60.57
4.2.4 Healthy life expectancy at birth	79	63.23
<b>3rd sub-pillar: SDG Contribution</b>		
4.3.1 SDG 3: Good Health and Well-Being	69	68.85
4.3.2 SDG 4: Quality Education	74	16.01
4.3.3 SDG 5: Gender Equality	125	28.98
4.3.4 SDG 7: Affordable and Clean Energy	27	88.37
4.3.5 SDG 11: Sustainable Cities and Communities	81	51.30

\* Data on indicator 1.2.3 is confidential, but has been included in the computation. Please see Appendix I: Technical Notes for further details.

# Mozambique

	Rank (out of 134)	Score
<b>Network Readiness Index</b>	<b>128</b>	<b>24.18</b>
<b>A. Technology pillar</b>	<b>126</b>	<b>15.85</b>
1st sub-pillar: Access	121	25.24
2nd sub-pillar: Content	126	7.32
3rd sub-pillar: Future Technologies	123	15.00
<b>B. People pillar</b>	<b>127</b>	<b>18.80</b>
1st sub-pillar: Individuals	132	13.53
2nd sub-pillar: Businesses	124	20.31
3rd sub-pillar: Governments	116	22.56
<b>C. Governance pillar</b>	<b>121</b>	<b>35.07</b>
1st sub-pillar: Trust	116	20.07
2nd sub-pillar: Regulation	114	45.51
3rd sub-pillar: Inclusion	116	39.64
<b>D. Impact pillar</b>	<b>130</b>	<b>26.99</b>
1st sub-pillar: Economy	129	7.79
2nd sub-pillar: Quality of Life	119	42.56
3rd sub-pillar: SDG Contribution	131	30.60



## The Network Readiness Index in detail

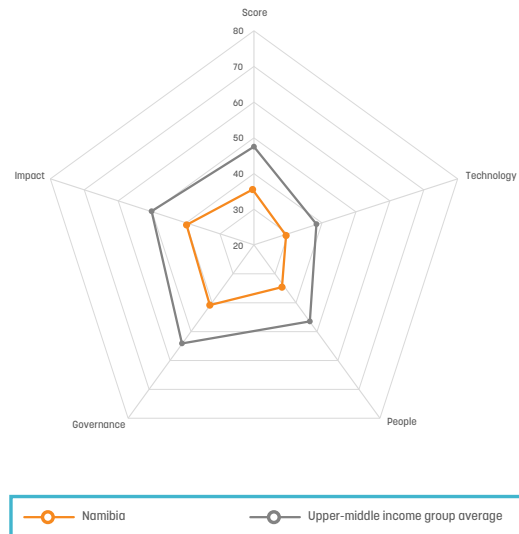
INDICATOR	RANK/134	SCORE
<b>A. Technology pillar</b>		
<b>1st sub-pillar: Access</b>		
1.1.1 Mobile tariffs	113	34.78
1.1.2 Handset prices	125	11.68
1.1.3 Households with internet access	123	10.56
1.1.4 4G mobile network coverage	114	33.00
1.1.5 Fixed-broadband subscriptions	117	0.67
1.1.6 International Internet bandwidth	106	60.73
1.1.7 Internet access in schools	n/a	n/a
<b>2nd sub-pillar: Content</b>		
1.2.1 GitHub commits	118	0.20
1.2.2 Wikipedia edits	117	6.77
1.2.3 Internet domain registrations*	-	-
1.2.4 Mobile apps development	125	22.20
<b>3rd sub-pillar: Future Technologies</b>		
1.3.1 Adoption of emerging technologies	119	17.19
1.3.2 Investment in emerging technology	106	26.00
1.3.3 ICT PCT patent applications	n/a	n/a
1.3.4 Computer software spending	115	1.80
1.3.5 Robot density	n/a	n/a
<b>B. People pillar</b>		
<b>1st sub-pillar: Individuals</b>		
2.1.1 Internet users	130	7.57
2.1.2 Active mobile-broadband subscriptions	130	4.52
2.1.3 Use of virtual social networks	122	6.29
2.1.4 Tertiary enrollment	114	4.78
2.1.5 Adult literacy rate	98	49.37
2.1.6 ICT skills	132	8.67
<b>2nd sub-pillar: Businesses</b>		
2.2.1 Firms with website	87	35.76
2.2.2 Ease of doing business	112	43.80
2.2.3 Professionals	120	4.13
2.2.4 Technicians and associate professionals	120	5.41
2.2.5 Business use of digital tools	116	32.72
2.2.6 R&D expenditure by businesses	91	0.03
<b>3rd sub-pillar: Governments</b>		
2.3.1 Government online services	100	50.30
2.3.2 Publication and use of open data	104	3.46
2.3.3 Government promotion of investment in emerging technologies	114	13.02
2.3.4 R&D expenditure by governments and higher education	68	23.46

INDICATOR	RANK/134	SCORE
<b>C. Governance pillar</b>		
<b>1st sub-pillar: Trust</b>		
3.1.1 Secure Internet servers	120	24.23
3.1.2 Cybersecurity	120	16.25
3.1.3 Online access to financial account	55	34.30
3.1.4 Internet shopping	92	5.48
<b>2nd sub-pillar: Regulation</b>		
3.2.1 Regulatory quality	113	35.42
3.2.2 ICT regulatory environment	123	54.06
3.2.3 Legal framework's adaptability to emerging technologies	119	10.34
3.2.4 E-commerce legislation	115	50.00
3.2.5 Privacy protection by law content	28	77.74
<b>3rd sub-pillar: Inclusion</b>		
3.3.1 E-Participation	95	50.62
3.3.2 Socioeconomic gap in use of digital payments	116	35.96
3.3.3 Availability of local online content	128	18.19
3.3.4 Gender gap in internet use	n/a	n/a
3.3.5 Rural gap in use of digital payments	94	53.79
<b>D. Impact pillar</b>		
<b>1st sub-pillar: Economy</b>		
4.1.1 Medium and high-tech industry	101	13.65
4.1.2 High-tech exports	73	10.69
4.1.3 PCT patent applications	n/a	n/a
4.1.4 Labour productivity per employee	117	1.01
4.1.5 Prevalence of gig economy	122	5.83
<b>2nd sub-pillar: Quality of Life</b>		
4.2.1 Happiness	103	44.01
4.2.2 Freedom to make life choices	46	84.12
4.2.3 Income inequality	117	23.20
4.2.4 Healthy life expectancy at birth	125	18.91
<b>3rd sub-pillar: SDG Contribution</b>		
4.3.1 SDG 3: Good Health and Well-Being	114	29.51
4.3.2 SDG 4: Quality Education	n/a	n/a
4.3.3 SDG 5: Gender Equality	107	52.11
4.3.4 SDG 7: Affordable and Clean Energy	131	0.00
4.3.5 SDG 11: Sustainable Cities and Communities	99	40.79

\* Data on indicator 1.2.3 is confidential, but has been included in the computation. Please see Appendix I: Technical Notes for further details.

# Namibia

	Rank (out of 134)	Score
<b>Network Readiness Index</b>	<b>103</b>	<b>36.11</b>
<b>A. Technology pillar</b>	<b>93</b>	<b>30.00</b>
1st sub-pillar: Access	103	38.14
2nd sub-pillar: Content	79	24.64
3rd sub-pillar: Future Technologies	71	27.20
<b>B. People pillar</b>	<b>98</b>	<b>34.24</b>
1st sub-pillar: Individuals	95	42.12
2nd sub-pillar: Businesses	100	31.21
3rd sub-pillar: Governments	100	29.39
<b>C. Governance pillar</b>	<b>105</b>	<b>40.55</b>
1st sub-pillar: Trust	91	29.26
2nd sub-pillar: Regulation	121	38.78
3rd sub-pillar: Inclusion	91	53.61
<b>D. Impact pillar</b>	<b>106</b>	<b>39.64</b>
1st sub-pillar: Economy	99	17.43
2nd sub-pillar: Quality of Life	128	34.46
3rd sub-pillar: SDG Contribution	62	67.04



## The Network Readiness Index in detail

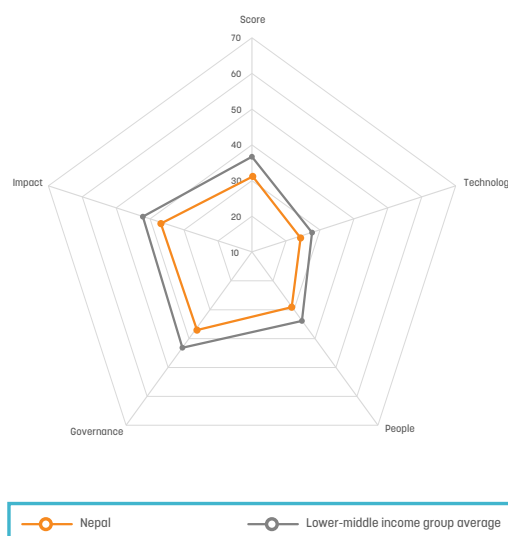
INDICATOR	RANK/134	SCORE
<b>A. Technology pillar</b>		
<b>1st sub-pillar: Access</b>		
1.1.1 Mobile tariffs	93	49.43
1.1.2 Handset prices	60	46.93
1.1.3 Households with internet access	90	34.39
1.1.4 4G mobile network coverage	110	39.00
1.1.5 Fixed-broadband subscriptions	113	1.80
1.1.6 International Internet bandwidth	114	57.31
1.1.7 Internet access in schools	n/a	n/a
<b>2nd sub-pillar: Content</b>		
1.2.1 GitHub commits	104	0.75
1.2.2 Wikipedia edits	75	40.02
1.2.3 Internet domain registrations*	-	-
1.2.4 Mobile apps development	89	53.33
<b>3rd sub-pillar: Future Technologies</b>		
1.3.1 Adoption of emerging technologies	71	44.52
1.3.2 Investment in emerging technology	n/a	n/a
1.3.3 ICT PCT patent applications	n/a	n/a
1.3.4 Computer software spending	83	9.89
1.3.5 Robot density	n/a	n/a
<b>B. People pillar</b>		
<b>1st sub-pillar: Individuals</b>		
2.1.1 Internet users	91	49.84
2.1.2 Active mobile-broadband subscriptions	42	35.59
2.1.3 Use of virtual social networks	104	26.80
2.1.4 Tertiary enrollment	90	16.25
2.1.5 Adult literacy rate	63	89.12
2.1.6 ICT skills	103	35.10
<b>2nd sub-pillar: Businesses</b>		
2.2.1 Firms with website	88	34.71
2.2.2 Ease of doing business	91	55.04
2.2.3 Professionals	79	17.93
2.2.4 Technicians and associate professionals	86	22.90
2.2.5 Business use of digital tools	78	55.69
2.2.6 R&D expenditure by businesses	75	0.98
<b>3rd sub-pillar: Governments</b>		
2.3.1 Government online services	97	50.91
2.3.2 Publication and use of open data	95	9.08
2.3.3 Government promotion of investment in emerging technologies	76	33.79
2.3.4 R&D expenditure by governments and higher education	67	23.79

INDICATOR	RANK/134	SCORE
<b>C. Governance pillar</b>		
<b>1st sub-pillar: Trust</b>		
3.1.1 Secure Internet servers	95	39.82
3.1.2 Cybersecurity	123	12.89
3.1.3 Online access to financial account	35	48.77
3.1.4 Internet shopping	67	15.54
<b>2nd sub-pillar: Regulation</b>		
3.2.1 Regulatory quality	75	50.26
3.2.2 ICT regulatory environment	100	69.12
3.2.3 Legal framework's adaptability to emerging technologies	76	35.76
3.2.4 E-commerce legislation	131	0.00
3.2.5 Privacy protection by law content	n/a	n/a
<b>3rd sub-pillar: Inclusion</b>		
3.3.1 E-Participation	100	48.15
3.3.2 Socioeconomic gap in use of digital payments	75	61.49
3.3.3 Availability of local online content	103	37.76
3.3.4 Gender gap in internet use	n/a	n/a
3.3.5 Rural gap in use of digital payments	65	67.03
<b>D. Impact pillar</b>		
<b>1st sub-pillar: Economy</b>		
4.1.1 Medium and high-tech industry	107	9.10
4.1.2 High-tech exports	123	0.42
4.1.3 PCT patent applications	n/a	n/a
4.1.4 Labour productivity per employee	77	20.70
4.1.5 Prevalence of gig economy	71	39.52
<b>2nd sub-pillar: Quality of Life</b>		
4.2.1 Happiness	112	34.25
4.2.2 Freedom to make life choices	94	61.91
4.2.3 Income inequality	120	10.05
4.2.4 Healthy life expectancy at birth	113	31.62
<b>3rd sub-pillar: SDG Contribution</b>		
4.3.1 SDG 3: Good Health and Well-Being	94	55.74
4.3.2 SDG 4: Quality Education	n/a	n/a
4.3.3 SDG 5: Gender Equality	11	88.56
4.3.4 SDG 7: Affordable and Clean Energy	35	85.91
4.3.5 SDG 11: Sustainable Cities and Communities	105	37.94

\* Data on indicator 1.2.3 is confidential, but has been included in the computation. Please see Appendix I: Technical Notes for further details.

# Nepal

	Rank (out of 134)	Score
<b>Network Readiness Index</b>	<b>113</b>	<b>31.81</b>
<b>A. Technology pillar</b>	<b>111</b>	<b>24.28</b>
1st sub-pillar: Access	114	32.63
2nd sub-pillar: Content	89	21.84
3rd sub-pillar: Future Technologies	106	18.37
<b>B. People pillar</b>	<b>113</b>	<b>28.81</b>
1st sub-pillar: Individuals	108	31.24
2nd sub-pillar: Businesses	109	29.29
3rd sub-pillar: Governments	107	25.88
<b>C. Governance pillar</b>	<b>114</b>	<b>36.82</b>
1st sub-pillar: Trust	117	19.42
2nd sub-pillar: Regulation	107	50.74
3rd sub-pillar: Inclusion	113	40.30
<b>D. Impact pillar</b>	<b>113</b>	<b>37.34</b>
1st sub-pillar: Economy	117	12.00
2nd sub-pillar: Quality of Life	76	63.07
3rd sub-pillar: SDG Contribution	127	36.96



## The Network Readiness Index in detail

INDICATOR	RANK/134	SCORE
<b>A. Technology pillar</b>		
<b>1st sub-pillar: Access</b>		
1.1.1 Mobile tariffs	92	49.45
1.1.2 Handset prices	115	21.21
1.1.3 Households with internet access	112	17.70
1.1.4 4G mobile network coverage	122	15.47
1.1.5 Fixed-broadband subscriptions	n/a	n/a
1.1.6 International Internet bandwidth	108	59.30
1.1.7 Internet access in schools	n/a	n/a
<b>2nd sub-pillar: Content</b>		
1.2.1 GitHub commits	79	2.36
1.2.2 Wikipedia edits	87	32.32
1.2.3 Internet domain registrations*	-	-
1.2.4 Mobile apps development	92	51.85
<b>3rd sub-pillar: Future Technologies</b>		
1.3.1 Adoption of emerging technologies	108	27.45
1.3.2 Investment in emerging technology	105	26.30
1.3.3 ICT PCT patent applications	n/a	n/a
1.3.4 Computer software spending	117	1.36
1.3.5 Robot density	n/a	n/a
<b>B. People pillar</b>		
<b>1st sub-pillar: Individuals</b>		
2.1.1 Internet users	105	32.31
2.1.2 Active mobile-broadband subscriptions	101	17.70
2.1.3 Use of virtual social networks	100	34.02
2.1.4 Tertiary enrollment	102	8.53
2.1.5 Adult literacy rate	94	58.71
2.1.6 ICT skills	100	36.17
<b>2nd sub-pillar: Businesses</b>		
2.2.1 Firms with website	107	19.27
2.2.2 Ease of doing business	86	58.29
2.2.3 Professionals	77	19.27
2.2.4 Technicians and associate professionals	94	18.44
2.2.5 Business use of digital tools	118	31.19
2.2.6 R&D expenditure by businesses	n/a	n/a
<b>3rd sub-pillar: Governments</b>		
2.3.1 Government online services	115	38.18
2.3.2 Publication and use of open data	81	15.49
2.3.3 Government promotion of investment in emerging technologies	100	23.98
2.3.4 R&D expenditure by governments and higher education	n/a	n/a

INDICATOR	RANK/134	SCORE
<b>C. Governance pillar</b>		
<b>1st sub-pillar: Trust</b>		
3.1.1 Secure Internet servers	90	41.83
3.1.2 Cybersecurity	108	27.30
3.1.3 Online access to financial account	115	6.34
3.1.4 Internet shopping	116	2.20
<b>2nd sub-pillar: Regulation</b>		
3.2.1 Regulatory quality	115	34.99
3.2.2 ICT regulatory environment	106	66.03
3.2.3 Legal framework's adaptability to emerging technologies	96	24.70
3.2.4 E-commerce legislation	1	100.00
3.2.5 Privacy protection by law content	71	27.96
<b>3rd sub-pillar: Inclusion</b>		
3.3.1 E-Participation	114	34.56
3.3.2 Socioeconomic gap in use of digital payments	96	47.57
3.3.3 Availability of local online content	108	34.35
3.3.4 Gender gap in internet use	n/a	n/a
3.3.5 Rural gap in use of digital payments	110	44.73
<b>D. Impact pillar</b>		
<b>1st sub-pillar: Economy</b>		
4.1.1 Medium and high-tech industry	104	10.43
4.1.2 High-tech exports	112	2.24
4.1.3 PCT patent applications	n/a	n/a
4.1.4 Labour productivity per employee	n/a	n/a
4.1.5 Prevalence of gig economy	106	23.33
<b>2nd sub-pillar: Quality of Life</b>		
4.2.1 Happiness	79	54.16
4.2.2 Freedom to make life choices	75	70.62
4.2.3 Income inequality	33	77.84
4.2.4 Healthy life expectancy at birth	98	49.66
<b>3rd sub-pillar: SDG Contribution</b>		
4.3.1 SDG 3: Good Health and Well-Being	109	32.79
4.3.2 SDG 4: Quality Education	n/a	n/a
4.3.3 SDG 5: Gender Equality	109	50.76
4.3.4 SDG 7: Affordable and Clean Energy	118	52.67
4.3.5 SDG 11: Sustainable Cities and Communities	127	11.63

\* Data on indicator 1.2.3 is confidential, but has been included in the computation. Please see Appendix I: Technical Notes for further details.



# Netherlands

	Rank (out of 134)	Score
<b>Network Readiness Index</b>	<b>4</b>	<b>81.37</b>
<b>A. Technology pillar</b>	<b>3</b>	<b>83.81</b>
1st sub-pillar: Access	12	86.86
2nd sub-pillar: Content	2	91.79
3rd sub-pillar: Future Technologies	8	72.79
<b>B. People pillar</b>	<b>9</b>	<b>73.45</b>
1st sub-pillar: Individuals	20	70.01
2nd sub-pillar: Businesses	9	73.68
3rd sub-pillar: Governments	11	76.66
<b>C. Governance pillar</b>	<b>3</b>	<b>89.47</b>
1st sub-pillar: Trust	3	93.78
2nd sub-pillar: Regulation	10	88.23
3rd sub-pillar: Inclusion	5	86.41
<b>D. Impact pillar</b>	<b>4</b>	<b>78.75</b>
1st sub-pillar: Economy	8	63.79
2nd sub-pillar: Quality of Life	10	88.72
3rd sub-pillar: SDG Contribution	9	83.74



## The Network Readiness Index in detail

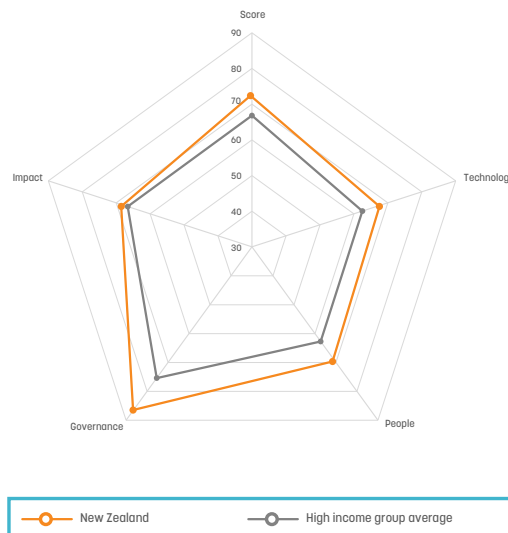
INDICATOR	RANK/134	SCORE
<b>A. Technology pillar</b>		
<b>1st sub-pillar: Access</b>		
1.1.1 Mobile tariffs	30	77.99
1.1.2 Handset prices	34	62.71
1.1.3 Households with internet access	9	96.14
1.1.4 4G mobile network coverage	24	99.00
1.1.5 Fixed-broadband subscriptions	6	98.81
1.1.6 International Internet bandwidth	29	73.35
1.1.7 Internet access in schools	1	100.00
<b>2nd sub-pillar: Content</b>		
1.2.1 GitHub commits	5	79.07
1.2.2 Wikipedia edits	5	93.02
1.2.3 Internet domain registrations*	-	-
1.2.4 Mobile apps development	5	95.07
<b>3rd sub-pillar: Future Technologies</b>		
1.3.1 Adoption of emerging technologies	1	100.00
1.3.2 Investment in emerging technology	5	87.95
1.3.3 ICT PCT patent applications	13	66.62
1.3.4 Computer software spending	9	55.71
1.3.5 Robot density	11	53.69
<b>B. People pillar</b>		
<b>1st sub-pillar: Individuals</b>		
2.1.1 Internet users	11	94.91
2.1.2 Active mobile-broadband subscriptions	43	35.31
2.1.3 Use of virtual social networks	44	63.92
2.1.4 Tertiary enrollment	12	61.98
2.1.5 Adult literacy rate	n/a	n/a
2.1.6 ICT skills	4	93.94
<b>2nd sub-pillar: Businesses</b>		
2.2.1 Firms with website	4	95.65
2.2.2 Ease of doing business	41	81.14
2.2.3 Professionals	5	65.69
2.2.4 Technicians and associate professionals	16	70.95
2.2.5 Business use of digital tools	2	99.21
2.2.6 R&D expenditure by businesses	17	29.45
<b>3rd sub-pillar: Governments</b>		
2.3.1 Government online services	12	90.30
2.3.2 Publication and use of open data	9	74.95
2.3.3 Government promotion of investment in emerging technologies	20	66.87
2.3.4 R&D expenditure by governments and higher education	12	74.51

INDICATOR	RANK/134	SCORE
<b>C. Governance pillar</b>		
<b>1st sub-pillar: Trust</b>		
3.1.1 Secure Internet servers	2	93.98
3.1.2 Cybersecurity	13	95.02
3.1.3 Online access to financial account	5	89.01
3.1.4 Internet shopping	2	97.11
<b>2nd sub-pillar: Regulation</b>		
3.2.1 Regulatory quality	3	95.86
3.2.2 ICT regulatory environment	19	94.98
3.2.3 Legal framework's adaptability to emerging technologies	8	82.05
3.2.4 E-commerce legislation	1	100.00
3.2.5 Privacy protection by law content	41	68.26
<b>3rd sub-pillar: Inclusion</b>		
3.3.1 E-Participation	9	96.30
3.3.2 Socioeconomic gap in use of digital payments	11	96.62
3.3.3 Availability of local online content	3	97.09
3.3.4 Gender gap in internet use	27	66.16
3.3.5 Rural gap in use of digital payments	25	75.85
<b>D. Impact pillar</b>		
<b>1st sub-pillar: Economy</b>		
4.1.1 Medium and high-tech industry	15	62.41
4.1.2 High-tech exports	18	42.97
4.1.3 PCT patent applications	9	51.85
4.1.4 Labour productivity per employee	15	67.09
4.1.5 Prevalence of gig economy	2	94.63
<b>2nd sub-pillar: Quality of Life</b>		
4.2.1 Happiness	6	93.02
4.2.2 Freedom to make life choices	36	86.80
4.2.3 Income inequality	14	88.92
4.2.4 Healthy life expectancy at birth	20	86.13
<b>3rd sub-pillar: SDG Contribution</b>		
4.3.1 SDG 3: Good Health and Well-Being	6	95.08
4.3.2 SDG 4: Quality Education	7	72.90
4.3.3 SDG 5: Gender Equality	69	74.10
4.3.4 SDG 7: Affordable and Clean Energy	48	82.95
4.3.5 SDG 11: Sustainable Cities and Communities	11	93.67

\* Data on indicator 1.2.3 is confidential, but has been included in the computation. Please see Appendix I: Technical Notes for further details.

# New Zealand

	Rank (out of 134)	Score
<b>Network Readiness Index</b>	<b>16</b>	<b>73.27</b>
<b>A. Technology pillar</b>	<b>20</b>	<b>68.44</b>
1st sub-pillar: Access	16	86.25
2nd sub-pillar: Content	12	74.21
3rd sub-pillar: Future Technologies	29	44.86
<b>B. People pillar</b>	<b>15</b>	<b>69.56</b>
1st sub-pillar: Individuals	23	68.85
2nd sub-pillar: Businesses	15	70.10
3rd sub-pillar: Governments	18	69.72
<b>C. Governance pillar</b>	<b>7</b>	<b>86.57</b>
1st sub-pillar: Trust	9	84.79
2nd sub-pillar: Regulation	16	85.33
3rd sub-pillar: Inclusion	2	89.60
<b>D. Impact pillar</b>	<b>24</b>	<b>68.49</b>
1st sub-pillar: Economy	38	36.40
2nd sub-pillar: Quality of Life	7	89.57
3rd sub-pillar: SDG Contribution	24	79.52



## The Network Readiness Index in detail

INDICATOR	RANK/134	SCORE
<b>A. Technology pillar</b>		
<b>1st sub-pillar: Access</b>		
1.1.1 Mobile tariffs	18	84.30
1.1.2 Handset prices	11	73.96
1.1.3 Households with internet access	24	87.77
1.1.4 4G mobile network coverage	46	97.00
1.1.5 Fixed-broadband subscriptions	5	99.03
1.1.6 International Internet bandwidth	16	75.42
1.1.7 Internet access in schools	n/a	n/a
<b>2nd sub-pillar: Content</b>		
1.2.1 GitHub commits	6	77.28
1.2.2 Wikipedia edits	24	79.37
1.2.3 Internet domain registrations*	-	-
1.2.4 Mobile apps development	18	86.45
<b>3rd sub-pillar: Future Technologies</b>		
1.3.1 Adoption of emerging technologies	18	77.97
1.3.2 Investment in emerging technology	19	68.51
1.3.3 ICT PCT patent applications	26	41.38
1.3.4 Computer software spending	55	22.01
1.3.5 Robot density	29	14.42
<b>B. People pillar</b>		
<b>1st sub-pillar: Individuals</b>		
2.1.1 Internet users	15	90.88
2.1.2 Active mobile-broadband subscriptions	19	44.91
2.1.3 Use of virtual social networks	15	75.26
2.1.4 Tertiary enrollment	15	59.81
2.1.5 Adult literacy rate	n/a	n/a
2.1.6 ICT skills	29	73.41
<b>2nd sub-pillar: Businesses</b>		
2.2.1 Firms with website	17	83.07
2.2.2 Ease of doing business	1	100.00
2.2.3 Professionals	n/a	n/a
2.2.4 Technicians and associate professionals	n/a	n/a
2.2.5 Business use of digital tools	25	81.24
2.2.6 R&D expenditure by businesses	34	16.11
<b>3rd sub-pillar: Governments</b>		
2.3.1 Government online services	10	92.73
2.3.2 Publication and use of open data	7	79.38
2.3.3 Government promotion of investment in emerging technologies	35	51.81
2.3.4 R&D expenditure by governments and higher education	26	54.95

INDICATOR	RANK/134	SCORE
<b>C. Governance pillar</b>		
<b>1st sub-pillar: Trust</b>		
3.1.1 Secure Internet servers	27	79.17
3.1.2 Cybersecurity	38	84.62
3.1.3 Online access to financial account	6	86.73
3.1.4 Internet shopping	8	88.63
<b>2nd sub-pillar: Regulation</b>		
3.2.1 Regulatory quality	4	95.00
3.2.2 ICT regulatory environment	80	80.51
3.2.3 Legal framework's adaptability to emerging technologies	23	65.82
3.2.4 E-commerce legislation	1	100.00
3.2.5 Privacy protection by law content	n/a	n/a
<b>3rd sub-pillar: Inclusion</b>		
3.3.1 E-Participation	4	98.77
3.3.2 Socioeconomic gap in use of digital payments	4	99.29
3.3.3 Availability of local online content	17	86.43
3.3.4 Gender gap in internet use	n/a	n/a
3.3.5 Rural gap in use of digital payments	39	73.94
<b>D. Impact pillar</b>		
<b>1st sub-pillar: Economy</b>		
4.1.1 Medium and high-tech industry	82	23.46
4.1.2 High-tech exports	50	18.44
4.1.3 PCT patent applications	25	14.56
4.1.4 Labour productivity per employee	31	51.66
4.1.5 Prevalence of gig economy	14	73.86
<b>2nd sub-pillar: Quality of Life</b>		
4.2.1 Happiness	11	88.69
4.2.2 Freedom to make life choices	20	91.29
4.2.3 Income inequality	n/a	n/a
4.2.4 Healthy life expectancy at birth	14	88.73
<b>3rd sub-pillar: SDG Contribution</b>		
4.3.1 SDG 3: Good Health and Well-Being	2	96.72
4.3.2 SDG 4: Quality Education	26	63.61
4.3.3 SDG 5: Gender Equality	74	73.04
4.3.4 SDG 7: Affordable and Clean Energy	83	73.12
4.3.5 SDG 11: Sustainable Cities and Communities	16	91.09

\* Data on indicator 1.2.3 is confidential, but has been included in the computation. Please see Appendix I: Technical Notes for further details.

# Nigeria

	Rank (out of 134)	Score
<b>Network Readiness Index</b>	<b>117</b>	<b>30.44</b>
<b>A. Technology pillar</b>	<b>124</b>	<b>18.52</b>
1st sub-pillar: Access	119	26.11
2nd sub-pillar: Content	119	10.51
3rd sub-pillar: Future Technologies	104	18.94
<b>B. People pillar</b>	<b>99</b>	<b>33.91</b>
1st sub-pillar: Individuals	117	24.94
2nd sub-pillar: Businesses	53	47.20
3rd sub-pillar: Governments	99	29.58
<b>C. Governance pillar</b>	<b>112</b>	<b>37.18</b>
1st sub-pillar: Trust	83	32.23
2nd sub-pillar: Regulation	113	46.10
3rd sub-pillar: Inclusion	122	33.20
<b>D. Impact pillar</b>	<b>125</b>	<b>32.15</b>
1st sub-pillar: Economy	100	17.12
2nd sub-pillar: Quality of Life	125	38.12
3rd sub-pillar: SDG Contribution	120	41.22



## The Network Readiness Index in detail

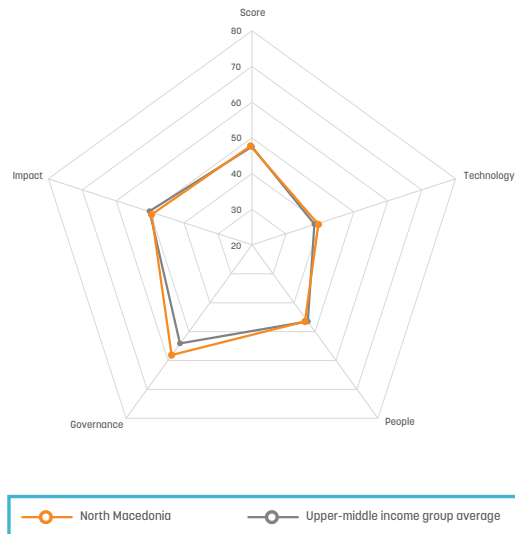
INDICATOR	RANK/134	SCORE
<b>A. Technology pillar</b>		
<b>1st sub-pillar: Access</b>		
1.1.1 Mobile tariffs	86	51.96
1.1.2 Handset prices	117	20.01
1.1.3 Households with internet access	129	7.27
1.1.4 4G mobile network coverage	120	22.34
1.1.5 Fixed-broadband subscriptions	102	8.16
1.1.6 International Internet bandwidth	130	46.89
1.1.7 Internet access in schools	n/a	n/a
<b>2nd sub-pillar: Content</b>		
1.2.1 GitHub commits	101	1.00
1.2.2 Wikipedia edits	118	5.94
1.2.3 Internet domain registrations*	-	-
1.2.4 Mobile apps development	115	34.73
<b>3rd sub-pillar: Future Technologies</b>		
1.3.1 Adoption of emerging technologies	74	43.17
1.3.2 Investment in emerging technology	113	22.87
1.3.3 ICT PCT patent applications	77	0.24
1.3.4 Computer software spending	84	9.49
1.3.5 Robot density	n/a	n/a
<b>B. People pillar</b>		
<b>1st sub-pillar: Individuals</b>		
2.1.1 Internet users	98	40.56
2.1.2 Active mobile-broadband subscriptions	115	10.86
2.1.3 Use of virtual social networks	116	11.34
2.1.4 Tertiary enrollment	107	6.89
2.1.5 Adult literacy rate	97	51.12
2.1.6 ICT skills	117	28.86
<b>2nd sub-pillar: Businesses</b>		
2.2.1 Firms with website	113	14.86
2.2.2 Ease of doing business	109	47.13
2.2.3 Professionals	97	14.24
2.2.4 Technicians and associate professionals	4	91.41
2.2.5 Business use of digital tools	50	68.38
2.2.6 R&D expenditure by businesses	n/a	n/a
<b>3rd sub-pillar: Governments</b>		
2.3.1 Government online services	100	50.30
2.3.2 Publication and use of open data	69	20.97
2.3.3 Government promotion of investment in emerging technologies	109	17.46
2.3.4 R&D expenditure by governments and higher education	n/a	n/a

INDICATOR	RANK/134	SCORE
<b>C. Governance pillar</b>		
<b>1st sub-pillar: Trust</b>		
3.1.1 Secure Internet servers	105	34.46
3.1.2 Cybersecurity	59	69.56
3.1.3 Online access to financial account	80	19.70
3.1.4 Internet shopping	94	5.21
<b>2nd sub-pillar: Regulation</b>		
3.2.1 Regulatory quality	121	31.98
3.2.2 ICT regulatory environment	87	77.99
3.2.3 Legal framework's adaptability to emerging technologies	99	22.70
3.2.4 E-commerce legislation	77	75.00
3.2.5 Privacy protection by law content	75	22.81
<b>3rd sub-pillar: Inclusion</b>		
3.3.1 E-Participation	102	46.91
3.3.2 Socioeconomic gap in use of digital payments	110	40.81
3.3.3 Availability of local online content	118	27.51
3.3.4 Gender gap in internet use	84	22.17
3.3.5 Rural gap in use of digital payments	118	28.59
<b>D. Impact pillar</b>		
<b>1st sub-pillar: Economy</b>		
4.1.1 Medium and high-tech industry	43	42.61
4.1.2 High-tech exports	107	3.51
4.1.3 PCT patent applications	88	0.00
4.1.4 Labour productivity per employee	96	8.30
4.1.5 Prevalence of gig economy	91	31.17
<b>2nd sub-pillar: Quality of Life</b>		
4.2.1 Happiness	114	32.69
4.2.2 Freedom to make life choices	97	60.26
4.2.3 Income inequality	94	51.55
4.2.4 Healthy life expectancy at birth	130	7.99
<b>3rd sub-pillar: SDG Contribution</b>		
4.3.1 SDG 3: Good Health and Well-Being	122	22.95
4.3.2 SDG 4: Quality Education	n/a	n/a
4.3.3 SDG 5: Gender Equality	120	40.74
4.3.4 SDG 7: Affordable and Clean Energy	102	66.11
4.3.5 SDG 11: Sustainable Cities and Communities	114	35.06

\* Data on indicator 1.2.3 is confidential, but has been included in the computation. Please see Appendix I: Technical Notes for further details.

# North Macedonia

	Rank (out of 134)	Score
<b>Network Readiness Index</b>	<b>67</b>	<b>48.28</b>
<b>A. Technology pillar</b>	<b>65</b>	<b>40.09</b>
1st sub-pillar: Access	61	67.73
2nd sub-pillar: Content	49	37.01
3rd sub-pillar: Future Technologies	120	15.52
<b>B. People pillar</b>	<b>70</b>	<b>46.07</b>
1st sub-pillar: Individuals	74	53.54
2nd sub-pillar: Businesses	60	46.08
3rd sub-pillar: Governments	80	38.57
<b>C. Governance pillar</b>	<b>60</b>	<b>57.72</b>
1st sub-pillar: Trust	64	44.10
2nd sub-pillar: Regulation	68	65.75
3rd sub-pillar: Inclusion	66	63.31
<b>D. Impact pillar</b>	<b>78</b>	<b>49.25</b>
1st sub-pillar: Economy	81	20.68
2nd sub-pillar: Quality of Life	80	62.21
3rd sub-pillar: SDG Contribution	76	64.84



## The Network Readiness Index in detail

INDICATOR	RANK/134	SCORE
<b>A. Technology pillar</b>		
<b>1st sub-pillar: Access</b>		
1.1.1 Mobile tariffs	77	57.19
1.1.2 Handset prices	78	39.32
1.1.3 Households with internet access	68	69.08
1.1.4 4G mobile network coverage	18	99.53
1.1.5 Fixed-broadband subscriptions	49	78.06
1.1.6 International Internet bandwidth	91	63.23
1.1.7 Internet access in schools	n/a	n/a
<b>2nd sub-pillar: Content</b>		
1.2.1 GitHub commits	53	7.82
1.2.2 Wikipedia edits	45	64.39
1.2.3 Internet domain registrations*	-	-
1.2.4 Mobile apps development	54	68.39
<b>3rd sub-pillar: Future Technologies</b>		
1.3.1 Adoption of emerging technologies	96	32.55
1.3.2 Investment in emerging technology	123	17.45
1.3.3 ICT PCT patent applications	82	0.00
1.3.4 Computer software spending	80	12.09
1.3.5 Robot density	n/a	n/a
<b>B. People pillar</b>		
<b>1st sub-pillar: Individuals</b>		
2.1.1 Internet users	43	78.88
2.1.2 Active mobile-broadband subscriptions	79	25.79
2.1.3 Use of virtual social networks	68	52.58
2.1.4 Tertiary enrollment	68	30.66
2.1.5 Adult literacy rate	33	97.20
2.1.6 ICT skills	101	36.16
<b>2nd sub-pillar: Businesses</b>		
2.2.1 Firms with website	50	62.69
2.2.2 Ease of doing business	16	89.36
2.2.3 Professionals	47	35.33
2.2.4 Technicians and associate professionals	50	43.15
2.2.5 Business use of digital tools	103	43.13
2.2.6 R&D expenditure by businesses	62	2.84
<b>3rd sub-pillar: Governments</b>		
2.3.1 Government online services	57	73.34
2.3.2 Publication and use of open data	49	32.58
2.3.3 Government promotion of investment in emerging technologies	95	27.25
2.3.4 R&D expenditure by governments and higher education	73	21.11

INDICATOR	RANK/134	SCORE
<b>C. Governance pillar</b>		
<b>1st sub-pillar: Trust</b>		
3.1.1 Secure Internet servers	68	52.16
3.1.2 Cybersecurity	36	85.81
3.1.3 Online access to financial account	88	16.85
3.1.4 Internet shopping	56	21.59
<b>2nd sub-pillar: Regulation</b>		
3.2.1 Regulatory quality	43	62.98
3.2.2 ICT regulatory environment	46	88.03
3.2.3 Legal framework's adaptability to emerging technologies	91	28.51
3.2.4 E-commerce legislation	77	75.00
3.2.5 Privacy protection by law content	36	74.21
<b>3rd sub-pillar: Inclusion</b>		
3.3.1 E-Participation	38	82.71
3.3.2 Socioeconomic gap in use of digital payments	72	62.80
3.3.3 Availability of local online content	80	52.34
3.3.4 Gender gap in internet use	55	59.18
3.3.5 Rural gap in use of digital payments	80	59.52
<b>D. Impact pillar</b>		
<b>1st sub-pillar: Economy</b>		
4.1.1 Medium and high-tech industry	65	29.24
4.1.2 High-tech exports	88	8.00
4.1.3 PCT patent applications	55	0.81
4.1.4 Labour productivity per employee	70	25.02
4.1.5 Prevalence of gig economy	67	40.36
<b>2nd sub-pillar: Quality of Life</b>		
4.2.1 Happiness	94	45.65
4.2.2 Freedom to make life choices	101	59.47
4.2.3 Income inequality	46	74.23
4.2.4 Healthy life expectancy at birth	51	69.51
<b>3rd sub-pillar: SDG Contribution</b>		
4.3.1 SDG 3: Good Health and Well-Being	65	72.13
4.3.2 SDG 4: Quality Education	67	26.04
4.3.3 SDG 5: Gender Equality	86	67.45
4.3.4 SDG 7: Affordable and Clean Energy	56	81.50
4.3.5 SDG 11: Sustainable Cities and Communities	43	77.07

\* Data on indicator 1.2.3 is confidential, but has been included in the computation. Please see Appendix I: Technical Notes for further details.

# Norway

	Rank (out of 134)	Score
<b>Network Readiness Index</b>	<b>7</b>	<b>79.39</b>
<b>A. Technology pillar</b>	<b>11</b>	<b>75.23</b>
1st sub-pillar: Access	6	89.39
2nd sub-pillar: Content	3	86.28
3rd sub-pillar: Future Technologies	22	50.02
<b>B. People pillar</b>	<b>8</b>	<b>73.88</b>
1st sub-pillar: Individuals	21	69.94
2nd sub-pillar: Businesses	19	67.38
3rd sub-pillar: Governments	3	84.31
<b>C. Governance pillar</b>	<b>1</b>	<b>91.30</b>
1st sub-pillar: Trust	2	94.13
2nd sub-pillar: Regulation	1	95.94
3rd sub-pillar: Inclusion	11	83.83
<b>D. Impact pillar</b>	<b>6</b>	<b>77.14</b>
1st sub-pillar: Economy	18	51.79
2nd sub-pillar: Quality of Life	2	93.49
3rd sub-pillar: SDG Contribution	2	86.13



## The Network Readiness Index in detail

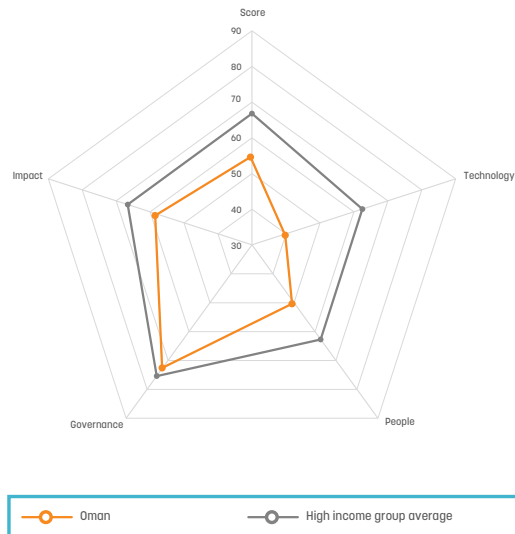
INDICATOR	RANK/134	SCORE
<b>A. Technology pillar</b>		
<b>1st sub-pillar: Access</b>		
1.1.1 Mobile tariffs	2	98.00
1.1.2 Handset prices	21	67.37
1.1.3 Households with internet access	10	95.99
1.1.4 4G mobile network coverage	9	99.90
1.1.5 Fixed-broadband subscriptions	30	92.53
1.1.6 International Internet bandwidth	38	71.93
1.1.7 Internet access in schools	1	100.00
<b>2nd sub-pillar: Content</b>		
1.2.1 GitHub commits	2	93.70
1.2.2 Wikipedia edits	1	100.00
1.2.3 Internet domain registrations*	-	-
1.2.4 Mobile apps development	17	87.21
<b>3rd sub-pillar: Future Technologies</b>		
1.3.1 Adoption of emerging technologies	n/a	n/a
1.3.2 Investment in emerging technology	16	73.55
1.3.3 ICT PCT patent applications	19	59.31
1.3.4 Computer software spending	16	50.74
1.3.5 Robot density	26	16.47
<b>B. People pillar</b>		
<b>1st sub-pillar: Individuals</b>		
2.1.1 Internet users	8	96.74
2.1.2 Active mobile-broadband subscriptions	29	38.93
2.1.3 Use of virtual social networks	24	70.10
2.1.4 Tertiary enrollment	16	59.78
2.1.5 Adult literacy rate	n/a	n/a
2.1.6 ICT skills	15	84.15
<b>2nd sub-pillar: Businesses</b>		
2.2.1 Firms with website	24	79.79
2.2.2 Ease of doing business	9	92.68
2.2.3 Professionals	4	67.11
2.2.4 Technicians and associate professionals	18	68.74
2.2.5 Business use of digital tools	n/a	n/a
2.2.6 R&D expenditure by businesses	20	28.61
<b>3rd sub-pillar: Governments</b>		
2.3.1 Government online services	19	87.28
2.3.2 Publication and use of open data	10	73.81
2.3.3 Government promotion of investment in emerging technologies	n/a	n/a
2.3.4 R&D expenditure by governments and higher education	2	91.85

INDICATOR	RANK/134	SCORE
<b>C. Governance pillar</b>		
<b>1st sub-pillar: Trust</b>		
3.1.1 Secure Internet servers	17	83.75
3.1.2 Cybersecurity	9	95.77
3.1.3 Online access to financial account	1	100.00
3.1.4 Internet shopping	3	96.99
<b>2nd sub-pillar: Regulation</b>		
3.2.1 Regulatory quality	10	90.14
3.2.2 ICT regulatory environment	4	97.88
3.2.3 Legal framework's adaptability to emerging technologies	n/a	n/a
3.2.4 E-commerce legislation	1	100.00
3.2.5 Privacy protection by law content	5	95.75
<b>3rd sub-pillar: Inclusion</b>		
3.3.1 E-Participation	18	90.13
3.3.2 Socioeconomic gap in use of digital payments	1	100.00
3.3.3 Availability of local online content	26	84.01
3.3.4 Gender gap in internet use	11	68.53
3.3.5 Rural gap in use of digital payments	20	76.50
<b>D. Impact pillar</b>		
<b>1st sub-pillar: Economy</b>		
4.1.1 Medium and high-tech industry	31	50.80
4.1.2 High-tech exports	19	40.23
4.1.3 PCT patent applications	13	37.87
4.1.4 Labour productivity per employee	7	78.28
4.1.5 Prevalence of gig economy	n/a	n/a
<b>2nd sub-pillar: Quality of Life</b>		
4.2.1 Happiness	5	93.35
4.2.2 Freedom to make life choices	4	98.42
4.2.3 Income inequality	8	92.78
4.2.4 Healthy life expectancy at birth	11	89.38
<b>3rd sub-pillar: SDG Contribution</b>		
4.3.1 SDG 3: Good Health and Well-Being	2	96.72
4.3.2 SDG 4: Quality Education	17	66.04
4.3.3 SDG 5: Gender Equality	29	82.14
4.3.4 SDG 7: Affordable and Clean Energy	32	86.42
4.3.5 SDG 11: Sustainable Cities and Communities	2	99.35

\* Data on indicator 1.2.3 is confidential, but has been included in the computation. Please see Appendix I: Technical Notes for further details.

# Oman

	Rank (out of 134)	Score
<b>Network Readiness Index</b>	<b>44</b>	<b>55.33</b>
<b>A. Technology pillar</b>	<b>63</b>	<b>40.34</b>
1st sub-pillar: Access	55	71.42
2nd sub-pillar: Content	90	21.54
3rd sub-pillar: Future Technologies	66	28.04
<b>B. People pillar</b>	<b>56</b>	<b>50.08</b>
1st sub-pillar: Individuals	46	60.44
2nd sub-pillar: Businesses	83	36.76
3rd sub-pillar: Governments	38	53.04
<b>C. Governance pillar</b>	<b>35</b>	<b>72.54</b>
1st sub-pillar: Trust	32	67.37
2nd sub-pillar: Regulation	46	71.63
3rd sub-pillar: Inclusion	21	78.62
<b>D. Impact pillar</b>	<b>44</b>	<b>58.37</b>
1st sub-pillar: Economy	49	31.96
2nd sub-pillar: Quality of Life	23	79.36
3rd sub-pillar: SDG Contribution	78	63.80



## The Network Readiness Index in detail

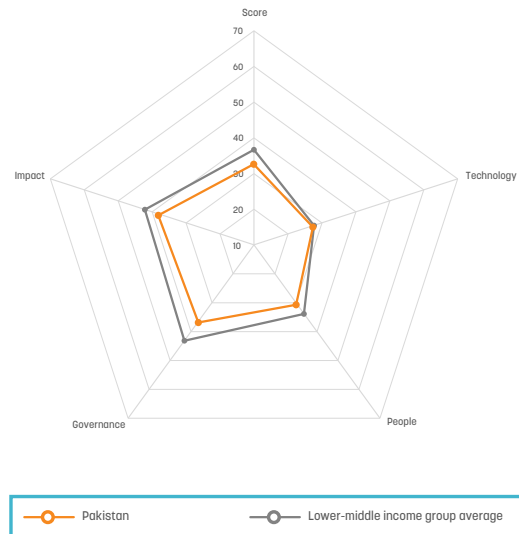
INDICATOR	RANK/134	SCORE
<b>A. Technology pillar</b>		
<b>1st sub-pillar: Access</b>		
1.1.1 Mobile tariffs	41	72.29
1.1.2 Handset prices	53	51.70
1.1.3 Households with internet access	23	88.53
1.1.4 4G mobile network coverage	51	96.05
1.1.5 Fixed-broadband subscriptions	91	21.04
1.1.6 International Internet bandwidth	48	70.32
1.1.7 Internet access in schools	1	100.00
<b>2nd sub-pillar: Content</b>		
1.2.1 GitHub commits	121	0.13
1.2.2 Wikipedia edits	93	26.22
1.2.3 Internet domain registrations*	-	-
1.2.4 Mobile apps development	73	58.68
<b>3rd sub-pillar: Future Technologies</b>		
1.3.1 Adoption of emerging technologies	44	57.47
1.3.2 Investment in emerging technology	43	50.01
1.3.3 ICT PCT patent applications	n/a	n/a
1.3.4 Computer software spending	98	4.56
1.3.5 Robot density	64	0.14
<b>B. People pillar</b>		
<b>1st sub-pillar: Individuals</b>		
2.1.1 Internet users	39	79.93
2.1.2 Active mobile-broadband subscriptions	53	33.00
2.1.3 Use of virtual social networks	63	55.67
2.1.4 Tertiary enrollment	73	27.41
2.1.5 Adult literacy rate	44	94.43
2.1.6 ICT skills	31	72.21
<b>2nd sub-pillar: Businesses</b>		
2.2.1 Firms with website	n/a	n/a
2.2.2 Ease of doing business	64	70.32
2.2.3 Professionals	85	17.27
2.2.4 Technicians and associate professionals	70	31.55
2.2.5 Business use of digital tools	58	62.93
2.2.6 R&D expenditure by businesses	67	1.74
<b>3rd sub-pillar: Governments</b>		
2.3.1 Government online services	24	84.84
2.3.2 Publication and use of open data	n/a	n/a
2.3.3 Government promotion of investment in emerging technologies	23	62.28
2.3.4 R&D expenditure by governments and higher education	88	11.99

INDICATOR	RANK/134	SCORE
<b>C. Governance pillar</b>		
<b>1st sub-pillar: Trust</b>		
3.1.1 Secure Internet servers	92	41.56
3.1.2 Cybersecurity	18	93.17
3.1.3 Online access to financial account	n/a	n/a
3.1.4 Internet shopping	n/a	n/a
<b>2nd sub-pillar: Regulation</b>		
3.2.1 Regulatory quality	55	58.24
3.2.2 ICT regulatory environment	30	91.89
3.2.3 Legal framework's adaptability to emerging technologies	30	61.39
3.2.4 E-commerce legislation	77	75.00
3.2.5 Privacy protection by law content	n/a	n/a
<b>3rd sub-pillar: Inclusion</b>		
3.3.1 E-Participation	38	82.71
3.3.2 Socioeconomic gap in use of digital payments	n/a	n/a
3.3.3 Availability of local online content	41	74.51
3.3.4 Gender gap in internet use	3	78.63
3.3.5 Rural gap in use of digital payments	n/a	n/a
<b>D. Impact pillar</b>		
<b>1st sub-pillar: Economy</b>		
4.1.1 Medium and high-tech industry	70	27.84
4.1.2 High-tech exports	110	2.39
4.1.3 PCT patent applications	n/a	n/a
4.1.4 Labour productivity per employee	53	32.53
4.1.5 Prevalence of gig economy	29	65.07
<b>2nd sub-pillar: Quality of Life</b>		
4.2.1 Happiness	20	81.77
4.2.2 Freedom to make life choices	17	92.01
4.2.3 Income inequality	n/a	n/a
4.2.4 Healthy life expectancy at birth	74	64.31
<b>3rd sub-pillar: SDG Contribution</b>		
4.3.1 SDG 3: Good Health and Well-Being	73	67.21
4.3.2 SDG 4: Quality Education	n/a	n/a
4.3.3 SDG 5: Gender Equality	90	66.03
4.3.4 SDG 7: Affordable and Clean Energy	91	69.65
4.3.5 SDG 11: Sustainable Cities and Communities	79	52.30

\* Data on indicator 1.2.3 is confidential, but has been included in the computation. Please see Appendix I: Technical Notes for further details.

# Pakistan

	Rank (out of 134)	Score
<b>Network Readiness Index</b>	<b>111</b>	<b>33.29</b>
<b>A. Technology pillar</b>	<b>98</b>	<b>27.66</b>
1st sub-pillar: Access	96	42.77
2nd sub-pillar: Content	101	16.78
3rd sub-pillar: Future Technologies	87	23.42
<b>B. People pillar</b>	<b>106</b>	<b>30.44</b>
1st sub-pillar: Individuals	119	23.77
2nd sub-pillar: Businesses	87	35.45
3rd sub-pillar: Governments	95	32.11
<b>C. Governance pillar</b>	<b>115</b>	<b>36.63</b>
1st sub-pillar: Trust	112	22.21
2nd sub-pillar: Regulation	111	49.13
3rd sub-pillar: Inclusion	120	38.55
<b>D. Impact pillar</b>	<b>110</b>	<b>38.41</b>
1st sub-pillar: Economy	92	18.47
2nd sub-pillar: Quality of Life	93	58.98
3rd sub-pillar: SDG Contribution	124	37.79



## The Network Readiness Index in detail

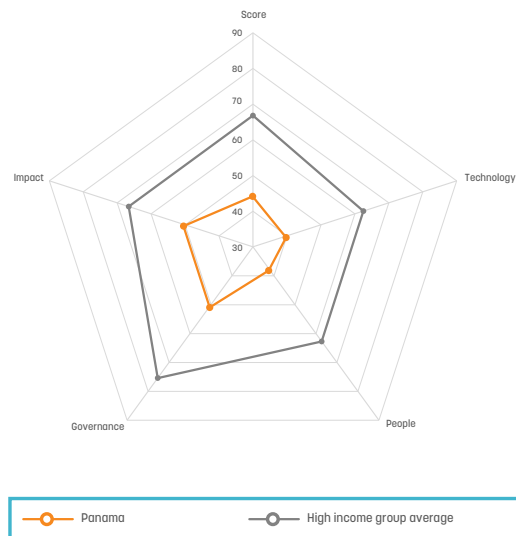
INDICATOR	RANK/134	SCORE
<b>A. Technology pillar</b>		
<b>1st sub-pillar: Access</b>		
1.1.1 Mobile tariffs	67	61.32
1.1.2 Handset prices	102	29.63
1.1.3 Households with internet access	108	21.93
1.1.4 4G mobile network coverage	92	68.60
1.1.5 Fixed-broadband subscriptions	99	12.88
1.1.6 International Internet bandwidth	97	62.26
1.1.7 Internet access in schools	n/a	n/a
<b>2nd sub-pillar: Content</b>		
1.2.1 GitHub commits	108	0.49
1.2.2 Wikipedia edits	105	15.98
1.2.3 Internet domain registrations*	-	-
1.2.4 Mobile apps development	95	50.31
<b>3rd sub-pillar: Future Technologies</b>		
1.3.1 Adoption of emerging technologies	68	45.59
1.3.2 Investment in emerging technology	49	48.24
1.3.3 ICT PCT patent applications	80	0.12
1.3.4 Computer software spending	51	23.17
1.3.5 Robot density	70	0.00
<b>B. People pillar</b>		
<b>1st sub-pillar: Individuals</b>		
2.1.1 Internet users	124	13.25
2.1.2 Active mobile-broadband subscriptions	119	10.25
2.1.3 Use of virtual social networks	111	15.46
2.1.4 Tertiary enrollment	112	5.99
2.1.5 Adult literacy rate	99	47.41
2.1.6 ICT skills	70	50.23
<b>2nd sub-pillar: Businesses</b>		
2.2.1 Firms with website	75	43.42
2.2.2 Ease of doing business	94	54.34
2.2.3 Professionals	106	12.05
2.2.4 Technicians and associate professionals	103	16.39
2.2.5 Business use of digital tools	87	51.04
2.2.6 R&D expenditure by businesses	n/a	n/a
<b>3rd sub-pillar: Governments</b>		
2.3.1 Government online services	80	61.82
2.3.2 Publication and use of open data	103	3.59
2.3.3 Government promotion of investment in emerging technologies	52	42.98
2.3.4 R&D expenditure by governments and higher education	74	20.07

INDICATOR	RANK/134	SCORE
<b>C. Governance pillar</b>		
<b>1st sub-pillar: Trust</b>		
3.1.1 Secure Internet servers	110	33.04
3.1.2 Cybersecurity	94	43.23
3.1.3 Online access to financial account	102	11.51
3.1.4 Internet shopping	123	1.05
<b>2nd sub-pillar: Regulation</b>		
3.2.1 Regulatory quality	110	37.22
3.2.2 ICT regulatory environment	41	89.19
3.2.3 Legal framework's adaptability to emerging technologies	59	43.43
3.2.4 E-commerce legislation	115	50.00
3.2.5 Privacy protection by law content	72	25.79
<b>3rd sub-pillar: Inclusion</b>		
3.3.1 E-Participation	95	50.62
3.3.2 Socioeconomic gap in use of digital payments	102	42.35
3.3.3 Availability of local online content	83	51.53
3.3.4 Gender gap in internet use	87	0.00
3.3.5 Rural gap in use of digital payments	105	48.25
<b>D. Impact pillar</b>		
<b>1st sub-pillar: Economy</b>		
4.1.1 Medium and high-tech industry	63	31.28
4.1.2 High-tech exports	103	4.40
4.1.3 PCT patent applications	87	0.00
4.1.4 Labour productivity per employee	95	8.95
4.1.5 Prevalence of gig economy	52	47.72
<b>2nd sub-pillar: Quality of Life</b>		
4.2.1 Happiness	76	54.61
4.2.2 Freedom to make life choices	84	67.60
4.2.3 Income inequality	40	76.03
4.2.4 Healthy life expectancy at birth	107	37.67
<b>3rd sub-pillar: SDG Contribution</b>		
4.3.1 SDG 3: Good Health and Well-Being	117	27.87
4.3.2 SDG 4: Quality Education	n/a	n/a
4.3.3 SDG 5: Gender Equality	133	0.00
4.3.4 SDG 7: Affordable and Clean Energy	64	80.13
4.3.5 SDG 11: Sustainable Cities and Communities	92	43.14

\* Data on indicator 1.2.3 is confidential, but has been included in the computation. Please see Appendix I: Technical Notes for further details.

# Panama

	Rank (out of 134)	Score
<b>Network Readiness Index</b>	<b>77</b>	<b>44.74</b>
<b>A. Technology pillar</b>	<b>66</b>	<b>39.99</b>
1st sub-pillar: Access	78	54.75
2nd sub-pillar: Content	47	39.34
3rd sub-pillar: Future Technologies	80	25.88
<b>B. People pillar</b>	<b>90</b>	<b>37.75</b>
1st sub-pillar: Individuals	87	50.01
2nd sub-pillar: Businesses	88	35.42
3rd sub-pillar: Governments	102	27.82
<b>C. Governance pillar</b>	<b>82</b>	<b>50.65</b>
1st sub-pillar: Trust	89	30.08
2nd sub-pillar: Regulation	56	68.39
3rd sub-pillar: Inclusion	93	53.47
<b>D. Impact pillar</b>	<b>67</b>	<b>50.57</b>
1st sub-pillar: Economy	105	14.93
2nd sub-pillar: Quality of Life	62	66.46
3rd sub-pillar: SDG Contribution	47	70.34



## The Network Readiness Index in detail

INDICATOR	RANK/134	SCORE
<b>A. Technology pillar</b>		
<b>1st sub-pillar: Access</b>		
1.1.1 Mobile tariffs	76	57.36
1.1.2 Handset prices	28	64.54
1.1.3 Households with internet access	75	60.61
1.1.4 4G mobile network coverage	114	33.00
1.1.5 Fixed-broadband subscriptions	79	41.75
1.1.6 International Internet bandwidth	42	71.22
1.1.7 Internet access in schools	n/a	n/a
<b>2nd sub-pillar: Content</b>		
1.2.1 GitHub commits	54	7.48
1.2.2 Wikipedia edits	60	46.77
1.2.3 Internet domain registrations*	-	-
1.2.4 Mobile apps development	56	67.50
<b>3rd sub-pillar: Future Technologies</b>		
1.3.1 Adoption of emerging technologies	66	47.02
1.3.2 Investment in emerging technology	64	40.39
1.3.3 ICT PCT patent applications	73	0.95
1.3.4 Computer software spending	72	15.15
1.3.5 Robot density	n/a	n/a
<b>B. People pillar</b>		
<b>1st sub-pillar: Individuals</b>		
2.1.1 Internet users	84	56.92
2.1.2 Active mobile-broadband subscriptions	74	26.98
2.1.3 Use of virtual social networks	63	55.67
2.1.4 Tertiary enrollment	64	34.60
2.1.5 Adult literacy rate	45	94.13
2.1.6 ICT skills	112	31.78
<b>2nd sub-pillar: Businesses</b>		
2.2.1 Firms with website	86	35.99
2.2.2 Ease of doing business	81	64.26
2.2.3 Professionals	63	25.61
2.2.4 Technicians and associate professionals	71	30.79
2.2.5 Business use of digital tools	77	55.83
2.2.6 R&D expenditure by businesses	93	0.02
<b>3rd sub-pillar: Governments</b>		
2.3.1 Government online services	81	61.21
2.3.2 Publication and use of open data	77	17.90
2.3.3 Government promotion of investment in emerging technologies	92	28.98
2.3.4 R&D expenditure by governments and higher education	106	3.21

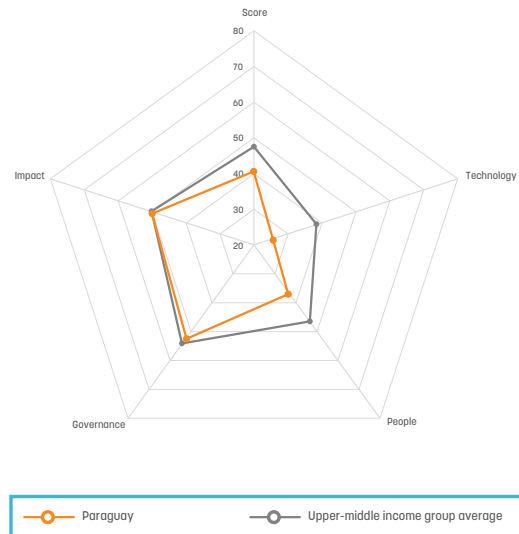
INDICATOR	RANK/134	SCORE
<b>C. Governance pillar</b>		
<b>1st sub-pillar: Trust</b>		
3.1.1 Secure Internet servers	57	60.21
3.1.2 Cybersecurity	99	39.11
3.1.3 Online access to financial account	98	13.18
3.1.4 Internet shopping	81	7.81
<b>2nd sub-pillar: Regulation</b>		
3.2.1 Regulatory quality	52	60.26
3.2.2 ICT regulatory environment	51	86.88
3.2.3 Legal framework's adaptability to emerging technologies	67	40.52
3.2.4 E-commerce legislation	1	100.00
3.2.5 Privacy protection by law content	54	54.30
<b>3rd sub-pillar: Inclusion</b>		
3.3.1 E-Participation	88	56.79
3.3.2 Socioeconomic gap in use of digital payments	107	41.27
3.3.3 Availability of local online content	74	56.08
3.3.4 Gender gap in internet use	4	75.79
3.3.5 Rural gap in use of digital payments	116	37.42
<b>D. Impact pillar</b>		
<b>1st sub-pillar: Economy</b>		
4.1.1 Medium and high-tech industry	112	7.65
4.1.2 High-tech exports	52	17.41
4.1.3 PCT patent applications	49	1.07
4.1.4 Labour productivity per employee	n/a	n/a
4.1.5 Prevalence of gig economy	88	33.59
<b>2nd sub-pillar: Quality of Life</b>		
4.2.1 Happiness	49	66.69
4.2.2 Freedom to make life choices	38	86.35
4.2.3 Income inequality	111	35.57
4.2.4 Healthy life expectancy at birth	31	77.21
<b>3rd sub-pillar: SDG Contribution</b>		
4.3.1 SDG 3: Good Health and Well-Being	25	83.61
4.3.2 SDG 4: Quality Education	77	10.42
4.3.3 SDG 5: Gender Equality	14	86.92
4.3.4 SDG 7: Affordable and Clean Energy	6	95.38
4.3.5 SDG 11: Sustainable Cities and Communities	47	75.36

\* Data on indicator 1.2.3 is confidential, but has been included in the computation. Please see Appendix I: Technical Notes for further details.



# Paraguay

	Rank (out of 134)	Score
<b>Network Readiness Index</b>	<b>92</b>	<b>41.12</b>
<b>A. Technology pillar</b>	<b>105</b>	<b>25.81</b>
1st sub-pillar: Access	106	36.34
2nd sub-pillar: Content	81	23.81
3rd sub-pillar: Future Technologies	113	17.26
<b>B. People pillar</b>	<b>93</b>	<b>36.56</b>
1st sub-pillar: Individuals	90	45.44
2nd sub-pillar: Businesses	85	36.01
3rd sub-pillar: Governments	101	28.23
<b>C. Governance pillar</b>	<b>78</b>	<b>52.08</b>
1st sub-pillar: Trust	86	31.17
2nd sub-pillar: Regulation	84	59.71
3rd sub-pillar: Inclusion	60	65.35
<b>D. Impact pillar</b>	<b>75</b>	<b>50.03</b>
1st sub-pillar: Economy	101	16.88
2nd sub-pillar: Quality of Life	78	62.45
3rd sub-pillar: SDG Contribution	46	70.75



## The Network Readiness Index in detail

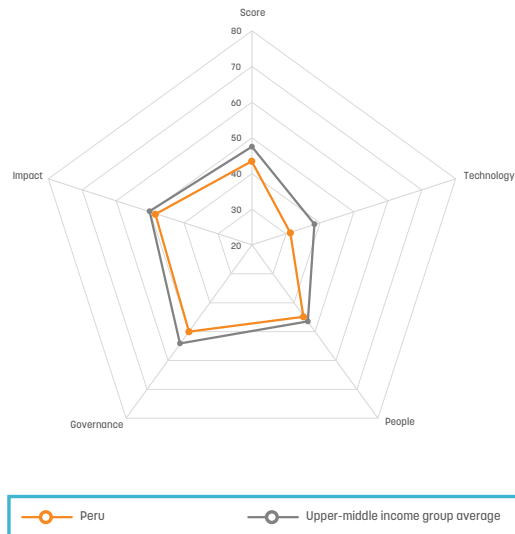
INDICATOR	RANK/134	SCORE
<b>A. Technology pillar</b>		
<b>1st sub-pillar: Access</b>		
1.1.1 Mobile tariffs	84	53.48
1.1.2 Handset prices	68	43.99
1.1.3 Households with internet access	102	24.20
1.1.4 4G mobile network coverage	96	65.00
1.1.5 Fixed-broadband subscriptions	118	0.66
1.1.6 International Internet bandwidth	100	61.69
1.1.7 Internet access in schools	66	5.41
<b>2nd sub-pillar: Content</b>		
1.2.1 GitHub commits	94	1.39
1.2.2 Wikipedia edits	82	34.12
1.2.3 Internet domain registrations*	-	-
1.2.4 Mobile apps development	75	58.12
<b>3rd sub-pillar: Future Technologies</b>		
1.3.1 Adoption of emerging technologies	104	28.79
1.3.2 Investment in emerging technology	120	19.09
1.3.3 ICT PCT patent applications	n/a	n/a
1.3.4 Computer software spending	101	3.91
1.3.5 Robot density	n/a	n/a
<b>B. People pillar</b>		
<b>1st sub-pillar: Individuals</b>		
2.1.1 Internet users	72	64.27
2.1.2 Active mobile-broadband subscriptions	91	21.83
2.1.3 Use of virtual social networks	63	55.67
2.1.4 Tertiary enrollment	78	24.90
2.1.5 Adult literacy rate	54	92.33
2.1.6 ICT skills	127	13.62
<b>2nd sub-pillar: Businesses</b>		
2.2.1 Firms with website	34	72.10
2.2.2 Ease of doing business	105	50.98
2.2.3 Professionals	90	16.07
2.2.4 Technicians and associate professionals	68	31.96
2.2.5 Business use of digital tools	100	44.93
2.2.6 R&D expenditure by businesses	95	0.00
<b>3rd sub-pillar: Governments</b>		
2.3.1 Government online services	64	69.70
2.3.2 Publication and use of open data	53	28.07
2.3.3 Government promotion of investment in emerging technologies	122	6.76
2.3.4 R&D expenditure by governments and higher education	93	8.39

INDICATOR	RANK/134	SCORE
<b>C. Governance pillar</b>		
<b>1st sub-pillar: Trust</b>		
3.1.1 Secure Internet servers	79	46.71
3.1.2 Cybersecurity	68	64.46
3.1.3 Online access to financial account	106	10.29
3.1.4 Internet shopping	111	3.22
<b>2nd sub-pillar: Regulation</b>		
3.2.1 Regulatory quality	80	48.68
3.2.2 ICT regulatory environment	118	58.88
3.2.3 Legal framework's adaptability to emerging technologies	111	14.11
3.2.4 E-commerce legislation	1	100.00
3.2.5 Privacy protection by law content	32	76.89
<b>3rd sub-pillar: Inclusion</b>		
3.3.1 E-Participation	56	74.07
3.3.2 Socioeconomic gap in use of digital payments	70	62.91
3.3.3 Availability of local online content	106	37.28
3.3.4 Gender gap in internet use	7	70.51
3.3.5 Rural gap in use of digital payments	4	81.99
<b>D. Impact pillar</b>		
<b>1st sub-pillar: Economy</b>		
4.1.1 Medium and high-tech industry	71	27.82
4.1.2 High-tech exports	51	18.37
4.1.3 PCT patent applications	n/a	n/a
4.1.4 Labour productivity per employee	84	16.08
4.1.5 Prevalence of gig economy	125	5.26
<b>2nd sub-pillar: Quality of Life</b>		
4.2.1 Happiness	71	58.17
4.2.2 Freedom to make life choices	44	85.18
4.2.3 Income inequality	106	43.30
4.2.4 Healthy life expectancy at birth	80	63.14
<b>3rd sub-pillar: SDG Contribution</b>		
4.3.1 SDG 3: Good Health and Well-Being	73	67.21
4.3.2 SDG 4: Quality Education	n/a	n/a
4.3.3 SDG 5: Gender Equality	66	74.58
4.3.4 SDG 7: Affordable and Clean Energy	60	81.00
4.3.5 SDG 11: Sustainable Cities and Communities	72	60.21

\* Data on indicator 1.2.3 is confidential, but has been included in the computation. Please see Appendix I: Technical Notes for further details.

# Peru

	Rank (out of 134)	Score
<b>Network Readiness Index</b>	<b>80</b>	<b>43.67</b>
<b>A. Technology pillar</b>	<b>90</b>	<b>31.44</b>
1st sub-pillar: Access	87	49.29
2nd sub-pillar: Content	68	28.20
3rd sub-pillar: Future Technologies	115	16.82
<b>B. People pillar</b>	<b>75</b>	<b>44.79</b>
1st sub-pillar: Individuals	75	53.49
2nd sub-pillar: Businesses	58	46.34
3rd sub-pillar: Governments	91	34.52
<b>C. Governance pillar</b>	<b>85</b>	<b>49.98</b>
1st sub-pillar: Trust	101	26.44
2nd sub-pillar: Regulation	55	68.85
3rd sub-pillar: Inclusion	88	54.64
<b>D. Impact pillar</b>	<b>82</b>	<b>48.47</b>
1st sub-pillar: Economy	115	12.51
2nd sub-pillar: Quality of Life	67	65.60
3rd sub-pillar: SDG Contribution	58	67.29



## The Network Readiness Index in detail

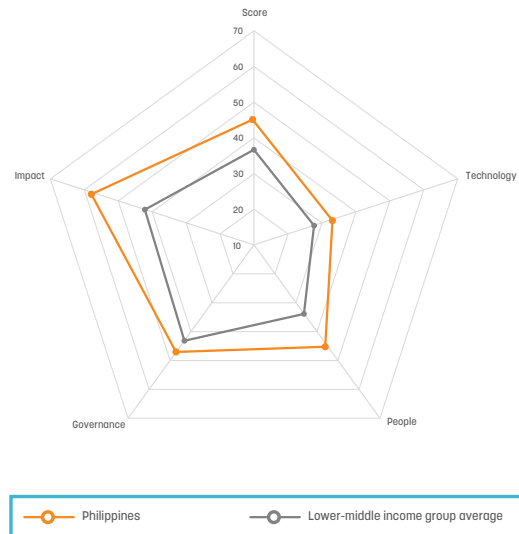
INDICATOR	RANK/134	SCORE
<b>A. Technology pillar</b>		
<b>1st sub-pillar: Access</b>		
1.1.1 Mobile tariffs	14	87.40
1.1.2 Handset prices	52	52.02
1.1.3 Households with internet access	97	29.60
1.1.4 4G mobile network coverage	103	52.24
1.1.5 Fixed-broadband subscriptions	95	17.39
1.1.6 International Internet bandwidth	79	65.61
1.1.7 Internet access in schools	47	40.77
<b>2nd sub-pillar: Content</b>		
1.2.1 GitHub commits	71	3.15
1.2.2 Wikipedia edits	57	49.18
1.2.3 Internet domain registrations*	-	-
1.2.4 Mobile apps development	77	56.92
<b>3rd sub-pillar: Future Technologies</b>		
1.3.1 Adoption of emerging technologies	83	38.64
1.3.2 Investment in emerging technology	108	25.15
1.3.3 ICT PCT patent applications	64	2.39
1.3.4 Computer software spending	67	17.71
1.3.5 Robot density	63	0.19
<b>B. People pillar</b>		
<b>1st sub-pillar: Individuals</b>		
2.1.1 Internet users	90	51.43
2.1.2 Active mobile-broadband subscriptions	82	25.08
2.1.3 Use of virtual social networks	17	73.20
2.1.4 Tertiary enrollment	28	51.49
2.1.5 Adult literacy rate	53	92.83
2.1.6 ICT skills	118	26.93
<b>2nd sub-pillar: Businesses</b>		
2.2.1 Firms with website	39	69.31
2.2.2 Ease of doing business	71	68.04
2.2.3 Professionals	87	16.93
2.2.4 Technicians and associate professionals	75	27.05
2.2.5 Business use of digital tools	89	50.39
2.2.6 R&D expenditure by businesses	n/a	n/a
<b>3rd sub-pillar: Governments</b>		
2.3.1 Government online services	51	74.54
2.3.2 Publication and use of open data	48	33.33
2.3.3 Government promotion of investment in emerging technologies	99	25.40
2.3.4 R&D expenditure by governments and higher education	103	4.82

INDICATOR	RANK/134	SCORE
<b>C. Governance pillar</b>		
<b>1st sub-pillar: Trust</b>		
3.1.1 Secure Internet servers	76	47.50
3.1.2 Cybersecurity	97	42.58
3.1.3 Online access to financial account	107	10.13
3.1.4 Internet shopping	90	5.56
<b>2nd sub-pillar: Regulation</b>		
3.2.1 Regulatory quality	44	62.83
3.2.2 ICT regulatory environment	46	88.03
3.2.3 Legal framework's adaptability to emerging technologies	97	24.52
3.2.4 E-commerce legislation	1	100.00
3.2.5 Privacy protection by law content	n/a	n/a
<b>3rd sub-pillar: Inclusion</b>		
3.3.1 E-Participation	54	75.31
3.3.2 Socioeconomic gap in use of digital payments	114	38.38
3.3.3 Availability of local online content	100	40.45
3.3.4 Gender gap in internet use	73	50.00
3.3.5 Rural gap in use of digital payments	61	69.07
<b>D. Impact pillar</b>		
<b>1st sub-pillar: Economy</b>		
4.1.1 Medium and high-tech industry	87	20.10
4.1.2 High-tech exports	87	8.65
4.1.3 PCT patent applications	62	0.56
4.1.4 Labour productivity per employee	87	14.36
4.1.5 Prevalence of gig economy	113	18.90
<b>2nd sub-pillar: Quality of Life</b>		
4.2.1 Happiness	57	64.99
4.2.2 Freedom to make life choices	69	74.78
4.2.3 Income inequality	92	52.06
4.2.4 Healthy life expectancy at birth	48	70.58
<b>3rd sub-pillar: SDG Contribution</b>		
4.3.1 SDG 3: Good Health and Well-Being	34	80.33
4.3.2 SDG 4: Quality Education	64	28.07
4.3.3 SDG 5: Gender Equality	84	68.87
4.3.4 SDG 7: Affordable and Clean Energy	11	91.98
4.3.5 SDG 11: Sustainable Cities and Communities	62	67.23

\* Data on indicator 1.2.3 is confidential, but has been included in the computation. Please see Appendix I: Technical Notes for further details.

# Philippines

	Rank (out of 134)	Score
<b>Network Readiness Index</b>	<b>74</b>	<b>45.95</b>
<b>A. Technology pillar</b>	<b>80</b>	<b>33.83</b>
1st sub-pillar: Access	83	51.84
2nd sub-pillar: Content	88	22.05
3rd sub-pillar: Future Technologies	68	27.61
<b>B. People pillar</b>	<b>74</b>	<b>45.08</b>
1st sub-pillar: Individuals	54	58.81
2nd sub-pillar: Businesses	95	33.08
3rd sub-pillar: Governments	68	43.34
<b>C. Governance pillar</b>	<b>92</b>	<b>46.91</b>
1st sub-pillar: Trust	79	32.90
2nd sub-pillar: Regulation	79	62.59
3rd sub-pillar: Inclusion	109	45.24
<b>D. Impact pillar</b>	<b>45</b>	<b>57.99</b>
1st sub-pillar: Economy	25	46.21
2nd sub-pillar: Quality of Life	69	65.05
3rd sub-pillar: SDG Contribution	81	62.71



## The Network Readiness Index in detail

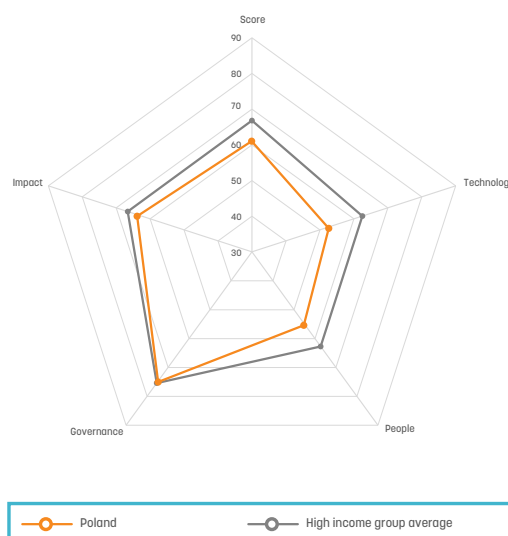
INDICATOR	RANK/134	SCORE
<b>A. Technology pillar</b>		
<b>1st sub-pillar: Access</b>		
1.1.1 Mobile tariffs	106	38.60
1.1.2 Handset prices	86	36.43
1.1.3 Households with internet access	86	42.56
1.1.4 4G mobile network coverage	80	80.00
1.1.5 Fixed-broadband subscriptions	n/a	n/a
1.1.6 International Internet bandwidth	101	61.61
1.1.7 Internet access in schools	n/a	n/a
<b>2nd sub-pillar: Content</b>		
1.2.1 GitHub commits	86	1.77
1.2.2 Wikipedia edits	71	41.07
1.2.3 Internet domain registrations*	-	-
1.2.4 Mobile apps development	101	44.63
<b>3rd sub-pillar: Future Technologies</b>		
1.3.1 Adoption of emerging technologies	52	51.83
1.3.2 Investment in emerging technology	31	61.10
1.3.3 ICT PCT patent applications	69	1.39
1.3.4 Computer software spending	54	22.56
1.3.5 Robot density	51	1.18
<b>B. People pillar</b>		
<b>1st sub-pillar: Individuals</b>		
2.1.1 Internet users	79	59.17
2.1.2 Active mobile-broadband subscriptions	76	26.21
2.1.3 Use of virtual social networks	34	67.01
2.1.4 Tertiary enrollment	76	25.52
2.1.5 Adult literacy rate	29	97.69
2.1.6 ICT skills	21	77.28
<b>2nd sub-pillar: Businesses</b>		
2.2.1 Firms with website	64	49.81
2.2.2 Ease of doing business	87	57.66
2.2.3 Professionals	103	12.88
2.2.4 Technicians and associate professionals	99	17.19
2.2.5 Business use of digital tools	65	59.44
2.2.6 R&D expenditure by businesses	69	1.54
<b>3rd sub-pillar: Governments</b>		
2.3.1 Government online services	59	72.12
2.3.2 Publication and use of open data	22	54.70
2.3.3 Government promotion of investment in emerging technologies	58	39.40
2.3.4 R&D expenditure by governments and higher education	95	7.14

INDICATOR	RANK/134	SCORE
<b>C. Governance pillar</b>		
<b>1st sub-pillar: Trust</b>		
3.1.1 Secure Internet servers	98	37.62
3.1.2 Cybersecurity	60	68.80
3.1.3 Online access to financial account	97	13.55
3.1.4 Internet shopping	71	11.62
<b>2nd sub-pillar: Regulation</b>		
3.2.1 Regulatory quality	66	52.42
3.2.2 ICT regulatory environment	108	64.87
3.2.3 Legal framework's adaptability to emerging technologies	80	31.69
3.2.4 E-commerce legislation	1	100.00
3.2.5 Privacy protection by law content	47	63.96
<b>3rd sub-pillar: Inclusion</b>		
3.3.1 E-Participation	56	74.07
3.3.2 Socioeconomic gap in use of digital payments	126	17.77
3.3.3 Availability of local online content	49	67.52
3.3.4 Gender gap in internet use	n/a	n/a
3.3.5 Rural gap in use of digital payments	123	21.61
<b>D. Impact pillar</b>		
<b>1st sub-pillar: Economy</b>		
4.1.1 Medium and high-tech industry	20	57.04
4.1.2 High-tech exports	1	100.00
4.1.3 PCT patent applications	79	0.07
4.1.4 Labour productivity per employee	89	13.09
4.1.5 Prevalence of gig economy	35	60.82
<b>2nd sub-pillar: Quality of Life</b>		
4.2.1 Happiness	37	70.26
4.2.2 Freedom to make life choices	23	90.88
4.2.3 Income inequality	100	47.94
4.2.4 Healthy life expectancy at birth	96	51.12
<b>3rd sub-pillar: SDG Contribution</b>		
4.3.1 SDG 3: Good Health and Well-Being	96	54.10
4.3.2 SDG 4: Quality Education	78	10.31
4.3.3 SDG 5: Gender Equality	15	86.62
4.3.4 SDG 7: Affordable and Clean Energy	23	88.80
4.3.5 SDG 11: Sustainable Cities and Communities	51	73.70

\* Data on indicator 1.2.3 is confidential, but has been included in the computation. Please see Appendix I: Technical Notes for further details.

# Poland

	Rank (out of 134)	Score
<b>Network Readiness Index</b>	<b>33</b>	<b>61.80</b>
<b>A. Technology pillar</b>	<b>36</b>	<b>52.99</b>
1st sub-pillar: Access	32	80.50
2nd sub-pillar: Content	34	49.78
3rd sub-pillar: Future Technologies	60	28.68
<b>B. People pillar</b>	<b>40</b>	<b>55.14</b>
1st sub-pillar: Individuals	48	59.62
2nd sub-pillar: Businesses	33	58.38
3rd sub-pillar: Governments	50	47.43
<b>C. Governance pillar</b>	<b>27</b>	<b>75.00</b>
1st sub-pillar: Trust	20	74.58
2nd sub-pillar: Regulation	47	71.39
3rd sub-pillar: Inclusion	20	79.02
<b>D. Impact pillar</b>	<b>31</b>	<b>64.08</b>
1st sub-pillar: Economy	41	34.37
2nd sub-pillar: Quality of Life	25	79.02
3rd sub-pillar: SDG Contribution	27	78.85



## The Network Readiness Index in detail

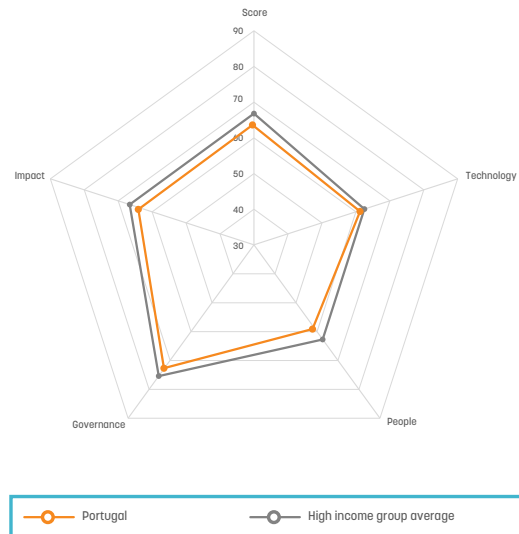
INDICATOR	RANK/134	SCORE
<b>A. Technology pillar</b>		
<b>1st sub-pillar: Access</b>		
1.1.1 Mobile tariffs	10	91.61
1.1.2 Handset prices	42	57.01
1.1.3 Households with internet access	35	84.15
1.1.4 4G mobile network coverage	1	100.00
1.1.5 Fixed-broadband subscriptions	63	67.89
1.1.6 International Internet bandwidth	95	62.86
1.1.7 Internet access in schools	1	100.00
<b>2nd sub-pillar: Content</b>		
1.2.1 GitHub commits	28	29.66
1.2.2 Wikipedia edits	32	73.13
1.2.3 Internet domain registrations*	-	-
1.2.4 Mobile apps development	40	75.37
<b>3rd sub-pillar: Future Technologies</b>		
1.3.1 Adoption of emerging technologies	61	48.92
1.3.2 Investment in emerging technology	73	37.21
1.3.3 ICT PCT patent applications	39	19.58
1.3.4 Computer software spending	43	25.13
1.3.5 Robot density	31	12.54
<b>B. People pillar</b>		
<b>1st sub-pillar: Individuals</b>		
2.1.1 Internet users	47	77.20
2.1.2 Active mobile-broadband subscriptions	3	68.16
2.1.3 Use of virtual social networks	79	49.48
2.1.4 Tertiary enrollment	35	49.35
2.1.5 Adult literacy rate	n/a	n/a
2.1.6 ICT skills	60	53.92
<b>2nd sub-pillar: Businesses</b>		
2.2.1 Firms with website	37	70.49
2.2.2 Ease of doing business	39	81.63
2.2.3 Professionals	20	49.98
2.2.4 Technicians and associate professionals	28	56.36
2.2.5 Business use of digital tools	36	74.78
2.2.6 R&D expenditure by businesses	30	17.04
<b>3rd sub-pillar: Governments</b>		
2.3.1 Government online services	22	85.45
2.3.2 Publication and use of open data	47	33.95
2.3.3 Government promotion of investment in emerging technologies	65	38.08
2.3.4 R&D expenditure by governments and higher education	57	32.23

INDICATOR	RANK/134	SCORE
<b>C. Governance pillar</b>		
<b>1st sub-pillar: Trust</b>		
3.1.1 Secure Internet servers	26	79.26
3.1.2 Cybersecurity	31	87.43
3.1.3 Online access to financial account	15	70.34
3.1.4 Internet shopping	23	61.28
<b>2nd sub-pillar: Regulation</b>		
3.2.1 Regulatory quality	36	70.84
3.2.2 ICT regulatory environment	35	89.77
3.2.3 Legal framework's adaptability to emerging technologies	56	45.62
3.2.4 E-commerce legislation	1	100.00
3.2.5 Privacy protection by law content	57	50.73
<b>3rd sub-pillar: Inclusion</b>		
3.3.1 E-Participation	9	96.30
3.3.2 Socioeconomic gap in use of digital payments	23	92.30
3.3.3 Availability of local online content	51	67.13
3.3.4 Gender gap in internet use	29	65.60
3.3.5 Rural gap in use of digital payments	42	73.79
<b>D. Impact pillar</b>		
<b>1st sub-pillar: Economy</b>		
4.1.1 Medium and high-tech industry	38	45.17
4.1.2 High-tech exports	48	19.14
4.1.3 PCT patent applications	40	2.65
4.1.4 Labour productivity per employee	35	49.64
4.1.5 Prevalence of gig economy	46	55.24
<b>2nd sub-pillar: Quality of Life</b>		
4.2.1 Happiness	40	69.76
4.2.2 Freedom to make life choices	39	86.34
4.2.3 Income inequality	18	85.82
4.2.4 Healthy life expectancy at birth	37	74.16
<b>3rd sub-pillar: SDG Contribution</b>		
4.3.1 SDG 3: Good Health and Well-Being	50	77.05
4.3.2 SDG 4: Quality Education	8	71.56
4.3.3 SDG 5: Gender Equality	12	88.25
4.3.4 SDG 7: Affordable and Clean Energy	62	80.56
4.3.5 SDG 11: Sustainable Cities and Communities	44	76.82

\* Data on indicator 1.2.3 is confidential, but has been included in the computation. Please see Appendix I: Technical Notes for further details.

# Portugal

	Rank (out of 134)	Score
<b>Network Readiness Index</b>	<b>31</b>	<b>64.40</b>
<b>A. Technology pillar</b>	<b>27</b>	<b>62.07</b>
1st sub-pillar: Access	25	83.55
2nd sub-pillar: Content	25	57.49
3rd sub-pillar: Future Technologies	28	45.18
<b>B. People pillar</b>	<b>34</b>	<b>58.93</b>
1st sub-pillar: Individuals	39	62.43
2nd sub-pillar: Businesses	40	55.06
3rd sub-pillar: Governments	27	59.32
<b>C. Governance pillar</b>	<b>34</b>	<b>72.62</b>
1st sub-pillar: Trust	43	56.69
2nd sub-pillar: Regulation	14	85.95
3rd sub-pillar: Inclusion	34	75.23
<b>D. Impact pillar</b>	<b>32</b>	<b>63.97</b>
1st sub-pillar: Economy	51	31.60
2nd sub-pillar: Quality of Life	26	78.56
3rd sub-pillar: SDG Contribution	13	81.73



## The Network Readiness Index in detail

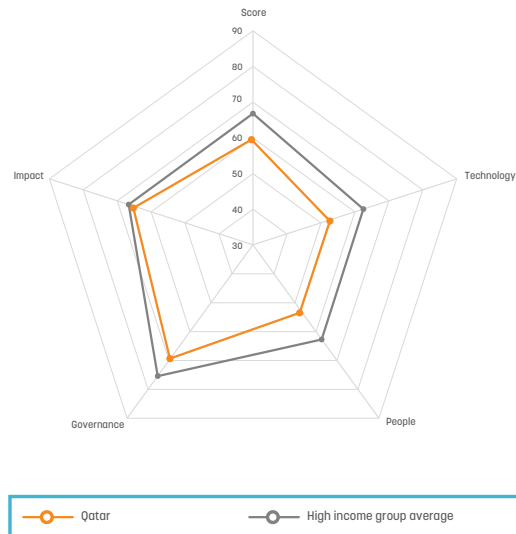
INDICATOR	RANK/134	SCORE
<b>A. Technology pillar</b>		
<b>1st sub-pillar: Access</b>		
1.1.1 Mobile tariffs	47	70.08
1.1.2 Handset prices	22	67.20
1.1.3 Households with internet access	48	79.37
1.1.4 4G mobile network coverage	22	99.20
1.1.5 Fixed-broadband subscriptions	4	99.21
1.1.6 International Internet bandwidth	53	69.81
1.1.7 Internet access in schools	1	100.00
<b>2nd sub-pillar: Content</b>		
1.2.1 GitHub commits	26	30.57
1.2.2 Wikipedia edits	23	79.87
1.2.3 Internet domain registrations*	-	-
1.2.4 Mobile apps development	34	78.76
<b>3rd sub-pillar: Future Technologies</b>		
1.3.1 Adoption of emerging technologies	27	70.91
1.3.2 Investment in emerging technology	39	52.88
1.3.3 ICT PCT patent applications	31	26.14
1.3.4 Computer software spending	8	55.77
1.3.5 Robot density	25	20.21
<b>B. People pillar</b>		
<b>1st sub-pillar: Individuals</b>		
2.1.1 Internet users	52	74.23
2.1.2 Active mobile-broadband subscriptions	70	28.40
2.1.3 Use of virtual social networks	27	69.07
2.1.4 Tertiary enrollment	41	46.48
2.1.5 Adult literacy rate	41	95.06
2.1.6 ICT skills	48	61.35
<b>2nd sub-pillar: Businesses</b>		
2.2.1 Firms with website	57	57.01
2.2.2 Ease of doing business	38	81.78
2.2.3 Professionals	24	46.70
2.2.4 Technicians and associate professionals	47	47.38
2.2.5 Business use of digital tools	27	80.46
2.2.6 R&D expenditure by businesses	31	17.00
<b>3rd sub-pillar: Governments</b>		
2.3.1 Government online services	35	83.03
2.3.2 Publication and use of open data	34	41.89
2.3.3 Government promotion of investment in emerging technologies	29	54.71
2.3.4 R&D expenditure by governments and higher education	22	57.63

INDICATOR	RANK/134	SCORE
<b>C. Governance pillar</b>		
<b>1st sub-pillar: Trust</b>		
3.1.1 Secure Internet servers	31	78.69
3.1.2 Cybersecurity	44	81.26
3.1.3 Online access to financial account	54	34.56
3.1.4 Internet shopping	42	32.24
<b>2nd sub-pillar: Regulation</b>		
3.2.1 Regulatory quality	35	71.02
3.2.2 ICT regulatory environment	11	96.14
3.2.3 Legal framework's adaptability to emerging technologies	28	62.61
3.2.4 E-commerce legislation	1	100.00
3.2.5 Privacy protection by law content	1	100.00
<b>3rd sub-pillar: Inclusion</b>		
3.3.1 E-Participation	41	81.48
3.3.2 Socioeconomic gap in use of digital payments	36	82.32
3.3.3 Availability of local online content	36	77.58
3.3.4 Gender gap in internet use	57	58.97
3.3.5 Rural gap in use of digital payments	26	75.82
<b>D. Impact pillar</b>		
<b>1st sub-pillar: Economy</b>		
4.1.1 Medium and high-tech industry	60	32.55
4.1.2 High-tech exports	71	12.68
4.1.3 PCT patent applications	31	5.54
4.1.4 Labour productivity per employee	41	46.57
4.1.5 Prevalence of gig economy	36	60.68
<b>2nd sub-pillar: Quality of Life</b>		
4.2.1 Happiness	48	66.88
4.2.2 Freedom to make life choices	40	86.25
4.2.3 Income inequality	43	75.26
4.2.4 Healthy life expectancy at birth	22	85.85
<b>3rd sub-pillar: SDG Contribution</b>		
4.3.1 SDG 3: Good Health and Well-Being	18	88.52
4.3.2 SDG 4: Quality Education	27	62.86
4.3.3 SDG 5: Gender Equality	41	79.98
4.3.4 SDG 7: Affordable and Clean Energy	30	87.07
4.3.5 SDG 11: Sustainable Cities and Communities	21	90.24

\* Data on indicator 1.2.3 is confidential, but has been included in the computation. Please see Appendix I: Technical Notes for further details.

# Qatar

	Rank (out of 134)	Score
<b>Network Readiness Index</b>	<b>38</b>	<b>60.26</b>
<b>A. Technology pillar</b>	<b>35</b>	<b>53.38</b>
1st sub-pillar: Access	2	92.28
2nd sub-pillar: Content	72	27.05
3rd sub-pillar: Future Technologies	34	40.81
<b>B. People pillar</b>	<b>45</b>	<b>53.24</b>
1st sub-pillar: Individuals	10	73.17
2nd sub-pillar: Businesses	79	38.32
3rd sub-pillar: Governments	47	48.23
<b>C. Governance pillar</b>	<b>41</b>	<b>69.26</b>
1st sub-pillar: Trust	24	70.41
2nd sub-pillar: Regulation	64	66.85
3rd sub-pillar: Inclusion	46	70.53
<b>D. Impact pillar</b>	<b>30</b>	<b>65.16</b>
1st sub-pillar: Economy	16	56.52
2nd sub-pillar: Quality of Life	22	80.09
3rd sub-pillar: SDG Contribution	88	58.87



## The Network Readiness Index in detail

INDICATOR	RANK/134	SCORE
<b>A. Technology pillar</b>		
<b>1st sub-pillar: Access</b>		
1.1.1 Mobile tariffs	17	84.43
1.1.2 Handset prices	1	100.00
1.1.3 Households with internet access	14	93.97
1.1.4 4G mobile network coverage	19	99.50
1.1.5 Fixed-broadband subscriptions	19	95.48
1.1.6 International Internet bandwidth	36	72.59
1.1.7 Internet access in schools	1	100.00
<b>2nd sub-pillar: Content</b>		
1.2.1 GitHub commits	84	1.89
1.2.2 Wikipedia edits	85	32.84
1.2.3 Internet domain registrations*	-	-
1.2.4 Mobile apps development	51	69.25
<b>3rd sub-pillar: Future Technologies</b>		
1.3.1 Adoption of emerging technologies	35	62.68
1.3.2 Investment in emerging technology	17	71.18
1.3.3 ICT PCT patent applications	n/a	n/a
1.3.4 Computer software spending	31	29.26
1.3.5 Robot density	67	0.10
<b>B. People pillar</b>		
<b>1st sub-pillar: Individuals</b>		
2.1.1 Internet users	1	100.00
2.1.2 Active mobile-broadband subscriptions	14	49.57
2.1.3 Use of virtual social networks	1	100.00
2.1.4 Tertiary enrollment	96	12.55
2.1.5 Adult literacy rate	57	91.62
2.1.6 ICT skills	11	85.28
<b>2nd sub-pillar: Businesses</b>		
2.2.1 Firms with website	n/a	n/a
2.2.2 Ease of doing business	72	67.98
2.2.3 Professionals	72	21.46
2.2.4 Technicians and associate professionals	74	28.83
2.2.5 Business use of digital tools	46	71.05
2.2.6 R&D expenditure by businesses	65	2.28
<b>3rd sub-pillar: Governments</b>		
2.3.1 Government online services	75	64.85
2.3.2 Publication and use of open data	73	19.26
2.3.3 Government promotion of investment in emerging technologies	18	70.33
2.3.4 R&D expenditure by governments and higher education	48	38.48

INDICATOR	RANK/134	SCORE
<b>C. Governance pillar</b>		
<b>1st sub-pillar: Trust</b>		
3.1.1 Secure Internet servers	73	48.50
3.1.2 Cybersecurity	19	92.31
3.1.3 Online access to financial account	n/a	n/a
3.1.4 Internet shopping	n/a	n/a
<b>2nd sub-pillar: Regulation</b>		
3.2.1 Regulatory quality	45	62.76
3.2.2 ICT regulatory environment	102	67.96
3.2.3 Legal framework's adaptability to emerging technologies	22	65.84
3.2.4 E-commerce legislation	1	100.00
3.2.5 Privacy protection by law content	62	37.67
<b>3rd sub-pillar: Inclusion</b>		
3.3.1 E-Participation	76	64.20
3.3.2 Socioeconomic gap in use of digital payments	n/a	n/a
3.3.3 Availability of local online content	29	81.91
3.3.4 Gender gap in internet use	30	65.50
3.3.5 Rural gap in use of digital payments	n/a	n/a
<b>D. Impact pillar</b>		
<b>1st sub-pillar: Economy</b>		
4.1.1 Medium and high-tech industry	9	69.23
4.1.2 High-tech exports	128	0.00
4.1.3 PCT patent applications	n/a	n/a
4.1.4 Labour productivity per employee	5	82.01
4.1.5 Prevalence of gig economy	13	74.83
<b>2nd sub-pillar: Quality of Life</b>		
4.2.1 Happiness	34	72.36
4.2.2 Freedom to make life choices	13	93.38
4.2.3 Income inequality	n/a	n/a
4.2.4 Healthy life expectancy at birth	36	74.53
<b>3rd sub-pillar: SDG Contribution</b>		
4.3.1 SDG 3: Good Health and Well-Being	79	65.57
4.3.2 SDG 4: Quality Education	60	33.47
4.3.3 SDG 5: Gender Equality	1	100.00
4.3.4 SDG 7: Affordable and Clean Energy	95	68.86
4.3.5 SDG 11: Sustainable Cities and Communities	120	26.46

\* Data on indicator 1.2.3 is confidential, but has been included in the computation. Please see Appendix I: Technical Notes for further details.

# Romania

	Rank (out of 134)	Score
<b>Network Readiness Index</b>	<b>49</b>	<b>54.16</b>
<b>A. Technology pillar</b>	<b>46</b>	<b>49.62</b>
1st sub-pillar: Access	18	85.43
2nd sub-pillar: Content	48	38.52
3rd sub-pillar: Future Technologies	82	24.90
<b>B. People pillar</b>	<b>59</b>	<b>49.75</b>
1st sub-pillar: Individuals	49	59.29
2nd sub-pillar: Businesses	49	49.19
3rd sub-pillar: Governments	73	40.77
<b>C. Governance pillar</b>	<b>55</b>	<b>58.69</b>
1st sub-pillar: Trust	59	45.73
2nd sub-pillar: Regulation	54	69.31
3rd sub-pillar: Inclusion	78	61.03
<b>D. Impact pillar</b>	<b>43</b>	<b>58.59</b>
1st sub-pillar: Economy	54	31.57
2nd sub-pillar: Quality of Life	49	71.32
3rd sub-pillar: SDG Contribution	41	72.87



## The Network Readiness Index in detail

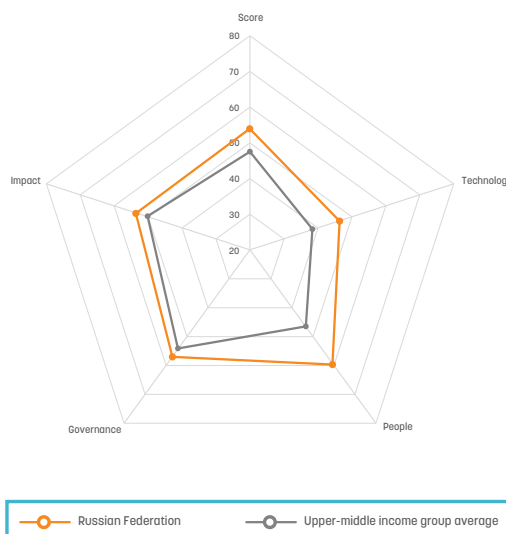
INDICATOR	RANK/134	SCORE
<b>A. Technology pillar</b>		
<b>1st sub-pillar: Access</b>		
1.1.1 Mobile tariffs	1	100.00
1.1.2 Handset prices	9	78.47
1.1.3 Households with internet access	44	80.83
1.1.4 4G mobile network coverage	63	92.56
1.1.5 Fixed-broadband subscriptions	27	92.92
1.1.6 International Internet bandwidth	69	67.82
1.1.7 Internet access in schools	n/a	n/a
<b>2nd sub-pillar: Content</b>		
1.2.1 GitHub commits	44	13.24
1.2.2 Wikipedia edits	55	54.94
1.2.3 Internet domain registrations*	-	-
1.2.4 Mobile apps development	39	75.44
<b>3rd sub-pillar: Future Technologies</b>		
1.3.1 Adoption of emerging technologies	50	52.70
1.3.2 Investment in emerging technology	94	31.16
1.3.3 ICT PCT patent applications	47	9.70
1.3.4 Computer software spending	45	24.69
1.3.5 Robot density	38	6.25
<b>B. People pillar</b>		
<b>1st sub-pillar: Individuals</b>		
2.1.1 Internet users	63	70.13
2.1.2 Active mobile-broadband subscriptions	46	34.14
2.1.3 Use of virtual social networks	61	56.70
2.1.4 Tertiary enrollment	61	35.76
2.1.5 Adult literacy rate	20	98.55
2.1.6 ICT skills	50	60.43
<b>2nd sub-pillar: Businesses</b>		
2.2.1 Firms with website	43	67.68
2.2.2 Ease of doing business	54	76.24
2.2.3 Professionals	42	37.46
2.2.4 Technicians and associate professionals	76	26.91
2.2.5 Business use of digital tools	29	79.57
2.2.6 R&D expenditure by businesses	48	7.30
<b>3rd sub-pillar: Governments</b>		
2.3.1 Government online services	60	71.51
2.3.2 Publication and use of open data	n/a	n/a
2.3.3 Government promotion of investment in emerging technologies	80	32.57
2.3.4 R&D expenditure by governments and higher education	76	18.23

INDICATOR	RANK/134	SCORE
<b>C. Governance pillar</b>		
<b>1st sub-pillar: Trust</b>		
3.1.1 Secure Internet servers	32	78.69
3.1.2 Cybersecurity	74	60.67
3.1.3 Online access to financial account	75	23.59
3.1.4 Internet shopping	59	19.99
<b>2nd sub-pillar: Regulation</b>		
3.2.1 Regulatory quality	51	61.22
3.2.2 ICT regulatory environment	23	93.83
3.2.3 Legal framework's adaptability to emerging technologies	52	47.35
3.2.4 E-commerce legislation	1	100.00
3.2.5 Privacy protection by law content	60	44.15
<b>3rd sub-pillar: Inclusion</b>		
3.3.1 E-Participation	46	80.24
3.3.2 Socioeconomic gap in use of digital payments	103	41.96
3.3.3 Availability of local online content	44	71.84
3.3.4 Gender gap in internet use	45	61.38
3.3.5 Rural gap in use of digital payments	104	49.73
<b>D. Impact pillar</b>		
<b>1st sub-pillar: Economy</b>		
4.1.1 Medium and high-tech industry	23	54.28
4.1.2 High-tech exports	43	20.98
4.1.3 PCT patent applications	51	0.99
4.1.4 Labour productivity per employee	43	43.29
4.1.5 Prevalence of gig economy	75	38.31
<b>2nd sub-pillar: Quality of Life</b>		
4.2.1 Happiness	46	67.56
4.2.2 Freedom to make life choices	56	80.34
4.2.3 Income inequality	59	69.59
4.2.4 Healthy life expectancy at birth	59	67.81
<b>3rd sub-pillar: SDG Contribution</b>		
4.3.1 SDG 3: Good Health and Well-Being	54	75.41
4.3.2 SDG 4: Quality Education	51	39.36
4.3.3 SDG 5: Gender Equality	37	80.74
4.3.4 SDG 7: Affordable and Clean Energy	25	88.51
4.3.5 SDG 11: Sustainable Cities and Communities	37	80.31

\* Data on indicator 1.2.3 is confidential, but has been included in the computation. Please see Appendix I: Technical Notes for further details.

# Russian Federation

	Rank (out of 134)	Score
<b>Network Readiness Index</b>	<b>48</b>	<b>54.23</b>
<b>A. Technology pillar</b>	<b>49</b>	<b>46.62</b>
1st sub-pillar: Access	59	69.68
2nd sub-pillar: Content	45	40.48
3rd sub-pillar: Future Technologies	57	29.70
<b>B. People pillar</b>	<b>31</b>	<b>59.68</b>
1st sub-pillar: Individuals	28	65.88
2nd sub-pillar: Businesses	34	57.80
3rd sub-pillar: Governments	34	55.36
<b>C. Governance pillar</b>	<b>65</b>	<b>56.98</b>
1st sub-pillar: Trust	40	61.93
2nd sub-pillar: Regulation	128	32.60
3rd sub-pillar: Inclusion	30	76.39
<b>D. Impact pillar</b>	<b>60</b>	<b>53.65</b>
1st sub-pillar: Economy	47	32.77
2nd sub-pillar: Quality of Life	89	59.61
3rd sub-pillar: SDG Contribution	51	68.57



## The Network Readiness Index in detail

INDICATOR	RANK/134	SCORE
<b>A. Technology pillar</b>		
<b>1st sub-pillar: Access</b>		
1.1.1 Mobile tariffs	59	66.09
1.1.2 Handset prices	37	58.97
1.1.3 Households with internet access	52	76.52
1.1.4 4G mobile network coverage	90	70.00
1.1.5 Fixed-broadband subscriptions	51	76.74
1.1.6 International Internet bandwidth	54	69.78
1.1.7 Internet access in schools	n/a	n/a
<b>2nd sub-pillar: Content</b>		
1.2.1 GitHub commits	41	13.87
1.2.2 Wikipedia edits	46	64.10
1.2.3 Internet domain registrations*	-	-
1.2.4 Mobile apps development	43	73.15
<b>3rd sub-pillar: Future Technologies</b>		
1.3.1 Adoption of emerging technologies	42	58.81
1.3.2 Investment in emerging technology	47	48.90
1.3.3 ICT PCT patent applications	40	19.45
1.3.4 Computer software spending	63	19.91
1.3.5 Robot density	49	1.42
<b>B. People pillar</b>		
<b>1st sub-pillar: Individuals</b>		
2.1.1 Internet users	36	80.63
2.1.2 Active mobile-broadband subscriptions	49	33.86
2.1.3 Use of virtual social networks	84	47.42
2.1.4 Tertiary enrollment	17	59.72
2.1.5 Adult literacy rate	10	99.69
2.1.6 ICT skills	26	73.95
<b>2nd sub-pillar: Businesses</b>		
2.2.1 Firms with website	58	56.89
2.2.2 Ease of doing business	27	84.78
2.2.3 Professionals	12	59.70
2.2.4 Technicians and associate professionals	32	55.73
2.2.5 Business use of digital tools	41	72.73
2.2.6 R&D expenditure by businesses	32	17.00
<b>3rd sub-pillar: Governments</b>		
2.3.1 Government online services	39	81.21
2.3.2 Publication and use of open data	25	48.53
2.3.3 Government promotion of investment in emerging technologies	33	52.56
2.3.4 R&D expenditure by governments and higher education	47	39.15

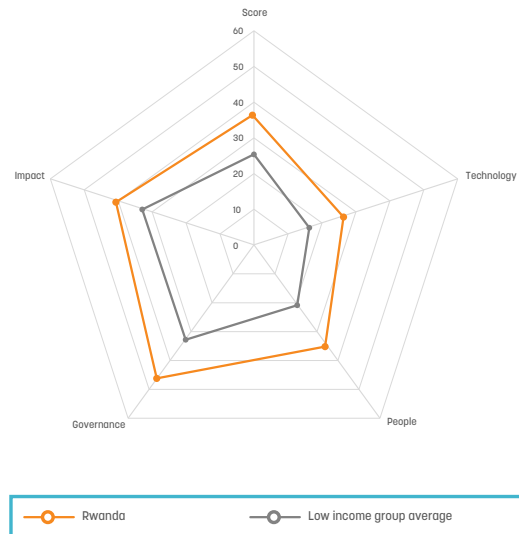
INDICATOR	RANK/134	SCORE
<b>C. Governance pillar</b>		
<b>1st sub-pillar: Trust</b>		
3.1.1 Secure Internet servers	40	72.95
3.1.2 Cybersecurity	28	89.71
3.1.3 Online access to financial account	34	50.60
3.1.4 Internet shopping	40	34.47
<b>2nd sub-pillar: Regulation</b>		
3.2.1 Regulatory quality	105	39.51
3.2.2 ICT regulatory environment	128	35.91
3.2.3 Legal framework's adaptability to emerging technologies	38	53.08
3.2.4 E-commerce legislation	127	25.00
3.2.5 Privacy protection by law content	78	9.50
<b>3rd sub-pillar: Inclusion</b>		
3.3.1 E-Participation	27	86.42
3.3.2 Socioeconomic gap in use of digital payments	33	83.18
3.3.3 Availability of local online content	39	76.58
3.3.4 Gender gap in internet use	35	63.10
3.3.5 Rural gap in use of digital payments	47	72.70
<b>D. Impact pillar</b>		
<b>1st sub-pillar: Economy</b>		
4.1.1 Medium and high-tech industry	49	38.54
4.1.2 High-tech exports	44	20.77
4.1.3 PCT patent applications	44	2.19
4.1.4 Labour productivity per employee	49	35.56
4.1.5 Prevalence of gig economy	25	66.77
<b>2nd sub-pillar: Quality of Life</b>		
4.2.1 Happiness	74	55.44
4.2.2 Freedom to make life choices	98	60.25
4.2.3 Income inequality	67	65.72
4.2.4 Healthy life expectancy at birth	90	57.04
<b>3rd sub-pillar: SDG Contribution</b>		
4.3.1 SDG 3: Good Health and Well-Being	54	75.41
4.3.2 SDG 4: Quality Education	29	61.09
4.3.3 SDG 5: Gender Equality	8	90.43
4.3.4 SDG 7: Affordable and Clean Energy	123	49.13
4.3.5 SDG 11: Sustainable Cities and Communities	63	66.80

\* Data on indicator 1.2.3 is confidential, but has been included in the computation. Please see Appendix I: Technical Notes for further details.



# Rwanda

	Rank (out of 134)	Score
<b>Network Readiness Index</b>	<b>96</b>	<b>37.24</b>
<b>A. Technology pillar</b>	<b>100</b>	<b>27.14</b>
1st sub-pillar: Access	99	39.10
2nd sub-pillar: Content	120	10.51
3rd sub-pillar: Future Technologies	47	31.81
<b>B. People pillar</b>	<b>97</b>	<b>35.01</b>
1st sub-pillar: Individuals	116	25.25
2nd sub-pillar: Businesses	94	33.15
3rd sub-pillar: Governments	57	46.62
<b>C. Governance pillar</b>	<b>95</b>	<b>46.15</b>
1st sub-pillar: Trust	87	31.08
2nd sub-pillar: Regulation	105	51.52
3rd sub-pillar: Inclusion	85	55.85
<b>D. Impact pillar</b>	<b>103</b>	<b>40.67</b>
1st sub-pillar: Economy	84	20.18
2nd sub-pillar: Quality of Life	110	47.52
3rd sub-pillar: SDG Contribution	97	54.30



## The Network Readiness Index in detail

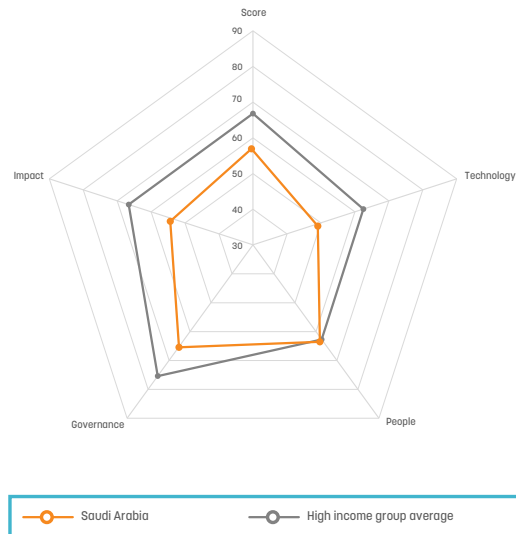
INDICATOR	RANK/134	SCORE
<b>A. Technology pillar</b>		
<b>1st sub-pillar: Access</b>		
1.1.1 Mobile tariffs	116	33.10
1.1.2 Handset prices	129	2.90
1.1.3 Households with internet access	125	9.05
1.1.4 4G mobile network coverage	50	96.60
1.1.5 Fixed-broadband subscriptions	76	45.37
1.1.6 International Internet bandwidth	115	56.67
1.1.7 Internet access in schools	51	30.01
<b>2nd sub-pillar: Content</b>		
1.2.1 GitHub commits	111	0.40
1.2.2 Wikipedia edits	104	16.76
1.2.3 Internet domain registrations*	-	-
1.2.4 Mobile apps development	124	24.76
<b>3rd sub-pillar: Future Technologies</b>		
1.3.1 Adoption of emerging technologies	77	41.88
1.3.2 Investment in emerging technology	42	50.02
1.3.3 ICT PCT patent applications	n/a	n/a
1.3.4 Computer software spending	103	3.54
1.3.5 Robot density	n/a	n/a
<b>B. People pillar</b>		
<b>1st sub-pillar: Individuals</b>		
2.1.1 Internet users	117	19.70
2.1.2 Active mobile-broadband subscriptions	109	14.25
2.1.3 Use of virtual social networks	130	2.89
2.1.4 Tertiary enrollment	116	4.35
2.1.5 Adult literacy rate	91	65.54
2.1.6 ICT skills	81	44.78
<b>2nd sub-pillar: Businesses</b>		
2.2.1 Firms with website	80	38.43
2.2.2 Ease of doing business	37	81.81
2.2.3 Professionals	95	14.49
2.2.4 Technicians and associate professionals	122	4.80
2.2.5 Business use of digital tools	68	58.23
2.2.6 R&D expenditure by businesses	73	1.16
<b>3rd sub-pillar: Governments</b>		
2.3.1 Government online services	83	60.60
2.3.2 Publication and use of open data	72	19.62
2.3.3 Government promotion of investment in emerging technologies	31	54.32
2.3.4 R&D expenditure by governments and higher education	29	51.92

INDICATOR	RANK/134	SCORE
<b>C. Governance pillar</b>		
<b>1st sub-pillar: Trust</b>		
3.1.1 Secure Internet servers	106	34.08
3.1.2 Cybersecurity	51	74.65
3.1.3 Online access to financial account	95	14.35
3.1.4 Internet shopping	122	1.23
<b>2nd sub-pillar: Regulation</b>		
3.2.1 Regulatory quality	64	53.27
3.2.2 ICT regulatory environment	71	82.62
3.2.3 Legal framework's adaptability to emerging technologies	57	44.54
3.2.4 E-commerce legislation	77	75.00
3.2.5 Privacy protection by law content	80	2.18
<b>3rd sub-pillar: Inclusion</b>		
3.3.1 E-Participation	81	61.73
3.3.2 Socioeconomic gap in use of digital payments	111	40.63
3.3.3 Availability of local online content	85	51.40
3.3.4 Gender gap in internet use	n/a	n/a
3.3.5 Rural gap in use of digital payments	59	69.65
<b>D. Impact pillar</b>		
<b>1st sub-pillar: Economy</b>		
4.1.1 Medium and high-tech industry	111	8.22
4.1.2 High-tech exports	37	23.77
4.1.3 PCT patent applications	n/a	n/a
4.1.4 Labour productivity per employee	113	1.61
4.1.5 Prevalence of gig economy	55	47.13
<b>2nd sub-pillar: Quality of Life</b>		
4.2.1 Happiness	131	11.30
4.2.2 Freedom to make life choices	47	83.98
4.2.3 Income inequality	97	49.74
4.2.4 Healthy life expectancy at birth	101	45.06
<b>3rd sub-pillar: SDG Contribution</b>		
4.3.1 SDG 3: Good Health and Well-Being	101	47.54
4.3.2 SDG 4: Quality Education	n/a	n/a
4.3.3 SDG 5: Gender Equality	89	66.14
4.3.4 SDG 7: Affordable and Clean Energy	71	77.60
4.3.5 SDG 11: Sustainable Cities and Communities	121	25.91

\* Data on indicator 1.2.3 is confidential, but has been included in the computation. Please see Appendix I: Technical Notes for further details.

# Saudi Arabia

	Rank (out of 134)	Score
<b>Network Readiness Index</b>	<b>41</b>	<b>57.97</b>
<b>A. Technology pillar</b>	<b>45</b>	<b>49.78</b>
1st sub-pillar: Access	19	84.80
2nd sub-pillar: Content	73	26.91
3rd sub-pillar: Future Technologies	39	37.62
<b>B. People pillar</b>	<b>26</b>	<b>63.01</b>
1st sub-pillar: Individuals	12	72.97
2nd sub-pillar: Businesses	29	59.09
3rd sub-pillar: Governments	32	56.96
<b>C. Governance pillar</b>	<b>45</b>	<b>64.92</b>
1st sub-pillar: Trust	46	52.27
2nd sub-pillar: Regulation	60	67.86
3rd sub-pillar: Inclusion	38	74.64
<b>D. Impact pillar</b>	<b>57</b>	<b>54.17</b>
1st sub-pillar: Economy	29	44.43
2nd sub-pillar: Quality of Life	32	76.08
3rd sub-pillar: SDG Contribution	118	42.00



## The Network Readiness Index in detail

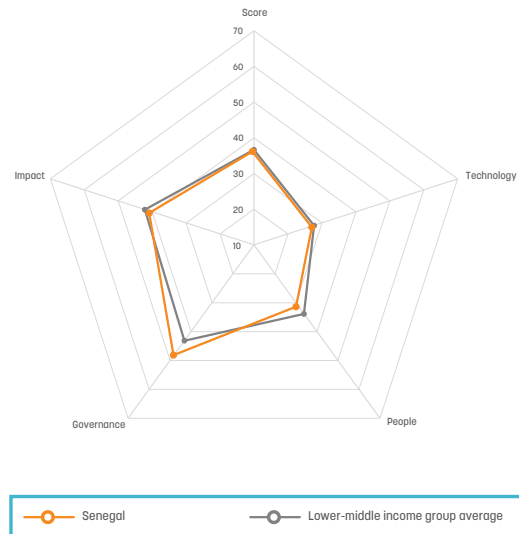
INDICATOR	RANK/134	SCORE
<b>A. Technology pillar</b>		
<b>1st sub-pillar: Access</b>		
1.1.1 Mobile tariffs	20	83.49
1.1.2 Handset prices	44	56.91
1.1.3 Households with internet access	12	94.52
1.1.4 4G mobile network coverage	60	93.10
1.1.5 Fixed-broadband subscriptions	36	87.61
1.1.6 International Internet bandwidth	13	77.96
1.1.7 Internet access in schools	1	100.00
<b>2nd sub-pillar: Content</b>		
1.2.1 GitHub commits	109	0.46
1.2.2 Wikipedia edits	64	44.49
1.2.3 Internet domain registrations*	-	-
1.2.4 Mobile apps development	70	60.75
<b>3rd sub-pillar: Future Technologies</b>		
1.3.1 Adoption of emerging technologies	23	72.31
1.3.2 Investment in emerging technology	30	61.52
1.3.3 ICT PCT patent applications	33	23.87
1.3.4 Computer software spending	29	29.93
1.3.5 Robot density	60	0.47
<b>B. People pillar</b>		
<b>1st sub-pillar: Individuals</b>		
2.1.1 Internet users	12	93.46
2.1.2 Active mobile-broadband subscriptions	22	43.54
2.1.3 Use of virtual social networks	20	72.16
2.1.4 Tertiary enrollment	33	49.50
2.1.5 Adult literacy rate	47	94.02
2.1.6 ICT skills	13	85.11
<b>2nd sub-pillar: Businesses</b>		
2.2.1 Firms with website	n/a	n/a
2.2.2 Ease of doing business	60	73.10
2.2.3 Professionals	58	27.85
2.2.4 Technicians and associate professionals	40	49.70
2.2.5 Business use of digital tools	13	85.73
2.2.6 R&D expenditure by businesses	n/a	n/a
<b>3rd sub-pillar: Governments</b>		
2.3.1 Government online services	70	67.88
2.3.2 Publication and use of open data	75	18.66
2.3.3 Government promotion of investment in emerging technologies	4	84.33
2.3.4 R&D expenditure by governments and higher education	n/a	n/a

INDICATOR	RANK/134	SCORE
<b>C. Governance pillar</b>		
<b>1st sub-pillar: Trust</b>		
3.1.1 Secure Internet servers	91	41.56
3.1.2 Cybersecurity	14	94.58
3.1.3 Online access to financial account	45	40.98
3.1.4 Internet shopping	44	31.95
<b>2nd sub-pillar: Regulation</b>		
3.2.1 Regulatory quality	72	50.40
3.2.2 ICT regulatory environment	23	93.83
3.2.3 Legal framework's adaptability to emerging technologies	12	77.22
3.2.4 E-commerce legislation	115	50.00
3.2.5 Privacy protection by law content	n/a	n/a
<b>3rd sub-pillar: Inclusion</b>		
3.3.1 E-Participation	65	70.37
3.3.2 Socioeconomic gap in use of digital payments	43	79.32
3.3.3 Availability of local online content	10	91.10
3.3.4 Gender gap in internet use	50	60.82
3.3.5 Rural gap in use of digital payments	49	71.56
<b>D. Impact pillar</b>		
<b>1st sub-pillar: Economy</b>		
4.1.1 Medium and high-tech industry	34	48.32
4.1.2 High-tech exports	117	1.16
4.1.3 PCT patent applications	33	5.12
4.1.4 Labour productivity per employee	8	77.24
4.1.5 Prevalence of gig economy	4	90.33
<b>2nd sub-pillar: Quality of Life</b>		
4.2.1 Happiness	27	76.03
4.2.2 Freedom to make life choices	34	87.73
4.2.3 Income inequality	n/a	n/a
4.2.4 Healthy life expectancy at birth	73	64.48
<b>3rd sub-pillar: SDG Contribution</b>		
4.3.1 SDG 3: Good Health and Well-Being	54	75.41
4.3.2 SDG 4: Quality Education	73	18.08
4.3.3 SDG 5: Gender Equality	113	44.61
4.3.4 SDG 7: Affordable and Clean Energy	90	71.89
4.3.5 SDG 11: Sustainable Cities and Communities	129	0.00

\* Data on indicator 1.2.3 is confidential, but has been included in the computation. Please see Appendix I: Technical Notes for further details.

# Senegal

	Rank (out of 134)	Score
<b>Network Readiness Index</b>	<b>100</b>	<b>36.90</b>
<b>A. Technology pillar</b>	<b>97</b>	<b>27.71</b>
1st sub-pillar: Access	111	34.36
2nd sub-pillar: Content	116	11.75
3rd sub-pillar: Future Technologies	41	37.03
<b>B. People pillar</b>	<b>104</b>	<b>31.09</b>
1st sub-pillar: Individuals	110	29.74
2nd sub-pillar: Businesses	115	26.62
3rd sub-pillar: Governments	84	36.91
<b>C. Governance pillar</b>	<b>88</b>	<b>48.05</b>
1st sub-pillar: Trust	111	22.50
2nd sub-pillar: Regulation	62	67.54
3rd sub-pillar: Inclusion	89	54.10
<b>D. Impact pillar</b>	<b>102</b>	<b>40.74</b>
1st sub-pillar: Economy	80	20.85
2nd sub-pillar: Quality of Life	99	54.97
3rd sub-pillar: SDG Contribution	112	46.40



## The Network Readiness Index in detail

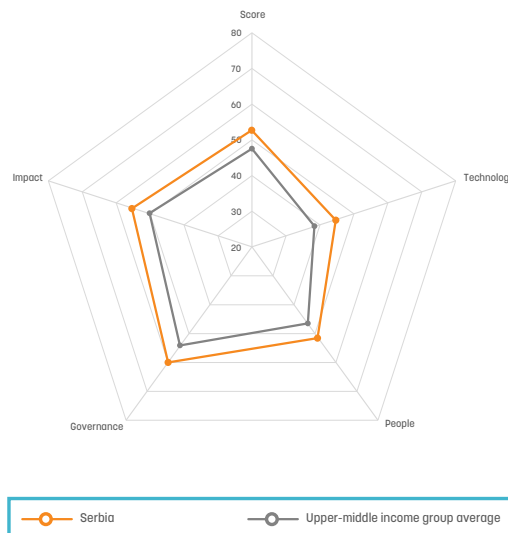
INDICATOR	RANK/134	SCORE
<b>A. Technology pillar</b>		
<b>1st sub-pillar: Access</b>		
1.1.1 Mobile tariffs	100	46.44
1.1.2 Handset prices	106	27.73
1.1.3 Households with internet access	104	23.95
1.1.4 4G mobile network coverage	98	62.00
1.1.5 Fixed-broadband subscriptions	97	15.86
1.1.6 International Internet bandwidth	125	51.87
1.1.7 Internet access in schools	59	12.66
<b>2nd sub-pillar: Content</b>		
1.2.1 GitHub commits	114	0.33
1.2.2 Wikipedia edits	109	14.11
1.2.3 Internet domain registrations*	-	-
1.2.4 Mobile apps development	117	32.07
<b>3rd sub-pillar: Future Technologies</b>		
1.3.1 Adoption of emerging technologies	73	43.93
1.3.2 Investment in emerging technology	60	41.21
1.3.3 ICT PCT patent applications	n/a	n/a
1.3.4 Computer software spending	40	25.94
1.3.5 Robot density	n/a	n/a
<b>B. People pillar</b>		
<b>1st sub-pillar: Individuals</b>		
2.1.1 Internet users	96	44.68
2.1.2 Active mobile-broadband subscriptions	108	15.25
2.1.3 Use of virtual social networks	107	19.59
2.1.4 Tertiary enrollment	100	8.79
2.1.5 Adult literacy rate	100	38.10
2.1.6 ICT skills	68	52.01
<b>2nd sub-pillar: Businesses</b>		
2.2.1 Firms with website	97	29.14
2.2.2 Ease of doing business	103	51.37
2.2.3 Professionals	112	9.09
2.2.4 Technicians and associate professionals	119	5.51
2.2.5 Business use of digital tools	55	64.58
2.2.6 R&D expenditure by businesses	92	0.03
<b>3rd sub-pillar: Governments</b>		
2.3.1 Government online services	105	47.88
2.3.2 Publication and use of open data	96	8.74
2.3.3 Government promotion of investment in emerging technologies	55	40.95
2.3.4 R&D expenditure by governments and higher education	33	50.07

INDICATOR	RANK/134	SCORE
<b>C. Governance pillar</b>		
<b>1st sub-pillar: Trust</b>		
3.1.1 Secure Internet servers	121	23.78
3.1.2 Cybersecurity	102	32.18
3.1.3 Online access to financial account	62	30.80
3.1.4 Internet shopping	110	3.24
<b>2nd sub-pillar: Regulation</b>		
3.2.1 Regulatory quality	79	49.04
3.2.2 ICT regulatory environment	82	79.93
3.2.3 Legal framework's adaptability to emerging technologies	73	37.76
3.2.4 E-commerce legislation	1	100.00
3.2.5 Privacy protection by law content	40	70.96
<b>3rd sub-pillar: Inclusion</b>		
3.3.1 E-Participation	108	41.98
3.3.2 Socioeconomic gap in use of digital payments	62	70.00
3.3.3 Availability of local online content	91	49.61
3.3.4 Gender gap in internet use	n/a	n/a
3.3.5 Rural gap in use of digital payments	89	54.81
<b>D. Impact pillar</b>		
<b>1st sub-pillar: Economy</b>		
4.1.1 Medium and high-tech industry	73	27.47
4.1.2 High-tech exports	115	1.77
4.1.3 PCT patent applications	n/a	n/a
4.1.4 Labour productivity per employee	103	6.87
4.1.5 Prevalence of gig economy	54	47.27
<b>2nd sub-pillar: Quality of Life</b>		
4.2.1 Happiness	75	54.95
4.2.2 Freedom to make life choices	88	65.27
4.2.3 Income inequality	78	58.51
4.2.4 Healthy life expectancy at birth	104	41.14
<b>3rd sub-pillar: SDG Contribution</b>		
4.3.1 SDG 3: Good Health and Well-Being	117	27.87
4.3.2 SDG 4: Quality Education	n/a	n/a
4.3.3 SDG 5: Gender Equality	117	42.70
4.3.4 SDG 7: Affordable and Clean Energy	75	75.36
4.3.5 SDG 11: Sustainable Cities and Communities	103	39.66

\* Data on indicator 1.2.3 is confidential, but has been included in the computation. Please see Appendix I: Technical Notes for further details.

# Serbia

	Rank (out of 134)	Score
<b>Network Readiness Index</b>	<b>52</b>	<b>52.96</b>
<b>A. Technology pillar</b>	<b>53</b>	<b>44.89</b>
1st sub-pillar: Access	51	74.08
2nd sub-pillar: Content	42	41.63
3rd sub-pillar: Future Technologies	103	18.97
<b>B. People pillar</b>	<b>52</b>	<b>51.53</b>
1st sub-pillar: Individuals	65	55.95
2nd sub-pillar: Businesses	48	50.79
3rd sub-pillar: Governments	49	47.84
<b>C. Governance pillar</b>	<b>54</b>	<b>59.99</b>
1st sub-pillar: Trust	57	46.12
2nd sub-pillar: Regulation	63	66.91
3rd sub-pillar: Inclusion	56	66.94
<b>D. Impact pillar</b>	<b>54</b>	<b>55.41</b>
1st sub-pillar: Economy	48	32.72
2nd sub-pillar: Quality of Life	55	68.35
3rd sub-pillar: SDG Contribution	73	65.17



## The Network Readiness Index in detail

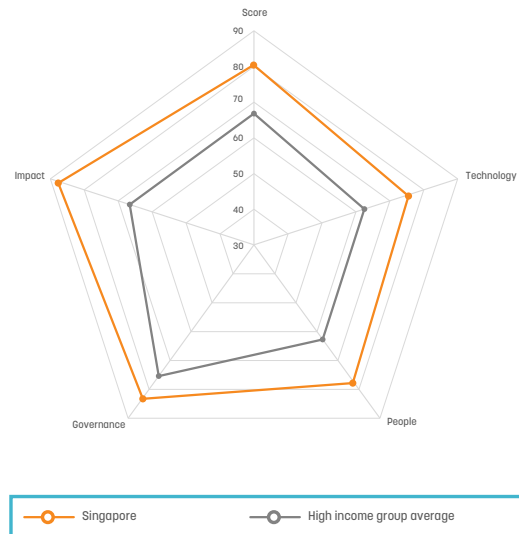
INDICATOR	RANK/134	SCORE
<b>A. Technology pillar</b>		
<b>1st sub-pillar: Access</b>		
1.1.1 Mobile tariffs	58	66.86
1.1.2 Handset prices	66	44.90
1.1.3 Households with internet access	58	72.83
1.1.4 4G mobile network coverage	49	96.70
1.1.5 Fixed-broadband subscriptions	28	92.91
1.1.6 International Internet bandwidth	49	70.29
1.1.7 Internet access in schools	n/a	n/a
<b>2nd sub-pillar: Content</b>		
1.2.1 GitHub commits	37	16.73
1.2.2 Wikipedia edits	36	71.04
1.2.3 Internet domain registrations*	-	-
1.2.4 Mobile apps development	42	73.77
<b>3rd sub-pillar: Future Technologies</b>		
1.3.1 Adoption of emerging technologies	80	40.36
1.3.2 Investment in emerging technology	93	31.34
1.3.3 ICT PCT patent applications	n/a	n/a
1.3.4 Computer software spending	106	3.19
1.3.5 Robot density	53	0.99
<b>B. People pillar</b>		
<b>1st sub-pillar: Individuals</b>		
2.1.1 Internet users	56	72.89
2.1.2 Active mobile-broadband subscriptions	80	25.63
2.1.3 Use of virtual social networks	91	41.24
2.1.4 Tertiary enrollment	36	48.86
2.1.5 Adult literacy rate	21	98.54
2.1.6 ICT skills	74	48.56
<b>2nd sub-pillar: Businesses</b>		
2.2.1 Firms with website	19	80.80
2.2.2 Ease of doing business	43	80.34
2.2.3 Professionals	48	33.09
2.2.4 Technicians and associate professionals	42	48.63
2.2.5 Business use of digital tools	82	52.69
2.2.6 R&D expenditure by businesses	44	9.20
<b>3rd sub-pillar: Governments</b>		
2.3.1 Government online services	42	78.79
2.3.2 Publication and use of open data	65	22.77
2.3.3 Government promotion of investment in emerging technologies	60	38.78
2.3.4 R&D expenditure by governments and higher education	32	51.00

INDICATOR	RANK/134	SCORE
<b>C. Governance pillar</b>		
<b>1st sub-pillar: Trust</b>		
3.1.1 Secure Internet servers	42	71.78
3.1.2 Cybersecurity	60	68.80
3.1.3 Online access to financial account	82	18.74
3.1.4 Internet shopping	52	25.17
<b>2nd sub-pillar: Regulation</b>		
3.2.1 Regulatory quality	67	51.58
3.2.2 ICT regulatory environment	21	94.41
3.2.3 Legal framework's adaptability to emerging technologies	72	38.25
3.2.4 E-commerce legislation	77	75.00
3.2.5 Privacy protection by law content	33	75.34
<b>3rd sub-pillar: Inclusion</b>		
3.3.1 E-Participation	41	81.48
3.3.2 Socioeconomic gap in use of digital payments	55	73.24
3.3.3 Availability of local online content	52	66.45
3.3.4 Gender gap in internet use	72	51.52
3.3.5 Rural gap in use of digital payments	78	62.00
<b>D. Impact pillar</b>		
<b>1st sub-pillar: Economy</b>		
4.1.1 Medium and high-tech industry	57	33.50
4.1.2 High-tech exports	n/a	n/a
4.1.3 PCT patent applications	n/a	n/a
4.1.4 Labour productivity per employee	65	27.67
4.1.5 Prevalence of gig economy	82	36.99
<b>2nd sub-pillar: Quality of Life</b>		
4.2.1 Happiness	41	69.75
4.2.2 Freedom to make life choices	91	64.19
4.2.3 Income inequality	60	69.07
4.2.4 Healthy life expectancy at birth	49	70.37
<b>3rd sub-pillar: SDG Contribution</b>		
4.3.1 SDG 3: Good Health and Well-Being	88	60.66
4.3.2 SDG 4: Quality Education	45	46.26
4.3.3 SDG 5: Gender Equality	53	77.40
4.3.4 SDG 7: Affordable and Clean Energy	109	63.29
4.3.5 SDG 11: Sustainable Cities and Communities	41	78.24

\* Data on indicator 1.2.3 is confidential, but has been included in the computation. Please see Appendix I: Technical Notes for further details.

# Singapore

	Rank (out of 134)	Score
<b>Network Readiness Index</b>	<b>3</b>	<b>81.39</b>
<b>A. Technology pillar</b>	<b>10</b>	<b>76.16</b>
1st sub-pillar: Access	5	89.71
2nd sub-pillar: Content	19	64.36
3rd sub-pillar: Future Technologies	5	74.42
<b>B. People pillar</b>	<b>5</b>	<b>77.86</b>
1st sub-pillar: Individuals	2	79.38
2nd sub-pillar: Businesses	11	72.02
3rd sub-pillar: Governments	4	82.17
<b>C. Governance pillar</b>	<b>13</b>	<b>83.35</b>
1st sub-pillar: Trust	18	77.10
2nd sub-pillar: Regulation	20	84.33
3rd sub-pillar: Inclusion	3	88.63
<b>D. Impact pillar</b>	<b>1</b>	<b>88.17</b>
1st sub-pillar: Economy	1	84.71
2nd sub-pillar: Quality of Life	8	89.38
3rd sub-pillar: SDG Contribution	1	90.43



## The Network Readiness Index in detail

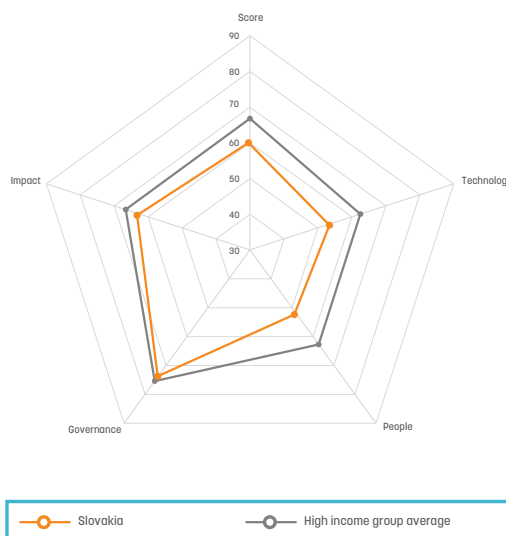
INDICATOR	RANK/134	SCORE
<b>A. Technology pillar</b>		
<b>1st sub-pillar: Access</b>		
1.1.1 Mobile tariffs	7	93.63
1.1.2 Handset prices	27	64.61
1.1.3 Households with internet access	6	97.73
1.1.4 4G mobile network coverage	1	100.00
1.1.5 Fixed-broadband subscriptions	15	95.90
1.1.6 International Internet bandwidth	3	86.40
1.1.7 Internet access in schools	n/a	n/a
<b>2nd sub-pillar: Content</b>		
1.2.1 GitHub commits	17	56.62
1.2.2 Wikipedia edits	29	77.66
1.2.3 Internet domain registrations*	-	-
1.2.4 Mobile apps development	1	100.00
<b>3rd sub-pillar: Future Technologies</b>		
1.3.1 Adoption of emerging technologies	8	88.54
1.3.2 Investment in emerging technology	13	78.60
1.3.3 ICT PCT patent applications	6	79.45
1.3.4 Computer software spending	42	25.50
1.3.5 Robot density	1	100.00
<b>B. People pillar</b>		
<b>1st sub-pillar: Individuals</b>		
2.1.1 Internet users	22	88.16
2.1.2 Active mobile-broadband subscriptions	6	57.60
2.1.3 Use of virtual social networks	10	79.38
2.1.4 Tertiary enrollment	13	61.84
2.1.5 Adult literacy rate	35	96.61
2.1.6 ICT skills	5	92.69
<b>2nd sub-pillar: Businesses</b>		
2.2.1 Firms with website	n/a	n/a
2.2.2 Ease of doing business	2	99.00
2.2.3 Professionals	21	49.44
2.2.4 Technicians and associate professionals	3	94.76
2.2.5 Business use of digital tools	19	83.57
2.2.6 R&D expenditure by businesses	16	33.34
<b>3rd sub-pillar: Governments</b>		
2.3.1 Government online services	5	96.36
2.3.2 Publication and use of open data	23	52.69
2.3.3 Government promotion of investment in emerging technologies	1	100.00
2.3.4 R&D expenditure by governments and higher education	9	79.62

INDICATOR	RANK/134	SCORE
<b>C. Governance pillar</b>		
<b>1st sub-pillar: Trust</b>		
3.1.1 Secure Internet servers	4	93.48
3.1.2 Cybersecurity	6	96.42
3.1.3 Online access to financial account	27	56.92
3.1.4 Internet shopping	22	61.58
<b>2nd sub-pillar: Regulation</b>		
3.2.1 Regulatory quality	2	98.36
3.2.2 ICT regulatory environment	26	93.25
3.2.3 Legal framework's adaptability to emerging technologies	4	86.76
3.2.4 E-commerce legislation	1	100.00
3.2.5 Privacy protection by law content	61	43.30
<b>3rd sub-pillar: Inclusion</b>		
3.3.1 E-Participation	6	97.53
3.3.2 Socioeconomic gap in use of digital payments	25	90.74
3.3.3 Availability of local online content	9	91.63
3.3.4 Gender gap in internet use	33	64.36
3.3.5 Rural gap in use of digital payments	2	98.86
<b>D. Impact pillar</b>		
<b>1st sub-pillar: Economy</b>		
4.1.1 Medium and high-tech industry	1	100.00
4.1.2 High-tech exports	5	98.01
4.1.3 PCT patent applications	12	42.87
4.1.4 Labour productivity per employee	3	97.14
4.1.5 Prevalence of gig economy	9	85.52
<b>2nd sub-pillar: Quality of Life</b>		
4.2.1 Happiness	33	72.44
4.2.2 Freedom to make life choices	9	95.71
4.2.3 Income inequality	n/a	n/a
4.2.4 Healthy life expectancy at birth	1	100.00
<b>3rd sub-pillar: SDG Contribution</b>		
4.3.1 SDG 3: Good Health and Well-Being	6	95.08
4.3.2 SDG 4: Quality Education	2	91.59
4.3.3 SDG 5: Gender Equality	34	81.37
4.3.4 SDG 7: Affordable and Clean Energy	8	93.14
4.3.5 SDG 11: Sustainable Cities and Communities	17	90.95

\* Data on indicator 1.2.3 is confidential, but has been included in the computation. Please see Appendix I: Technical Notes for further details.

# Slovakia

	Rank (out of 134)	Score
<b>Network Readiness Index</b>	<b>35</b>	<b>60.78</b>
<b>A. Technology pillar</b>	<b>34</b>	<b>54.14</b>
1st sub-pillar: Access	38	78.76
2nd sub-pillar: Content	37	44.97
3rd sub-pillar: Future Technologies	37	38.68
<b>B. People pillar</b>	<b>49</b>	<b>52.13</b>
1st sub-pillar: Individuals	80	52.24
2nd sub-pillar: Businesses	30	58.70
3rd sub-pillar: Governments	59	45.44
<b>C. Governance pillar</b>	<b>30</b>	<b>73.69</b>
1st sub-pillar: Trust	31	67.41
2nd sub-pillar: Regulation	33	78.77
3rd sub-pillar: Inclusion	36	74.88
<b>D. Impact pillar</b>	<b>35</b>	<b>63.15</b>
1st sub-pillar: Economy	40	34.75
2nd sub-pillar: Quality of Life	30	76.97
3rd sub-pillar: SDG Contribution	30	77.73



## The Network Readiness Index in detail

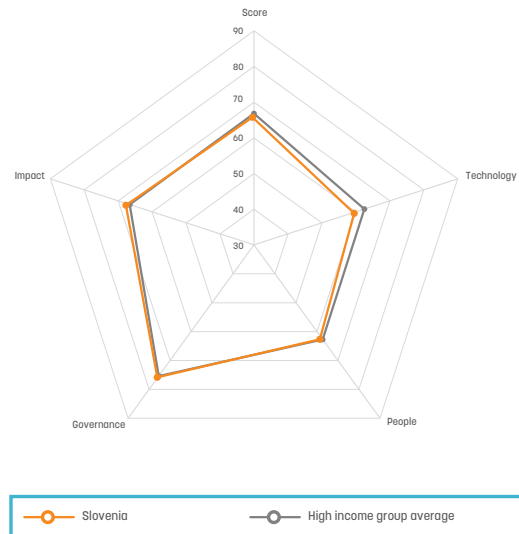
INDICATOR	RANK/134	SCORE
<b>A. Technology pillar</b>		
<b>1st sub-pillar: Access</b>		
1.1.1 Mobile tariffs	36	74.43
1.1.2 Handset prices	48	55.08
1.1.3 Households with internet access	43	81.27
1.1.4 4G mobile network coverage	55	94.00
1.1.5 Fixed-broadband subscriptions	55	74.89
1.1.6 International Internet bandwidth	37	71.96
1.1.7 Internet access in schools	24	99.70
<b>2nd sub-pillar: Content</b>		
1.2.1 GitHub commits	38	16.06
1.2.2 Wikipedia edits	42	66.13
1.2.3 Internet domain registrations*	-	-
1.2.4 Mobile apps development	37	77.00
<b>3rd sub-pillar: Future Technologies</b>		
1.3.1 Adoption of emerging technologies	40	59.51
1.3.2 Investment in emerging technology	44	49.41
1.3.3 ICT PCT patent applications	48	9.12
1.3.4 Computer software spending	39	26.61
1.3.5 Robot density	16	48.76
<b>B. People pillar</b>		
<b>1st sub-pillar: Individuals</b>		
2.1.1 Internet users	38	80.42
2.1.2 Active mobile-broadband subscriptions	52	33.33
2.1.3 Use of virtual social networks	74	50.52
2.1.4 Tertiary enrollment	65	33.74
2.1.5 Adult literacy rate	n/a	n/a
2.1.6 ICT skills	45	63.21
<b>2nd sub-pillar: Businesses</b>		
2.2.1 Firms with website	31	73.94
2.2.2 Ease of doing business	44	80.22
2.2.3 Professionals	49	32.40
2.2.4 Technicians and associate professionals	19	67.86
2.2.5 Business use of digital tools	14	85.56
2.2.6 R&D expenditure by businesses	39	12.20
<b>3rd sub-pillar: Governments</b>		
2.3.1 Government online services	62	70.90
2.3.2 Publication and use of open data	30	44.90
2.3.3 Government promotion of investment in emerging technologies	88	30.15
2.3.4 R&D expenditure by governments and higher education	50	35.81

INDICATOR	RANK/134	SCORE
<b>C. Governance pillar</b>		
<b>1st sub-pillar: Trust</b>		
3.1.1 Secure Internet servers	28	79.06
3.1.2 Cybersecurity	47	78.11
3.1.3 Online access to financial account	24	58.94
3.1.4 Internet shopping	31	53.52
<b>2nd sub-pillar: Regulation</b>		
3.2.1 Regulatory quality	37	69.27
3.2.2 ICT regulatory environment	40	89.39
3.2.3 Legal framework's adaptability to emerging technologies	50	48.15
3.2.4 E-commerce legislation	1	100.00
3.2.5 Privacy protection by law content	14	87.04
<b>3rd sub-pillar: Inclusion</b>		
3.3.1 E-Participation	69	69.14
3.3.2 Socioeconomic gap in use of digital payments	39	80.38
3.3.3 Availability of local online content	28	82.95
3.3.4 Gender gap in internet use	24	66.50
3.3.5 Rural gap in use of digital payments	29	75.42
<b>D. Impact pillar</b>		
<b>1st sub-pillar: Economy</b>		
4.1.1 Medium and high-tech industry	12	65.65
4.1.2 High-tech exports	46	20.14
4.1.3 PCT patent applications	38	3.16
4.1.4 Labour productivity per employee	40	46.82
4.1.5 Prevalence of gig economy	76	37.99
<b>2nd sub-pillar: Quality of Life</b>		
4.2.1 Happiness	39	69.79
4.2.2 Freedom to make life choices	85	67.36
4.2.3 Income inequality	3	97.42
4.2.4 Healthy life expectancy at birth	40	73.30
<b>3rd sub-pillar: SDG Contribution</b>		
4.3.1 SDG 3: Good Health and Well-Being	34	80.33
4.3.2 SDG 4: Quality Education	31	60.48
4.3.3 SDG 5: Gender Equality	27	82.80
4.3.4 SDG 7: Affordable and Clean Energy	65	79.55
4.3.5 SDG 11: Sustainable Cities and Communities	30	85.51

\* Data on indicator 1.2.3 is confidential, but has been included in the computation. Please see Appendix I: Technical Notes for further details.

# Slovenia

	Rank (out of 134)	Score
<b>Network Readiness Index</b>	<b>27</b>	<b>66.58</b>
<b>A. Technology pillar</b>	<b>29</b>	<b>60.31</b>
1st sub-pillar: Access	24	83.66
2nd sub-pillar: Content	26	57.10
3rd sub-pillar: Future Technologies	35	40.18
<b>B. People pillar</b>	<b>28</b>	<b>62.53</b>
1st sub-pillar: Individuals	34	64.89
2nd sub-pillar: Businesses	23	65.09
3rd sub-pillar: Governments	30	57.63
<b>C. Governance pillar</b>	<b>25</b>	<b>75.81</b>
1st sub-pillar: Trust	28	67.70
2nd sub-pillar: Regulation	21	83.57
3rd sub-pillar: Inclusion	31	76.16
<b>D. Impact pillar</b>	<b>25</b>	<b>67.67</b>
1st sub-pillar: Economy	43	33.47
2nd sub-pillar: Quality of Life	9	88.97
3rd sub-pillar: SDG Contribution	18	80.57



## The Network Readiness Index in detail

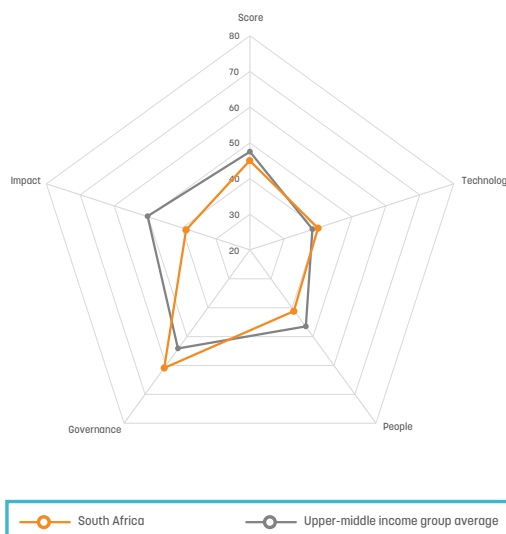
INDICATOR	RANK/134	SCORE
<b>A. Technology pillar</b>		
<b>1st sub-pillar: Access</b>		
1.1.1 Mobile tariffs	29	78.51
1.1.2 Handset prices	38	58.52
1.1.3 Households with internet access	29	86.65
1.1.4 4G mobile network coverage	19	99.50
1.1.5 Fixed-broadband subscriptions	37	87.57
1.1.6 International Internet bandwidth	18	74.89
1.1.7 Internet access in schools	1	100.00
<b>2nd sub-pillar: Content</b>		
1.2.1 GitHub commits	23	33.12
1.2.2 Wikipedia edits	19	81.99
1.2.3 Internet domain registrations*	-	-
1.2.4 Mobile apps development	19	85.63
<b>3rd sub-pillar: Future Technologies</b>		
1.3.1 Adoption of emerging technologies	28	69.85
1.3.2 Investment in emerging technology	41	51.61
1.3.3 ICT PCT patent applications	37	20.41
1.3.4 Computer software spending	90	7.50
1.3.5 Robot density	13	51.53
<b>B. People pillar</b>		
<b>1st sub-pillar: Individuals</b>		
2.1.1 Internet users	41	79.48
2.1.2 Active mobile-broadband subscriptions	61	29.96
2.1.3 Use of virtual social networks	68	52.58
2.1.4 Tertiary enrollment	21	57.27
2.1.5 Adult literacy rate	11	99.65
2.1.6 ICT skills	36	70.42
<b>2nd sub-pillar: Businesses</b>		
2.2.1 Firms with website	14	85.05
2.2.2 Ease of doing business	36	81.87
2.2.3 Professionals	15	56.41
2.2.4 Technicians and associate professionals	35	55.05
2.2.5 Business use of digital tools	34	76.57
2.2.6 R&D expenditure by businesses	14	35.56
<b>3rd sub-pillar: Governments</b>		
2.3.1 Government online services	24	84.84
2.3.2 Publication and use of open data	n/a	n/a
2.3.3 Government promotion of investment in emerging technologies	48	46.03
2.3.4 R&D expenditure by governments and higher education	44	42.00

INDICATOR	RANK/134	SCORE
<b>C. Governance pillar</b>		
<b>1st sub-pillar: Trust</b>		
3.1.1 Secure Internet servers	13	85.05
3.1.2 Cybersecurity	50	75.08
3.1.3 Online access to financial account	30	52.32
3.1.4 Internet shopping	27	58.35
<b>2nd sub-pillar: Regulation</b>		
3.2.1 Regulatory quality	38	66.72
3.2.2 ICT regulatory environment	16	95.56
3.2.3 Legal framework's adaptability to emerging technologies	34	58.57
3.2.4 E-commerce legislation	1	100.00
3.2.5 Privacy protection by law content	3	97.02
<b>3rd sub-pillar: Inclusion</b>		
3.3.1 E-Participation	29	85.18
3.3.2 Socioeconomic gap in use of digital payments	17	95.23
3.3.3 Availability of local online content	48	68.28
3.3.4 Gender gap in internet use	64	57.57
3.3.5 Rural gap in use of digital payments	36	74.54
<b>D. Impact pillar</b>		
<b>1st sub-pillar: Economy</b>		
4.1.1 Medium and high-tech industry	36	47.78
4.1.2 High-tech exports	69	12.91
4.1.3 PCT patent applications	23	17.21
4.1.4 Labour productivity per employee	34	49.99
4.1.5 Prevalence of gig economy	72	39.47
<b>2nd sub-pillar: Quality of Life</b>		
4.2.1 Happiness	25	78.08
4.2.2 Freedom to make life choices	7	96.96
4.2.3 Income inequality	1	100.00
4.2.4 Healthy life expectancy at birth	29	80.85
<b>3rd sub-pillar: SDG Contribution</b>		
4.3.1 SDG 3: Good Health and Well-Being	25	83.61
4.3.2 SDG 4: Quality Education	12	69.02
4.3.3 SDG 5: Gender Equality	19	86.24
4.3.4 SDG 7: Affordable and Clean Energy	70	77.75
4.3.5 SDG 11: Sustainable Cities and Communities	29	86.24

\* Data on indicator 1.2.3 is confidential, but has been included in the computation. Please see Appendix I: Technical Notes for further details.

# South Africa

	Rank (out of 134)	Score
<b>Network Readiness Index</b>	<b>76</b>	<b>45.26</b>
<b>A. Technology pillar</b>	<b>64</b>	<b>40.23</b>
1st sub-pillar: Access	69	61.79
2nd sub-pillar: Content	71	27.20
3rd sub-pillar: Future Technologies	48	31.68
<b>B. People pillar</b>	<b>83</b>	<b>41.16</b>
1st sub-pillar: Individuals	97	40.69
2nd sub-pillar: Businesses	81	37.48
3rd sub-pillar: Governments	62	45.30
<b>C. Governance pillar</b>	<b>52</b>	<b>60.88</b>
1st sub-pillar: Trust	58	46.08
2nd sub-pillar: Regulation	59	68.11
3rd sub-pillar: Inclusion	52	68.44
<b>D. Impact pillar</b>	<b>109</b>	<b>38.80</b>
1st sub-pillar: Economy	78	21.27
2nd sub-pillar: Quality of Life	127	34.66
3rd sub-pillar: SDG Contribution	86	60.46



## The Network Readiness Index in detail

INDICATOR	RANK/134	SCORE
<b>A. Technology pillar</b>		
<b>1st sub-pillar: Access</b>		
1.1.1 Mobile tariffs	63	64.43
1.1.2 Handset prices	47	55.16
1.1.3 Households with internet access	73	61.73
1.1.4 4G mobile network coverage	65	90.32
1.1.5 Fixed-broadband subscriptions	80	41.30
1.1.6 International Internet bandwidth	113	57.78
1.1.7 Internet access in schools	n/a	n/a
<b>2nd sub-pillar: Content</b>		
1.2.1 GitHub commits	58	4.77
1.2.2 Wikipedia edits	83	33.93
1.2.3 Internet domain registrations*	-	-
1.2.4 Mobile apps development	67	63.11
<b>3rd sub-pillar: Future Technologies</b>		
1.3.1 Adoption of emerging technologies	33	64.29
1.3.2 Investment in emerging technology	40	51.83
1.3.3 ICT PCT patent applications	44	11.30
1.3.4 Computer software spending	48	23.65
1.3.5 Robot density	36	7.36
<b>B. People pillar</b>		
<b>1st sub-pillar: Individuals</b>		
2.1.1 Internet users	87	55.17
2.1.2 Active mobile-broadband subscriptions	66	29.27
2.1.3 Use of virtual social networks	98	36.08
2.1.4 Tertiary enrollment	91	15.87
2.1.5 Adult literacy rate	70	83.35
2.1.6 ICT skills	121	24.43
<b>2nd sub-pillar: Businesses</b>		
2.2.1 Firms with website	94	30.77
2.2.2 Ease of doing business	79	65.07
2.2.3 Professionals	101	12.95
2.2.4 Technicians and associate professionals	57	36.99
2.2.5 Business use of digital tools	49	70.45
2.2.6 R&D expenditure by businesses	45	8.66
<b>3rd sub-pillar: Governments</b>		
2.3.1 Government online services	54	73.94
2.3.2 Publication and use of open data	46	34.43
2.3.3 Government promotion of investment in emerging technologies	83	31.77
2.3.4 R&D expenditure by governments and higher education	45	41.05

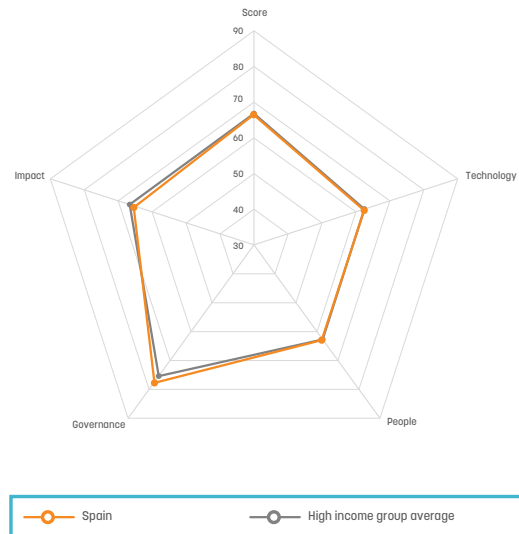
INDICATOR	RANK/134	SCORE
<b>C. Governance pillar</b>		
<b>1st sub-pillar: Trust</b>		
3.1.1 Secure Internet servers	36	76.38
3.1.2 Cybersecurity	57	69.77
3.1.3 Online access to financial account	67	28.13
3.1.4 Internet shopping	74	10.05
<b>2nd sub-pillar: Regulation</b>		
3.2.1 Regulatory quality	60	55.20
3.2.2 ICT regulatory environment	99	69.88
3.2.3 Legal framework's adaptability to emerging technologies	41	51.13
3.2.4 E-commerce legislation	1	100.00
3.2.5 Privacy protection by law content	46	64.33
<b>3rd sub-pillar: Inclusion</b>		
3.3.1 E-Participation	56	74.07
3.3.2 Socioeconomic gap in use of digital payments	52	74.94
3.3.3 Availability of local online content	90	49.81
3.3.4 Gender gap in internet use	n/a	n/a
3.3.5 Rural gap in use of digital payments	35	74.94
<b>D. Impact pillar</b>		
<b>1st sub-pillar: Economy</b>		
4.1.1 Medium and high-tech industry	64	31.04
4.1.2 High-tech exports	76	10.08
4.1.3 PCT patent applications	47	1.30
4.1.4 Labour productivity per employee	62	28.34
4.1.5 Prevalence of gig economy	85	35.60
<b>2nd sub-pillar: Quality of Life</b>		
4.2.1 Happiness	93	46.03
4.2.2 Freedom to make life choices	95	61.79
4.2.3 Income inequality	121	0.00
4.2.4 Healthy life expectancy at birth	115	30.83
<b>3rd sub-pillar: SDG Contribution</b>		
4.3.1 SDG 3: Good Health and Well-Being	73	67.21
4.3.2 SDG 4: Quality Education	n/a	n/a
4.3.3 SDG 5: Gender Equality	40	80.02
4.3.4 SDG 7: Affordable and Clean Energy	122	49.28
4.3.5 SDG 11: Sustainable Cities and Communities	90	45.34

\* Data on indicator 1.2.3 is confidential, but has been included in the computation. Please see Appendix I: Technical Notes for further details.



# Spain

	Rank (out of 134)	Score
<b>Network Readiness Index</b>	<b>25</b>	<b>67.31</b>
<b>A. Technology pillar</b>	<b>25</b>	<b>62.96</b>
1st sub-pillar: Access	23	83.99
2nd sub-pillar: Content	30	54.08
3rd sub-pillar: Future Technologies	20	50.82
<b>B. People pillar</b>	<b>27</b>	<b>62.82</b>
1st sub-pillar: Individuals	27	67.52
2nd sub-pillar: Businesses	31	58.65
3rd sub-pillar: Governments	21	62.30
<b>C. Governance pillar</b>	<b>22</b>	<b>77.76</b>
1st sub-pillar: Trust	25	70.01
2nd sub-pillar: Regulation	26	81.12
3rd sub-pillar: Inclusion	16	82.14
<b>D. Impact pillar</b>	<b>27</b>	<b>65.68</b>
1st sub-pillar: Economy	34	38.12
2nd sub-pillar: Quality of Life	31	76.87
3rd sub-pillar: SDG Contribution	11	82.06



## The Network Readiness Index in detail

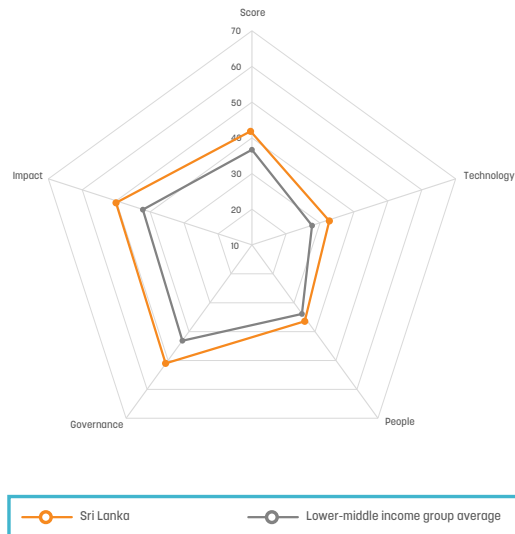
INDICATOR	RANK/134	SCORE
<b>A. Technology pillar</b>		
<b>1st sub-pillar: Access</b>		
1.1.1 Mobile tariffs	28	79.58
1.1.2 Handset prices	31	64.23
1.1.3 Households with internet access	30	86.36
1.1.4 4G mobile network coverage	43	97.80
1.1.5 Fixed-broadband subscriptions	14	96.04
1.1.6 International Internet bandwidth	86	63.88
1.1.7 Internet access in schools	1	100.00
<b>2nd sub-pillar: Content</b>		
1.2.1 GitHub commits	30	28.23
1.2.2 Wikipedia edits	25	79.36
1.2.3 Internet domain registrations*	-	-
1.2.4 Mobile apps development	25	83.71
<b>3rd sub-pillar: Future Technologies</b>		
1.3.1 Adoption of emerging technologies	29	68.80
1.3.2 Investment in emerging technology	56	43.01
1.3.3 ICT PCT patent applications	29	31.42
1.3.4 Computer software spending	5	61.13
1.3.5 Robot density	15	49.72
<b>B. People pillar</b>		
<b>1st sub-pillar: Individuals</b>		
2.1.1 Internet users	26	86.03
2.1.2 Active mobile-broadband subscriptions	30	38.41
2.1.3 Use of virtual social networks	47	61.86
2.1.4 Tertiary enrollment	5	64.83
2.1.5 Adult literacy rate	25	98.02
2.1.6 ICT skills	58	56.00
<b>2nd sub-pillar: Businesses</b>		
2.2.1 Firms with website	27	77.05
2.2.2 Ease of doing business	29	84.38
2.2.3 Professionals	30	44.82
2.2.4 Technicians and associate professionals	43	48.54
2.2.5 Business use of digital tools	28	80.21
2.2.6 R&D expenditure by businesses	33	16.90
<b>3rd sub-pillar: Governments</b>		
2.3.1 Government online services	17	88.48
2.3.2 Publication and use of open data	12	73.36
2.3.3 Government promotion of investment in emerging technologies	62	38.29
2.3.4 R&D expenditure by governments and higher education	34	49.05

INDICATOR	RANK/134	SCORE
<b>C. Governance pillar</b>		
<b>1st sub-pillar: Trust</b>		
3.1.1 Secure Internet servers	34	78.06
3.1.2 Cybersecurity	7	96.21
3.1.3 Online access to financial account	50	36.31
3.1.4 Internet shopping	18	69.47
<b>2nd sub-pillar: Regulation</b>		
3.2.1 Regulatory quality	33	72.23
3.2.2 ICT regulatory environment	51	86.88
3.2.3 Legal framework's adaptability to emerging technologies	29	62.08
3.2.4 E-commerce legislation	1	100.00
3.2.5 Privacy protection by law content	17	84.39
<b>3rd sub-pillar: Inclusion</b>		
3.3.1 E-Participation	36	83.95
3.3.2 Socioeconomic gap in use of digital payments	9	97.21
3.3.3 Availability of local online content	21	85.49
3.3.4 Gender gap in internet use	21	66.71
3.3.5 Rural gap in use of digital payments	15	77.36
<b>D. Impact pillar</b>		
<b>1st sub-pillar: Economy</b>		
4.1.1 Medium and high-tech industry	30	50.84
4.1.2 High-tech exports	65	13.63
4.1.3 PCT patent applications	28	9.98
4.1.4 Labour productivity per employee	23	62.32
4.1.5 Prevalence of gig economy	47	53.85
<b>2nd sub-pillar: Quality of Life</b>		
4.2.1 Happiness	28	73.99
4.2.2 Freedom to make life choices	80	68.52
4.2.3 Income inequality	50	72.94
4.2.4 Healthy life expectancy at birth	3	92.01
<b>3rd sub-pillar: SDG Contribution</b>		
4.3.1 SDG 3: Good Health and Well-Being	13	90.16
4.3.2 SDG 4: Quality Education	33	58.69
4.3.3 SDG 5: Gender Equality	47	78.85
4.3.4 SDG 7: Affordable and Clean Energy	29	87.57
4.3.5 SDG 11: Sustainable Cities and Communities	7	95.02

\* Data on indicator 1.2.3 is confidential, but has been included in the computation. Please see Appendix I: Technical Notes for further details.

# Sri Lanka

	Rank (out of 134)	Score
<b>Network Readiness Index</b>	<b>83</b>	<b>42.65</b>
<b>A. Technology pillar</b>	<b>84</b>	<b>33.48</b>
1st sub-pillar: Access	88	47.49
2nd sub-pillar: Content	93	21.10
3rd sub-pillar: Future Technologies	46	31.86
<b>B. People pillar</b>	<b>94</b>	<b>36.15</b>
1st sub-pillar: Individuals	99	39.90
2nd sub-pillar: Businesses	114	27.02
3rd sub-pillar: Governments	72	41.52
<b>C. Governance pillar</b>	<b>81</b>	<b>50.91</b>
1st sub-pillar: Trust	96	27.27
2nd sub-pillar: Regulation	87	58.57
3rd sub-pillar: Inclusion	57	66.89
<b>D. Impact pillar</b>	<b>74</b>	<b>50.05</b>
1st sub-pillar: Economy	95	17.96
2nd sub-pillar: Quality of Life	95	58.62
3rd sub-pillar: SDG Contribution	39	73.57



## The Network Readiness Index in detail

INDICATOR	RANK/134	SCORE
<b>A. Technology pillar</b>		
<b>1st sub-pillar: Access</b>		
1.1.1 Mobile tariffs	21	83.17
1.1.2 Handset prices	84	36.79
1.1.3 Households with internet access	103	24.15
1.1.4 4G mobile network coverage	64	91.00
1.1.5 Fixed-broadband subscriptions	90	22.40
1.1.6 International Internet bandwidth	93	62.98
1.1.7 Internet access in schools	60	11.90
<b>2nd sub-pillar: Content</b>		
1.2.1 GitHub commits	61	4.28
1.2.2 Wikipedia edits	94	25.80
1.2.3 Internet domain registrations*	-	-
1.2.4 Mobile apps development	87	53.51
<b>3rd sub-pillar: Future Technologies</b>		
1.3.1 Adoption of emerging technologies	45	56.01
1.3.2 Investment in emerging technology	70	38.35
1.3.3 ICT PCT patent applications	58	3.40
1.3.4 Computer software spending	30	29.68
1.3.5 Robot density	n/a	n/a
<b>B. People pillar</b>		
<b>1st sub-pillar: Individuals</b>		
2.1.1 Internet users	104	32.43
2.1.2 Active mobile-broadband subscriptions	90	22.28
2.1.3 Use of virtual social networks	102	28.87
2.1.4 Tertiary enrollment	94	13.85
2.1.5 Adult literacy rate	62	89.36
2.1.6 ICT skills	65	52.61
<b>2nd sub-pillar: Businesses</b>		
2.2.1 Firms with website	119	10.56
2.2.2 Ease of doing business	89	55.85
2.2.3 Professionals	89	16.28
2.2.4 Technicians and associate professionals	58	35.21
2.2.5 Business use of digital tools	102	43.30
2.2.6 R&D expenditure by businesses	76	0.93
<b>3rd sub-pillar: Governments</b>		
2.3.1 Government online services	62	70.90
2.3.2 Publication and use of open data	n/a	n/a
2.3.3 Government promotion of investment in emerging technologies	40	49.22
2.3.4 R&D expenditure by governments and higher education	104	4.44

INDICATOR	RANK/134	SCORE
<b>C. Governance pillar</b>		
<b>1st sub-pillar: Trust</b>		
3.1.1 Secure Internet servers	80	46.24
3.1.2 Cybersecurity	84	49.62
3.1.3 Online access to financial account	110	9.76
3.1.4 Internet shopping	107	3.45
<b>2nd sub-pillar: Regulation</b>		
3.2.1 Regulatory quality	82	48.06
3.2.2 ICT regulatory environment	117	59.46
3.2.3 Legal framework's adaptability to emerging technologies	44	49.83
3.2.4 E-commerce legislation	77	75.00
3.2.5 Privacy protection by law content	50	60.48
<b>3rd sub-pillar: Inclusion</b>		
3.3.1 E-Participation	65	70.37
3.3.2 Socioeconomic gap in use of digital payments	32	83.98
3.3.3 Availability of local online content	94	47.12
3.3.4 Gender gap in internet use	n/a	n/a
3.3.5 Rural gap in use of digital payments	68	66.10
<b>D. Impact pillar</b>		
<b>1st sub-pillar: Economy</b>		
4.1.1 Medium and high-tech industry	106	9.39
4.1.2 High-tech exports	113	1.93
4.1.3 PCT patent applications	69	0.34
4.1.4 Labour productivity per employee	73	21.99
4.1.5 Prevalence of gig economy	44	56.16
<b>2nd sub-pillar: Quality of Life</b>		
4.2.1 Happiness	120	29.88
4.2.2 Freedom to make life choices	64	76.38
4.2.3 Income inequality	77	59.79
4.2.4 Healthy life expectancy at birth	56	68.43
<b>3rd sub-pillar: SDG Contribution</b>		
4.3.1 SDG 3: Good Health and Well-Being	85	62.30
4.3.2 SDG 4: Quality Education	n/a	n/a
4.3.3 SDG 5: Gender Equality	92	64.29
4.3.4 SDG 7: Affordable and Clean Energy	4	96.39
4.3.5 SDG 11: Sustainable Cities and Communities	56	71.30

\* Data on indicator 1.2.3 is confidential, but has been included in the computation. Please see Appendix I: Technical Notes for further details.

# Sweden

	Rank (out of 134)	Score
<b>Network Readiness Index</b>	<b>1</b>	<b>82.75</b>
<b>A. Technology pillar</b>	<b>2</b>	<b>83.82</b>
1st sub-pillar: Access	14	86.59
2nd sub-pillar: Content	6	81.66
3rd sub-pillar: Future Technologies	2	83.20
<b>B. People pillar</b>	<b>4</b>	<b>78.07</b>
1st sub-pillar: Individuals	16	71.54
2nd sub-pillar: Businesses	2	82.16
3rd sub-pillar: Governments	6	80.50
<b>C. Governance pillar</b>	<b>4</b>	<b>88.88</b>
1st sub-pillar: Trust	5	88.22
2nd sub-pillar: Regulation	3	92.99
3rd sub-pillar: Inclusion	6	85.44
<b>D. Impact pillar</b>	<b>3</b>	<b>80.23</b>
1st sub-pillar: Economy	4	65.70
2nd sub-pillar: Quality of Life	5	91.07
3rd sub-pillar: SDG Contribution	8	83.93



## The Network Readiness Index in detail

INDICATOR	RANK/134	SCORE
<b>A. Technology pillar</b>		
<b>1st sub-pillar: Access</b>		
1.1.1 Mobile tariffs	8	92.50
1.1.2 Handset prices	15	70.48
1.1.3 Households with internet access	11	94.72
1.1.4 4G mobile network coverage	1	100.00
1.1.5 Fixed-broadband subscriptions	31	92.12
1.1.6 International Internet bandwidth	55	69.75
1.1.7 Internet access in schools	n/a	n/a
<b>2nd sub-pillar: Content</b>		
1.2.1 GitHub commits	3	84.98
1.2.2 Wikipedia edits	4	93.45
1.2.3 Internet domain registrations*	-	-
1.2.4 Mobile apps development	13	88.66
<b>3rd sub-pillar: Future Technologies</b>		
1.3.1 Adoption of emerging technologies	5	96.31
1.3.2 Investment in emerging technology	3	91.97
1.3.3 ICT PCT patent applications	1	100.00
1.3.4 Computer software spending	10	54.79
1.3.5 Robot density	5	72.93
<b>B. People pillar</b>		
<b>1st sub-pillar: Individuals</b>		
2.1.1 Internet users	13	92.26
2.1.2 Active mobile-broadband subscriptions	17	48.39
2.1.3 Use of virtual social networks	17	73.20
2.1.4 Tertiary enrollment	37	48.73
2.1.5 Adult literacy rate	n/a	n/a
2.1.6 ICT skills	3	95.14
<b>2nd sub-pillar: Businesses</b>		
2.2.1 Firms with website	6	93.05
2.2.2 Ease of doing business	10	91.56
2.2.3 Professionals	2	72.42
2.2.4 Technicians and associate professionals	8	79.53
2.2.5 Business use of digital tools	6	96.36
2.2.6 R&D expenditure by businesses	5	60.02
<b>3rd sub-pillar: Governments</b>		
2.3.1 Government online services	15	89.70
2.3.2 Publication and use of open data	15	69.84
2.3.3 Government promotion of investment in emerging technologies	16	71.71
2.3.4 R&D expenditure by governments and higher education	3	90.76

INDICATOR	RANK/134	SCORE
<b>C. Governance pillar</b>		
<b>1st sub-pillar: Trust</b>		
3.1.1 Secure Internet servers	24	81.02
3.1.2 Cybersecurity	34	86.89
3.1.3 Online access to financial account	4	93.08
3.1.4 Internet shopping	6	91.90
<b>2nd sub-pillar: Regulation</b>		
3.2.1 Regulatory quality	6	91.06
3.2.2 ICT regulatory environment	33	90.35
3.2.3 Legal framework's adaptability to emerging technologies	7	84.19
3.2.4 E-commerce legislation	1	100.00
3.2.5 Privacy protection by law content	2	99.35
<b>3rd sub-pillar: Inclusion</b>		
3.3.1 E-Participation	41	81.48
3.3.2 Socioeconomic gap in use of digital payments	7	97.28
3.3.3 Availability of local online content	1	100.00
3.3.4 Gender gap in internet use	5	72.47
3.3.5 Rural gap in use of digital payments	24	75.98
<b>D. Impact pillar</b>		
<b>1st sub-pillar: Economy</b>		
4.1.1 Medium and high-tech industry	10	67.74
4.1.2 High-tech exports	33	27.61
4.1.3 PCT patent applications	2	91.27
4.1.4 Labour productivity per employee	14	69.51
4.1.5 Prevalence of gig economy	18	72.37
<b>2nd sub-pillar: Quality of Life</b>		
4.2.1 Happiness	8	92.49
4.2.2 Freedom to make life choices	8	96.30
4.2.3 Income inequality	16	88.14
4.2.4 Healthy life expectancy at birth	16	87.36
<b>3rd sub-pillar: SDG Contribution</b>		
4.3.1 SDG 3: Good Health and Well-Being	6	95.08
4.3.2 SDG 4: Quality Education	15	66.58
4.3.3 SDG 5: Gender Equality	46	79.24
4.3.4 SDG 7: Affordable and Clean Energy	67	78.76
4.3.5 SDG 11: Sustainable Cities and Communities	1	100.00

\* Data on indicator 1.2.3 is confidential, but has been included in the computation. Please see Appendix I: Technical Notes for further details.

# Switzerland

	Rank (out of 134)	Score
<b>Network Readiness Index</b>	<b>5</b>	<b>80.41</b>
<b>A. Technology pillar</b>	<b>1</b>	<b>85.67</b>
1st sub-pillar: Access	4	90.35
2nd sub-pillar: Content	1	93.45
3rd sub-pillar: Future Technologies	7	73.21
<b>B. People pillar</b>	<b>13</b>	<b>70.02</b>
1st sub-pillar: Individuals	41	62.41
2nd sub-pillar: Businesses	8	76.78
3rd sub-pillar: Governments	17	70.87
<b>C. Governance pillar</b>	<b>10</b>	<b>85.04</b>
1st sub-pillar: Trust	14	78.52
2nd sub-pillar: Regulation	4	92.83
3rd sub-pillar: Inclusion	12	83.76
<b>D. Impact pillar</b>	<b>2</b>	<b>80.93</b>
1st sub-pillar: Economy	3	67.59
2nd sub-pillar: Quality of Life	6	89.69
3rd sub-pillar: SDG Contribution	4	85.52



## The Network Readiness Index in detail

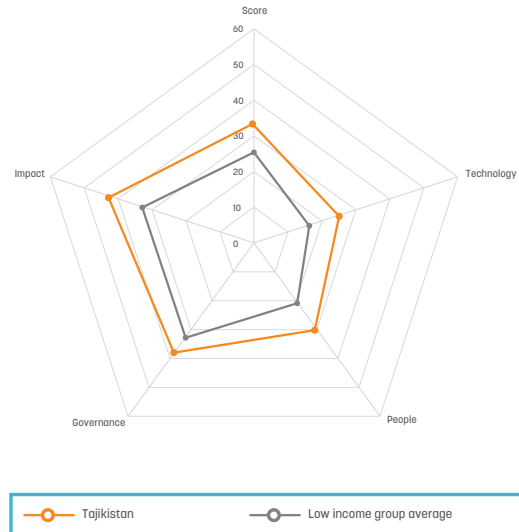
INDICATOR	RANK/134	SCORE
<b>A. Technology pillar</b>		
<b>1st sub-pillar: Access</b>		
1.1.1 Mobile tariffs	6	93.92
1.1.2 Handset prices	5	82.77
1.1.3 Households with internet access	22	88.54
1.1.4 4G mobile network coverage	24	99.00
1.1.5 Fixed-broadband subscriptions	11	97.05
1.1.6 International Internet bandwidth	43	71.15
1.1.7 Internet access in schools	1	100.00
<b>2nd sub-pillar: Content</b>		
1.2.1 GitHub commits	1	100.00
1.2.2 Wikipedia edits	16	83.14
1.2.3 Internet domain registrations*	-	-
1.2.4 Mobile apps development	9	90.67
<b>3rd sub-pillar: Future Technologies</b>		
1.3.1 Adoption of emerging technologies	6	93.09
1.3.2 Investment in emerging technology	4	89.43
1.3.3 ICT PCT patent applications	8	72.81
1.3.4 Computer software spending	3	67.41
1.3.5 Robot density	18	43.32
<b>B. People pillar</b>		
<b>1st sub-pillar: Individuals</b>		
2.1.1 Internet users	17	89.72
2.1.2 Active mobile-broadband subscriptions	31	38.31
2.1.3 Use of virtual social networks	72	51.55
2.1.4 Tertiary enrollment	49	43.26
2.1.5 Adult literacy rate	n/a	n/a
2.1.6 ICT skills	7	89.20
<b>2nd sub-pillar: Businesses</b>		
2.2.1 Firms with website	5	95.48
2.2.2 Ease of doing business	35	82.05
2.2.3 Professionals	6	64.46
2.2.4 Technicians and associate professionals	14	73.98
2.2.5 Business use of digital tools	20	83.55
2.2.6 R&D expenditure by businesses	4	61.17
<b>3rd sub-pillar: Governments</b>		
2.3.1 Government online services	36	82.42
2.3.2 Publication and use of open data	19	57.46
2.3.3 Government promotion of investment in emerging technologies	27	57.55
2.3.4 R&D expenditure by governments and higher education	5	86.04

INDICATOR	RANK/134	SCORE
<b>C. Governance pillar</b>		
<b>1st sub-pillar: Trust</b>		
3.1.1 Secure Internet servers	5	91.52
3.1.2 Cybersecurity	39	84.51
3.1.3 Online access to financial account	19	66.23
3.1.4 Internet shopping	15	71.84
<b>2nd sub-pillar: Regulation</b>		
3.2.1 Regulatory quality	8	90.63
3.2.2 ICT regulatory environment	16	95.56
3.2.3 Legal framework's adaptability to emerging technologies	5	85.14
3.2.4 E-commerce legislation	1	100.00
3.2.5 Privacy protection by law content	n/a	n/a
<b>3rd sub-pillar: Inclusion</b>		
3.3.1 E-Participation	18	90.13
3.3.2 Socioeconomic gap in use of digital payments	15	95.67
3.3.3 Availability of local online content	5	95.34
3.3.4 Gender gap in internet use	41	62.12
3.3.5 Rural gap in use of digital payments	28	75.53
<b>D. Impact pillar</b>		
<b>1st sub-pillar: Economy</b>		
4.1.1 Medium and high-tech industry	2	82.59
4.1.2 High-tech exports	35	24.57
4.1.3 PCT patent applications	3	89.42
4.1.4 Labour productivity per employee	10	75.26
4.1.5 Prevalence of gig economy	27	66.09
<b>2nd sub-pillar: Quality of Life</b>		
4.2.1 Happiness	2	98.31
4.2.2 Freedom to make life choices	19	91.48
4.2.3 Income inequality	31	78.09
4.2.4 Healthy life expectancy at birth	4	90.87
<b>3rd sub-pillar: SDG Contribution</b>		
4.3.1 SDG 3: Good Health and Well-Being	13	90.16
4.3.2 SDG 4: Quality Education	9	71.43
4.3.3 SDG 5: Gender Equality	75	73.02
4.3.4 SDG 7: Affordable and Clean Energy	5	95.95
4.3.5 SDG 11: Sustainable Cities and Communities	3	97.02

\* Data on indicator 1.2.3 is confidential, but has been included in the computation. Please see Appendix I: Technical Notes for further details.

# Tajikistan

	Rank (out of 134)	Score
<b>Network Readiness Index</b>	<b>109</b>	<b>34.14</b>
<b>A. Technology pillar</b>	<b>104</b>	<b>25.84</b>
1st sub-pillar: Access	107	36.13
2nd sub-pillar: Content	107	14.83
3rd sub-pillar: Future Technologies	73	26.56
<b>B. People pillar</b>	<b>109</b>	<b>30.00</b>
1st sub-pillar: Individuals	105	35.65
2nd sub-pillar: Businesses	93	34.30
3rd sub-pillar: Governments	123	20.06
<b>C. Governance pillar</b>	<b>110</b>	<b>37.87</b>
1st sub-pillar: Trust	110	22.69
2nd sub-pillar: Regulation	126	34.19
3rd sub-pillar: Inclusion	83	56.74
<b>D. Impact pillar</b>	<b>99</b>	<b>42.86</b>
1st sub-pillar: Economy	120	11.28
2nd sub-pillar: Quality of Life	64	65.99
3rd sub-pillar: SDG Contribution	107	51.31



## The Network Readiness Index in detail

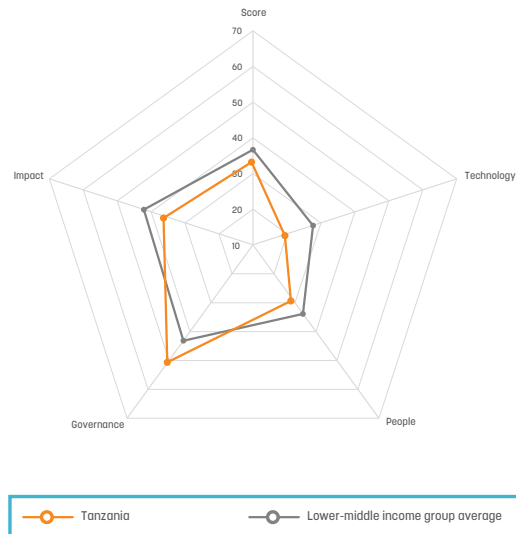
INDICATOR	RANK/134	SCORE
<b>A. Technology pillar</b>		
<b>1st sub-pillar: Access</b>		
1.1.1 Mobile tariffs	123	25.50
1.1.2 Handset prices	121	16.67
1.1.3 Households with internet access	120	11.61
1.1.4 4G mobile network coverage	80	80.00
1.1.5 Fixed-broadband subscriptions	n/a	n/a
1.1.6 International Internet bandwidth	129	46.89
1.1.7 Internet access in schools	n/a	n/a
<b>2nd sub-pillar: Content</b>		
1.2.1 GitHub commits	128	0.05
1.2.2 Wikipedia edits	99	20.34
1.2.3 Internet domain registrations*	-	-
1.2.4 Mobile apps development	109	38.71
<b>3rd sub-pillar: Future Technologies</b>		
1.3.1 Adoption of emerging technologies	100	31.62
1.3.2 Investment in emerging technology	58	41.88
1.3.3 ICT PCT patent applications	n/a	n/a
1.3.4 Computer software spending	94	6.19
1.3.5 Robot density	n/a	n/a
<b>B. People pillar</b>		
<b>1st sub-pillar: Individuals</b>		
2.1.1 Internet users	116	19.90
2.1.2 Active mobile-broadband subscriptions	122	7.67
2.1.3 Use of virtual social networks	125	5.15
2.1.4 Tertiary enrollment	81	22.41
2.1.5 Adult literacy rate	5	99.78
2.1.6 ICT skills	54	58.99
<b>2nd sub-pillar: Businesses</b>		
2.2.1 Firms with website	105	21.71
2.2.2 Ease of doing business	93	54.90
2.2.3 Professionals	83	17.78
2.2.4 Technicians and associate professionals	82	24.29
2.2.5 Business use of digital tools	81	52.81
2.2.6 R&D expenditure by businesses	n/a	n/a
<b>3rd sub-pillar: Governments</b>		
2.3.1 Government online services	124	29.69
2.3.2 Publication and use of open data	94	9.70
2.3.3 Government promotion of investment in emerging technologies	74	34.01
2.3.4 R&D expenditure by governments and higher education	96	6.84

INDICATOR	RANK/134	SCORE
<b>C. Governance pillar</b>		
<b>1st sub-pillar: Trust</b>		
3.1.1 Secure Internet servers	107	34.06
3.1.2 Cybersecurity	106	27.63
3.1.3 Online access to financial account	81	19.40
3.1.4 Internet shopping	75	9.65
<b>2nd sub-pillar: Regulation</b>		
3.2.1 Regulatory quality	127	28.32
3.2.2 ICT regulatory environment	133	3.48
3.2.3 Legal framework's adaptability to emerging technologies	87	29.97
3.2.4 E-commerce legislation	77	75.00
3.2.5 Privacy protection by law content	n/a	n/a
<b>3rd sub-pillar: Inclusion</b>		
3.3.1 E-Participation	117	32.10
3.3.2 Socioeconomic gap in use of digital payments	65	68.11
3.3.3 Availability of local online content	79	53.71
3.3.4 Gender gap in internet use	n/a	n/a
3.3.5 Rural gap in use of digital payments	45	73.04
<b>D. Impact pillar</b>		
<b>1st sub-pillar: Economy</b>		
4.1.1 Medium and high-tech industry	122	2.48
4.1.2 High-tech exports	n/a	n/a
4.1.3 PCT patent applications	n/a	n/a
4.1.4 Labour productivity per employee	101	7.00
4.1.5 Prevalence of gig economy	105	24.36
<b>2nd sub-pillar: Quality of Life</b>		
4.2.1 Happiness	78	54.46
4.2.2 Freedom to make life choices	60	77.70
4.2.3 Income inequality	45	74.74
4.2.4 Healthy life expectancy at birth	89	57.06
<b>3rd sub-pillar: SDG Contribution</b>		
4.3.1 SDG 3: Good Health and Well-Being	79	65.57
4.3.2 SDG 4: Quality Education	n/a	n/a
4.3.3 SDG 5: Gender Equality	130	17.43
4.3.4 SDG 7: Affordable and Clean Energy	79	74.86
4.3.5 SDG 11: Sustainable Cities and Communities	87	47.38

\* Data on indicator 1.2.3 is confidential, but has been included in the computation. Please see Appendix I: Technical Notes for further details.

# Tanzania

	Rank (out of 134)	Score
<b>Network Readiness Index</b>	<b>110</b>	<b>33.92</b>
<b>A. Technology pillar</b>	<b>117</b>	<b>19.93</b>
1st sub-pillar: Access	120	25.49
2nd sub-pillar: Content	125	7.76
3rd sub-pillar: Future Technologies	74	26.54
<b>B. People pillar</b>	<b>112</b>	<b>29.02</b>
1st sub-pillar: Individuals	118	24.46
2nd sub-pillar: Businesses	120	23.33
3rd sub-pillar: Governments	78	39.27
<b>C. Governance pillar</b>	<b>83</b>	<b>50.54</b>
1st sub-pillar: Trust	74	35.13
2nd sub-pillar: Regulation	89	57.44
3rd sub-pillar: Inclusion	82	59.06
<b>D. Impact pillar</b>	<b>114</b>	<b>36.19</b>
1st sub-pillar: Economy	103	15.97
2nd sub-pillar: Quality of Life	109	47.70
3rd sub-pillar: SDG Contribution	115	44.90



## The Network Readiness Index in detail

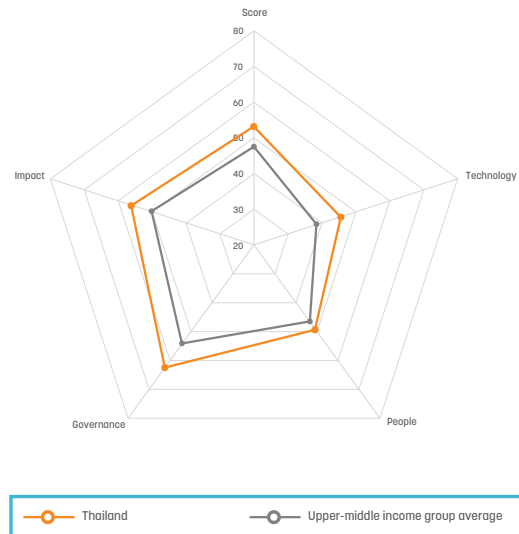
INDICATOR	RANK/134	SCORE
<b>A. Technology pillar</b>		
<b>1st sub-pillar: Access</b>		
1.1.1 Mobile tariffs	109	36.07
1.1.2 Handset prices	108	26.12
1.1.3 Households with internet access	117	14.17
1.1.4 4G mobile network coverage	123	13.00
1.1.5 Fixed-broadband subscriptions	n/a	n/a
1.1.6 International Internet bandwidth	133	38.08
1.1.7 Internet access in schools	n/a	n/a
<b>2nd sub-pillar: Content</b>		
1.2.1 GitHub commits	116	0.24
1.2.2 Wikipedia edits	121	0.00
1.2.3 Internet domain registrations*	-	-
1.2.4 Mobile apps development	118	30.64
<b>3rd sub-pillar: Future Technologies</b>		
1.3.1 Adoption of emerging technologies	87	37.57
1.3.2 Investment in emerging technology	59	41.64
1.3.3 ICT PCT patent applications	n/a	n/a
1.3.4 Computer software spending	124	0.39
1.3.5 Robot density	n/a	n/a
<b>B. People pillar</b>		
<b>1st sub-pillar: Individuals</b>		
2.1.1 Internet users	112	23.03
2.1.2 Active mobile-broadband subscriptions	132	2.09
2.1.3 Use of virtual social networks	124	5.77
2.1.4 Tertiary enrollment	124	2.35
2.1.5 Adult literacy rate	82	71.56
2.1.6 ICT skills	85	41.95
<b>2nd sub-pillar: Businesses</b>		
2.2.1 Firms with website	110	15.21
2.2.2 Ease of doing business	114	42.86
2.2.3 Professionals	124	1.17
2.2.4 Technicians and associate professionals	115	8.09
2.2.5 Business use of digital tools	92	49.31
2.2.6 R&D expenditure by businesses	n/a	n/a
<b>3rd sub-pillar: Governments</b>		
2.3.1 Government online services	93	53.94
2.3.2 Publication and use of open data	66	21.73
2.3.3 Government promotion of investment in emerging technologies	72	34.83
2.3.4 R&D expenditure by governments and higher education	36	46.58

INDICATOR	RANK/134	SCORE
<b>C. Governance pillar</b>		
<b>1st sub-pillar: Trust</b>		
3.1.1 Secure Internet servers	114	29.32
3.1.2 Cybersecurity	62	68.69
3.1.3 Online access to financial account	52	35.69
3.1.4 Internet shopping	84	6.82
<b>2nd sub-pillar: Regulation</b>		
3.2.1 Regulatory quality	108	37.92
3.2.2 ICT regulatory environment	61	85.72
3.2.3 Legal framework's adaptability to emerging technologies	81	31.11
3.2.4 E-commerce legislation	77	75.00
3.2.5 Privacy protection by law content	n/a	n/a
<b>3rd sub-pillar: Inclusion</b>		
3.3.1 E-Participation	92	54.32
3.3.2 Socioeconomic gap in use of digital payments	66	67.56
3.3.3 Availability of local online content	96	44.69
3.3.4 Gender gap in internet use	n/a	n/a
3.3.5 Rural gap in use of digital payments	58	69.69
<b>D. Impact pillar</b>		
<b>1st sub-pillar: Economy</b>		
4.1.1 Medium and high-tech industry	109	8.44
4.1.2 High-tech exports	68	13.05
4.1.3 PCT patent applications	n/a	n/a
4.1.4 Labour productivity per employee	112	2.49
4.1.5 Prevalence of gig economy	69	39.92
<b>2nd sub-pillar: Quality of Life</b>		
4.2.1 Happiness	127	18.61
4.2.2 Freedom to make life choices	55	80.78
4.2.3 Income inequality	80	57.99
4.2.4 Healthy life expectancy at birth	110	33.42
<b>3rd sub-pillar: SDG Contribution</b>		
4.3.1 SDG 3: Good Health and Well-Being	121	24.59
4.3.2 SDG 4: Quality Education	n/a	n/a
4.3.3 SDG 5: Gender Equality	96	63.64
4.3.4 SDG 7: Affordable and Clean Energy	116	53.47
4.3.5 SDG 11: Sustainable Cities and Communities	106	37.91

\* Data on indicator 1.2.3 is confidential, but has been included in the computation. Please see Appendix I: Technical Notes for further details.

# Thailand

	Rank (out of 134)	Score
<b>Network Readiness Index</b>	<b>51</b>	<b>53.45</b>
<b>A. Technology pillar</b>	<b>51</b>	<b>45.79</b>
1st sub-pillar: Access	39	78.64
2nd sub-pillar: Content	69	28.12
3rd sub-pillar: Future Technologies	51	30.61
<b>B. People pillar</b>	<b>61</b>	<b>49.33</b>
1st sub-pillar: Individuals	52	58.87
2nd sub-pillar: Businesses	66	42.38
3rd sub-pillar: Governments	55	46.74
<b>C. Governance pillar</b>	<b>47</b>	<b>62.47</b>
1st sub-pillar: Trust	55	46.81
2nd sub-pillar: Regulation	49	70.96
3rd sub-pillar: Inclusion	49	69.63
<b>D. Impact pillar</b>	<b>51</b>	<b>56.22</b>
1st sub-pillar: Economy	42	34.29
2nd sub-pillar: Quality of Life	41	72.85
3rd sub-pillar: SDG Contribution	84	61.51



## The Network Readiness Index in detail

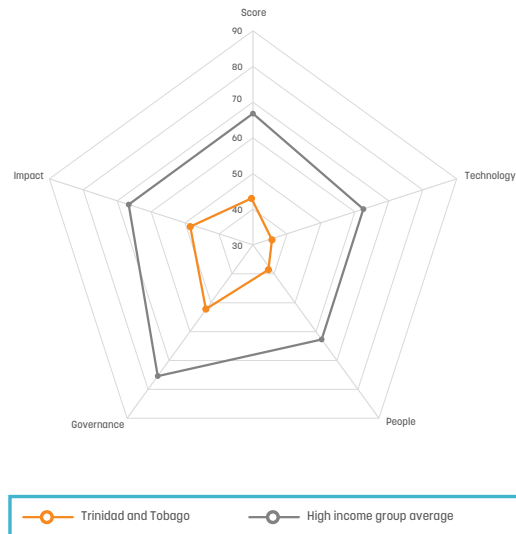
INDICATOR	RANK/134	SCORE
<b>A. Technology pillar</b>		
<b>1st sub-pillar: Access</b>		
1.1.1 Mobile tariffs	72	60.55
1.1.2 Handset prices	50	52.99
1.1.3 Households with internet access	69	67.62
1.1.4 4G mobile network coverage	38	98.00
1.1.5 Fixed-broadband subscriptions	9	97.86
1.1.6 International Internet bandwidth	19	74.69
1.1.7 Internet access in schools	26	98.80
<b>2nd sub-pillar: Content</b>		
1.2.1 GitHub commits	75	2.74
1.2.2 Wikipedia edits	67	43.41
1.2.3 Internet domain registrations*	-	-
1.2.4 Mobile apps development	68	63.08
<b>3rd sub-pillar: Future Technologies</b>		
1.3.1 Adoption of emerging technologies	39	60.58
1.3.2 Investment in emerging technology	37	54.44
1.3.3 ICT PCT patent applications	66	2.14
1.3.4 Computer software spending	61	20.72
1.3.5 Robot density	28	15.19
<b>B. People pillar</b>		
<b>1st sub-pillar: Individuals</b>		
2.1.1 Internet users	86	55.84
2.1.2 Active mobile-broadband subscriptions	25	40.93
2.1.3 Use of virtual social networks	15	75.26
2.1.4 Tertiary enrollment	62	35.69
2.1.5 Adult literacy rate	56	92.01
2.1.6 ICT skills	63	53.51
<b>2nd sub-pillar: Businesses</b>		
2.2.1 Firms with website	77	41.79
2.2.2 Ease of doing business	20	88.20
2.2.3 Professionals	100	12.97
2.2.4 Technicians and associate professionals	92	18.68
2.2.5 Business use of digital tools	44	72.13
2.2.6 R&D expenditure by businesses	27	20.52
<b>3rd sub-pillar: Governments</b>		
2.3.1 Government online services	42	78.79
2.3.2 Publication and use of open data	57	27.55
2.3.3 Government promotion of investment in emerging technologies	22	64.58
2.3.4 R&D expenditure by governments and higher education	81	16.04

INDICATOR	RANK/134	SCORE
<b>C. Governance pillar</b>		
<b>1st sub-pillar: Trust</b>		
3.1.1 Secure Internet servers	61	57.83
3.1.2 Cybersecurity	37	85.37
3.1.3 Online access to financial account	78	22.52
3.1.4 Internet shopping	57	21.54
<b>2nd sub-pillar: Regulation</b>		
3.2.1 Regulatory quality	63	53.87
3.2.2 ICT regulatory environment	76	81.47
3.2.3 Legal framework's adaptability to emerging technologies	47	48.48
3.2.4 E-commerce legislation	1	100.00
3.2.5 Privacy protection by law content	n/a	n/a
<b>3rd sub-pillar: Inclusion</b>		
3.3.1 E-Participation	50	76.54
3.3.2 Socioeconomic gap in use of digital payments	42	79.33
3.3.3 Availability of local online content	59	64.00
3.3.4 Gender gap in internet use	48	60.99
3.3.5 Rural gap in use of digital payments	64	67.30
<b>D. Impact pillar</b>		
<b>1st sub-pillar: Economy</b>		
4.1.1 Medium and high-tech industry	28	51.95
4.1.2 High-tech exports	16	44.23
4.1.3 PCT patent applications	64	0.48
4.1.4 Labour productivity per employee	75	21.33
4.1.5 Prevalence of gig economy	48	53.47
<b>2nd sub-pillar: Quality of Life</b>		
4.2.1 Happiness	53	65.44
4.2.2 Freedom to make life choices	31	88.95
4.2.3 Income inequality	61	68.56
4.2.4 Healthy life expectancy at birth	55	68.45
<b>3rd sub-pillar: SDG Contribution</b>		
4.3.1 SDG 3: Good Health and Well-Being	23	85.25
4.3.2 SDG 4: Quality Education	56	35.09
4.3.3 SDG 5: Gender Equality	23	83.85
4.3.4 SDG 7: Affordable and Clean Energy	88	72.25
4.3.5 SDG 11: Sustainable Cities and Communities	118	31.12

\* Data on indicator 1.2.3 is confidential, but has been included in the computation. Please see Appendix I: Technical Notes for further details.

# Trinidad and Tobago

	Rank (out of 134)	Score
<b>Network Readiness Index</b>	<b>81</b>	<b>43.61</b>
<b>A. Technology pillar</b>	<b>78</b>	<b>36.12</b>
1st sub-pillar: Access	65	64.19
2nd sub-pillar: Content	70	27.45
3rd sub-pillar: Future Technologies	116	16.73
<b>B. People pillar</b>	<b>88</b>	<b>38.16</b>
1st sub-pillar: Individuals	51	59.12
2nd sub-pillar: Businesses	101	31.02
3rd sub-pillar: Governments	114	24.34
<b>C. Governance pillar</b>	<b>79</b>	<b>51.94</b>
1st sub-pillar: Trust	103	26.03
2nd sub-pillar: Regulation	82	62.00
3rd sub-pillar: Inclusion	55	67.78
<b>D. Impact pillar</b>	<b>83</b>	<b>48.22</b>
1st sub-pillar: Economy	76	22.02
2nd sub-pillar: Quality of Life	54	69.14
3rd sub-pillar: SDG Contribution	99	53.50



## The Network Readiness Index in detail

INDICATOR	RANK/134	SCORE
<b>A. Technology pillar</b>		
<b>1st sub-pillar: Access</b>		
1.1.1 Mobile tariffs	111	35.40
1.1.2 Handset prices	57	48.96
1.1.3 Households with internet access	51	77.44
1.1.4 4G mobile network coverage	84	75.00
1.1.5 Fixed-broadband subscriptions	57	72.76
1.1.6 International Internet bandwidth	15	75.58
1.1.7 Internet access in schools	n/a	n/a
<b>2nd sub-pillar: Content</b>		
1.2.1 GitHub commits	62	4.25
1.2.2 Wikipedia edits	61	46.27
1.2.3 Internet domain registrations*	-	-
1.2.4 Mobile apps development	80	56.08
<b>3rd sub-pillar: Future Technologies</b>		
1.3.1 Adoption of emerging technologies	105	27.86
1.3.2 Investment in emerging technology	114	22.32
1.3.3 ICT PCT patent applications	82	0.00
1.3.4 Computer software spending	n/a	n/a
1.3.5 Robot density	n/a	n/a
<b>B. People pillar</b>		
<b>1st sub-pillar: Individuals</b>		
2.1.1 Internet users	48	76.98
2.1.2 Active mobile-broadband subscriptions	103	17.15
2.1.3 Use of virtual social networks	47	61.86
2.1.4 Tertiary enrollment	n/a	n/a
2.1.5 Adult literacy rate	23	98.36
2.1.6 ICT skills	87	41.24
<b>2nd sub-pillar: Businesses</b>		
2.2.1 Firms with website	102	24.73
2.2.2 Ease of doing business	92	54.94
2.2.3 Professionals	98	14.14
2.2.4 Technicians and associate professionals	27	57.30
2.2.5 Business use of digital tools	111	34.83
2.2.6 R&D expenditure by businesses	85	0.18
<b>3rd sub-pillar: Governments</b>		
2.3.1 Government online services	84	60.00
2.3.2 Publication and use of open data	76	17.99
2.3.3 Government promotion of investment in emerging technologies	113	13.71
2.3.4 R&D expenditure by governments and higher education	99	5.65

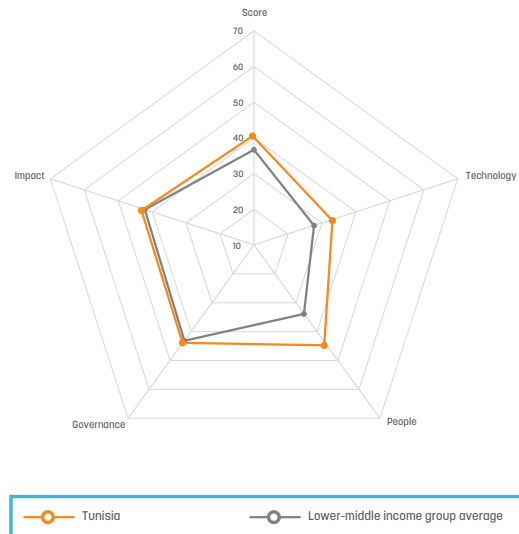
INDICATOR	RANK/134	SCORE
<b>C. Governance pillar</b>		
<b>1st sub-pillar: Trust</b>		
3.1.1 Secure Internet servers	82	45.85
3.1.2 Cybersecurity	116	19.50
3.1.3 Online access to financial account	84	17.67
3.1.4 Internet shopping	58	21.09
<b>2nd sub-pillar: Regulation</b>		
3.2.1 Regulatory quality	68	50.96
3.2.2 ICT regulatory environment	60	86.10
3.2.3 Legal framework's adaptability to emerging technologies	118	10.95
3.2.4 E-commerce legislation	1	100.00
3.2.5 Privacy protection by law content	n/a	n/a
<b>3rd sub-pillar: Inclusion</b>		
3.3.1 E-Participation	83	60.49
3.3.2 Socioeconomic gap in use of digital payments	30	86.14
3.3.3 Availability of local online content	87	50.57
3.3.4 Gender gap in internet use	n/a	n/a
3.3.5 Rural gap in use of digital payments	40	73.91
<b>D. Impact pillar</b>		
<b>1st sub-pillar: Economy</b>		
4.1.1 Medium and high-tech industry	32	50.52
4.1.2 High-tech exports	126	0.26
4.1.3 PCT patent applications	58	0.71
4.1.4 Labour productivity per employee	47	38.52
4.1.5 Prevalence of gig economy	111	20.09
<b>2nd sub-pillar: Quality of Life</b>		
4.2.1 Happiness	44	68.77
4.2.2 Freedom to make life choices	51	82.31
4.2.3 Income inequality	n/a	n/a
4.2.4 Healthy life expectancy at birth	93	56.33
<b>3rd sub-pillar: SDG Contribution</b>		
4.3.1 SDG 3: Good Health and Well-Being	54	75.41
4.3.2 SDG 4: Quality Education	59	34.60
4.3.3 SDG 5: Gender Equality	20	86.08
4.3.4 SDG 7: Affordable and Clean Energy	131	0.00
4.3.5 SDG 11: Sustainable Cities and Communities	55	71.39

\* Data on indicator 1.2.3 is confidential, but has been included in the computation. Please see Appendix I: Technical Notes for further details.



# Tunisia

	Rank (out of 134)	Score
<b>Network Readiness Index</b>	<b>91</b>	<b>41.30</b>
<b>A. Technology pillar</b>	<b>81</b>	<b>33.81</b>
1st sub-pillar: Access	77	58.27
2nd sub-pillar: Content	84	23.49
3rd sub-pillar: Future Technologies	100	19.66
<b>B. People pillar</b>	<b>77</b>	<b>44.59</b>
1st sub-pillar: Individuals	85	50.53
2nd sub-pillar: Businesses	84	36.57
3rd sub-pillar: Governments	56	46.67
<b>C. Governance pillar</b>	<b>101</b>	<b>43.73</b>
1st sub-pillar: Trust	90	29.56
2nd sub-pillar: Regulation	92	56.08
3rd sub-pillar: Inclusion	108	45.54
<b>D. Impact pillar</b>	<b>98</b>	<b>43.06</b>
1st sub-pillar: Economy	82	20.67
2nd sub-pillar: Quality of Life	98	56.17
3rd sub-pillar: SDG Contribution	105	52.33



## The Network Readiness Index in detail

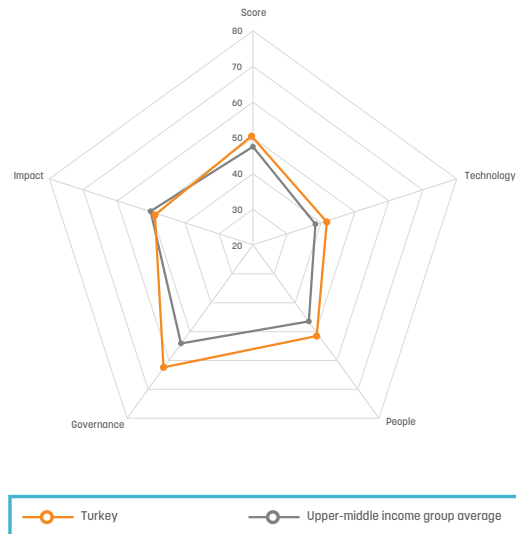
INDICATOR	RANK/134	SCORE
<b>A. Technology pillar</b>		
<b>1st sub-pillar: Access</b>		
1.1.1 Mobile tariffs	54	68.38
1.1.2 Handset prices	76	41.27
1.1.3 Households with internet access	84	45.90
1.1.4 4G mobile network coverage	52	96.00
1.1.5 Fixed-broadband subscriptions	81	40.64
1.1.6 International Internet bandwidth	75	67.07
1.1.7 Internet access in schools	42	48.66
<b>2nd sub-pillar: Content</b>		
1.2.1 GitHub commits	80	2.19
1.2.2 Wikipedia edits	88	31.79
1.2.3 Internet domain registrations*	-	-
1.2.4 Mobile apps development	76	57.61
<b>3rd sub-pillar: Future Technologies</b>		
1.3.1 Adoption of emerging technologies	103	29.39
1.3.2 Investment in emerging technology	80	35.63
1.3.3 ICT PCT patent applications	56	4.65
1.3.4 Computer software spending	34	27.67
1.3.5 Robot density	54	0.95
<b>B. People pillar</b>		
<b>1st sub-pillar: Individuals</b>		
2.1.1 Internet users	76	63.44
2.1.2 Active mobile-broadband subscriptions	65	29.31
2.1.3 Use of virtual social networks	47	61.86
2.1.4 Tertiary enrollment	80	22.77
2.1.5 Adult literacy rate	81	73.04
2.1.6 ICT skills	64	52.77
<b>2nd sub-pillar: Businesses</b>		
2.2.1 Firms with website	45	65.94
2.2.2 Ease of doing business	73	67.97
2.2.3 Professionals	93	15.74
2.2.4 Technicians and associate professionals	67	32.17
2.2.5 Business use of digital tools	112	34.51
2.2.6 R&D expenditure by businesses	60	3.09
<b>3rd sub-pillar: Governments</b>		
2.3.1 Government online services	81	61.21
2.3.2 Publication and use of open data	52	32.17
2.3.3 Government promotion of investment in emerging technologies	50	44.95
2.3.4 R&D expenditure by governments and higher education	35	48.36

INDICATOR	RANK/134	SCORE
<b>C. Governance pillar</b>		
<b>1st sub-pillar: Trust</b>		
3.1.1 Secure Internet servers	85	44.71
3.1.2 Cybersecurity	77	57.20
3.1.3 Online access to financial account	105	10.37
3.1.4 Internet shopping	89	5.96
<b>2nd sub-pillar: Regulation</b>		
3.2.1 Regulatory quality	100	42.36
3.2.2 ICT regulatory environment	89	73.75
3.2.3 Legal framework's adaptability to emerging technologies	85	30.45
3.2.4 E-commerce legislation	77	75.00
3.2.5 Privacy protection by law content	51	58.83
<b>3rd sub-pillar: Inclusion</b>		
3.3.1 E-Participation	72	67.90
3.3.2 Socioeconomic gap in use of digital payments	117	35.33
3.3.3 Availability of local online content	84	51.50
3.3.4 Gender gap in internet use	n/a	n/a
3.3.5 Rural gap in use of digital payments	119	27.44
<b>D. Impact pillar</b>		
<b>1st sub-pillar: Economy</b>		
4.1.1 Medium and high-tech industry	42	42.88
4.1.2 High-tech exports	62	14.01
4.1.3 PCT patent applications	74	0.17
4.1.4 Labour productivity per employee	72	23.00
4.1.5 Prevalence of gig economy	107	23.30
<b>2nd sub-pillar: Quality of Life</b>		
4.2.1 Happiness	117	31.89
4.2.2 Freedom to make life choices	118	48.37
4.2.3 Income inequality	33	77.84
4.2.4 Healthy life expectancy at birth	65	66.58
<b>3rd sub-pillar: SDG Contribution</b>		
4.3.1 SDG 3: Good Health and Well-Being	69	68.85
4.3.2 SDG 4: Quality Education	75	15.67
4.3.3 SDG 5: Gender Equality	108	51.14
4.3.4 SDG 7: Affordable and Clean Energy	44	83.89
4.3.5 SDG 11: Sustainable Cities and Communities	93	42.10

\* Data on indicator 1.2.3 is confidential, but has been included in the computation. Please see Appendix I: Technical Notes for further details.

# Turkey

	Rank (out of 134)	Score
<b>Network Readiness Index</b>	<b>57</b>	<b>51.24</b>
<b>A. Technology pillar</b>	<b>58</b>	<b>42.44</b>
1st sub-pillar: Access	54	71.81
2nd sub-pillar: Content	78	25.36
3rd sub-pillar: Future Technologies	55	30.15
<b>B. People pillar</b>	<b>53</b>	<b>51.41</b>
1st sub-pillar: Individuals	57	57.98
2nd sub-pillar: Businesses	63	43.80
3rd sub-pillar: Governments	39	52.44
<b>C. Governance pillar</b>	<b>48</b>	<b>62.35</b>
1st sub-pillar: Trust	42	57.72
2nd sub-pillar: Regulation	74	64.17
3rd sub-pillar: Inclusion	61	65.17
<b>D. Impact pillar</b>	<b>81</b>	<b>48.76</b>
1st sub-pillar: Economy	58	28.89
2nd sub-pillar: Quality of Life	103	51.62
3rd sub-pillar: SDG Contribution	72	65.77



## The Network Readiness Index in detail

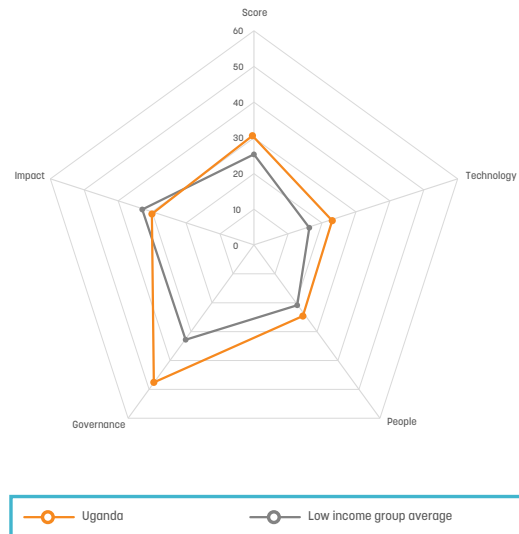
INDICATOR	RANK/134	SCORE
<b>A. Technology pillar</b>		
<b>1st sub-pillar: Access</b>		
1.1.1 Mobile tariffs	49	69.79
1.1.2 Handset prices	88	35.86
1.1.3 Households with internet access	37	83.75
1.1.4 4G mobile network coverage	59	93.17
1.1.5 Fixed-broadband subscriptions	52	76.42
1.1.6 International Internet bandwidth	39	71.89
1.1.7 Internet access in schools	n/a	n/a
<b>2nd sub-pillar: Content</b>		
1.2.1 GitHub commits	65	3.71
1.2.2 Wikipedia edits	100	19.70
1.2.3 Internet domain registrations*	-	-
1.2.4 Mobile apps development	48	70.78
<b>3rd sub-pillar: Future Technologies</b>		
1.3.1 Adoption of emerging technologies	58	49.37
1.3.2 Investment in emerging technology	103	27.62
1.3.3 ICT PCT patent applications	35	21.73
1.3.4 Computer software spending	20	43.21
1.3.5 Robot density	35	8.83
<b>B. People pillar</b>		
<b>1st sub-pillar: Individuals</b>		
2.1.1 Internet users	62	70.50
2.1.2 Active mobile-broadband subscriptions	69	28.54
2.1.3 Use of virtual social networks	44	63.92
2.1.4 Tertiary enrollment	n/a	n/a
2.1.5 Adult literacy rate	40	95.08
2.1.6 ICT skills	111	31.87
<b>2nd sub-pillar: Businesses</b>		
2.2.1 Firms with website	66	48.78
2.2.2 Ease of doing business	32	82.36
2.2.3 Professionals	60	26.88
2.2.4 Technicians and associate professionals	79	25.85
2.2.5 Business use of digital tools	53	64.97
2.2.6 R&D expenditure by businesses	37	13.96
<b>3rd sub-pillar: Governments</b>		
2.3.1 Government online services	22	85.45
2.3.2 Publication and use of open data	43	36.88
2.3.3 Government promotion of investment in emerging technologies	38	50.38
2.3.4 R&D expenditure by governments and higher education	49	37.05

INDICATOR	RANK/134	SCORE
<b>C. Governance pillar</b>		
<b>1st sub-pillar: Trust</b>		
3.1.1 Secure Internet servers	47	68.63
3.1.2 Cybersecurity	22	91.55
3.1.3 Online access to financial account	43	43.39
3.1.4 Internet shopping	50	27.31
<b>2nd sub-pillar: Regulation</b>		
3.2.1 Regulatory quality	73	50.37
3.2.2 ICT regulatory environment	8	96.72
3.2.3 Legal framework's adaptability to emerging technologies	61	43.18
3.2.4 E-commerce legislation	1	100.00
3.2.5 Privacy protection by law content	67	30.57
<b>3rd sub-pillar: Inclusion</b>		
3.3.1 E-Participation	23	88.89
3.3.2 Socioeconomic gap in use of digital payments	63	68.25
3.3.3 Availability of local online content	46	69.95
3.3.4 Gender gap in internet use	81	38.99
3.3.5 Rural gap in use of digital payments	79	59.78
<b>D. Impact pillar</b>		
<b>1st sub-pillar: Economy</b>		
4.1.1 Medium and high-tech industry	45	40.05
4.1.2 High-tech exports	102	4.41
4.1.3 PCT patent applications	35	3.73
4.1.4 Labour productivity per employee	29	54.26
4.1.5 Prevalence of gig economy	65	42.00
<b>2nd sub-pillar: Quality of Life</b>		
4.2.1 Happiness	105	42.83
4.2.2 Freedom to make life choices	124	43.57
4.2.3 Income inequality	87	54.38
4.2.4 Healthy life expectancy at birth	71	65.71
<b>3rd sub-pillar: SDG Contribution</b>		
4.3.1 SDG 3: Good Health and Well-Being	54	75.41
4.3.2 SDG 4: Quality Education	41	48.22
4.3.3 SDG 5: Gender Equality	102	59.69
4.3.4 SDG 7: Affordable and Clean Energy	21	89.09
4.3.5 SDG 11: Sustainable Cities and Communities	75	56.44

\* Data on indicator 1.2.3 is confidential, but has been included in the computation. Please see Appendix I: Technical Notes for further details.

# Uganda

	Rank (out of 134)	Score
<b>Network Readiness Index</b>	<b>114</b>	<b>31.40</b>
<b>A. Technology pillar</b>	<b>112</b>	<b>23.76</b>
1st sub-pillar: Access	97	40.76
2nd sub-pillar: Content	123	8.28
3rd sub-pillar: Future Technologies	91	22.23
<b>B. People pillar</b>	<b>121</b>	<b>24.33</b>
1st sub-pillar: Individuals	120	23.18
2nd sub-pillar: Businesses	121	22.68
3rd sub-pillar: Governments	103	27.12
<b>C. Governance pillar</b>	<b>90</b>	<b>47.57</b>
1st sub-pillar: Trust	84	31.60
2nd sub-pillar: Regulation	91	56.42
3rd sub-pillar: Inclusion	87	54.69
<b>D. Impact pillar</b>	<b>129</b>	<b>29.96</b>
1st sub-pillar: Economy	116	12.44
2nd sub-pillar: Quality of Life	115	45.12
3rd sub-pillar: SDG Contribution	130	32.31



## The Network Readiness Index in detail

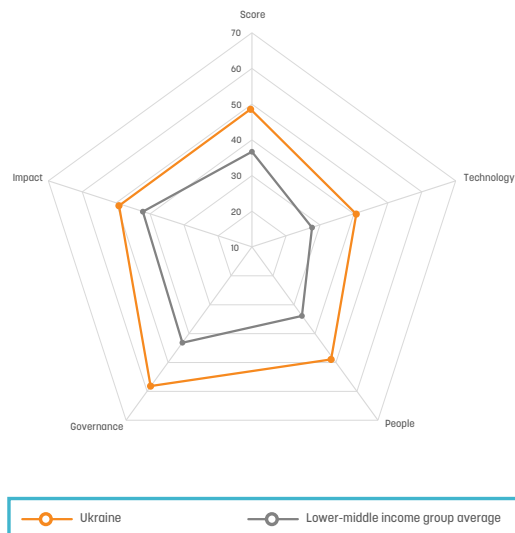
INDICATOR	RANK/134	SCORE
<b>A. Technology pillar</b>		
<b>1st sub-pillar: Access</b>		
1.1.1 Mobile tariffs	121	28.67
1.1.2 Handset prices	114	21.53
1.1.3 Households with internet access	124	10.52
1.1.4 4G mobile network coverage	100	57.00
1.1.5 Fixed-broadband subscriptions	60	71.01
1.1.6 International Internet bandwidth	116	55.80
1.1.7 Internet access in schools	n/a	n/a
<b>2nd sub-pillar: Content</b>		
1.2.1 GitHub commits	105	0.75
1.2.2 Wikipedia edits	119	3.00
1.2.3 Internet domain registrations*	-	-
1.2.4 Mobile apps development	119	29.26
<b>3rd sub-pillar: Future Technologies</b>		
1.3.1 Adoption of emerging technologies	101	29.80
1.3.2 Investment in emerging technology	77	36.03
1.3.3 ICT PCT patent applications	n/a	n/a
1.3.4 Computer software spending	121	0.86
1.3.5 Robot density	n/a	n/a
<b>B. People pillar</b>		
<b>1st sub-pillar: Individuals</b>		
2.1.1 Internet users	114	21.70
2.1.2 Active mobile-broadband subscriptions	113	12.05
2.1.3 Use of virtual social networks	128	3.71
2.1.4 Tertiary enrollment	121	2.96
2.1.5 Adult literacy rate	86	69.81
2.1.6 ICT skills	116	28.87
<b>2nd sub-pillar: Businesses</b>		
2.2.1 Firms with website	116	11.26
2.2.2 Ease of doing business	99	52.62
2.2.3 Professionals	96	14.26
2.2.4 Technicians and associate professionals	109	11.61
2.2.5 Business use of digital tools	98	46.18
2.2.6 R&D expenditure by businesses	86	0.18
<b>3rd sub-pillar: Governments</b>		
2.3.1 Government online services	88	56.98
2.3.2 Publication and use of open data	89	11.59
2.3.3 Government promotion of investment in emerging technologies	96	27.21
2.3.4 R&D expenditure by governments and higher education	87	12.71

INDICATOR	RANK/134	SCORE
<b>C. Governance pillar</b>		
<b>1st sub-pillar: Trust</b>		
3.1.1 Secure Internet servers	119	24.77
3.1.2 Cybersecurity	67	66.41
3.1.3 Online access to financial account	64	30.31
3.1.4 Internet shopping	95	4.91
<b>2nd sub-pillar: Regulation</b>		
3.2.1 Regulatory quality	92	45.88
3.2.2 ICT regulatory environment	51	86.88
3.2.3 Legal framework's adaptability to emerging technologies	106	17.92
3.2.4 E-commerce legislation	77	75.00
3.2.5 Privacy protection by law content	n/a	n/a
<b>3rd sub-pillar: Inclusion</b>		
3.3.1 E-Participation	90	55.55
3.3.2 Socioeconomic gap in use of digital payments	68	65.42
3.3.3 Availability of local online content	123	23.57
3.3.4 Gender gap in internet use	n/a	n/a
3.3.5 Rural gap in use of digital payments	38	74.20
<b>D. Impact pillar</b>		
<b>1st sub-pillar: Economy</b>		
4.1.1 Medium and high-tech industry	100	13.88
4.1.2 High-tech exports	93	6.70
4.1.3 PCT patent applications	n/a	n/a
4.1.4 Labour productivity per employee	111	2.55
4.1.5 Prevalence of gig economy	101	26.61
<b>2nd sub-pillar: Quality of Life</b>		
4.2.1 Happiness	101	44.32
4.2.2 Freedom to make life choices	110	56.02
4.2.3 Income inequality	92	52.06
4.2.4 Healthy life expectancy at birth	117	28.08
<b>3rd sub-pillar: SDG Contribution</b>		
4.3.1 SDG 3: Good Health and Well-Being	117	27.87
4.3.2 SDG 4: Quality Education	n/a	n/a
4.3.3 SDG 5: Gender Equality	122	39.06
4.3.4 SDG 7: Affordable and Clean Energy	126	40.75
4.3.5 SDG 11: Sustainable Cities and Communities	122	21.57

\* Data on indicator 1.2.3 is confidential, but has been included in the computation. Please see Appendix I: Technical Notes for further details.

# Ukraine

	Rank (out of 134)	Score
<b>Network Readiness Index</b>	<b>64</b>	<b>49.43</b>
<b>A. Technology pillar</b>	<b>62</b>	<b>41.51</b>
1st sub-pillar: Access	79	54.12
2nd sub-pillar: Content	46	39.90
3rd sub-pillar: Future Technologies	53	30.50
<b>B. People pillar</b>	<b>65</b>	<b>48.87</b>
1st sub-pillar: Individuals	63	56.22
2nd sub-pillar: Businesses	52	48.53
3rd sub-pillar: Governments	71	41.85
<b>C. Governance pillar</b>	<b>58</b>	<b>58.19</b>
1st sub-pillar: Trust	49	50.66
2nd sub-pillar: Regulation	83	61.48
3rd sub-pillar: Inclusion	72	62.42
<b>D. Impact pillar</b>	<b>79</b>	<b>49.16</b>
1st sub-pillar: Economy	62	26.17
2nd sub-pillar: Quality of Life	77	62.86
3rd sub-pillar: SDG Contribution	91	58.46



## The Network Readiness Index in detail

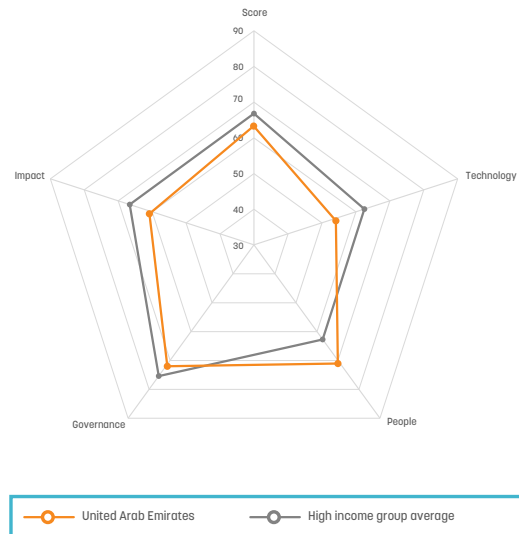
INDICATOR	RANK/134	SCORE
<b>A. Technology pillar</b>		
<b>1st sub-pillar: Access</b>		
1.1.1 Mobile tariffs	46	70.14
1.1.2 Handset prices	113	21.72
1.1.3 Households with internet access	76	60.16
1.1.4 4G mobile network coverage	129	3.00
1.1.5 Fixed-broadband subscriptions	16	95.72
1.1.6 International Internet bandwidth	50	70.28
1.1.7 Internet access in schools	40	57.79
<b>2nd sub-pillar: Content</b>		
1.2.1 GitHub commits	34	21.80
1.2.2 Wikipedia edits	43	65.94
1.2.3 Internet domain registrations*	-	-
1.2.4 Mobile apps development	61	66.34
<b>3rd sub-pillar: Future Technologies</b>		
1.3.1 Adoption of emerging technologies	49	53.00
1.3.2 Investment in emerging technology	63	40.56
1.3.3 ICT PCT patent applications	45	11.25
1.3.4 Computer software spending	19	46.98
1.3.5 Robot density	56	0.74
<b>B. People pillar</b>		
<b>1st sub-pillar: Individuals</b>		
2.1.1 Internet users	81	57.97
2.1.2 Active mobile-broadband subscriptions	102	17.56
2.1.3 Use of virtual social networks	88	42.27
2.1.4 Tertiary enrollment	14	60.28
2.1.5 Adult literacy rate	1	100.00
2.1.6 ICT skills	53	59.25
<b>2nd sub-pillar: Businesses</b>		
2.2.1 Firms with website	49	63.16
2.2.2 Ease of doing business	62	70.72
2.2.3 Professionals	31	44.51
2.2.4 Technicians and associate professionals	44	48.09
2.2.5 Business use of digital tools	71	57.68
2.2.6 R&D expenditure by businesses	49	7.04
<b>3rd sub-pillar: Governments</b>		
2.3.1 Government online services	71	67.28
2.3.2 Publication and use of open data	45	35.96
2.3.3 Government promotion of investment in emerging technologies	42	47.94
2.3.4 R&D expenditure by governments and higher education	80	16.24

INDICATOR	RANK/134	SCORE
<b>C. Governance pillar</b>		
<b>1st sub-pillar: Trust</b>		
3.1.1 Secure Internet servers	43	71.58
3.1.2 Cybersecurity	55	70.75
3.1.3 Online access to financial account	58	32.53
3.1.4 Internet shopping	49	27.80
<b>2nd sub-pillar: Regulation</b>		
3.2.1 Regulatory quality	87	46.57
3.2.2 ICT regulatory environment	75	81.66
3.2.3 Legal framework's adaptability to emerging technologies	43	50.29
3.2.4 E-commerce legislation	1	100.00
3.2.5 Privacy protection by law content	68	28.89
<b>3rd sub-pillar: Inclusion</b>		
3.3.1 E-Participation	46	80.24
3.3.2 Socioeconomic gap in use of digital payments	58	71.47
3.3.3 Availability of local online content	75	54.32
3.3.4 Gender gap in internet use	71	52.09
3.3.5 Rural gap in use of digital payments	93	53.97
<b>D. Impact pillar</b>		
<b>1st sub-pillar: Economy</b>		
4.1.1 Medium and high-tech industry	48	38.65
4.1.2 High-tech exports	74	10.24
4.1.3 PCT patent applications	53	0.96
4.1.4 Labour productivity per employee	78	20.29
4.1.5 Prevalence of gig economy	36	60.68
<b>2nd sub-pillar: Quality of Life</b>		
4.2.1 Happiness	109	39.48
4.2.2 Freedom to make life choices	105	57.88
4.2.3 Income inequality	6	95.10
4.2.4 Healthy life expectancy at birth	86	58.97
<b>3rd sub-pillar: SDG Contribution</b>		
4.3.1 SDG 3: Good Health and Well-Being	79	65.57
4.3.2 SDG 4: Quality Education	42	48.07
4.3.3 SDG 5: Gender Equality	24	83.72
4.3.4 SDG 7: Affordable and Clean Energy	128	23.70
4.3.5 SDG 11: Sustainable Cities and Communities	57	71.24

\* Data on indicator 1.2.3 is confidential, but has been included in the computation. Please see Appendix I: Technical Notes for further details.

# United Arab Emirates

	Rank (out of 134)	Score
<b>Network Readiness Index</b>	<b>30</b>	<b>64.42</b>
<b>A. Technology pillar</b>	<b>33</b>	<b>54.50</b>
1st sub-pillar: Access	10	87.79
2nd sub-pillar: Content	52	35.60
3rd sub-pillar: Future Technologies	36	40.11
<b>B. People pillar</b>	<b>11</b>	<b>70.62</b>
1st sub-pillar: Individuals	1	95.00
2nd sub-pillar: Businesses	39	55.52
3rd sub-pillar: Governments	25	61.34
<b>C. Governance pillar</b>	<b>37</b>	<b>71.55</b>
1st sub-pillar: Trust	30	67.41
2nd sub-pillar: Regulation	52	70.09
3rd sub-pillar: Inclusion	26	77.13
<b>D. Impact pillar</b>	<b>38</b>	<b>61.02</b>
1st sub-pillar: Economy	32	40.59
2nd sub-pillar: Quality of Life	24	79.17
3rd sub-pillar: SDG Contribution	80	63.30



## The Network Readiness Index in detail

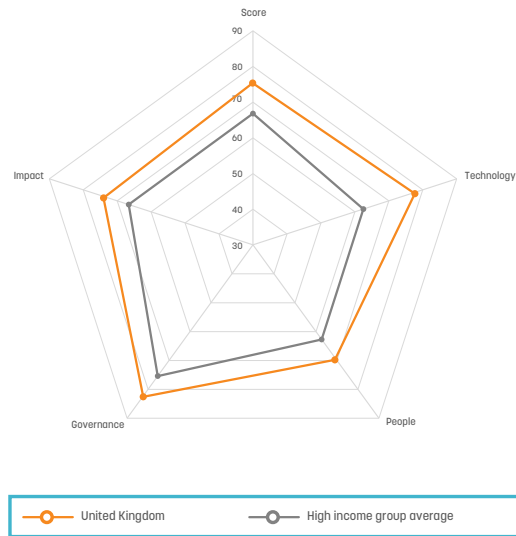
INDICATOR	RANK/134	SCORE
<b>A. Technology pillar</b>		
<b>1st sub-pillar: Access</b>		
1.1.1 Mobile tariffs	43	71.25
1.1.2 Handset prices	12	73.52
1.1.3 Households with internet access	4	98.40
1.1.4 4G mobile network coverage	14	99.73
1.1.5 Fixed-broadband subscriptions	32	91.39
1.1.6 International Internet bandwidth	8	80.24
1.1.7 Internet access in schools	1	100.00
<b>2nd sub-pillar: Content</b>		
1.2.1 GitHub commits	57	5.42
1.2.2 Wikipedia edits	63	45.10
1.2.3 Internet domain registrations*	-	-
1.2.4 Mobile apps development	32	79.42
<b>3rd sub-pillar: Future Technologies</b>		
1.3.1 Adoption of emerging technologies	17	78.00
1.3.2 Investment in emerging technology	11	79.57
1.3.3 ICT PCT patent applications	41	18.63
1.3.4 Computer software spending	49	23.49
1.3.5 Robot density	55	0.90
<b>B. People pillar</b>		
<b>1st sub-pillar: Individuals</b>		
2.1.1 Internet users	5	98.76
2.1.2 Active mobile-broadband subscriptions	1	100.00
2.1.3 Use of virtual social networks	1	100.00
2.1.4 Tertiary enrollment	n/a	n/a
2.1.5 Adult literacy rate	59	91.31
2.1.6 ICT skills	14	84.93
<b>2nd sub-pillar: Businesses</b>		
2.2.1 Firms with website	n/a	n/a
2.2.2 Ease of doing business	15	89.65
2.2.3 Professionals	43	37.29
2.2.4 Technicians and associate professionals	46	47.61
2.2.5 Business use of digital tools	21	82.41
2.2.6 R&D expenditure by businesses	26	20.62
<b>3rd sub-pillar: Governments</b>		
2.3.1 Government online services	15	89.70
2.3.2 Publication and use of open data	60	26.17
2.3.3 Government promotion of investment in emerging technologies	3	84.66
2.3.4 R&D expenditure by governments and higher education	41	44.83

INDICATOR	RANK/134	SCORE
<b>C. Governance pillar</b>		
<b>1st sub-pillar: Trust</b>		
3.1.1 Secure Internet servers	56	60.29
3.1.2 Cybersecurity	35	86.57
3.1.3 Online access to financial account	23	59.16
3.1.4 Internet shopping	21	63.63
<b>2nd sub-pillar: Regulation</b>		
3.2.1 Regulatory quality	34	71.93
3.2.2 ICT regulatory environment	67	83.40
3.2.3 Legal framework's adaptability to emerging technologies	13	75.04
3.2.4 E-commerce legislation	115	50.00
3.2.5 Privacy protection by law content	n/a	n/a
<b>3rd sub-pillar: Inclusion</b>		
3.3.1 E-Participation	16	93.83
3.3.2 Socioeconomic gap in use of digital payments	31	86.01
3.3.3 Availability of local online content	20	85.87
3.3.4 Gender gap in internet use	15	67.60
3.3.5 Rural gap in use of digital payments	100	52.36
<b>D. Impact pillar</b>		
<b>1st sub-pillar: Economy</b>		
4.1.1 Medium and high-tech industry	61	32.36
4.1.2 High-tech exports	45	20.44
4.1.3 PCT patent applications	42	2.50
4.1.4 Labour productivity per employee	22	63.85
4.1.5 Prevalence of gig economy	10	83.82
<b>2nd sub-pillar: Quality of Life</b>		
4.2.1 Happiness	23	78.97
4.2.2 Freedom to make life choices	22	91.19
4.2.3 Income inequality	30	78.61
4.2.4 Healthy life expectancy at birth	58	67.91
<b>3rd sub-pillar: SDG Contribution</b>		
4.3.1 SDG 3: Good Health and Well-Being	39	78.69
4.3.2 SDG 4: Quality Education	49	41.25
4.3.3 SDG 5: Gender Equality	72	73.61
4.3.4 SDG 7: Affordable and Clean Energy	77	75.14
4.3.5 SDG 11: Sustainable Cities and Communities	86	47.82

\* Data on indicator 1.2.3 is confidential, but has been included in the computation. Please see Appendix I: Technical Notes for further details.

# United Kingdom

	Rank (out of 134)	Score
<b>Network Readiness Index</b>	<b>10</b>	<b>76.27</b>
<b>A. Technology pillar</b>	<b>8</b>	<b>78.34</b>
1st sub-pillar: Access	3	90.38
2nd sub-pillar: Content	8	80.88
3rd sub-pillar: Future Technologies	14	63.77
<b>B. People pillar</b>	<b>14</b>	<b>69.69</b>
1st sub-pillar: Individuals	37	63.20
2nd sub-pillar: Businesses	16	68.87
3rd sub-pillar: Governments	10	76.98
<b>C. Governance pillar</b>	<b>14</b>	<b>82.65</b>
1st sub-pillar: Trust	12	83.85
2nd sub-pillar: Regulation	34	78.72
3rd sub-pillar: Inclusion	7	85.37
<b>D. Impact pillar</b>	<b>10</b>	<b>74.40</b>
1st sub-pillar: Economy	15	56.64
2nd sub-pillar: Quality of Life	19	81.89
3rd sub-pillar: SDG Contribution	5	84.66



## The Network Readiness Index in detail

INDICATOR	RANK/134	SCORE
<b>A. Technology pillar</b>		
<b>1st sub-pillar: Access</b>		
1.1.1 Mobile tariffs	12	89.21
1.1.2 Handset prices	8	80.12
1.1.3 Households with internet access	13	93.97
1.1.4 4G mobile network coverage	17	99.70
1.1.5 Fixed-broadband subscriptions	8	98.04
1.1.6 International Internet bandwidth	6	81.22
1.1.7 Internet access in schools	n/a	n/a
<b>2nd sub-pillar: Content</b>		
1.2.1 GitHub commits	10	69.26
1.2.2 Wikipedia edits	15	84.06
1.2.3 Internet domain registrations*	-	-
1.2.4 Mobile apps development	14	88.41
<b>3rd sub-pillar: Future Technologies</b>		
1.3.1 Adoption of emerging technologies	12	84.23
1.3.2 Investment in emerging technology	8	82.43
1.3.3 ICT PCT patent applications	16	62.28
1.3.4 Computer software spending	4	62.95
1.3.5 Robot density	22	26.94
<b>B. People pillar</b>		
<b>1st sub-pillar: Individuals</b>		
2.1.1 Internet users	10	95.10
2.1.2 Active mobile-broadband subscriptions	33	37.76
2.1.3 Use of virtual social networks	37	65.98
2.1.4 Tertiary enrollment	47	43.58
2.1.5 Adult literacy rate	n/a	n/a
2.1.6 ICT skills	28	73.58
<b>2nd sub-pillar: Businesses</b>		
2.2.1 Firms with website	10	86.35
2.2.2 Ease of doing business	8	94.31
2.2.3 Professionals	7	64.22
2.2.4 Technicians and associate professionals	36	53.07
2.2.5 Business use of digital tools	11	86.57
2.2.6 R&D expenditure by businesses	19	28.73
<b>3rd sub-pillar: Governments</b>		
2.3.1 Government online services	6	95.76
2.3.2 Publication and use of open data	1	100.00
2.3.3 Government promotion of investment in emerging technologies	21	66.69
2.3.4 R&D expenditure by governments and higher education	38	45.48

INDICATOR	RANK/134	SCORE
<b>C. Governance pillar</b>		
<b>1st sub-pillar: Trust</b>		
3.1.1 Secure Internet servers	18	83.71
3.1.2 Cybersecurity	1	100.00
3.1.3 Online access to financial account	28	55.84
3.1.4 Internet shopping	4	95.86
<b>2nd sub-pillar: Regulation</b>		
3.2.1 Regulatory quality	9	90.22
3.2.2 ICT regulatory environment	5	97.30
3.2.3 Legal framework's adaptability to emerging technologies	14	74.30
3.2.4 E-commerce legislation	1	100.00
3.2.5 Privacy protection by law content	66	31.79
<b>3rd sub-pillar: Inclusion</b>		
3.3.1 E-Participation	6	97.53
3.3.2 Socioeconomic gap in use of digital payments	20	94.21
3.3.3 Availability of local online content	11	90.87
3.3.4 Gender gap in internet use	12	68.19
3.3.5 Rural gap in use of digital payments	23	76.06
<b>D. Impact pillar</b>		
<b>1st sub-pillar: Economy</b>		
4.1.1 Medium and high-tech industry	18	58.01
4.1.2 High-tech exports	15	44.37
4.1.3 PCT patent applications	20	25.88
4.1.4 Labour productivity per employee	25	61.14
4.1.5 Prevalence of gig economy	3	93.80
<b>2nd sub-pillar: Quality of Life</b>		
4.2.1 Happiness	13	87.75
4.2.2 Freedom to make life choices	53	81.44
4.2.3 Income inequality	51	72.68
4.2.4 Healthy life expectancy at birth	23	85.67
<b>3rd sub-pillar: SDG Contribution</b>		
4.3.1 SDG 3: Good Health and Well-Being	2	96.72
4.3.2 SDG 4: Quality Education	16	66.34
4.3.3 SDG 5: Gender Equality	68	74.14
4.3.4 SDG 7: Affordable and Clean Energy	18	90.03
4.3.5 SDG 11: Sustainable Cities and Communities	5	96.06

\* Data on indicator 1.2.3 is confidential, but has been included in the computation. Please see Appendix I: Technical Notes for further details.

# United States

	Rank (out of 134)	Score
<b>Network Readiness Index</b>	<b>8</b>	<b>78.91</b>
<b>A. Technology pillar</b>	<b>4</b>	<b>82.88</b>
1st sub-pillar: Access	28	81.59
2nd sub-pillar: Content	9	78.42
3rd sub-pillar: Future Technologies	1	88.62
<b>B. People pillar</b>	<b>7</b>	<b>74.59</b>
1st sub-pillar: Individuals	14	72.63
2nd sub-pillar: Businesses	10	72.88
3rd sub-pillar: Governments	9	78.27
<b>C. Governance pillar</b>	<b>8</b>	<b>86.23</b>
1st sub-pillar: Trust	4	91.94
2nd sub-pillar: Regulation	30	79.97
3rd sub-pillar: Inclusion	4	86.77
<b>D. Impact pillar</b>	<b>14</b>	<b>71.96</b>
1st sub-pillar: Economy	5	65.67
2nd sub-pillar: Quality of Life	40	72.93
3rd sub-pillar: SDG Contribution	31	77.28



## The Network Readiness Index in detail

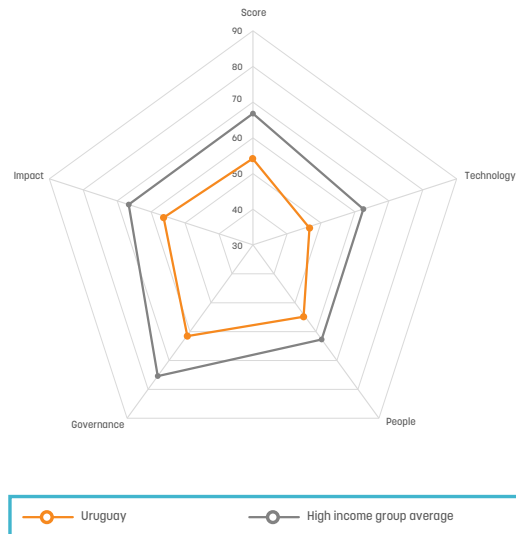
INDICATOR	RANK/134	SCORE
<b>A. Technology pillar</b>		
<b>1st sub-pillar: Access</b>		
1.1.1 Mobile tariffs	70	60.72
1.1.2 Handset prices	4	85.02
1.1.3 Households with internet access	36	83.80
1.1.4 4G mobile network coverage	12	99.80
1.1.5 Fixed-broadband subscriptions	38	87.49
1.1.6 International Internet bandwidth	35	72.69
1.1.7 Internet access in schools	n/a	n/a
<b>2nd sub-pillar: Content</b>		
1.2.1 GitHub commits	8	71.54
1.2.2 Wikipedia edits	34	72.47
1.2.3 Internet domain registrations*	-	-
1.2.4 Mobile apps development	6	94.51
<b>3rd sub-pillar: Future Technologies</b>		
1.3.1 Adoption of emerging technologies	2	99.75
1.3.2 Investment in emerging technology	1	100.00
1.3.3 ICT PCT patent applications	7	79.30
1.3.4 Computer software spending	1	100.00
1.3.5 Robot density	8	64.06
<b>B. People pillar</b>		
<b>1st sub-pillar: Individuals</b>		
2.1.1 Internet users	24	87.23
2.1.2 Active mobile-broadband subscriptions	7	56.29
2.1.3 Use of virtual social networks	24	70.10
2.1.4 Tertiary enrollment	8	64.33
2.1.5 Adult literacy rate	n/a	n/a
2.1.6 ICT skills	12	85.19
<b>2nd sub-pillar: Businesses</b>		
2.2.1 Firms with website	32	73.55
2.2.2 Ease of doing business	6	95.10
2.2.3 Professionals	16	54.97
2.2.4 Technicians and associate professionals	24	61.60
2.2.5 Business use of digital tools	1	100.00
2.2.6 R&D expenditure by businesses	8	52.08
<b>3rd sub-pillar: Governments</b>		
2.3.1 Government online services	7	94.55
2.3.2 Publication and use of open data	4	81.62
2.3.3 Government promotion of investment in emerging technologies	7	78.86
2.3.4 R&D expenditure by governments and higher education	21	58.04

INDICATOR	RANK/134	SCORE
<b>C. Governance pillar</b>		
<b>1st sub-pillar: Trust</b>		
3.1.1 Secure Internet servers	3	93.58
3.1.2 Cybersecurity	2	99.46
3.1.3 Online access to financial account	7	84.40
3.1.4 Internet shopping	7	90.33
<b>2nd sub-pillar: Regulation</b>		
3.2.1 Regulatory quality	16	86.17
3.2.2 ICT regulatory environment	35	89.77
3.2.3 Legal framework's adaptability to emerging technologies	3	88.10
3.2.4 E-commerce legislation	1	100.00
3.2.5 Privacy protection by law content	63	35.82
<b>3rd sub-pillar: Inclusion</b>		
3.3.1 E-Participation	1	100.00
3.3.2 Socioeconomic gap in use of digital payments	40	79.64
3.3.3 Availability of local online content	6	93.52
3.3.4 Gender gap in internet use	n/a	n/a
3.3.5 Rural gap in use of digital payments	41	73.90
<b>D. Impact pillar</b>		
<b>1st sub-pillar: Economy</b>		
4.1.1 Medium and high-tech industry	16	61.01
4.1.2 High-tech exports	23	36.18
4.1.3 PCT patent applications	11	46.46
4.1.4 Labour productivity per employee	4	84.69
4.1.5 Prevalence of gig economy	1	100.00
<b>2nd sub-pillar: Quality of Life</b>		
4.2.1 Happiness	18	83.55
4.2.2 Freedom to make life choices	58	78.40
4.2.3 Income inequality	84	55.67
4.2.4 Healthy life expectancy at birth	38	74.10
<b>3rd sub-pillar: SDG Contribution</b>		
4.3.1 SDG 3: Good Health and Well-Being	10	91.80
4.3.2 SDG 4: Quality Education	36	57.51
4.3.3 SDG 5: Gender Equality	28	82.48
4.3.4 SDG 7: Affordable and Clean Energy	84	73.05
4.3.5 SDG 11: Sustainable Cities and Communities	34	81.56

\* Data on indicator 1.2.3 is confidential, but has been included in the computation. Please see Appendix I: Technical Notes for further details.

# Uruguay

	Rank (out of 134)	Score
<b>Network Readiness Index</b>	<b>47</b>	<b>54.87</b>
<b>A. Technology pillar</b>	<b>48</b>	<b>46.96</b>
1st sub-pillar: Access	46	75.76
2nd sub-pillar: Content	43	40.92
3rd sub-pillar: Future Technologies	84	24.22
<b>B. People pillar</b>	<b>41</b>	<b>54.63</b>
1st sub-pillar: Individuals	31	65.44
2nd sub-pillar: Businesses	64	43.31
3rd sub-pillar: Governments	35	55.13
<b>C. Governance pillar</b>	<b>50</b>	<b>61.40</b>
1st sub-pillar: Trust	53	47.94
2nd sub-pillar: Regulation	48	71.17
3rd sub-pillar: Inclusion	62	65.09
<b>D. Impact pillar</b>	<b>49</b>	<b>56.49</b>
1st sub-pillar: Economy	93	18.46
2nd sub-pillar: Quality of Life	33	75.45
3rd sub-pillar: SDG Contribution	36	75.56



## The Network Readiness Index in detail

INDICATOR	RANK/134	SCORE
<b>A. Technology pillar</b>		
<b>1st sub-pillar: Access</b>		
1.1.1 Mobile tariffs	39	72.91
1.1.2 Handset prices	33	62.73
1.1.3 Households with internet access	72	63.92
1.1.4 4G mobile network coverage	73	86.20
1.1.5 Fixed-broadband subscriptions	59	71.71
1.1.6 International Internet bandwidth	33	72.83
1.1.7 Internet access in schools	1	100.00
<b>2nd sub-pillar: Content</b>		
1.2.1 GitHub commits	42	13.73
1.2.2 Wikipedia edits	39	68.66
1.2.3 Internet domain registrations*	-	-
1.2.4 Mobile apps development	45	71.53
<b>3rd sub-pillar: Future Technologies</b>		
1.3.1 Adoption of emerging technologies	54	51.47
1.3.2 Investment in emerging technology	104	26.97
1.3.3 ICT PCT patent applications	67	1.85
1.3.4 Computer software spending	68	16.57
1.3.5 Robot density	n/a	n/a
<b>B. People pillar</b>		
<b>1st sub-pillar: Individuals</b>		
2.1.1 Internet users	67	67.65
2.1.2 Active mobile-broadband subscriptions	16	48.72
2.1.3 Use of virtual social networks	12	78.35
2.1.4 Tertiary enrollment	44	45.88
2.1.5 Adult literacy rate	22	98.36
2.1.6 ICT skills	62	53.65
<b>2nd sub-pillar: Businesses</b>		
2.2.1 Firms with website	40	69.19
2.2.2 Ease of doing business	90	55.38
2.2.3 Professionals	55	29.11
2.2.4 Technicians and associate professionals	66	32.23
2.2.5 Business use of digital tools	47	71.02
2.2.6 R&D expenditure by businesses	61	2.95
<b>3rd sub-pillar: Governments</b>		
2.3.1 Government online services	31	83.64
2.3.2 Publication and use of open data	17	60.85
2.3.3 Government promotion of investment in emerging technologies	51	43.69
2.3.4 R&D expenditure by governments and higher education	56	32.33

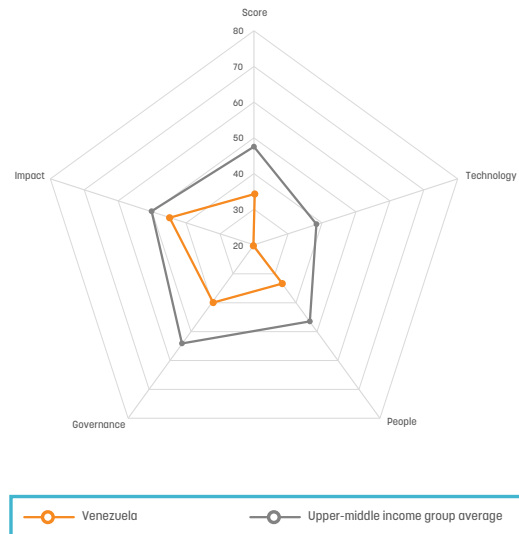
INDICATOR	RANK/134	SCORE
<b>C. Governance pillar</b>		
<b>1st sub-pillar: Trust</b>		
3.1.1 Secure Internet servers	58	59.85
3.1.2 Cybersecurity	53	72.91
3.1.3 Online access to financial account	68	27.88
3.1.4 Internet shopping	45	31.10
<b>2nd sub-pillar: Regulation</b>		
3.2.1 Regulatory quality	46	62.41
3.2.2 ICT regulatory environment	108	64.87
3.2.3 Legal framework's adaptability to emerging technologies	40	51.41
3.2.4 E-commerce legislation	1	100.00
3.2.5 Privacy protection by law content	31	77.16
<b>3rd sub-pillar: Inclusion</b>		
3.3.1 E-Participation	29	85.18
3.3.2 Socioeconomic gap in use of digital payments	85	54.89
3.3.3 Availability of local online content	62	61.70
3.3.4 Gender gap in internet use	9	69.30
3.3.5 Rural gap in use of digital payments	91	54.37
<b>D. Impact pillar</b>		
<b>1st sub-pillar: Economy</b>		
4.1.1 Medium and high-tech industry	88	19.30
4.1.2 High-tech exports	64	13.64
4.1.3 PCT patent applications	54	0.83
4.1.4 Labour productivity per employee	57	29.47
4.1.5 Prevalence of gig economy	97	29.09
<b>2nd sub-pillar: Quality of Life</b>		
4.2.1 Happiness	26	76.80
4.2.2 Freedom to make life choices	28	89.70
4.2.3 Income inequality	76	60.05
4.2.4 Healthy life expectancy at birth	34	75.23
<b>3rd sub-pillar: SDG Contribution</b>		
4.3.1 SDG 3: Good Health and Well-Being	23	85.25
4.3.2 SDG 4: Quality Education	57	34.76
4.3.3 SDG 5: Gender Equality	6	90.79
4.3.4 SDG 7: Affordable and Clean Energy	28	88.15
4.3.5 SDG 11: Sustainable Cities and Communities	40	78.85

\* Data on indicator 1.2.3 is confidential, but has been included in the computation. Please see Appendix I: Technical Notes for further details.



# Venezuela

	Rank (out of 134)	Score
<b>Network Readiness Index</b>	<b>108</b>	<b>34.57</b>
<b>A. Technology pillar</b>	<b>118</b>	<b>19.61</b>
1st sub-pillar: Access	115	30.48
2nd sub-pillar: Content	103	16.39
3rd sub-pillar: Future Technologies	128	11.95
<b>B. People pillar</b>	<b>101</b>	<b>33.34</b>
1st sub-pillar: Individuals	76	53.42
2nd sub-pillar: Businesses	96	32.82
3rd sub-pillar: Governments	133	13.77
<b>C. Governance pillar</b>	<b>108</b>	<b>40.02</b>
1st sub-pillar: Trust	72	35.82
2nd sub-pillar: Regulation	123	38.20
3rd sub-pillar: Inclusion	104	46.05
<b>D. Impact pillar</b>	<b>91</b>	<b>45.33</b>
1st sub-pillar: Economy	102	16.45
2nd sub-pillar: Quality of Life	102	51.83
3rd sub-pillar: SDG Contribution	55	67.72



## The Network Readiness Index in detail

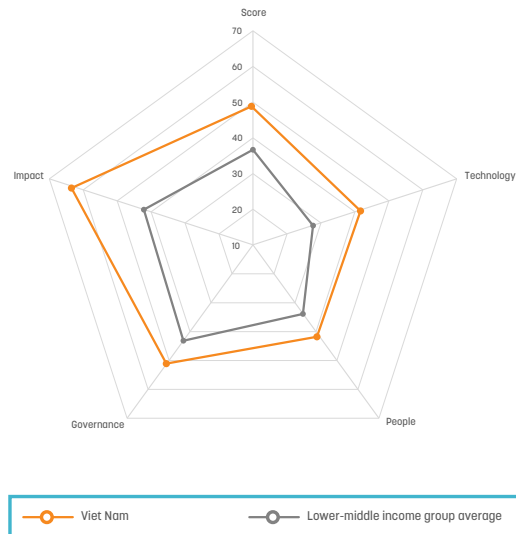
INDICATOR	RANK/134	SCORE
<b>A. Technology pillar</b>		
<b>1st sub-pillar: Access</b>		
1.1.1 Mobile tariffs	133	0.00
1.1.2 Handset prices	132	0.00
1.1.3 Households with internet access	92	33.32
1.1.4 4G mobile network coverage	77	82.00
1.1.5 Fixed-broadband subscriptions	107	5.96
1.1.6 International Internet bandwidth	102	61.57
1.1.7 Internet access in schools	n/a	n/a
<b>2nd sub-pillar: Content</b>		
1.2.1 GitHub commits	70	3.28
1.2.2 Wikipedia edits	n/a	n/a
1.2.3 Internet domain registrations*	-	-
1.2.4 Mobile apps development	104	43.59
<b>3rd sub-pillar: Future Technologies</b>		
1.3.1 Adoption of emerging technologies	97	32.25
1.3.2 Investment in emerging technology	129	10.78
1.3.3 ICT PCT patent applications	79	0.22
1.3.4 Computer software spending	69	16.48
1.3.5 Robot density	69	0.03
<b>B. People pillar</b>		
<b>1st sub-pillar: Individuals</b>		
2.1.1 Internet users	59	71.49
2.1.2 Active mobile-broadband subscriptions	96	20.55
2.1.3 Use of virtual social networks	91	41.24
2.1.4 Tertiary enrollment	20	57.80
2.1.5 Adult literacy rate	36	96.33
2.1.6 ICT skills	108	33.10
<b>2nd sub-pillar: Businesses</b>		
2.2.1 Firms with website	67	48.76
2.2.2 Ease of doing business	133	0.00
2.2.3 Professionals	45	36.12
2.2.4 Technicians and associate professionals	n/a	n/a
2.2.5 Business use of digital tools	97	46.40
2.2.6 R&D expenditure by businesses	n/a	n/a
<b>3rd sub-pillar: Governments</b>		
2.3.1 Government online services	124	29.69
2.3.2 Publication and use of open data	88	11.62
2.3.3 Government promotion of investment in emerging technologies	127	0.00
2.3.4 R&D expenditure by governments and higher education	n/a	n/a

INDICATOR	RANK/134	SCORE
<b>C. Governance pillar</b>		
<b>1st sub-pillar: Trust</b>		
3.1.1 Secure Internet servers	87	42.94
3.1.2 Cybersecurity	101	37.49
3.1.3 Online access to financial account	37	46.32
3.1.4 Internet shopping	66	16.52
<b>2nd sub-pillar: Regulation</b>		
3.2.1 Regulatory quality	134	0.00
3.2.2 ICT regulatory environment	70	82.82
3.2.3 Legal framework's adaptability to emerging technologies	121	9.42
3.2.4 E-commerce legislation	77	75.00
3.2.5 Privacy protection by law content	74	23.76
<b>3rd sub-pillar: Inclusion</b>		
3.3.1 E-Participation	129	20.99
3.3.2 Socioeconomic gap in use of digital payments	77	60.92
3.3.3 Availability of local online content	111	31.77
3.3.4 Gender gap in internet use	n/a	n/a
3.3.5 Rural gap in use of digital payments	53	70.54
<b>D. Impact pillar</b>		
<b>1st sub-pillar: Economy</b>		
4.1.1 Medium and high-tech industry	41	43.69
4.1.2 High-tech exports	n/a	n/a
4.1.3 PCT patent applications	85	0.02
4.1.4 Labour productivity per employee	99	7.54
4.1.5 Prevalence of gig economy	117	14.55
<b>2nd sub-pillar: Quality of Life</b>		
4.2.1 Happiness	90	46.93
4.2.2 Freedom to make life choices	125	42.63
4.2.3 Income inequality	n/a	n/a
4.2.4 Healthy life expectancy at birth	67	65.94
<b>3rd sub-pillar: SDG Contribution</b>		
4.3.1 SDG 3: Good Health and Well-Being	54	75.41
4.3.2 SDG 4: Quality Education	n/a	n/a
4.3.3 SDG 5: Gender Equality	9	89.66
4.3.4 SDG 7: Affordable and Clean Energy	95	68.86
4.3.5 SDG 11: Sustainable Cities and Communities	109	36.93

\* Data on indicator 1.2.3 is confidential, but has been included in the computation. Please see Appendix I: Technical Notes for further details.

# Viet Nam

	Rank (out of 134)	Score
<b>Network Readiness Index</b>	<b>62</b>	<b>49.68</b>
<b>A. Technology pillar</b>	<b>57</b>	<b>42.51</b>
1st sub-pillar: Access	60	69.14
2nd sub-pillar: Content	65	28.42
3rd sub-pillar: Future Technologies	56	29.96
<b>B. People pillar</b>	<b>82</b>	<b>41.63</b>
1st sub-pillar: Individuals	77	52.90
2nd sub-pillar: Businesses	89	35.41
3rd sub-pillar: Governments	87	36.58
<b>C. Governance pillar</b>	<b>80</b>	<b>51.01</b>
1st sub-pillar: Trust	54	47.31
2nd sub-pillar: Regulation	98	54.26
3rd sub-pillar: Inclusion	97	51.48
<b>D. Impact pillar</b>	<b>33</b>	<b>63.58</b>
1st sub-pillar: Economy	19	50.50
2nd sub-pillar: Quality of Life	38	73.43
3rd sub-pillar: SDG Contribution	66	66.80



## The Network Readiness Index in detail

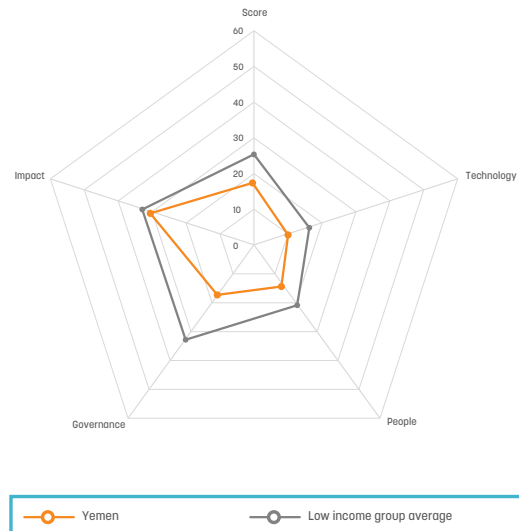
INDICATOR	RANK/134	SCORE
<b>A. Technology pillar</b>		
<b>1st sub-pillar: Access</b>		
1.1.1 Mobile tariffs	51	69.30
1.1.2 Handset prices	80	38.84
1.1.3 Households with internet access	83	46.91
1.1.4 4G mobile network coverage	57	93.89
1.1.5 Fixed-broadband subscriptions	13	96.44
1.1.6 International Internet bandwidth	58	69.45
1.1.7 Internet access in schools	n/a	n/a
<b>2nd sub-pillar: Content</b>		
1.2.1 GitHub commits	66	3.50
1.2.2 Wikipedia edits	74	40.45
1.2.3 Internet domain registrations*	-	-
1.2.4 Mobile apps development	57	67.10
<b>3rd sub-pillar: Future Technologies</b>		
1.3.1 Adoption of emerging technologies	56	50.09
1.3.2 Investment in emerging technology	68	38.57
1.3.3 ICT PCT patent applications	n/a	n/a
1.3.4 Computer software spending	37	26.81
1.3.5 Robot density	42	4.36
<b>B. People pillar</b>		
<b>1st sub-pillar: Individuals</b>		
2.1.1 Internet users	64	69.79
2.1.2 Active mobile-broadband subscriptions	73	27.61
2.1.3 Use of virtual social networks	34	67.01
2.1.4 Tertiary enrollment	83	20.42
2.1.5 Adult literacy rate	50	93.60
2.1.6 ICT skills	92	38.98
<b>2nd sub-pillar: Businesses</b>		
2.2.1 Firms with website	72	45.39
2.2.2 Ease of doing business	65	69.93
2.2.3 Professionals	94	15.28
2.2.4 Technicians and associate professionals	110	11.24
2.2.5 Business use of digital tools	63	60.78
2.2.6 R&D expenditure by businesses	43	9.83
<b>3rd sub-pillar: Governments</b>		
2.3.1 Government online services	77	64.24
2.3.2 Publication and use of open data	79	16.79
2.3.3 Government promotion of investment in emerging technologies	30	54.36
2.3.4 R&D expenditure by governments and higher education	89	10.94

INDICATOR	RANK/134	SCORE
<b>C. Governance pillar</b>		
<b>1st sub-pillar: Trust</b>		
3.1.1 Secure Internet servers	54	62.74
3.1.2 Cybersecurity	52	74.21
3.1.3 Online access to financial account	66	28.29
3.1.4 Internet shopping	53	24.00
<b>2nd sub-pillar: Regulation</b>		
3.2.1 Regulatory quality	98	42.92
3.2.2 ICT regulatory environment	110	63.71
3.2.3 Legal framework's adaptability to emerging technologies	54	45.96
3.2.4 E-commerce legislation	1	100.00
3.2.5 Privacy protection by law content	76	18.71
<b>3rd sub-pillar: Inclusion</b>		
3.3.1 E-Participation	69	69.14
3.3.2 Socioeconomic gap in use of digital payments	118	33.44
3.3.3 Availability of local online content	64	61.05
3.3.4 Gender gap in internet use	n/a	n/a
3.3.5 Rural gap in use of digital payments	111	42.27
<b>D. Impact pillar</b>		
<b>1st sub-pillar: Economy</b>		
4.1.1 Medium and high-tech industry	35	48.17
4.1.2 High-tech exports	6	76.10
4.1.3 PCT patent applications	n/a	n/a
4.1.4 Labour productivity per employee	97	8.28
4.1.5 Prevalence of gig economy	21	69.47
<b>2nd sub-pillar: Quality of Life</b>		
4.2.1 Happiness	77	54.53
4.2.2 Freedom to make life choices	5	98.16
4.2.3 Income inequality	56	70.36
4.2.4 Healthy life expectancy at birth	47	70.67
<b>3rd sub-pillar: SDG Contribution</b>		
4.3.1 SDG 3: Good Health and Well-Being	50	77.05
4.3.2 SDG 4: Quality Education	23	64.06
4.3.3 SDG 5: Gender Equality	18	86.29
4.3.4 SDG 7: Affordable and Clean Energy	101	66.62
4.3.5 SDG 11: Sustainable Cities and Communities	102	39.99

\* Data on indicator 1.2.3 is confidential, but has been included in the computation. Please see Appendix I: Technical Notes for further details.

# Yemen

	Rank (out of 134)	Score
<b>Network Readiness Index</b>	<b>132</b>	<b>18.00</b>
<b>A. Technology pillar</b>	<b>131</b>	<b>10.63</b>
1st sub-pillar: Access	132	13.10
2nd sub-pillar: Content	121	10.32
3rd sub-pillar: Future Technologies	131	8.47
<b>B. People pillar</b>	<b>133</b>	<b>14.00</b>
1st sub-pillar: Individuals	129	14.24
2nd sub-pillar: Businesses	132	13.43
3rd sub-pillar: Governments	132	14.34
<b>C. Governance pillar</b>	<b>134</b>	<b>16.95</b>
1st sub-pillar: Trust	133	6.80
2nd sub-pillar: Regulation	134	20.05
3rd sub-pillar: Inclusion	131	24.00
<b>D. Impact pillar</b>	<b>128</b>	<b>30.42</b>
1st sub-pillar: Economy	122	10.63
2nd sub-pillar: Quality of Life	118	43.25
3rd sub-pillar: SDG Contribution	126	37.37



## The Network Readiness Index in detail

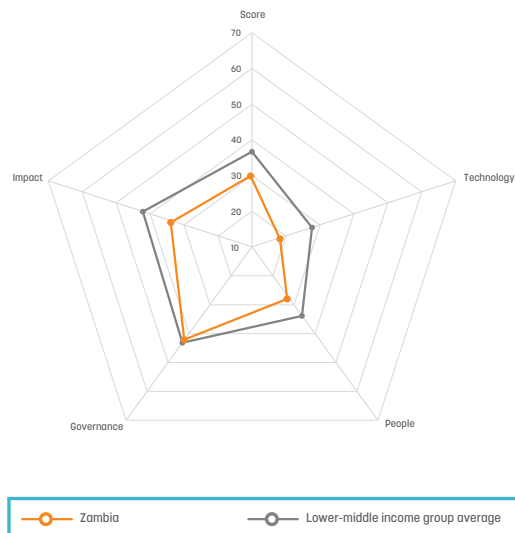
INDICATOR	RANK/134	SCORE
<b>A. Technology pillar</b>		
<b>1st sub-pillar: Access</b>		
1.1.1 Mobile tariffs	132	0.33
1.1.2 Handset prices	118	19.34
1.1.3 Households with internet access	131	6.02
1.1.4 4G mobile network coverage	130	0.00
1.1.5 Fixed-broadband subscriptions	122	0.00
1.1.6 International Internet bandwidth	123	52.94
1.1.7 Internet access in schools	n/a	n/a
<b>2nd sub-pillar: Content</b>		
1.2.1 GitHub commits	129	0.05
1.2.2 Wikipedia edits	106	15.93
1.2.3 Internet domain registrations*	-	-
1.2.4 Mobile apps development	122	25.13
<b>3rd sub-pillar: Future Technologies</b>		
1.3.1 Adoption of emerging technologies	123	14.69
1.3.2 Investment in emerging technology	130	7.80
1.3.3 ICT PCT patent applications	n/a	n/a
1.3.4 Computer software spending	107	2.93
1.3.5 Robot density	n/a	n/a
<b>B. People pillar</b>		
<b>1st sub-pillar: Individuals</b>		
2.1.1 Internet users	110	24.80
2.1.2 Active mobile-broadband subscriptions	133	0.83
2.1.3 Use of virtual social networks	119	6.70
2.1.4 Tertiary enrollment	108	6.87
2.1.5 Adult literacy rate	n/a	n/a
2.1.6 ICT skills	110	31.98
<b>2nd sub-pillar: Businesses</b>		
2.2.1 Firms with website	114	13.35
2.2.2 Ease of doing business	132	2.70
2.2.3 Professionals	86	16.97
2.2.4 Technicians and associate professionals	105	14.20
2.2.5 Business use of digital tools	122	19.93
2.2.6 R&D expenditure by businesses	n/a	n/a
<b>3rd sub-pillar: Governments</b>		
2.3.1 Government online services	123	30.30
2.3.2 Publication and use of open data	108	0.00
2.3.3 Government promotion of investment in emerging technologies	115	12.71
2.3.4 R&D expenditure by governments and higher education	n/a	n/a

INDICATOR	RANK/134	SCORE
<b>C. Governance pillar</b>		
<b>1st sub-pillar: Trust</b>		
3.1.1 Secure Internet servers	130	12.41
3.1.2 Cybersecurity	132	1.19
3.1.3 Online access to financial account	n/a	n/a
3.1.4 Internet shopping	n/a	n/a
<b>2nd sub-pillar: Regulation</b>		
3.2.1 Regulatory quality	132	17.58
3.2.2 ICT regulatory environment	134	0.00
3.2.3 Legal framework's adaptability to emerging technologies	114	12.62
3.2.4 E-commerce legislation	115	50.00
3.2.5 Privacy protection by law content	n/a	n/a
<b>3rd sub-pillar: Inclusion</b>		
3.3.1 E-Participation	124	28.39
3.3.2 Socioeconomic gap in use of digital payments	128	0.00
3.3.3 Availability of local online content	115	29.18
3.3.4 Gender gap in internet use	n/a	n/a
3.3.5 Rural gap in use of digital payments	115	38.40
<b>D. Impact pillar</b>		
<b>1st sub-pillar: Economy</b>		
4.1.1 Medium and high-tech industry	123	2.31
4.1.2 High-tech exports	61	15.19
4.1.3 PCT patent applications	n/a	n/a
4.1.4 Labour productivity per employee	100	7.51
4.1.5 Prevalence of gig economy	114	17.52
<b>2nd sub-pillar: Quality of Life</b>		
4.2.1 Happiness	121	29.55
4.2.2 Freedom to make life choices	121	47.01
4.2.3 Income inequality	64	67.78
4.2.4 Healthy life expectancy at birth	116	28.67
<b>3rd sub-pillar: SDG Contribution</b>		
4.3.1 SDG 3: Good Health and Well-Being	122	22.95
4.3.2 SDG 4: Quality Education	n/a	n/a
4.3.3 SDG 5: Gender Equality	133	0.00
4.3.4 SDG 7: Affordable and Clean Energy	20	89.16
4.3.5 SDG 11: Sustainable Cities and Communities	n/a	n/a

\* Data on indicator 1.2.3 is confidential, but has been included in the computation. Please see Appendix I: Technical Notes for further details.

# Zambia

	Rank (out of 134)	Score
<b>Network Readiness Index</b>	<b>116</b>	<b>30.54</b>
<b>A. Technology pillar</b>	<b>123</b>	<b>18.76</b>
1st sub-pillar: Access	118	28.27
2nd sub-pillar: Content	124	8.15
3rd sub-pillar: Future Technologies	98	19.85
<b>B. People pillar</b>	<b>116</b>	<b>27.68</b>
1st sub-pillar: Individuals	114	26.88
2nd sub-pillar: Businesses	70	41.05
3rd sub-pillar: Governments	131	15.11
<b>C. Governance pillar</b>	<b>103</b>	<b>41.95</b>
1st sub-pillar: Trust	88	30.51
2nd sub-pillar: Regulation	90	56.75
3rd sub-pillar: Inclusion	119	38.59
<b>D. Impact pillar</b>	<b>121</b>	<b>33.75</b>
1st sub-pillar: Economy	108	14.45
2nd sub-pillar: Quality of Life	129	31.90
3rd sub-pillar: SDG Contribution	96	54.90



## The Network Readiness Index in detail

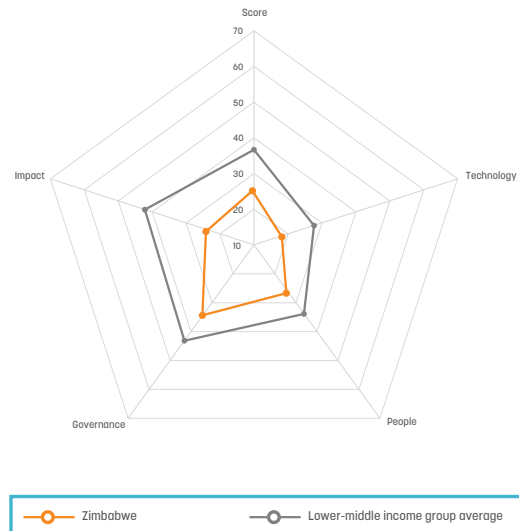
INDICATOR	RANK/134	SCORE
<b>A. Technology pillar</b>		
<b>1st sub-pillar: Access</b>		
1.1.1 Mobile tariffs	112	35.21
1.1.2 Handset prices	103	29.32
1.1.3 Households with internet access	113	17.47
1.1.4 4G mobile network coverage	106	43.41
1.1.5 Fixed-broadband subscriptions	104	6.65
1.1.6 International Internet bandwidth	107	60.02
1.1.7 Internet access in schools	65	5.81
<b>2nd sub-pillar: Content</b>		
1.2.1 GitHub commits	115	0.31
1.2.2 Wikipedia edits	110	13.17
1.2.3 Internet domain registrations*	-	-
1.2.4 Mobile apps development	127	19.03
<b>3rd sub-pillar: Future Technologies</b>		
1.3.1 Adoption of emerging technologies	114	25.44
1.3.2 Investment in emerging technology	91	31.39
1.3.3 ICT PCT patent applications	n/a	n/a
1.3.4 Computer software spending	109	2.72
1.3.5 Robot density	n/a	n/a
<b>B. People pillar</b>		
<b>1st sub-pillar: Individuals</b>		
2.1.1 Internet users	127	12.00
2.1.2 Active mobile-broadband subscriptions	92	21.40
2.1.3 Use of virtual social networks	116	11.34
2.1.4 Tertiary enrollment	123	2.42
2.1.5 Adult literacy rate	73	82.97
2.1.6 ICT skills	113	31.17
<b>2nd sub-pillar: Businesses</b>		
2.2.1 Firms with website	56	57.47
2.2.2 Ease of doing business	80	64.92
2.2.3 Professionals	73	21.10
2.2.4 Technicians and associate professionals	93	18.65
2.2.5 Business use of digital tools	104	43.11
2.2.6 R&D expenditure by businesses	n/a	n/a
<b>3rd sub-pillar: Governments</b>		
2.3.1 Government online services	128	23.63
2.3.2 Publication and use of open data	102	3.82
2.3.3 Government promotion of investment in emerging technologies	108	17.87
2.3.4 R&D expenditure by governments and higher education	n/a	n/a

INDICATOR	RANK/134	SCORE
<b>C. Governance pillar</b>		
<b>1st sub-pillar: Trust</b>		
3.1.1 Secure Internet servers	115	28.72
3.1.2 Cybersecurity	90	46.37
3.1.3 Online access to financial account	46	40.46
3.1.4 Internet shopping	86	6.50
<b>2nd sub-pillar: Regulation</b>		
3.2.1 Regulatory quality	101	41.67
3.2.2 ICT regulatory environment	97	70.28
3.2.3 Legal framework's adaptability to emerging technologies	109	15.07
3.2.4 E-commerce legislation	1	100.00
3.2.5 Privacy protection by law content	n/a	n/a
<b>3rd sub-pillar: Inclusion</b>		
3.3.1 E-Participation	124	28.39
3.3.2 Socioeconomic gap in use of digital payments	94	49.51
3.3.3 Availability of local online content	127	21.37
3.3.4 Gender gap in internet use	80	40.88
3.3.5 Rural gap in use of digital payments	97	52.80
<b>D. Impact pillar</b>		
<b>1st sub-pillar: Economy</b>		
4.1.1 Medium and high-tech industry	75	26.74
4.1.2 High-tech exports	104	4.38
4.1.3 PCT patent applications	n/a	n/a
4.1.4 Labour productivity per employee	104	6.66
4.1.5 Prevalence of gig economy	112	20.04
<b>2nd sub-pillar: Quality of Life</b>		
4.2.1 Happiness	130	12.06
4.2.2 Freedom to make life choices	70	74.14
4.2.3 Income inequality	119	15.21
4.2.4 Healthy life expectancy at birth	120	26.21
<b>3rd sub-pillar: SDG Contribution</b>		
4.3.1 SDG 3: Good Health and Well-Being	107	40.98
4.3.2 SDG 4: Quality Education	n/a	n/a
4.3.3 SDG 5: Gender Equality	85	68.29
4.3.4 SDG 7: Affordable and Clean Energy	115	55.42
4.3.5 SDG 11: Sustainable Cities and Communities	n/a	n/a

\* Data on indicator 1.2.3 is confidential, but has been included in the computation. Please see Appendix I: Technical Notes for further details.

# Zimbabwe

	Rank (out of 134)	Score
<b>Network Readiness Index</b>	<b>126</b>	<b>25.78</b>
<b>A. Technology pillar</b>	<b>122</b>	<b>18.80</b>
1st sub-pillar: Access	124	23.87
2nd sub-pillar: Content	109	13.90
3rd sub-pillar: Future Technologies	105	18.62
<b>B. People pillar</b>	<b>118</b>	<b>26.38</b>
1st sub-pillar: Individuals	109	30.77
2nd sub-pillar: Businesses	113	27.15
3rd sub-pillar: Governments	119	21.22
<b>C. Governance pillar</b>	<b>124</b>	<b>34.11</b>
1st sub-pillar: Trust	105	25.51
2nd sub-pillar: Regulation	130	31.05
3rd sub-pillar: Inclusion	106	45.78
<b>D. Impact pillar</b>	<b>132</b>	<b>23.82</b>
1st sub-pillar: Economy	128	8.10
2nd sub-pillar: Quality of Life	131	29.58
3rd sub-pillar: SDG Contribution	129	33.80



## The Network Readiness Index in detail

INDICATOR	RANK/134	SCORE
<b>A. Technology pillar</b>		
<b>1st sub-pillar: Access</b>		
1.1.1 Mobile tariffs	126	20.44
1.1.2 Handset prices	132	0.00
1.1.3 Households with internet access	105	23.78
1.1.4 4G mobile network coverage	111	35.00
1.1.5 Fixed-broadband subscriptions	108	5.11
1.1.6 International Internet bandwidth	110	58.88
1.1.7 Internet access in schools	n/a	n/a
<b>2nd sub-pillar: Content</b>		
1.2.1 GitHub commits	112	0.34
1.2.2 Wikipedia edits	107	15.35
1.2.3 Internet domain registrations*	-	-
1.2.4 Mobile apps development	107	39.31
<b>3rd sub-pillar: Future Technologies</b>		
1.3.1 Adoption of emerging technologies	111	26.03
1.3.2 Investment in emerging technology	126	12.22
1.3.3 ICT PCT patent applications	82	0.00
1.3.4 Computer software spending	22	36.23
1.3.5 Robot density	n/a	n/a
<b>B. People pillar</b>		
<b>1st sub-pillar: Individuals</b>		
2.1.1 Internet users	109	25.15
2.1.2 Active mobile-broadband subscriptions	99	19.64
2.1.3 Use of virtual social networks	127	4.74
2.1.4 Tertiary enrollment	109	6.76
2.1.5 Adult literacy rate	66	85.47
2.1.6 ICT skills	83	42.83
<b>2nd sub-pillar: Businesses</b>		
2.2.1 Firms with website	89	33.90
2.2.2 Ease of doing business	113	42.87
2.2.3 Professionals	113	7.68
2.2.4 Technicians and associate professionals	118	5.99
2.2.5 Business use of digital tools	99	45.31
2.2.6 R&D expenditure by businesses	n/a	n/a
<b>3rd sub-pillar: Governments</b>		
2.3.1 Government online services	97	50.91
2.3.2 Publication and use of open data	106	1.87
2.3.3 Government promotion of investment in emerging technologies	116	10.90
2.3.4 R&D expenditure by governments and higher education	n/a	n/a

INDICATOR	RANK/134	SCORE
<b>C. Governance pillar</b>		
<b>1st sub-pillar: Trust</b>		
3.1.1 Secure Internet servers	108	33.67
3.1.2 Cybersecurity	117	19.28
3.1.3 Online access to financial account	39	44.27
3.1.4 Internet shopping	96	4.83
<b>2nd sub-pillar: Regulation</b>		
3.2.1 Regulatory quality	133	16.53
3.2.2 ICT regulatory environment	92	72.98
3.2.3 Legal framework's adaptability to emerging technologies	120	9.68
3.2.4 E-commerce legislation	127	25.00
3.2.5 Privacy protection by law content	n/a	n/a
<b>3rd sub-pillar: Inclusion</b>		
3.3.1 E-Participation	105	43.21
3.3.2 Socioeconomic gap in use of digital payments	69	65.03
3.3.3 Availability of local online content	117	27.72
3.3.4 Gender gap in internet use	n/a	n/a
3.3.5 Rural gap in use of digital payments	106	47.15
<b>D. Impact pillar</b>		
<b>1st sub-pillar: Economy</b>		
4.1.1 Medium and high-tech industry	72	27.69
4.1.2 High-tech exports	85	9.07
4.1.3 PCT patent applications	84	0.02
4.1.4 Labour productivity per employee	107	3.72
4.1.5 Prevalence of gig economy	127	0.00
<b>2nd sub-pillar: Quality of Life</b>		
4.2.1 Happiness	133	0.00
4.2.2 Freedom to make life choices	123	43.71
4.2.3 Income inequality	99	48.20
4.2.4 Healthy life expectancy at birth	119	26.41
<b>3rd sub-pillar: SDG Contribution</b>		
4.3.1 SDG 3: Good Health and Well-Being	106	42.62
4.3.2 SDG 4: Quality Education	n/a	n/a
4.3.3 SDG 5: Gender Equality	101	60.03
4.3.4 SDG 7: Affordable and Clean Energy	131	0.00
4.3.5 SDG 11: Sustainable Cities and Communities	116	32.54

\* Data on indicator 1.2.3 is confidential, but has been included in the computation. Please see Appendix I: Technical Notes for further details.





# DATA TABLES





# How to Read the Data Tables

The following pages provide detailed data for all 60 indicators used to compute the Network Readiness Index 2020. The data tables are organized into four sections, which correspond to the four pillars of the NRI.

Each data table consists of four parts:

## 1. INDICATOR ID AND NAME

The first section provides the indicator name and the number that represents the indicator's position in the overall structure of the NRI. The numbering follows a three-digit notation, whereby the first digit refers to the pillar, the second digit refers to the sub-pillar within that pillar, and the third digit refers to the position of the indicator in that sub-pillar. For instance, indicator 3.2.1 Regulatory Quality refers to the first variable in the second sub-pillar of the third pillar.

## 2. INDICATOR DESCRIPTION AND YEAR

The second section provides a short description of the indicator and the latest year for which the data are available. For qualitative variables derived from survey responses, the question asked in the survey is shown as the exact technical name. This applies to all variables taken from the World Economic Forum's Executive Opinion Survey, for instance. A detailed description for each indicator can be found in Appendix II: Sources and Definitions. For variables derived from a published report where the publication date differs from the year the data were actually collected, reference is made to the year of the data collection.

## 3. PERFORMANCE OF COUNTRIES/ECONOMIES

The third section presents the ranks, raw values, and normalized scores of the economies. The economies are listed according to their rank. The rankings of the economies within the data table follows their normalized scores. Ties between two or more economies are possible. In such cases, shared rankings are indicated accordingly, and the relevant economies are listed alphabetically. For example, 4G mobile network coverage in both Iceland and Lebanon extended to 98.2 percent of the population in 2018. As a result, in Table 1.1.4, both countries are ranked 36th and listed alphabetically. When data is not available or is too outdated, no rank is given and "n/a" is used in lieu of the value and the normalized score.

**3.2.1 Regulatory quality**  
Regulatory quality indicator I 2018

RANK	COUNTRY/ECONOMY	VALUE	SCORE	RANK	COUNTRY/ECONOMY	VALUE	SCORE
1	Hong Kong (China)	2.21	100.00	69	Mongolia	-0.03	50.76
2	Singapore	2.13	98.36	70	Kuwait	-0.04	50.63
3	Netherlands	2.02	95.86	71	El Salvador	-0.04	50.56
4	New Zealand	1.98	95.00	72	Saudi Arabia	-0.05	50.40
5	Australia	1.93	93.91	73	Turkey	-0.05	50.37
6	Sweden	1.80	91.06	74	Moldova	-0.05	50.33
7	Finland	1.79	90.76	75	Namibia	-0.05	50.26
8	Switzerland	1.78	90.63	76	Indonesia	-0.07	49.94
9	United Kingdom	1.76	90.22	77	Dominican Republic	-0.08	49.71
10	Norway	1.76	90.14	78	Ghana	-0.08	49.65
11	Luxembourg	1.76	90.12	79	Senegal	-0.11	49.04
12	Germany	1.75	89.94	80	Paraguay	-0.12	48.68
13	Denmark	1.66	88.35	81	China	-0.14	48.44
14	Canada	1.67	88.09	82	Sri Lanka	-0.15	48.06
15	Ireland	1.60	86.55	83	India	-0.18	47.37
16	United States	1.58	86.17	84	Côte d'Ivoire	-0.19	47.21
17	Estonia	1.55	85.83	85	Guatemala	-0.20	47.11
18	Austria	1.54	85.44	86	Bosnia and Herzegovina	-0.21	46.87
19	Iceland	1.42	82.64	87	Ukraine	-0.22	46.57
20	Chile	1.34	81.00	88	Kenya	-0.23	46.42
21	Malta	1.34	80.86	89	Cabo Verde	-0.24	46.10
22	Japan	1.33	80.69	90	Morocco	-0.24	46.06
23	Czech Republic	1.26	79.20	91	Argentina	-0.24	46.06
24	Ireland	1.25	78.89	92	Uganda	-0.25	45.88
25	Belgium	1.23	78.59	93	Brazil	-0.31	44.51
26	Latvia	1.19	77.62	94	Benin	-0.34	43.94
27	France	1.07	77.25	95	Lebanon	-0.34	43.89
28	Georgia	1.12	76.34	96	Kyrgyzstan	-0.35	43.71
29	Lithuania	1.11	75.93	97	Azerbaijan	-0.38	43.03
30	Korea, Rep.	1.09	75.53	98	Viet Nam	-0.39	42.92
31	Mauritius	1.03	74.04	99	Burkina Faso	-0.39	42.80
32	Cyprus	1.02	73.82	100	Tunisia	-0.41	42.36
33	Spain	0.95	72.23	101	Zambia	-0.44	41.67
34	United Arab Emirates	0.93	71.93	102	Honduras	-0.47	41.09
35	Portugal	0.89	71.02	103	Lesotho	-0.50	40.48
36	Poland	0.88	70.84	104	Cambodia	-0.50	40.29
37	Slovakia	0.81	69.27	105	Russian Federation	-0.54	39.51
38	Slovenia	0.69	66.72	106	Mali	-0.55	39.31
39	Malaysia	0.68	66.44	107	Eswatini	-0.60	38.11
40	Italy	0.67	66.20	108	Tanzania	-0.61	37.92
41	Hungary	0.60	64.68	109	Gambia	-0.63	37.50
42	Belgium	0.58	64.11	110	Pakistan	-0.64	37.22
43	North Macedonia	0.52	62.98	111	Belarus	-0.66	36.88
44	Peru	0.52	62.83	112	Malawi	-0.67	36.64
45	Qatar	0.52	62.76	113	Mozambique	-0.73	35.42
46	Uruguay	0.50	62.41	114	Madagascar	-0.73	35.26
47	Costa Rica	0.48	61.97	115	Nepal	-0.75	34.99
48	Botswana	0.45	61.43	116	Guinea	-0.78	34.28
49	Croatia	0.45	61.27	117	Laos PDR	-0.79	33.97
50	Bahrain	0.45	61.24	118	Cape Verde	-0.80	33.81
51	Romania	0.45	61.22	119	Bangladesh	-0.83	33.22
52	Panama	0.40	60.26	120	Egypt	-0.87	32.32
53	Montenegro	0.36	59.40	121	Nigeria	-0.88	31.98
54	Colombia	0.33	58.63	122	Ecuador	-0.89	31.81
55	Oman	0.31	58.24	123	Bolivia	-0.89	31.71
56	Greece	0.30	57.91	124	Ethiopia	-0.97	29.97
57	Albania	0.28	57.62	125	Burundi	-0.98	29.77
58	Jamaica	0.28	57.55	126	Angola	-1.00	29.39
59	Armenia	0.27	57.34	127	Tajikistan	-1.05	28.32
60	South Africa	0.17	55.30	128	Chad	-1.11	26.92
61	Mexico	0.15	54.74	129	Algeria	-1.26	23.58
62	Kazakhstan	0.14	54.51	130	Iran, Islamic Rep.	-1.30	22.86
63	Thailand	0.11	53.87	131	Congo, Dem. Rep.	-1.47	18.95
64	Rwanda	0.08	53.27	132	Yemen	-1.54	17.58
65	Jordan	0.08	53.25	133	Zimbabwe	-1.58	16.53
66	Philippines	0.05	52.42	134	Venezuela	-2.33	0.00
67	Serbia	0.01	51.58				
68	Trinidad and Tobago	0.02	50.96				

Source: World Bank, Worldwide Governance Indicators 2019 Update ([www.govindicators.org](http://www.govindicators.org))  
For some countries, the latest year for which data are available may differ from the year that appears at the top of the page. The cut-off year is 2009.

## 4. SOURCE

The final section presents all data sources for the indicator and the cut-off year.

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**1st pillar:**

**Technology**



## 1.1.1 Mobile tariffs

### Mobile tariffs sub-index | 2018

RANK	COUNTRY/ECONOMY	VALUE	SCORE	RANK	COUNTRY/ECONOMY	VALUE	SCORE
1	Romania	96.85	100.00	69	Argentina	58.94	60.86
2	Norway	94.91	98.00	70	United States	58.81	60.72
3	Luxembourg	94.73	97.81	71	Korea, Rep.	58.74	60.65
4	Ireland	94.56	97.63	72	Thailand	58.64	60.55
5	Kazakhstan	93.53	96.57	73	Jamaica	57.18	59.04
6	Switzerland	90.96	93.92	74	Moldova	56.69	58.54
7	Singapore	90.68	93.63	75	Cyprus	55.56	57.37
8	Sweden	89.58	92.50	76	Panama	55.55	57.36
9	Hong Kong (China)	88.80	91.69	77	North Macedonia	55.39	57.19
10	Poland	88.72	91.61	78	Bahrain	55.30	57.10
11	Germany	87.42	90.26	79	Mexico	54.73	56.51
12	United Kingdom	86.39	89.21	80	Armenia	54.05	55.81
13	Israel	85.93	88.73	81	Cabo Verde	52.61	54.32
14	Peru	84.64	87.40	82	Bolivia	51.98	53.67
15	Italy	83.72	86.45	83	Japan	51.90	53.59
16	Austria	81.78	84.44	84	Paraguay	51.79	53.48
17	Qatar	81.77	84.43	85	Albania	50.73	52.38
18	New Zealand	81.65	84.30	86	Nigeria	50.32	51.96
19	Lithuania	81.57	84.23	87	Lao PDR	49.73	51.35
20	Saudi Arabia	80.86	83.49	88	Mongolia	48.92	50.51
21	Sri Lanka	80.55	83.17	89	Cambodia	48.32	49.89
22	Finland	79.68	82.27	90	Guinea	48.22	49.79
23	Hungary	79.35	81.93	91	Colombia	47.99	49.55
24	Iceland	77.77	80.30	92	Nepal	47.90	49.45
25	Australia	77.72	80.25	93	Namibia	47.88	49.43
26	China	77.30	79.82	94	Bosnia and Herzegovina	47.86	49.42
27	Czech Republic	77.21	79.73	95	Kenya	47.75	49.30
28	Spain	77.08	79.58	96	Dominican Republic	47.25	48.79
29	Slovenia	76.04	78.51	97	Côte d'Ivoire	46.54	48.05
30	Netherlands	75.53	77.99	98	Lebanon	45.92	47.41
31	Denmark	74.89	77.33	99	Angola	45.86	47.35
32	Egypt	74.61	77.03	100	Senegal	44.97	46.44
33	Estonia	72.90	75.27	101	Botswana	44.60	46.05
34	Georgia	72.42	74.78	102	Morocco	44.32	45.77
35	Costa Rica	72.19	74.54	103	Ecuador	43.39	44.80
36	Slovakia	72.09	74.43	104	El Salvador	38.69	39.95
37	Belarus	71.96	74.30	105	Cameroon	38.29	39.53
38	India	71.79	74.13	106	Philippines	37.38	38.60
39	Uruguay	70.61	72.91	107	Eswatini	36.90	38.10
40	Canada	70.17	72.45	108	Jordan	35.48	36.63
41	Oman	70.01	72.29	109	Tanzania	34.94	36.07
42	Belgium	69.71	71.98	110	Algeria	34.81	35.94
43	United Arab Emirates	69.00	71.25	111	Trinidad and Tobago	34.28	35.40
44	Croatia	68.61	70.84	112	Zambia	34.10	35.21
45	Kuwait	68.14	70.35	113	Mozambique	33.68	34.78
46	Ukraine	67.93	70.14	114	Kyrgyzstan	33.43	34.52
47	Portugal	67.88	70.08	115	Montenegro	33.39	34.48
48	Greece	67.75	69.95	116	Rwanda	32.06	33.10
49	Turkey	67.59	69.79	117	Gambia	29.35	30.31
50	Bangladesh	67.36	69.55	118	Guatemala	28.49	29.41
51	Viet Nam	67.11	69.30	119	Burkina Faso	28.06	28.97
52	Brazil	66.45	68.61	120	Lesotho	27.80	28.71
53	Malaysia	66.25	68.41	121	Uganda	27.77	28.67
54	Tunisia	66.23	68.38	122	Benin	26.52	27.38
55	Iran, Islamic Rep.	65.42	67.55	123	Tajikistan	24.70	25.50
56	Azerbaijan	65.24	67.37	124	Ethiopia	23.58	24.34
57	Latvia	65.12	67.24	125	Burundi	21.99	22.70
58	Serbia	64.75	66.86	126	Zimbabwe	19.80	20.44
59	Russian Federation	64.01	66.09	127	Honduras	18.47	19.07
60	Ghana	63.28	65.34	128	Mali	18.32	18.92
61	France	63.04	65.09	129	Chad	8.16	8.42
62	Bulgaria	62.83	64.87	130	Malawi	7.97	8.23
63	South Africa	62.40	64.43	131	Madagascar	7.38	7.62
64	Indonesia	61.58	63.58	132	Yemen	0.32	0.33
65	Chile	61.29	63.29	133	Congo, Dem. Rep.	0.00	0.00
66	Malta	59.57	61.50	133	Venezuela	0.00	0.00
67	Pakistan	59.39	61.32				
68	Mauritius	59.04	60.96				

Source: GSM Association, The GSMA Mobile Connectivity Index 2019 (<http://www.mobileconnectivityindex.com>)

For some countries, the latest year for which data are available may differ from the year that appears at the top of the page. The cut-off year is 2009.

## 1.1.2 Handset prices

Cost of cheapest Internet-enabled device (% of monthly GDP per capita) | 2018

RANK	COUNTRY/ECONOMY	VALUE	SCORE	RANK	COUNTRY/ECONOMY	VALUE	SCORE
1	Qatar	99.52	100.00	69	El Salvador	43.52	43.74
2	Australia	93.58	94.04	70	Malaysia	43.33	43.54
3	Ireland	90.40	90.84	71	Jamaica	42.26	42.46
4	United States	84.60	85.02	72	Indonesia	41.85	42.05
5	Switzerland	82.37	82.77	73	Cameroon	41.56	41.76
6	Luxembourg	82.06	82.46	74	Armenia	41.53	41.74
7	France	81.26	81.65	75	Bosnia and Herzegovina	41.11	41.31
8	United Kingdom	79.73	80.12	76	Tunisia	41.07	41.27
9	Romania	78.09	78.47	77	Lebanon	40.85	41.05
10	Iceland	74.67	75.04	78	North Macedonia	39.13	39.32
11	New Zealand	73.60	73.96	79	Ghana	38.84	39.03
12	United Arab Emirates	73.17	73.52	80	Viet Nam	38.65	38.84
13	Japan	71.15	71.50	81	Georgia	38.50	38.69
14	Belgium	70.92	71.27	82	Albania	37.25	37.43
15	Sweden	70.13	70.48	83	Iran, Islamic Rep.	37.22	37.40
16	Finland	70.02	70.36	84	Sri Lanka	36.61	36.79
17	Canada	69.32	69.66	85	Morocco	36.38	36.55
18	Kuwait	69.23	69.57	86	Philippines	36.25	36.43
19	Austria	68.79	69.12	87	Jordan	35.98	36.15
20	Denmark	67.16	67.49	88	Turkey	35.68	35.86
21	Norway	67.04	67.37	89	Montenegro	35.66	35.83
22	Portugal	66.87	67.20	90	Ecuador	34.48	34.65
23	Hong Kong (China)	65.72	66.04	91	Moldova	34.33	34.50
24	Italy	65.55	65.86	92	Cabo Verde	34.21	34.38
25	Chile	65.00	65.32	93	Egypt	33.97	34.14
26	Greece	64.78	65.09	94	Kenya	32.98	33.14
27	Singapore	64.29	64.61	95	Bulgaria	32.90	33.06
28	Panama	64.22	64.54	96	Brazil	32.54	32.70
29	Czech Republic	64.09	64.40	97	Côte d'Ivoire	32.23	32.38
30	Israel	64.05	64.37	98	Algeria	32.01	32.17
31	Spain	63.92	64.23	99	Bolivia	31.91	32.07
32	Korea, Rep.	62.85	63.16	100	Honduras	31.06	31.21
33	Uruguay	62.43	62.73	101	Mongolia	30.46	30.61
34	Netherlands	62.41	62.71	102	Pakistan	29.48	29.63
35	Hungary	62.15	62.46	103	Zambia	29.18	29.32
36	Mexico	59.94	60.23	104	Cambodia	28.93	29.07
37	Russian Federation	58.68	58.97	105	Guinea	28.69	28.83
38	Slovenia	58.23	58.52	106	Senegal	27.60	27.73
39	Botswana	58.00	58.28	107	Angola	27.42	27.56
40	Malta	57.95	58.24	108	Tanzania	25.99	26.12
41	Germany	57.74	58.03	109	Madagascar	23.44	23.56
42	Poland	56.73	57.01	110	Bahrain	23.05	23.16
43	Cyprus	56.71	56.98	111	Lao PDR	23.03	23.15
44	Saudi Arabia	56.63	56.91	112	Azerbaijan	22.73	22.84
45	Kazakhstan	55.61	55.88	113	Ukraine	21.61	21.72
46	Estonia	55.34	55.61	114	Uganda	21.43	21.53
47	South Africa	54.89	55.16	115	Nepal	21.11	21.21
48	Slovakia	54.82	55.08	116	Congo, Dem. Rep.	20.17	20.27
49	Lithuania	53.68	53.94	117	Nigeria	19.92	20.01
50	Thailand	52.73	52.99	118	Yemen	19.25	19.34
51	Costa Rica	52.23	52.49	119	Lesotho	18.97	19.06
52	Peru	51.77	52.02	120	Eswatini	17.15	17.24
53	Oman	51.45	51.70	121	Tajikistan	16.58	16.67
54	Latvia	49.84	50.09	122	Kyrgyzstan	16.35	16.43
55	India	49.43	49.67	123	Burkina Faso	15.19	15.26
56	Colombia	49.00	49.24	124	Gambia	13.71	13.78
57	Trinidad and Tobago	48.73	48.96	125	Mozambique	11.63	11.68
58	Mauritius	47.36	47.59	126	Benin	10.12	10.17
59	Bangladesh	46.73	46.95	127	Mali	7.44	7.48
60	Namibia	46.70	46.93	128	Malawi	4.08	4.10
61	Croatia	46.62	46.85	129	Rwanda	2.88	2.90
62	Belarus	46.55	46.77	130	Ethiopia	2.67	2.68
63	China	46.50	46.73	131	Chad	1.62	1.63
64	Guatemala	46.20	46.42	132	Burundi	0.00	0.00
65	Dominican Republic	46.11	46.33	132	Venezuela	0.00	0.00
66	Serbia	44.68	44.90	132	Zimbabwe	0.00	0.00
67	Argentina	43.91	44.12				
68	Paraguay	43.77	43.99				

Source: GSM Association, The GSMA Mobile Connectivity Index 2019 (<http://www.mobileconnectivityindex.com>)

For some countries, the latest year for which data are available may differ from the year that appears at the top of the page. The cut-off year is 2009.



## 1.1.3 Internet access

Estimated proportion of households with Internet access at home (%) | 2018

RANK	COUNTRY/ECONOMY	VALUE	SCORE	RANK	COUNTRY/ECONOMY	VALUE	SCORE
1	Kuwait	100.00	100.00	69	Thailand	67.71	67.62
2	Korea, Rep.	99.48	99.48	70	Indonesia	66.22	66.13
3	Japan	98.53	98.53	71	Armenia	64.70	64.60
4	United Arab Emirates	98.40	98.40	72	Uruguay	64.02	63.92
5	Iceland	97.86	97.85	73	South Africa	61.83	61.73
6	Singapore	97.73	97.73	74	Brazil	60.75	60.65
7	Bahrain	97.55	97.54	75	Panama	60.71	60.61
8	Denmark	97.00	96.99	76	Ukraine	60.26	60.16
9	Netherlands	96.15	96.14	77	China	59.57	59.46
10	Norway	96.00	95.99	78	Jamaica	52.89	52.76
11	Sweden	94.73	94.72	79	Mexico	52.86	52.74
12	Saudi Arabia	94.53	94.52	80	Egypt	51.04	50.91
13	United Kingdom	93.99	93.97	81	Moldova	50.54	50.40
14	Qatar	93.99	93.97	82	Colombia	49.95	49.82
15	Luxembourg	92.99	92.97	83	Viet Nam	47.06	46.91
16	Canada	91.24	91.21	84	Tunisia	46.05	45.90
17	Estonia	90.48	90.46	85	Botswana	45.72	45.57
18	Germany	89.90	89.87	86	Philippines	42.71	42.56
19	Ireland	89.09	89.06	87	Cambodia	40.00	39.84
20	Finland	88.95	88.92	88	Ecuador	37.20	37.03
21	Austria	88.79	88.76	89	Ghana	35.54	35.37
22	Switzerland	88.57	88.54	90	Namibia	34.57	34.39
23	Oman	88.56	88.53	91	Kenya	33.65	33.47
24	New Zealand	87.80	87.77	92	Venezuela	33.51	33.32
25	Kazakhstan	87.59	87.55	93	Bolivia	32.16	31.98
26	Chile	87.54	87.50	94	Dominican Republic	31.62	31.43
27	Belgium	87.27	87.24	95	Lesotho	30.42	30.23
28	Malaysia	86.98	86.95	96	Albania	30.19	30.00
29	Slovenia	86.68	86.65	97	Peru	29.79	29.60
30	Spain	86.40	86.36	98	Eswatini	27.00	26.80
31	Cyprus	86.17	86.13	99	Honduras	26.48	26.28
32	Australia	86.11	86.08	100	India	25.38	25.18
33	Malta	84.39	84.34	101	Lao PDR	24.46	24.25
34	Lebanon	84.36	84.32	102	Paraguay	24.41	24.20
35	Poland	84.19	84.15	103	Sri Lanka	24.36	24.15
36	United States	83.84	83.80	104	Senegal	24.16	23.95
37	Turkey	83.79	83.75	105	Zimbabwe	23.99	23.78
38	Hungary	83.31	83.26	106	Guatemala	23.60	23.40
39	Jordan	82.88	82.83	107	Mongolia	22.99	22.78
40	France	82.37	82.32	108	Pakistan	22.14	21.93
41	Latvia	81.58	81.53	109	Cameroon	21.70	21.49
42	Croatia	81.52	81.47	110	Kyrgyzstan	21.11	20.89
43	Slovakia	81.33	81.27	111	Ethiopia	17.98	17.76
44	Romania	80.89	80.83	112	Nepal	17.93	17.70
45	Czech Republic	80.48	80.43	113	Zambia	17.70	17.47
46	Hong Kong (China)	80.19	80.13	114	Mali	17.37	17.15
47	Iran, Islamic Rep.	79.56	79.51	115	El Salvador	17.06	16.84
48	Portugal	79.43	79.37	116	Côte d'Ivoire	15.85	15.62
49	Lithuania	78.38	78.32	117	Tanzania	14.40	14.17
50	Azerbaijan	78.20	78.14	118	Gambia	13.85	13.61
51	Trinidad and Tobago	77.51	77.44	119	Burkina Faso	12.90	12.66
52	Russian Federation	76.58	76.52	120	Tajikistan	11.85	11.61
53	Argentina	75.94	75.88	121	Angola	11.30	11.06
54	Algeria	74.38	74.31	122	Malawi	11.07	10.82
55	Morocco	74.17	74.10	123	Mozambique	10.80	10.56
56	Israel	74.06	73.99	124	Uganda	10.77	10.52
57	Costa Rica	73.08	73.01	125	Rwanda	9.30	9.05
58	Serbia	72.91	72.83	126	Guinea	8.94	8.69
59	Belarus	72.45	72.37	127	Madagascar	8.20	7.95
60	Montenegro	72.18	72.10	128	Benin	7.90	7.65
61	Bulgaria	72.13	72.06	129	Nigeria	7.52	7.27
62	Italy	71.70	71.62	130	Bangladesh	6.75	6.50
63	Greece	70.96	70.88	131	Yemen	6.27	6.02
64	Cabo Verde	70.09	70.01	132	Chad	3.44	3.17
65	Mauritius	69.73	69.65	133	Congo, Dem. Rep.	3.20	2.94
66	Georgia	69.52	69.44	134	Burundi	0.27	0.00
67	Bosnia and Herzegovina	69.19	69.11				
68	North Macedonia	69.16	69.08				

Source: International Telecommunication Union (ITU), ITU World Telecommunication/ICT Indicators database 2019 (<http://www.itu.int/en/ITU-D/Statistics/Pages/publications/wtid.aspx>)  
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## 1.1.4 4G mobile network coverage

Population covered by at least an LTE/WiMAX mobile network (%) | 2018

RANK	COUNTRY/ECONOMY	VALUE	SCORE	RANK	COUNTRY/ECONOMY	VALUE	SCORE
1	Bahrain	100.00	100.00	69	Costa Rica	89.90	89.90
1	Belgium	100.00	100.00	70	Egypt	89.00	89.00
1	Denmark	100.00	100.00	71	Iran, Islamic Rep.	88.02	88.02
1	Kuwait	100.00	100.00	72	Chile	88.00	88.00
1	Malta	100.00	100.00	73	Uruguay	86.20	86.20
1	Poland	100.00	100.00	74	Albania	85.50	85.50
1	Singapore	100.00	100.00	75	Argentina	85.00	85.00
1	Sweden	100.00	100.00	76	Brazil	83.05	83.05
9	Finland	99.90	99.90	77	Israel	82.00	82.00
9	Korea, Rep.	99.90	99.90	77	Venezuela	82.00	82.00
9	Norway	99.90	99.90	79	Cambodia	80.30	80.30
12	Czech Republic	99.80	99.80	80	Philippines	80.00	80.00
12	United States	99.80	99.80	80	Tajikistan	80.00	80.00
14	United Arab Emirates	99.73	99.73	82	Belarus	75.70	75.70
15	Georgia	99.72	99.72	83	Kazakhstan	75.30	75.30
16	Bulgaria	99.71	99.71	84	Lesotho	75.00	75.00
17	United Kingdom	99.70	99.70	84	Trinidad and Tobago	75.00	75.00
18	North Macedonia	99.53	99.53	86	Bolivia	74.48	74.48
19	Qatar	99.50	99.50	87	Jamaica	73.00	73.00
19	Slovenia	99.50	99.50	88	Mexico	70.91	70.91
21	China	99.40	99.40	89	Ecuador	70.87	70.87
22	Hungary	99.20	99.20	90	Kyrgyzstan	70.00	70.00
22	Portugal	99.20	99.20	90	Russian Federation	70.00	70.00
24	Australia	99.00	99.00	92	Pakistan	68.60	68.60
24	Canada	99.00	99.00	93	El Salvador	68.00	68.00
24	Estonia	99.00	99.00	94	Honduras	67.46	67.46
24	France	99.00	99.00	95	Cameroon	65.48	65.48
24	Hong Kong (China)	99.00	99.00	96	Botswana	65.00	65.00
24	Italy	99.00	99.00	96	Paraguay	65.00	65.00
24	Japan	99.00	99.00	98	Senegal	62.00	62.00
24	Mauritius	99.00	99.00	99	Bangladesh	58.00	58.00
24	Netherlands	99.00	99.00	100	Uganda	57.00	57.00
24	Switzerland	99.00	99.00	101	Côte d'Ivoire	55.00	55.00
34	Greece	98.80	98.80	102	Eswatini	54.00	54.00
35	Croatia	98.50	98.50	103	Peru	52.24	52.24
36	Iceland	98.20	98.20	104	Azerbaijan	49.00	49.00
36	Lebanon	98.20	98.20	105	Mongolia	45.00	45.00
38	Austria	98.00	98.00	106	Zambia	43.41	43.41
38	Colombia	98.00	98.00	107	Lao PDR	43.00	43.00
38	Lithuania	98.00	98.00	108	Guatemala	40.35	40.35
38	Montenegro	98.00	98.00	109	Benin	40.00	40.00
38	Thailand	98.00	98.00	110	Namibia	39.00	39.00
43	Spain	97.80	97.80	111	Kenya	35.00	35.00
44	Cyprus	97.53	97.53	111	Zimbabwe	35.00	35.00
45	Germany	97.50	97.50	113	Ghana	34.86	34.86
46	Luxembourg	97.00	97.00	114	Mozambique	33.00	33.00
46	Moldova	97.00	97.00	114	Panama	33.00	33.00
46	New Zealand	97.00	97.00	116	Mali	31.00	31.00
49	Serbia	96.70	96.70	117	Algeria	30.64	30.64
50	Rwanda	96.60	96.60	118	Malawi	30.00	30.00
51	Oman	96.05	96.05	119	Madagascar	25.00	25.00
52	Morocco	96.00	96.00	120	Nigeria	22.34	22.34
52	Tunisia	96.00	96.00	121	Burundi	20.93	20.93
54	Latvia	95.00	95.00	122	Nepal	15.47	15.47
55	India	94.00	94.00	123	Tanzania	13.00	13.00
55	Slovakia	94.00	94.00	124	Chad	12.00	12.00
57	Viet Nam	93.89	93.89	125	Guinea	10.30	10.30
58	Dominican Republic	93.72	93.72	126	Angola	8.00	8.00
59	Turkey	93.17	93.17	127	Gambia	7.20	7.20
60	Saudi Arabia	93.10	93.10	128	Ethiopia	7.00	7.00
61	Malaysia	93.00	93.00	129	Ukraine	3.00	3.00
62	Indonesia	92.70	92.70	130	Bosnia and Herzegovina	0.00	0.00
63	Romania	92.56	92.56	130	Burkina Faso	0.00	0.00
64	Sri Lanka	91.00	91.00	130	Cabo Verde	0.00	0.00
65	South Africa	90.32	90.32	130	Congo, Dem. Rep.	0.00	0.00
66	Armenia	90.05	90.05	130	Yemen	0.00	0.00
67	Ireland	90.00	90.00				
67	Jordan	90.00	90.00				

Source: International Telecommunication Union (ITU), ITU World Telecommunication/ICT Indicators database 2019 (<http://www.itu.int/en/ITU-D/Statistics/Pages/publications/wtid.aspx>)  
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## 1.1.5 Fixed-broadband subscriptions

Fixed-broadband subscriptions that are equal to or above 10 Mbit/s (% of total subscriptions) | 2018

RANK	COUNTRY/ECONOMY	VALUE	SCORE	RANK	COUNTRY/ECONOMY	VALUE	SCORE
1	Korea, Rep.	100.00	100.00	69	Colombia	53.44	53.44
2	Malta	99.73	99.73	70	India	53.11	53.11
3	Iceland	99.46	99.46	71	Brazil	52.04	52.04
4	Portugal	99.21	99.21	72	Kazakhstan	51.83	51.83
5	New Zealand	99.03	99.03	73	Indonesia	48.04	48.04
6	Netherlands	98.81	98.81	74	Armenia	47.98	47.98
7	China	98.47	98.47	75	Bosnia and Herzegovina	46.79	46.79
8	United Kingdom	98.04	98.04	76	Rwanda	45.37	45.37
9	Thailand	97.86	97.86	77	Jordan	44.83	44.83
10	Bulgaria	97.71	97.71	78	Israel	42.00	42.00
11	Switzerland	97.05	97.05	79	Panama	41.75	41.75
12	Belgium	96.76	96.76	80	South Africa	41.30	41.30
13	Viet Nam	96.44	96.44	81	Tunisia	40.64	40.64
14	Spain	96.04	96.04	82	Dominican Republic	34.39	34.39
15	Singapore	95.90	95.90	83	Morocco	30.87	30.87
16	Ukraine	95.72	95.72	84	Albania	28.65	28.65
17	Greece	95.64	95.64	85	Algeria	28.20	28.20
18	Moldova	95.63	95.63	86	Madagascar	27.87	27.87
19	Qatar	95.48	95.48	87	Ecuador	24.75	24.75
20	Bahrain	94.83	94.83	88	Costa Rica	23.71	23.71
21	Lithuania	94.58	94.58	89	Benin	23.56	23.56
22	Denmark	93.95	93.95	90	Sri Lanka	22.40	22.40
23	Cabo Verde	93.61	93.61	91	Oman	21.04	21.04
24	France	93.56	93.56	92	Iran, Islamic Rep.	20.27	20.27
25	Hungary	93.29	93.29	93	Lesotho	20.17	20.17
26	Finland	93.26	93.26	94	Bangladesh	20.00	20.00
27	Romania	92.92	92.92	95	Peru	17.39	17.39
28	Serbia	92.91	92.91	96	Angola	16.14	16.14
29	Australia	92.80	92.80	97	Senegal	15.86	15.86
30	Norway	92.53	92.53	98	Egypt	14.60	14.60
31	Sweden	92.12	92.12	99	Pakistan	12.88	12.88
32	United Arab Emirates	91.39	91.39	100	Gambia	9.99	9.99
33	Japan	91.19	91.19	101	Azerbaijan	8.20	8.20
34	Czech Republic	88.76	88.76	102	Nigeria	8.16	8.16
35	Germany	88.06	88.06	103	Bolivia	8.14	8.14
36	Saudi Arabia	87.61	87.61	104	Zambia	6.65	6.65
37	Slovenia	87.57	87.57	105	Mali	6.25	6.25
38	United States	87.49	87.49	106	Côte d'Ivoire	6.15	6.15
39	Ireland	87.40	87.40	107	Venezuela	5.96	5.96
40	Canada	86.69	86.69	108	Zimbabwe	5.11	5.11
41	Mexico	86.62	86.62	109	Honduras	3.60	3.60
42	Cambodia	85.21	85.21	110	Ethiopia	3.08	3.08
43	Estonia	85.12	85.12	111	Lao PDR	2.93	2.93
44	Hong Kong (China)	83.86	83.86	112	Burundi	2.24	2.24
45	Luxembourg	83.86	83.86	113	Namibia	1.80	1.80
46	Mauritius	80.82	80.82	114	Botswana	1.18	1.18
47	Chile	80.46	80.46	115	El Salvador	1.06	1.06
48	Latvia	80.11	80.11	116	Malawi	0.77	0.77
49	North Macedonia	78.06	78.06	117	Mozambique	0.67	0.67
50	Georgia	77.49	77.49	118	Paraguay	0.66	0.66
51	Russian Federation	76.74	76.74	119	Mongolia	0.58	0.58
52	Turkey	76.42	76.42	120	Eswatini	0.09	0.09
53	Croatia	76.31	76.31	121	Ghana	0.06	0.06
54	Montenegro	75.33	75.33	122	Burkina Faso	0.00	0.00
55	Slovakia	74.89	74.89	122	Chad	0.00	0.00
56	Italy	73.12	73.12	122	Kenya	0.00	0.00
57	Trinidad and Tobago	72.76	72.76	122	Yemen	0.00	0.00
58	Cyprus	72.66	72.66		Cameroon	n/a	n/a
59	Uruguay	71.71	71.71		Congo, Dem. Rep.	n/a	n/a
60	Uganda	71.01	71.01		Guatemala	n/a	n/a
61	Austria	69.51	69.51		Guinea	n/a	n/a
62	Jamaica	68.63	68.63		Lebanon	n/a	n/a
63	Poland	67.89	67.89		Nepal	n/a	n/a
64	Kuwait	67.67	67.67		Philippines	n/a	n/a
65	Kyrgyzstan	64.27	64.27		Tajikistan	n/a	n/a
66	Malaysia	64.04	64.04		Tanzania	n/a	n/a
67	Belarus	57.86	57.86				
68	Argentina	53.45	53.45				

Source: International Telecommunication Union (ITU), ITU World Telecommunication/ICT Indicators database 2019 (<http://www.itu.int/en/ITU-D/Statistics/Pages/publications/wtid.aspx>)  
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## 1.1.6 International Internet bandwidth

International Internet bandwidth per Internet user (bit/s) | 2018

RANK	COUNTRY/ECONOMY	VALUE	SCORE	RANK	COUNTRY/ECONOMY	VALUE	SCORE
1	Luxembourg	8328979.44	100.00	69	Romania	49884.78	67.82
2	Hong Kong (China)	8203481.38	99.90	70	Jordan	49492.39	67.77
3	Singapore	954274.82	86.40	71	Dominican Republic	49251.71	67.74
4	Montenegro	563484.74	83.09	72	Honduras	48886.30	67.69
5	Iceland	491517.05	82.23	73	Cambodia	48403.85	67.63
6	United Kingdom	418134.87	81.22	74	Kyrgyzstan	47863.64	67.56
7	Kenya	386743.03	80.73	75	Tunisia	44316.95	67.07
8	United Arab Emirates	357642.24	80.24	76	Indonesia	43194.46	66.91
9	Malta	355151.78	80.19	77	Argentina	42275.45	66.77
10	Lithuania	350369.86	80.11	78	Mexico	37653.85	66.04
11	Cyprus	322698.45	79.59	79	Peru	35243.30	65.61
12	Bulgaria	274775.69	78.58	80	Italy	33967.96	65.38
13	Saudi Arabia	248839.40	77.96	81	Bolivia	32943.80	65.18
14	Belarus	197902.49	76.52	82	Brazil	29238.07	64.42
15	Trinidad and Tobago	170591.93	75.58	83	China	27722.32	64.08
16	New Zealand	166277.57	75.42	84	Japan	26888.68	63.89
17	Colombia	157599.01	75.08	85	Cabo Verde	26871.80	63.88
18	Slovenia	152757.16	74.89	86	Spain	26859.40	63.88
19	Thailand	147994.18	74.69	87	India	25942.09	63.66
20	Croatia	142630.19	74.45	88	Egypt	24900.06	63.40
21	Georgia	140193.78	74.35	89	Lebanon	24383.66	63.26
22	Mauritius	137458.83	74.22	90	Iran, Islamic Rep.	24266.06	63.23
23	El Salvador	134912.77	74.10	91	North Macedonia	24256.68	63.23
24	Belgium	134827.44	74.10	92	Bangladesh	24095.79	63.19
25	Latvia	134348.12	74.08	93	Sri Lanka	23348.68	62.98
26	Bahrain	130219.49	73.88	94	Benin	22944.56	62.87
27	Chile	127751.50	73.76	95	Poland	22885.78	62.86
28	Estonia	122159.47	73.48	96	Mongolia	22399.44	62.72
29	Netherlands	119772.31	73.35	97	Pakistan	20853.68	62.26
30	Moldova	115321.73	73.12	98	Botswana	20398.74	62.12
31	Greece	115021.90	73.10	99	Burundi	20371.96	62.11
32	Costa Rica	112520.61	72.96	100	Paraguay	19074.37	61.69
33	Uruguay	110265.52	72.83	101	Philippines	18840.64	61.61
34	Armenia	109142.89	72.77	102	Venezuela	18737.50	61.57
35	United States	107864.66	72.69	103	Lao PDR	18116.43	61.35
36	Qatar	106059.64	72.59	104	Ghana	18113.49	61.35
37	Slovakia	96073.38	71.96	105	Algeria	17238.74	61.03
38	Norway	95622.29	71.93	106	Mozambique	16445.94	60.73
39	Turkey	94995.15	71.89	107	Zambia	14745.94	60.02
40	Kuwait	87362.47	71.36	108	Nepal	13198.35	59.30
41	Denmark	87136.16	71.35	109	Gambia	12575.76	58.98
42	Panama	85423.85	71.22	110	Zimbabwe	12375.58	58.88
43	Switzerland	84391.69	71.15	111	Angola	11693.27	58.51
44	Finland	84012.05	71.12	112	Guatemala	11641.94	58.48
45	Ireland	78785.98	70.71	113	South Africa	10467.76	57.78
46	Albania	76035.50	70.49	114	Namibia	9744.21	57.31
47	Canada	74791.62	70.38	115	Rwanda	8849.79	56.67
48	Oman	74086.63	70.32	116	Uganda	7775.25	55.80
49	Serbia	73692.05	70.29	117	Côte d'Ivoire	6163.47	54.23
50	Ukraine	73625.04	70.28	118	Lesotho	6001.20	54.05
51	Malaysia	72051.03	70.15	119	Burkina Faso	5915.17	53.95
52	Bosnia and Herzegovina	71268.60	70.08	120	Madagascar	5589.59	53.56
53	Portugal	68283.21	69.81	121	Guinea	5554.86	53.52
54	Russian Federation	68025.95	69.78	122	Mali	5484.88	53.43
55	Sweden	67652.04	69.75	123	Yemen	5109.58	52.94
56	Australia	67209.45	69.71	124	Eswatini	4728.95	52.40
57	Morocco	64600.62	69.46	125	Senegal	4384.66	51.87
58	Viet Nam	64542.21	69.45	126	Malawi	3818.78	50.88
59	Hungary	60929.13	69.09	127	Ecuador	3780.75	50.81
60	Czech Republic	59213.04	68.91	128	Cameroon	2680.67	48.25
61	Israel	57245.42	68.69	129	Tajikistan	2256.29	46.89
62	Kazakhstan	55067.84	68.45	130	Nigeria	2254.63	46.89
63	France	54597.89	68.39	131	Chad	1779.55	44.91
64	Germany	53755.75	68.29	132	Ethiopia	1383.17	42.59
65	Korea, Rep.	53107.47	68.22	133	Tanzania	929.38	38.08
66	Austria	52218.77	68.11	134	Congo, Dem. Rep.	498.82	0.00
67	Azerbaijan	52142.83	68.10				
68	Jamaica	50355.24	67.88				

Source: International Telecommunication Union (ITU), ITU World Telecommunication/ICT Indicators database 2019 (<http://www.itu.int/en/ITU-D/Statistics/Pages/publications/wtid.aspx>)  
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## 1.1.7 Internet access in schools

Proportion of primary schools with access to Internet for pedagogical purposes (%) | 2019

RANK	COUNTRY/ECONOMY	VALUE	SCORE	RANK	COUNTRY/ECONOMY	VALUE	SCORE
1	Armenia	100.00	100.00	69	Madagascar	0.41	0.41
1	Australia	100.00	100.00	70	Burkina Faso	0.14	0.14
1	Bahrain	100.00	100.00	71	Burundi	0.00	0.00
1	Belgium	100.00	100.00	71	Congo, Dem. Rep.	0.00	0.00
1	Denmark	100.00	100.00	71	Guinea	0.00	0.00
1	Estonia	100.00	100.00		Algeria	n/a	n/a
1	Finland	100.00	100.00		Austria	n/a	n/a
1	Georgia	100.00	100.00		Benin	n/a	n/a
1	Hungary	100.00	100.00		Bosnia and Herzegovina	n/a	n/a
1	Korea, Rep.	100.00	100.00		Botswana	n/a	n/a
1	Latvia	100.00	100.00		Bulgaria	n/a	n/a
1	Netherlands	100.00	100.00		Cambodia	n/a	n/a
1	Norway	100.00	100.00		Cameroon	n/a	n/a
1	Oman	100.00	100.00		Canada	n/a	n/a
1	Poland	100.00	100.00		Chad	n/a	n/a
1	Portugal	100.00	100.00		Chile	n/a	n/a
1	Qatar	100.00	100.00		Côte d'Ivoire	n/a	n/a
1	Saudi Arabia	100.00	100.00		Croatia	n/a	n/a
1	Slovenia	100.00	100.00		Cyprus	n/a	n/a
1	Spain	100.00	100.00		Czech Republic	n/a	n/a
1	Switzerland	100.00	100.00		Ethiopia	n/a	n/a
1	United Arab Emirates	100.00	100.00		Gambia	n/a	n/a
1	Uruguay	100.00	100.00		Germany	n/a	n/a
24	Slovakia	99.70	99.70		Greece	n/a	n/a
25	Hong Kong (China)	99.22	99.22		Iceland	n/a	n/a
26	Thailand	98.80	98.80		India	n/a	n/a
27	France	98.00	98.00		Indonesia	n/a	n/a
28	Malaysia	97.18	97.18		Ireland	n/a	n/a
29	China	96.25	96.25		Japan	n/a	n/a
30	Moldova	90.56	90.56		Kazakhstan	n/a	n/a
31	Lebanon	89.88	89.88		Kenya	n/a	n/a
32	Belarus	87.01	87.01		Kuwait	n/a	n/a
33	Israel	85.00	85.00		Lao PDR	n/a	n/a
34	Jamaica	84.31	84.31		Lesotho	n/a	n/a
35	Morocco	78.96	78.96		Lithuania	n/a	n/a
36	Mongolia	70.66	70.66		Luxembourg	n/a	n/a
37	Italy	70.00	70.00		Malawi	n/a	n/a
38	Brazil	62.04	62.04		Mali	n/a	n/a
39	Costa Rica	59.24	59.24		Malta	n/a	n/a
40	Ukraine	57.79	57.79		Montenegro	n/a	n/a
41	Azerbaijan	53.63	53.63		Mozambique	n/a	n/a
42	Tunisia	48.66	48.66		Namibia	n/a	n/a
43	Egypt	47.58	47.58		Nepal	n/a	n/a
44	Albania	46.77	46.77		New Zealand	n/a	n/a
45	Colombia	43.05	43.05		Nigeria	n/a	n/a
46	Kyrgyzstan	41.37	41.37		North Macedonia	n/a	n/a
47	Peru	40.77	40.77		Pakistan	n/a	n/a
48	Argentina	39.98	39.98		Panama	n/a	n/a
49	Ecuador	39.28	39.28		Philippines	n/a	n/a
50	Mexico	38.88	38.88		Romania	n/a	n/a
51	Rwanda	30.01	30.01		Russian Federation	n/a	n/a
52	Mauritius	27.04	27.04		Serbia	n/a	n/a
53	El Salvador	23.24	23.24		Singapore	n/a	n/a
54	Dominican Republic	23.16	23.16		South Africa	n/a	n/a
55	Honduras	16.14	16.14		Sweden	n/a	n/a
56	Cabo Verde	15.85	15.85		Tajikistan	n/a	n/a
57	Eswatini	15.59	15.59		Tanzania	n/a	n/a
58	Jordan	12.74	12.74		Trinidad and Tobago	n/a	n/a
59	Senegal	12.66	12.66		Turkey	n/a	n/a
60	Sri Lanka	11.90	11.90		Uganda	n/a	n/a
61	Iran, Islamic Rep.	10.55	10.55		United Kingdom	n/a	n/a
62	Guatemala	9.12	9.12		United States	n/a	n/a
63	Ghana	8.41	8.41		Venezuela	n/a	n/a
64	Bolivia	7.52	7.52		Viet Nam	n/a	n/a
65	Zambia	5.81	5.81		Yemen	n/a	n/a
66	Paraguay	5.41	5.41		Zimbabwe	n/a	n/a
67	Bangladesh	4.14	4.14				
68	Angola	2.70	2.70				

Source: UNESCO Institute for Statistics, UIS.Stat (<http://data.uis.unesco.org/>)

For some countries, the latest year for which data are available may differ from the year that appears at the top of the page. The cut-off year is 2009.

## 1.2.1 GitHub commits

GitHub commits per 1,000 population | 2018

RANK	COUNTRY/ECONOMY	VALUE	SCORE
1	Switzerland	135.17	100.00
2	Norway	126.65	93.70
3	Sweden	114.87	84.98
4	Finland	112.56	83.27
5	Netherlands	106.88	79.07
6	New Zealand	104.45	77.28
7	Denmark	96.99	71.76
8	United States	96.69	71.54
9	Canada	95.02	70.30
10	United Kingdom	93.62	69.26
11	Estonia	85.39	63.17
12	Iceland	84.69	62.66
13	Australia	82.75	61.22
14	Ireland	81.88	60.58
15	Germany	79.30	58.66
16	Luxembourg	78.39	57.99
17	Singapore	76.53	56.62
18	Czech Republic	66.30	49.05
19	France	65.43	48.41
20	Malta	61.89	45.79
21	Austria	60.12	44.48
22	Belgium	58.06	42.95
23	Slovenia	44.77	33.12
24	Lithuania	43.79	32.39
25	Latvia	41.38	30.61
26	Portugal	41.32	30.57
27	Bulgaria	40.76	30.16
28	Poland	40.08	29.66
29	Israel	40.02	29.61
30	Spain	38.15	28.23
31	Belarus	37.42	27.68
32	Hong Kong (China)	36.45	26.97
33	Hungary	32.28	23.88
34	Ukraine	29.47	21.80
35	Croatia	29.37	21.73
36	Greece	24.65	18.23
37	Serbia	22.61	16.73
38	Slovakia	21.71	16.06
39	Cyprus	18.97	14.04
40	Japan	18.93	14.00
41	Russian Federation	18.75	13.87
42	Uruguay	18.56	13.73
43	Korea, Rep.	18.24	13.50
44	Romania	17.90	13.24
45	Mauritius	17.34	12.83
46	Italy	16.75	12.39
47	Costa Rica	13.59	10.05
48	Brazil	12.75	9.43
49	Montenegro	12.33	9.12
50	Moldova	11.97	8.86
51	Armenia	11.28	8.35
52	Argentina	11.11	8.22
53	North Macedonia	10.58	7.82
54	Panama	10.12	7.48
55	Chile	9.85	7.29
56	Bosnia and Herzegovina	9.59	7.09
57	United Arab Emirates	7.33	5.42
58	South Africa	6.45	4.77
59	Colombia	5.95	4.40
60	Eswatini	5.83	4.31
61	Sri Lanka	5.79	4.28
62	Trinidad and Tobago	5.74	4.25
63	Kazakhstan	5.47	4.05
64	Lebanon	5.17	3.83
65	Turkey	5.01	3.71
66	Viet Nam	4.72	3.50
67	China	4.58	3.39
68	Malaysia	4.56	3.37
69	Albania	4.46	3.30
70	Venezuela	4.44	3.28
71	Peru	4.26	3.15
72	Mexico	4.04	2.99
73	Dominican Republic	3.97	2.94
74	Jamaica	3.86	2.86
75	Thailand	3.71	2.74
76	Kenya	3.48	2.57
77	Ecuador	3.33	2.46
78	Kyrgyzstan	3.23	2.39
79	Nepal	3.19	2.36
80	Tunisia	2.96	2.19
81	El Salvador	2.93	2.17
82	Botswana	2.92	2.16
83	Bolivia	2.60	1.92
84	Qatar	2.55	1.89
85	India	2.55	1.89
86	Philippines	2.40	1.77
87	Mongolia	2.36	1.75
88	Indonesia	2.28	1.68
89	Kuwait	2.08	1.54
90	Jordan	2.05	1.52
91	Iran, Islamic Rep.	2.01	1.48
92	Georgia	2.00	1.48
93	Bahrain	1.95	1.45
94	Paraguay	1.88	1.39
95	Guatemala	1.83	1.35
96	Egypt	1.67	1.23
97	Honduras	1.60	1.19
98	Azerbaijan	1.58	1.17
99	Bangladesh	1.44	1.07
100	Cambodia	1.37	1.01
101	Nigeria	1.35	1.00
102	Morocco	1.06	0.78
103	Ghana	1.02	0.75
104	Namibia	1.01	0.75
105	Uganda	1.01	0.75
106	Cabo Verde	0.90	0.67
107	Benin	0.77	0.57
108	Pakistan	0.66	0.49
109	Saudi Arabia	0.62	0.46
110	Cameroon	0.59	0.44
111	Rwanda	0.54	0.40
112	Zimbabwe	0.46	0.34
113	Algeria	0.45	0.33
114	Senegal	0.45	0.33
115	Zambia	0.41	0.31
116	Tanzania	0.33	0.24
117	Gambia	0.27	0.20
118	Mozambique	0.27	0.20
119	Côte d'Ivoire	0.22	0.16
120	Madagascar	0.19	0.14
121	Oman	0.18	0.13
122	Angola	0.12	0.09
123	Malawi	0.12	0.09
124	Mali	0.10	0.07
125	Ethiopia	0.09	0.06
126	Lao PDR	0.09	0.06
127	Lesotho	0.07	0.05
128	Tajikistan	0.07	0.05
129	Yemen	0.07	0.05
130	Guinea	0.04	0.03
131	Burundi	0.01	0.01
132	Burkina Faso	0.01	0.01
133	Chad	0.00	0.00
134	Congo, Dem. Rep.	0.00	0.00

Source: Gousios, Georgios. 2013. The GHTorrent dataset and tool suite. MSR 2013: 233-236. Data accessed through Google BigQuery. Data on population are sourced from World Development Indicators (<http://data.worldbank.org/data-catalog/world-development-indicators>).

For some countries, the latest year for which data are available may differ from the year that appears at the top of the page. The cut-off year is 2009.

## 1.2.2 Wikipedia edits

Wikipedia yearly page edits (per million population 15–69 years old) | 2019

RANK	COUNTRY/ECONOMY	VALUE	SCORE
1	Norway	100.00	100.00
2	Estonia	99.47	99.44
3	Israel	94.94	94.66
4	Sweden	93.78	93.45
5	Netherlands	93.38	93.02
6	Finland	93.34	92.98
7	Armenia	90.91	90.42
8	Iceland	89.00	88.41
9	Luxembourg	87.79	87.14
10	Hong Kong (China)	87.62	86.96
11	Germany	86.35	85.62
12	France	86.05	85.30
13	Czech Republic	85.90	85.14
14	Austria	85.76	84.99
15	United Kingdom	84.87	84.06
16	Switzerland	84.00	83.14
17	Denmark	83.25	82.34
18	Hungary	82.94	82.02
19	Slovenia	82.91	81.99
20	Latvia	81.43	80.43
21	Belgium	81.05	80.03
22	Lithuania	81.01	79.99
23	Portugal	80.90	79.87
24	New Zealand	80.43	79.37
25	Spain	80.42	79.36
26	Australia	79.52	78.42
27	Canada	79.34	78.23
28	Ireland	79.11	77.98
29	Singapore	78.80	77.66
30	Italy	78.21	77.03
31	Greece	74.80	73.44
32	Poland	74.50	73.13
33	Bulgaria	74.35	72.97
34	United States	73.88	72.47
35	Cyprus	73.80	72.39
36	Serbia	72.52	71.04
37	Georgia	70.65	69.07
38	Belarus	70.55	68.97
39	Uruguay	70.26	68.66
40	Croatia	69.86	68.23
41	Bosnia and Herzegovina	68.21	66.50
42	Slovakia	67.87	66.13
43	Ukraine	67.68	65.94
44	Malta	66.61	64.81
45	North Macedonia	66.21	64.39
46	Russian Federation	65.94	64.10
47	Albania	65.74	63.89
48	Japan	65.28	63.41
49	Azerbaijan	63.16	61.17
50	Chile	61.48	59.41
51	Montenegro	61.06	58.96
52	Costa Rica	59.54	57.36
53	Korea, Rep.	58.80	56.58
54	Argentina	57.38	55.09
55	Romania	57.24	54.94
56	Malaysia	52.48	49.92
57	Peru	51.78	49.18
58	Iran, Islamic Rep.	50.76	48.11
59	Mauritius	49.86	47.16
60	Panama	49.49	46.77
61	Trinidad and Tobago	49.02	46.27
62	Jordan	48.58	45.81
63	United Arab Emirates	47.90	45.10
64	Saudi Arabia	47.33	44.49
65	Lebanon	46.88	44.02
66	Brazil	46.43	43.55
67	Thailand	46.31	43.41
68	Colombia	46.26	43.36
69	Kazakhstan	45.45	42.51
70	Bahrain	45.24	42.29
71	Philippines	44.08	41.07
72	Ecuador	43.87	40.84
73	Botswana	43.58	40.54
74	Viet Nam	43.50	40.45
75	Namibia	43.09	40.02
76	Moldova	42.96	39.88
77	Kuwait	42.31	39.20
78	Mexico	40.26	37.04
79	El Salvador	38.86	35.57
80	Jamaica	38.52	35.20
81	Mongolia	38.01	34.67
82	Paraguay	37.49	34.12
83	South Africa	37.31	33.93
84	Dominican Republic	36.66	33.24
85	Qatar	36.28	32.84
86	Egypt	35.83	32.37
87	Nepal	35.78	32.32
88	Tunisia	35.28	31.79
89	Morocco	33.42	29.83
90	Bolivia	33.26	29.66
91	Indonesia	31.66	27.98
92	Guatemala	30.08	26.31
93	Oman	30.00	26.22
94	Sri Lanka	29.60	25.80
95	Algeria	29.33	25.52
96	Kyrgyzstan	28.67	24.83
97	India	28.12	24.24
98	Bangladesh	26.75	22.80
99	Tajikistan	24.41	20.34
100	Turkey	23.80	19.70
101	Honduras	22.87	18.71
102	Benin	22.51	18.34
103	Guinea	21.70	17.48
104	Rwanda	21.01	16.76
105	Pakistan	20.28	15.98
106	Yemen	20.23	15.93
107	Zimbabwe	19.68	15.35
108	Ghana	19.29	14.94
109	Senegal	18.50	14.11
110	Zambia	17.61	13.17
111	Mali	17.14	12.67
112	Malawi	16.95	12.47
113	Cambodia	16.16	11.64
114	Cameroon	12.87	8.17
115	Côte d'Ivoire	12.82	8.12
116	Madagascar	12.05	7.31
117	Mozambique	11.54	6.77
118	Nigeria	10.75	5.94
119	Uganda	7.96	3.00
120	Kenya	5.23	0.12
121	Tanzania	5.11	0.00
	Angola	n/a	n/a
	Burkina Faso	n/a	n/a
	Burundi	n/a	n/a
	Cabo Verde	n/a	n/a
	Chad	n/a	n/a
	China	n/a	n/a
	Congo, Dem. Rep.	n/a	n/a
	Eswatini	n/a	n/a
	Ethiopia	n/a	n/a
	Gambia	n/a	n/a
	Lao PDR	n/a	n/a
	Lesotho	n/a	n/a
	Venezuela	n/a	n/a

Source: Wikimedia Foundation; United Nations, Department of Economic and Social Affairs, Population Division (2014–17). World Population Prospects: The 2017 Revision (population). (<https://www.wikimediafoundation.org>; <https://esa.un.org/unpd/wpp/>). Data have been sourced from INSEAD, Cornell University, and World Intellectual Property Organization, The Global Innovation Index 2020 (<https://www.globalinnovationindex.org>).

For some countries, the latest year for which data are available may differ from the year that appears at the top of the page. The cut-off year is 2009.

### 1.2.3 Internet domain registrations

Generic Top-Level Domains (gTLDs) and Country Code Top-Level Domains (ccTLDs) per person | 2019

Data for indicator 1.2.3 Internet domain registrations is confidential. Data on gTLDs and ccTLDs have been kindly provided by ZookNIC.

Data on population are sourced from World Development Indicators (<http://data.worldbank.org/data-catalog/world-development-indicators>).



## 1.2.4 Mobile apps development

Number of active mobile applications developed per person | 2018

RANK	COUNTRY/ECONOMY	VALUE	SCORE	RANK	COUNTRY/ECONOMY	VALUE	SCORE
1	Singapore	97.24	100.00	69	China	67.52	62.76
2	Austria	95.02	97.21	70	Saudi Arabia	65.91	60.75
3	Hong Kong (China)	94.35	96.38	71	Moldova	65.89	60.72
4	Ireland	93.66	95.51	72	Mexico	64.50	58.98
5	Netherlands	93.31	95.07	73	Oman	64.26	58.68
6	United States	92.86	94.51	74	Kazakhstan	64.10	58.47
7	Denmark	91.13	92.35	75	Paraguay	63.81	58.12
8	Israel	90.69	91.79	76	Tunisia	63.41	57.61
9	Switzerland	89.80	90.67	77	Peru	62.86	56.92
10	Luxembourg	89.43	90.21	78	Azerbaijan	62.81	56.86
11	Iceland	89.01	89.69	79	Ecuador	62.52	56.50
12	Cyprus	88.57	89.13	80	Trinidad and Tobago	62.19	56.08
13	Sweden	88.19	88.66	81	El Salvador	62.07	55.93
14	United Kingdom	87.99	88.41	82	India	61.85	55.66
15	Malta	87.36	87.62	83	Cabo Verde	61.65	55.41
16	Australia	87.22	87.44	84	Bosnia and Herzegovina	61.20	54.84
17	Norway	87.03	87.21	85	Indonesia	60.90	54.47
18	New Zealand	86.43	86.45	86	Colombia	60.54	54.02
19	Slovenia	85.77	85.63	87	Sri Lanka	60.14	53.51
20	Canada	85.77	85.63	88	Morocco	60.08	53.44
21	Germany	85.76	85.62	89	Namibia	59.99	53.33
22	Estonia	85.72	85.56	90	Dominican Republic	59.78	53.06
23	Finland	85.10	84.79	91	Jamaica	59.70	52.96
24	Lithuania	85.07	84.75	92	Nepal	58.81	51.85
25	Spain	84.24	83.71	93	Bolivia	58.69	51.70
26	Korea, Rep.	83.99	83.40	94	Cambodia	58.56	51.54
27	France	83.38	82.63	95	Pakistan	57.58	50.31
28	Bulgaria	82.85	81.97	96	Kyrgyzstan	57.58	50.30
29	Czech Republic	82.80	81.91	97	Guatemala	56.53	48.99
30	Italy	82.07	80.99	98	Egypt	55.04	47.13
31	Japan	81.52	80.31	99	Honduras	54.24	46.12
32	United Arab Emirates	80.82	79.42	100	Botswana	53.57	45.28
33	Belgium	80.31	78.79	101	Philippines	53.05	44.63
34	Portugal	80.29	78.76	102	Kenya	52.77	44.28
35	Latvia	79.71	78.03	103	Iran, Islamic Rep.	52.42	43.84
36	Greece	79.61	77.90	104	Venezuela	52.22	43.59
37	Slovakia	78.88	77.00	105	Lao PDR	50.46	41.39
38	Hungary	78.43	76.43	106	Eswatini	49.56	40.25
39	Romania	77.64	75.44	107	Zimbabwe	48.80	39.31
40	Poland	77.58	75.37	108	Mali	48.67	39.14
41	Croatia	77.05	74.70	109	Tajikistan	48.32	38.71
42	Serbia	76.31	73.77	110	Burundi	46.86	36.88
43	Russian Federation	75.81	73.15	111	Bangladesh	46.65	36.61
44	Bahrain	75.04	72.18	112	Madagascar	45.96	35.75
45	Uruguay	74.52	71.53	113	Lesotho	45.86	35.62
46	Lebanon	74.20	71.13	114	Ghana	45.46	35.12
47	Malaysia	74.03	70.92	115	Nigeria	45.15	34.73
48	Turkey	73.92	70.78	116	Cameroon	43.50	32.67
49	Brazil	73.43	70.16	117	Senegal	43.03	32.07
50	Costa Rica	72.87	69.46	118	Tanzania	41.88	30.64
51	Qatar	72.70	69.25	119	Uganda	40.78	29.26
52	Kuwait	72.56	69.08	120	Gambia	39.49	27.64
53	Armenia	72.45	68.94	121	Benin	38.50	26.41
54	North Macedonia	72.02	68.39	122	Yemen	37.48	25.13
55	Argentina	71.49	67.74	123	Algeria	37.39	25.02
56	Panama	71.30	67.50	124	Rwanda	37.19	24.76
57	Viet Nam	70.99	67.10	125	Mozambique	35.15	22.20
58	Belarus	70.78	66.85	126	Angola	33.10	19.64
59	Georgia	70.70	66.74	127	Zambia	32.62	19.03
60	Chile	70.58	66.59	128	Burkina Faso	32.12	18.40
61	Ukraine	70.38	66.34	129	Côte d'Ivoire	31.77	17.97
62	Mongolia	70.14	66.05	130	Chad	28.65	14.07
63	Mauritius	69.70	65.49	131	Ethiopia	25.98	10.71
64	Montenegro	69.17	64.82	132	Malawi	24.87	9.33
65	Albania	68.27	63.70	133	Congo, Dem. Rep.	17.45	0.03
66	Jordan	67.94	63.29	134	Guinea	17.43	0.00
67	South Africa	67.80	63.11				
68	Thailand	67.77	63.08				

Source: GSM Association, The GSMA Mobile Connectivity Index 2019 (<http://www.mobileconnectivityindex.com>)

For some countries, the latest year for which data are available may differ from the year that appears at the top of the page. The cut-off year is 2009.

### 1.3.1 Adoption of emerging technologies

Average answer to survey questions concerning the extent to which companies adopt five types of emerging technology | 2018–19

RANK	COUNTRY/ECONOMY	VALUE	SCORE	RANK	COUNTRY/ECONOMY	VALUE	SCORE
1	Netherlands	5.70	100.00	69	Lao PDR	3.44	44.69
2	United States	5.69	99.75	70	Montenegro	3.44	44.68
3	Finland	5.58	96.95	71	Namibia	3.43	44.52
4	Israel	5.57	96.84	72	Cyprus	3.41	44.07
5	Sweden	5.55	96.31	73	Senegal	3.40	43.93
6	Switzerland	5.42	93.09	74	Nigeria	3.37	43.17
7	Luxembourg	5.38	92.18	75	Jamaica	3.37	43.00
8	Singapore	5.23	88.54	76	Kuwait	3.36	42.95
9	Germany	5.11	85.48	77	Rwanda	3.32	41.88
10	Japan	5.10	85.26	78	Guatemala	3.29	41.14
11	Canada	5.09	85.04	79	Lebanon	3.28	40.87
12	United Kingdom	5.06	84.23	80	Serbia	3.26	40.36
13	Denmark	5.06	84.22	81	Iran, Islamic Rep.	3.21	39.26
14	France	5.04	83.82	82	Ecuador	3.20	38.94
15	Australia	4.98	82.33	83	Peru	3.19	38.64
16	Iceland	4.83	78.69	84	Kazakhstan	3.19	38.60
17	United Arab Emirates	4.80	78.00	85	Greece	3.18	38.50
18	New Zealand	4.80	77.97	86	Mauritius	3.17	38.18
19	Hong Kong (China)	4.75	76.65	87	Tanzania	3.14	37.57
20	Korea, Rep.	4.70	75.40	88	Côte d'Ivoire	3.14	37.49
21	Austria	4.66	74.59	89	Moldova	3.14	37.40
22	Estonia	4.60	73.19	90	Morocco	3.13	37.16
23	Saudi Arabia	4.57	72.31	91	El Salvador	3.10	36.60
24	Czech Republic	4.56	72.11	92	Cameroon	3.09	36.36
25	Malaysia	4.55	71.90	93	Guinea	3.08	36.01
26	Ireland	4.53	71.34	94	Gambia	3.06	35.57
27	Portugal	4.51	70.91	95	Bosnia and Herzegovina	2.96	33.05
28	Slovenia	4.47	69.85	96	North Macedonia	2.94	32.55
29	Spain	4.42	68.80	97	Venezuela	2.93	32.25
30	Bahrain	4.30	65.71	98	Ghana	2.92	32.17
31	Lithuania	4.28	65.18	99	Cambodia	2.92	32.06
32	Italy	4.28	65.18	100	Tajikistan	2.90	31.62
33	South Africa	4.24	64.29	101	Uganda	2.82	29.80
34	Azerbaijan	4.18	62.72	102	Cabo Verde	2.82	29.74
35	Qatar	4.17	62.68	103	Tunisia	2.81	29.39
36	Chile	4.13	61.55	104	Paraguay	2.78	28.79
37	Malta	4.13	61.51	105	Trinidad and Tobago	2.75	27.86
38	Latvia	4.12	61.35	106	Bolivia	2.74	27.75
39	Thailand	4.09	60.58	107	Bangladesh	2.74	27.75
40	Slovakia	4.04	59.51	108	Nepal	2.73	27.45
41	Indonesia	4.04	59.47	109	Botswana	2.70	26.73
42	Russian Federation	4.02	58.81	110	Benin	2.68	26.30
43	Costa Rica	3.97	57.76	111	Zimbabwe	2.67	26.03
44	Oman	3.96	57.47	112	Mongolia	2.67	25.94
45	Sri Lanka	3.90	56.01	113	Ethiopia	2.66	25.79
46	Brazil	3.89	55.65	114	Zambia	2.65	25.44
47	Mexico	3.87	55.16	115	Eswatini	2.54	22.76
48	Egypt	3.86	54.92	116	Madagascar	2.54	22.75
49	Ukraine	3.78	53.00	117	Albania	2.39	19.18
50	Romania	3.76	52.70	118	Burundi	2.31	17.31
51	Argentina	3.73	51.97	119	Mozambique	2.31	17.19
52	Philippines	3.73	51.83	120	Mali	2.29	16.80
53	India	3.72	51.54	121	Angola	2.28	16.41
54	Uruguay	3.71	51.47	122	Kyrgyzstan	2.24	15.66
55	Kenya	3.69	50.77	123	Yemen	2.21	14.69
56	Viet Nam	3.66	50.09	124	Congo, Dem. Rep.	2.16	13.47
57	Croatia	3.65	49.87	125	Malawi	2.15	13.46
58	Turkey	3.63	49.37	126	Chad	1.74	3.37
59	Jordan	3.61	49.03	127	Burkina Faso	1.70	2.44
60	Bulgaria	3.61	48.94	128	Lesotho	1.60	0.00
61	Poland	3.61	48.92		Belarus	n/a	n/a
62	Dominican Republic	3.57	48.00		Belgium	n/a	n/a
63	Hungary	3.56	47.82		China	n/a	n/a
64	Armenia	3.56	47.72		Georgia	n/a	n/a
65	Algeria	3.54	47.15		Honduras	n/a	n/a
66	Panama	3.53	47.02		Norway	n/a	n/a
67	Colombia	3.53	46.99				
68	Pakistan	3.47	45.59				

Source: World Economic Forum, Executive Opinion Survey 2018–2019 (<http://reports.weforum.org>)

For some countries, the latest year for which data are available may differ from the year that appears at the top of the page. The cut-off year is 2009.

### 1.3.2 Investment in emerging technologies

Average answer to the question: In your country, to what extent do companies invest in emerging technologies (e.g. Internet of Things, advanced analytics and artificial intelligence, augmented virtual reality and wearables, advanced robotics, 3D printing)? [1 = not at all; 7 = to a great extent] | 2017–18

RANK	COUNTRY/ECONOMY	VALUE	SCORE	RANK	COUNTRY/ECONOMY	VALUE	SCORE
1	United States	6.00	100.00	69	Chile	3.54	38.42
2	Israel	5.85	96.21	70	Sri Lanka	3.53	38.35
3	Sweden	5.68	91.97	71	Jamaica	3.52	38.07
4	Switzerland	5.57	89.43	72	Guatemala	3.50	37.54
5	Netherlands	5.51	87.95	73	Poland	3.49	37.21
6	Finland	5.51	87.87	74	Egypt	3.48	37.05
7	Germany	5.47	86.85	75	Kazakhstan	3.48	37.04
8	United Kingdom	5.29	82.43	76	Gambia	3.45	36.20
9	Japan	5.20	79.99	77	Uganda	3.44	36.03
10	Luxembourg	5.18	79.58	78	Honduras	3.43	35.90
11	United Arab Emirates	5.18	79.57	79	Lesotho	3.43	35.86
12	Malaysia	5.15	78.89	80	Tunisia	3.42	35.63
13	Singapore	5.14	78.60	81	Mauritius	3.40	34.96
14	Denmark	5.07	76.91	82	Morocco	3.40	34.94
15	Hong Kong (China)	4.99	74.83	83	Argentina	3.38	34.66
16	Norway	4.94	73.55	84	Cabo Verde	3.36	34.06
17	Qatar	4.84	71.18	85	Algeria	3.36	33.92
18	Ireland	4.82	70.53	86	Madagascar	3.35	33.88
19	New Zealand	4.74	68.51	87	Montenegro	3.34	33.65
20	Canada	4.73	68.25	88	Cameroon	3.33	33.24
21	Belgium	4.70	67.50	89	Mali	3.33	33.17
22	France	4.69	67.30	90	Mongolia	3.32	32.94
23	Azerbaijan	4.68	67.18	91	Zambia	3.25	31.39
24	Australia	4.63	65.76	92	Cyprus	3.25	31.37
25	Iceland	4.63	65.70	93	Serbia	3.25	31.34
26	Austria	4.57	64.42	94	Romania	3.25	31.16
27	India	4.57	64.29	95	Botswana	3.23	30.84
28	Indonesia	4.51	62.78	96	Georgia	3.20	29.90
29	Lithuania	4.47	61.76	97	Dominican Republic	3.16	29.14
30	Saudi Arabia	4.46	61.52	98	Bangladesh	3.16	29.07
31	Philippines	4.44	61.10	99	Côte d'Ivoire	3.14	28.47
32	Kenya	4.40	60.12	100	Hungary	3.13	28.34
33	China	4.39	59.71	101	Ethiopia	3.13	28.27
34	Korea, Rep.	4.38	59.48	102	Iran, Islamic Rep.	3.11	27.77
35	Estonia	4.35	58.91	103	Turkey	3.10	27.62
36	Czech Republic	4.20	55.17	104	Uruguay	3.08	26.97
37	Thailand	4.18	54.44	105	Nepal	3.05	26.30
38	Malta	4.14	53.67	106	Mozambique	3.04	26.00
39	Portugal	4.11	52.88	107	Croatia	3.01	25.34
40	South Africa	4.07	51.83	108	Peru	3.01	25.15
41	Slovenia	4.06	51.61	109	Burkina Faso	2.96	23.92
42	Rwanda	4.00	50.02	110	Greece	2.94	23.53
43	Oman	4.00	50.01	111	Burundi	2.94	23.48
44	Slovakia	3.97	49.41	112	Ecuador	2.93	23.33
45	Ghana	3.97	49.40	113	Nigeria	2.91	22.87
46	Jordan	3.97	49.20	114	Trinidad and Tobago	2.89	22.32
47	Russian Federation	3.95	48.90	115	Benin	2.88	21.93
48	Costa Rica	3.93	48.38	116	Albania	2.87	21.88
49	Pakistan	3.93	48.24	117	Malawi	2.79	19.79
50	Bulgaria	3.86	46.61	118	Moldova	2.78	19.51
51	Lao PDR	3.85	46.40	119	Kyrgyzstan	2.77	19.32
52	Armenia	3.85	46.26	120	Paraguay	2.76	19.09
53	Guinea	3.83	45.81	121	El Salvador	2.76	18.90
54	Latvia	3.79	44.86	122	Congo, Dem. Rep.	2.70	17.50
55	Cambodia	3.75	43.85	123	North Macedonia	2.70	17.45
56	Spain	3.72	43.01	124	Bosnia and Herzegovina	2.68	16.99
57	Kuwait	3.70	42.57	125	Chad	2.51	12.79
58	Tajikistan	3.67	41.88	126	Zimbabwe	2.49	12.22
59	Tanzania	3.66	41.64	127	Bolivia	2.48	12.03
60	Senegal	3.65	41.21	128	Eswatini	2.47	11.76
61	Italy	3.64	41.08	129	Venezuela	2.43	10.78
62	Lebanon	3.63	40.91	130	Yemen	2.31	7.80
63	Ukraine	3.62	40.56	131	Angola	2.00	0.00
64	Panama	3.61	40.39		Bahrain	n/a	n/a
65	Mexico	3.59	39.74		Belarus	n/a	n/a
66	Brazil	3.56	38.96		Namibia	n/a	n/a
67	Colombia	3.55	38.85				
68	Viet Nam	3.54	38.57				

Source: World Economic Forum, Executive Opinion Survey 2017–2018 (<http://reports.weforum.org>)

For some countries, the latest year for which data are available may differ from the year that appears at the top of the page. The cut-off year is 2009.

### 1.3.3 ICT PCT patent applications

Number of applications for information and communication technology–related patents filed under the Patent Cooperation Treaty (PCT) (per million population) | 2017

RANK	COUNTRY/ECONOMY	VALUE	SCORE	RANK	COUNTRY/ECONOMY	VALUE	SCORE
1	Sweden	145.20	100.00	69	Philippines	0.07	1.39
2	Finland	101.74	92.91	70	Kazakhstan	0.06	1.08
3	Korea, Rep.	101.41	92.85	71	Egypt	0.05	1.01
4	Japan	80.02	88.14	72	Kenya	0.05	1.00
5	Israel	71.19	85.83	73	Panama	0.05	0.95
6	Singapore	51.56	79.45	74	Bosnia and Herzegovina	0.04	0.73
7	United States	51.16	79.30	75	Croatia	0.03	0.60
8	Switzerland	36.76	72.81	76	Ecuador	0.03	0.53
9	Germany	34.77	71.72	77	Nigeria	0.01	0.24
10	Hong Kong (China)	31.74	69.94	78	Algeria	0.01	0.24
11	Luxembourg	31.13	69.57	79	Venezuela	0.01	0.22
12	Ireland	29.96	68.82	80	Pakistan	0.01	0.12
13	Netherlands	26.75	66.62	81	Indonesia	0.00	0.06
14	Canada	22.36	63.16	82	Guatemala	0.00	0.00
15	Denmark	22.31	63.12	82	Jamaica	0.00	0.00
16	United Kingdom	21.35	62.28	82	Jordan	0.00	0.00
17	Austria	19.02	60.07	82	Mongolia	0.00	0.00
18	France	18.62	59.66	82	North Macedonia	0.00	0.00
19	Norway	18.28	59.31	82	Trinidad and Tobago	0.00	0.00
20	China	17.41	58.38	82	Zimbabwe	0.00	0.00
21	Belgium	16.13	56.93		Albania	n/a	n/a
22	Australia	14.30	54.67		Angola	n/a	n/a
23	Malta	11.40	50.44		Azerbaijan	n/a	n/a
24	Iceland	8.01	44.03		Bahrain	n/a	n/a
25	Estonia	7.38	42.59		Bangladesh	n/a	n/a
26	New Zealand	6.89	41.38		Benin	n/a	n/a
27	Hungary	5.50	37.47		Bolivia	n/a	n/a
28	Italy	4.89	35.51		Botswana	n/a	n/a
29	Spain	3.80	31.42		Burkina Faso	n/a	n/a
30	Malaysia	2.98	27.66		Burundi	n/a	n/a
31	Portugal	2.69	26.14		Cabo Verde	n/a	n/a
32	Czech Republic	2.64	25.85		Cambodia	n/a	n/a
33	Saudi Arabia	2.30	23.87		Cameroon	n/a	n/a
34	Cyprus	2.26	23.65		Chad	n/a	n/a
35	Turkey	1.96	21.73		Congo, Dem. Rep.	n/a	n/a
36	Greece	1.78	20.42		Côte d'Ivoire	n/a	n/a
37	Slovenia	1.77	20.41		Dominican Republic	n/a	n/a
38	Latvia	1.72	19.98		Eswatini	n/a	n/a
39	Poland	1.66	19.58		Ethiopia	n/a	n/a
40	Russian Federation	1.64	19.45		Gambia	n/a	n/a
41	United Arab Emirates	1.54	18.63		Ghana	n/a	n/a
42	Lithuania	1.53	18.58		Guinea	n/a	n/a
43	Belarus	0.76	11.33		Honduras	n/a	n/a
44	South Africa	0.76	11.30		Kyrgyzstan	n/a	n/a
45	Ukraine	0.76	11.25		Lao PDR	n/a	n/a
46	Bulgaria	0.73	11.01		Lesotho	n/a	n/a
47	Romania	0.63	9.70		Madagascar	n/a	n/a
48	Slovakia	0.58	9.12		Malawi	n/a	n/a
49	India	0.56	8.94		Mali	n/a	n/a
50	Lebanon	0.50	8.07		Mauritius	n/a	n/a
51	Brazil	0.48	7.81		Montenegro	n/a	n/a
52	Costa Rica	0.40	6.78		Mozambique	n/a	n/a
53	Armenia	0.34	5.84		Namibia	n/a	n/a
54	Mexico	0.33	5.75		Nepal	n/a	n/a
55	Kuwait	0.29	5.05		Oman	n/a	n/a
56	Tunisia	0.26	4.65		Paraguay	n/a	n/a
57	Morocco	0.23	4.11		Qatar	n/a	n/a
58	Sri Lanka	0.19	3.40		Rwanda	n/a	n/a
59	Colombia	0.16	3.02		Senegal	n/a	n/a
60	Chile	0.16	3.00		Serbia	n/a	n/a
61	El Salvador	0.16	2.90		Tajikistan	n/a	n/a
62	Iran, Islamic Rep.	0.15	2.79		Tanzania	n/a	n/a
63	Georgia	0.13	2.51		Uganda	n/a	n/a
64	Peru	0.13	2.39		Viet Nam	n/a	n/a
65	Moldova	0.12	2.28		Yemen	n/a	n/a
66	Thailand	0.11	2.14		Zambia	n/a	n/a
67	Uruguay	0.10	1.85				
68	Argentina	0.09	1.67				

Source: World Intellectual Property Organization (WIPO) PCT Data, sourced from Organisation for Economic Co-operation and Development (OECD), Patent Database (<http://www.oecd.org/sti/inno/intellectual-property-statistics-and-analysis.htm>). Population data sourced from World Bank, World Development Indicators (<http://data.worldbank.org/data-catalog/world-development-indicators>). The IPC classification is discussed in Inaba, T. and M. Squicciarini (2017), "ICT: A new taxonomy based on the international patent classification", OECD Science, Technology and Industry Working Papers, No. 2017/01, OECD Publishing, Paris (<https://doi.org/10.1787/ab16c396-en>).

For some countries, the latest year for which data are available may differ from the year that appears at the top of the page. The cut-off year is 2019.

### 1.3.4 Computer software spending

Total computer software spending (% of GDP) | 2019

RANK	COUNTRY/ECONOMY	VALUE	SCORE	RANK	COUNTRY/ECONOMY	VALUE	SCORE
1	United States	1.17	100.00	69	Venezuela	0.20	16.48
2	Ireland	0.84	71.61	70	Luxembourg	0.19	15.49
3	Switzerland	0.79	67.41	71	Cyprus	0.18	15.46
4	United Kingdom	0.74	62.95	72	Panama	0.18	15.15
5	Spain	0.71	61.13	73	Bangladesh	0.18	14.65
6	Canada	0.70	60.08	74	Mauritius	0.17	14.55
7	Belgium	0.68	57.95	75	Colombia	0.17	14.34
8	Portugal	0.65	55.77	76	Brazil	0.17	14.05
9	Netherlands	0.65	55.71	77	Cameroon	0.16	13.62
10	Sweden	0.64	54.79	78	Kenya	0.16	12.89
11	France	0.64	54.56	79	Argentina	0.15	12.48
12	Denmark	0.64	54.50	80	North Macedonia	0.15	12.09
13	Greece	0.62	52.90	81	Estonia	0.14	11.68
14	Italy	0.62	52.55	82	Mongolia	0.13	11.06
15	Austria	0.61	52.25	83	Namibia	0.12	9.89
16	Norway	0.59	50.74	84	Nigeria	0.12	9.49
17	Finland	0.57	48.39	85	Botswana	0.11	9.23
18	Germany	0.56	47.94	86	Latvia	0.11	9.06
19	Ukraine	0.55	46.98	87	Albania	0.11	8.66
20	Turkey	0.51	43.21	88	Armenia	0.11	8.65
21	Egypt	0.45	38.02	89	Georgia	0.10	8.53
22	Zimbabwe	0.43	36.23	90	Slovenia	0.09	7.50
23	China	0.40	33.77	91	Kyrgyzstan	0.09	7.40
24	Montenegro	0.40	33.70	92	Bosnia and Herzegovina	0.09	7.26
25	Kuwait	0.38	32.28	93	Moldova	0.09	7.09
26	Jamaica	0.38	32.12	94	Tajikistan	0.08	6.19
27	Hong Kong (China)	0.38	31.90	95	Azerbaijan	0.08	6.14
28	Malaysia	0.36	30.32	96	Lithuania	0.07	5.95
29	Saudi Arabia	0.35	29.93	97	Burundi	0.07	5.82
30	Sri Lanka	0.35	29.68	98	Oman	0.06	4.56
31	Qatar	0.34	29.26	99	Croatia	0.06	4.55
32	Indonesia	0.34	29.17	100	Benin	0.05	4.02
33	Malta	0.34	29.12	101	Paraguay	0.05	3.91
34	Tunisia	0.33	27.67	102	Lebanon	0.05	3.76
35	Iceland	0.32	27.50	103	Rwanda	0.05	3.54
36	Czech Republic	0.32	27.00	104	El Salvador	0.05	3.50
37	Viet Nam	0.32	26.81	105	Belarus	0.04	3.28
38	Hungary	0.32	26.73	106	Serbia	0.04	3.19
39	Slovakia	0.31	26.61	107	Yemen	0.04	2.93
40	Senegal	0.31	25.94	108	Guinea	0.04	2.85
41	Bahrain	0.30	25.74	109	Zambia	0.04	2.72
42	Singapore	0.30	25.50	110	Malawi	0.04	2.63
43	Poland	0.30	25.13	111	Burkina Faso	0.03	2.43
44	Chile	0.30	25.04	112	Mali	0.03	2.43
45	Romania	0.29	24.69	113	Cambodia	0.03	2.01
46	Japan	0.29	24.50	114	Madagascar	0.03	1.87
47	Costa Rica	0.28	24.10	115	Mozambique	0.03	1.80
48	South Africa	0.28	23.65	116	Dominican Republic	0.02	1.40
49	United Arab Emirates	0.28	23.49	117	Nepal	0.02	1.36
50	Jordan	0.28	23.48	118	Kazakhstan	0.02	1.22
51	Pakistan	0.27	23.17	119	Côte d'Ivoire	0.02	1.15
52	Bolivia	0.27	22.88	120	Guatemala	0.02	0.95
53	Australia	0.27	22.79	121	Uganda	0.02	0.86
54	Philippines	0.27	22.56	122	Algeria	0.01	0.63
55	New Zealand	0.26	22.01	123	Ghana	0.01	0.62
56	Bulgaria	0.26	21.77	124	Tanzania	0.01	0.39
57	Israel	0.25	21.36	125	Ethiopia	0.01	0.00
58	Iran, Islamic Rep.	0.25	21.24		Angola	n/a	n/a
59	Morocco	0.25	21.14		Cabo Verde	n/a	n/a
60	Honduras	0.25	20.82		Chad	n/a	n/a
61	Thailand	0.25	20.72		Congo, Dem. Rep.	n/a	n/a
62	Korea, Rep.	0.25	20.70		Eswatini	n/a	n/a
63	Russian Federation	0.24	19.91		Gambia	n/a	n/a
64	India	0.24	19.79		Lao PDR	n/a	n/a
65	Ecuador	0.23	19.55		Lesotho	n/a	n/a
66	Mexico	0.23	19.14		Trinidad and Tobago	n/a	n/a
67	Peru	0.21	17.71				
68	Uruguay	0.20	16.57				

Source: IHS Markit, Information and Communication Technology Database (<https://www.ihsmarkit.com/index.html>). Sourced from INSEAD, Cornell University, and World Intellectual Property Organization, The Global Innovation Index 2020 (<https://www.globalinnovationindex.org>)

For some countries, the latest year for which data are available may differ from the year that appears at the top of the page. The cut-off year is 2009.

### 1.3.5 Robot density

Number of robots in operation per 10,000 employees in the manufacturing industry | 2019

RANK	COUNTRY/ECONOMY	VALUE*	SCORE
1	Germany	-	100.00
1	Korea, Rep.	-	100.00
1	Singapore	-	100.00
4	Japan	-	96.78
5	Sweden	-	72.93
6	Hong Kong (China)	-	72.54
7	Denmark	-	70.85
8	United States	-	64.06
9	Italy	-	59.11
10	Belgium	-	55.75
11	Netherlands	-	53.69
12	Austria	-	51.73
13	Slovenia	-	51.53
14	Canada	-	50.86
15	Spain	-	49.72
16	Slovakia	-	48.76
17	France	-	45.52
18	Switzerland	-	43.32
19	Finland	-	41.52
20	Czech Republic	-	40.05
21	China	-	39.65
22	United Kingdom	-	26.94
23	Hungary	-	24.95
24	Australia	-	21.92
25	Portugal	-	20.21
26	Norway	-	16.47
27	Malaysia	-	15.32
28	Thailand	-	15.19
29	New Zealand	-	14.42
30	Israel	-	13.65
31	Poland	-	12.54
32	Ireland	-	12.16
33	Mexico	-	12.04
34	Malta	-	11.58
35	Turkey	-	8.83
36	South Africa	-	7.36
37	Greece	-	6.74
38	Romania	-	6.25
39	Iceland	-	6.06
40	Estonia	-	5.63
41	Argentina	-	5.17
42	Viet Nam	-	4.36
43	Brazil	-	4.01
44	Lithuania	-	3.88
45	Bulgaria	-	2.34
46	Croatia	-	2.01
47	Indonesia	-	1.56
48	Latvia	-	1.45
49	Russian Federation	-	1.42
50	Morocco	-	1.40
51	Philippines	-	1.18
52	India	-	1.09
53	Serbia	-	0.99
54	Tunisia	-	0.95
55	United Arab Emirates	-	0.90
56	Ukraine	-	0.74
57	Chile	-	0.70
58	Belarus	-	0.56
59	Bosnia and Herzegovina	-	0.55
60	Saudi Arabia	-	0.47
61	Egypt	-	0.22
62	Colombia	-	0.19
63	Peru	-	0.19
64	Oman	-	0.14
65	Iran, Islamic Rep.	-	0.12
66	Moldova	-	0.10
67	Qatar	-	0.10
68	Kuwait	-	0.04
69	Venezuela	-	0.03
70	Pakistan	-	0.00
	Albania	-	n/a
	Algeria	-	n/a
	Angola	-	n/a
	Armenia	-	n/a
	Azerbaijan	-	n/a
	Bahrain	-	n/a
	Bangladesh	-	n/a
	Benin	-	n/a
	Bolivia	-	n/a
	Botswana	-	n/a
	Burkina Faso	-	n/a
	Burundi	-	n/a
	Cabo Verde	-	n/a
	Cambodia	-	n/a
	Cameroon	-	n/a
	Chad	-	n/a
	Congo, Dem. Rep.	-	n/a
	Costa Rica	-	n/a
	Côte d'Ivoire	-	n/a
	Cyprus	-	n/a
	Dominican Republic	-	n/a
	Ecuador	-	n/a
	El Salvador	-	n/a
	Eswatini	-	n/a
	Ethiopia	-	n/a
	Gambia	-	n/a
	Georgia	-	n/a
	Ghana	-	n/a
	Guatemala	-	n/a
	Guinea	-	n/a
	Honduras	-	n/a
	Jamaica	-	n/a
	Jordan	-	n/a
	Kazakhstan	-	n/a
	Kenya	-	n/a
	Kyrgyzstan	-	n/a
	Lao PDR	-	n/a
	Lebanon	-	n/a
	Lesotho	-	n/a
	Luxembourg	-	n/a
	Madagascar	-	n/a
	Malawi	-	n/a
	Mali	-	n/a
	Mauritius	-	n/a
	Mongolia	-	n/a
	Montenegro	-	n/a
	Mozambique	-	n/a
	Namibia	-	n/a
	Nepal	-	n/a
	Nigeria	-	n/a
	North Macedonia	-	n/a
	Panama	-	n/a
	Paraguay	-	n/a
	Rwanda	-	n/a
	Senegal	-	n/a
	Sri Lanka	-	n/a
	Tajikistan	-	n/a
	Tanzania	-	n/a
	Trinidad and Tobago	-	n/a
	Uganda	-	n/a
	Uruguay	-	n/a
	Yemen	-	n/a
	Zambia	-	n/a
	Zimbabwe	-	n/a

Source: Data on robot density and operational stock of industrial robots for 2019 kindly provided by the International Federation of Robotics (IFR, <https://ifr.org>). Data on employment in manufacturing in the countries for which IFR has not computed robot densities are sourced from the International Labour Organization, ILOSTAT (<https://ilostat.ilo.org>)

For some countries, the latest year for which data are available may differ from the year that appears at the top of the page. The cut-off year is 2009.

\*Confidential data.









2nd pillar:

People



## 2.1.1 Internet users

Individuals using the internet (%) | 2018

RANK	COUNTRY/ECONOMY	VALUE	SCORE	RANK	COUNTRY/ECONOMY	VALUE	SCORE
1	Qatar	99.65	100.00	69	Jordan	66.79	66.12
2	Kuwait	99.60	99.95	70	Mexico	65.77	65.07
3	Iceland	99.01	99.34	71	Guatemala	65.00	64.27
4	Bahrain	98.64	98.96	72	Paraguay	64.99	64.27
5	United Arab Emirates	98.45	98.76	73	Morocco	64.80	64.07
6	Denmark	97.64	97.93	74	Bulgaria	64.78	64.05
7	Luxembourg	97.06	97.33	75	Armenia	64.74	64.01
8	Norway	96.49	96.74	76	Tunisia	64.19	63.44
9	Korea, Rep.	95.90	96.13	77	Georgia	63.97	63.21
10	United Kingdom	94.90	95.10	78	Colombia	62.26	61.45
11	Netherlands	94.71	94.91	79	Philippines	60.05	59.17
12	Saudi Arabia	93.31	93.46	80	Algeria	59.58	58.68
13	Sweden	92.14	92.26	81	Ukraine	58.89	57.97
14	Canada	91.00	91.08	82	Mauritius	58.60	57.67
15	New Zealand	90.81	90.88	83	Cabo Verde	58.17	57.23
16	Germany	89.74	89.78	84	Panama	57.87	56.92
17	Switzerland	89.69	89.72	85	Ecuador	57.27	56.31
18	Hong Kong (China)	89.42	89.45	86	Thailand	56.82	55.84
19	Estonia	89.36	89.38	87	South Africa	56.17	55.17
20	Finland	88.89	88.90	88	Jamaica	55.07	54.04
21	Belgium	88.66	88.66	89	China	54.30	53.24
22	Singapore	88.17	88.16	90	Peru	52.54	51.43
23	Austria	87.71	87.69	91	Namibia	51.00	49.84
24	United States	87.27	87.23	92	Botswana	47.00	45.71
25	Australia	86.55	86.49	92	Eswatini	47.00	45.71
26	Spain	86.11	86.03	94	Egypt	46.92	45.64
27	Japan	84.59	84.47	95	Côte d'Ivoire	46.82	45.53
28	Ireland	84.52	84.40	96	Senegal	46.00	44.68
29	Cyprus	84.43	84.31	97	Bolivia	43.83	42.45
30	Latvia	83.58	83.43	98	Nigeria	42.00	40.56
31	Chile	82.33	82.14	99	Cambodia	40.00	38.50
32	France	82.04	81.84	100	Indonesia	39.79	38.28
33	Israel	81.58	81.37	101	Ghana	39.00	37.47
34	Malta	81.40	81.18	102	Kyrgyzstan	38.00	36.44
35	Malaysia	81.20	80.98	103	India	34.45	32.78
36	Russian Federation	80.86	80.63	104	Sri Lanka	34.11	32.43
37	Czech Republic	80.69	80.45	105	Nepal	34.00	32.31
38	Slovakia	80.66	80.42	106	El Salvador	33.82	32.13
39	Oman	80.19	79.93	107	Honduras	31.70	29.94
40	Azerbaijan	79.80	79.53	108	Lesotho	29.00	27.16
41	Slovenia	79.75	79.48	109	Zimbabwe	27.06	25.15
42	Lithuania	79.72	79.45	110	Yemen	26.72	24.80
43	North Macedonia	79.17	78.88	111	Lao PDR	25.51	23.56
44	Belarus	79.13	78.84	112	Tanzania	25.00	23.03
45	Kazakhstan	78.90	78.61	113	Mongolia	23.71	21.71
46	Lebanon	78.18	77.86	114	Uganda	23.71	21.70
47	Poland	77.54	77.20	115	Cameroon	23.20	21.18
48	Trinidad and Tobago	77.33	76.98	116	Tajikistan	21.96	19.90
49	Moldova	76.12	75.74	117	Rwanda	21.77	19.70
50	Hungary	76.07	75.69	118	Benin	20.00	17.88
51	Dominican Republic	74.82	74.40	119	Gambia	19.84	17.71
52	Portugal	74.66	74.23	120	Ethiopia	18.62	16.45
53	Italy	74.39	73.95	121	Guinea	18.00	15.81
54	Argentina	74.29	73.86	122	Kenya	17.83	15.64
55	Costa Rica	74.09	73.64	123	Burkina Faso	16.00	13.75
56	Serbia	73.36	72.89	124	Pakistan	15.51	13.25
57	Greece	72.95	72.47	125	Bangladesh	15.00	12.72
58	Croatia	72.69	72.20	126	Angola	14.34	12.04
59	Venezuela	72.00	71.49	127	Zambia	14.30	12.00
60	Albania	71.85	71.33	128	Malawi	13.78	11.47
61	Montenegro	71.52	70.99	129	Mali	13.00	10.66
62	Turkey	71.04	70.50	130	Mozambique	10.00	7.57
63	Romania	70.68	70.13	131	Madagascar	9.80	7.36
64	Viet Nam	70.35	69.79	132	Congo, Dem. Rep.	8.62	6.14
65	Bosnia and Herzegovina	70.12	69.55	133	Chad	6.50	3.96
66	Iran, Islamic Rep.	70.00	69.43	134	Burundi	2.66	0.00
67	Uruguay	68.28	67.65				
68	Brazil	67.47	66.82				

Source: International Telecommunication Union (ITU), ITU World Telecommunication/ICT Indicators database 2019 (<http://www.itu.int/en/ITU-D/Statistics/Pages/publications/wtid.aspx>)  
For some countries, the latest year for which data are available may differ from the year that appears at the top of the page. The cut-off year is 2009.

## 2.1.2 Active mobile-broadband subscriptions

Active mobile-broadband subscriptions (per 100 inhabitants) | 2018

RANK	COUNTRY/ECONOMY	VALUE	SCORE	RANK	COUNTRY/ECONOMY	VALUE	SCORE
1	United Arab Emirates	250.04	100.00	69	Turkey	74.20	28.54
2	Japan	188.92	75.16	70	Portugal	73.84	28.40
3	Poland	171.70	68.16	71	Montenegro	73.59	28.30
4	Finland	156.45	61.97	72	Moldova	72.76	27.96
5	Estonia	146.72	58.01	73	Viet Nam	71.89	27.61
6	Singapore	145.71	57.60	74	Panama	70.35	26.98
7	United States	142.48	56.29	75	Mexico	69.96	26.82
8	Hong Kong (China)	137.33	54.20	76	Philippines	68.44	26.21
9	Australia	136.96	54.05	77	Iran, Islamic Rep.	68.21	26.11
10	Denmark	136.71	53.95	78	Hungary	67.81	25.95
11	Kuwait	130.86	51.57	79	North Macedonia	67.42	25.79
12	Latvia	130.23	51.31	80	Serbia	67.02	25.63
13	Bahrain	126.01	49.60	81	Cabo Verde	66.83	25.55
14	Qatar	125.94	49.57	82	Peru	65.66	25.08
15	Iceland	125.46	49.38	83	Mauritius	65.29	24.92
16	Uruguay	123.85	48.72	84	Albania	62.79	23.91
17	Sweden	123.03	48.39	85	Côte d'Ivoire	61.60	23.42
18	Malaysia	116.70	45.82	86	Dominican Republic	60.82	23.11
19	New Zealand	114.46	44.91	87	Azerbaijan	59.59	22.61
20	Korea, Rep.	113.62	44.56	88	Morocco	59.09	22.40
21	Cyprus	111.20	43.58	89	Lesotho	58.98	22.36
22	Saudi Arabia	111.09	43.54	90	Sri Lanka	58.77	22.28
23	Malta	110.53	43.31	91	Paraguay	57.67	21.83
24	Israel	106.14	41.52	92	Zambia	56.63	21.40
25	Thailand	104.67	40.93	93	El Salvador	55.80	21.07
26	Ireland	103.75	40.55	94	Bosnia and Herzegovina	55.38	20.90
27	Bulgaria	102.31	39.97	95	Ecuador	54.69	20.62
28	Lithuania	100.60	39.27	96	Venezuela	54.53	20.55
29	Norway	99.75	38.93	97	Egypt	53.92	20.30
30	Spain	98.48	38.41	98	Colombia	52.32	19.65
31	Switzerland	98.23	38.31	99	Zimbabwe	52.29	19.64
32	Costa Rica	97.19	37.89	100	Jamaica	51.19	19.19
33	United Kingdom	96.87	37.76	101	Nepal	47.52	17.70
34	Algeria	96.66	37.67	102	Ukraine	47.16	17.56
35	China	95.41	37.16	103	Trinidad and Tobago	46.15	17.15
36	Italy	94.53	36.80	104	Georgia	45.26	16.79
37	Kyrgyzstan	94.03	36.60	105	Lebanon	45.25	16.78
38	Luxembourg	94.00	36.59	106	Lao PDR	42.01	15.46
39	Ghana	91.75	35.68	107	Kenya	41.92	15.43
40	France	91.62	35.62	108	Senegal	41.48	15.25
41	Chile	91.58	35.61	109	Rwanda	39.01	14.25
42	Namibia	91.55	35.59	110	Bangladesh	37.55	13.65
43	Netherlands	90.85	35.31	111	India	37.54	13.65
44	Brazil	88.11	34.20	112	Gambia	36.76	13.33
45	Czech Republic	88.10	34.19	113	Uganda	33.61	12.05
46	Romania	87.97	34.14	114	Honduras	32.12	11.45
47	Austria	87.95	34.13	115	Nigeria	30.68	10.86
48	Jordan	87.62	34.00	116	Guinea	30.38	10.74
49	Russian Federation	87.28	33.86	117	Mali	30.28	10.70
50	Indonesia	87.25	33.85	118	Burkina Faso	29.93	10.55
51	Belarus	86.34	33.48	119	Pakistan	29.19	10.25
52	Slovakia	85.98	33.33	120	Malawi	27.21	9.45
53	Oman	85.17	33.00	121	Cameroon	23.66	8.01
54	Mongolia	83.72	32.41	122	Tajikistan	22.83	7.67
55	Cambodia	82.82	32.05	123	Benin	19.80	6.44
56	Greece	81.99	31.71	124	Angola	18.89	6.07
57	Germany	81.56	31.54	125	Ethiopia	17.84	5.64
58	Argentina	80.65	31.17	126	Guatemala	16.45	5.08
59	Bolivia	79.87	30.85	127	Eswatini	15.91	4.86
60	Croatia	79.45	30.68	128	Congo, Dem. Rep.	15.89	4.85
61	Slovenia	77.67	29.96	129	Madagascar	15.60	4.73
62	Botswana	77.60	29.92	130	Mozambique	15.08	4.52
63	Kazakhstan	77.57	29.92	131	Burundi	11.44	3.04
64	Canada	76.72	29.57	132	Tanzania	9.10	2.09
65	Tunisia	76.08	29.31	133	Yemen	5.99	0.83
66	South Africa	75.98	29.27	134	Chad	3.96	0.00
67	Armenia	75.87	29.22				
68	Belgium	75.74	29.17				

Source: International Telecommunication Union (ITU), ITU World Telecommunication/ICT Indicators database 2019 (<http://www.itu.int/en/ITU-D/Statistics/Pages/publications/wtid.aspx>)  
For some countries, the latest year for which data are available may differ from the year that appears at the top of the page. The cut-off year is 2009.

## 2.1.3 Use of virtual social networks

Number of active social media users (% of population) | 2019

RANK	COUNTRY/ECONOMY	VALUE	SCORE
1	Kuwait	99.00	100.00
1	Qatar	99.00	100.00
1	United Arab Emirates	99.00	100.00
4	Malta	91.00	91.75
5	Korea, Rep.	87.00	87.63
6	Bahrain	84.00	84.54
7	Cyprus	83.00	83.51
8	Iceland	82.00	82.47
9	Malaysia	81.00	81.44
10	Chile	79.00	79.38
10	Singapore	79.00	79.38
12	Hong Kong (China)	78.00	78.35
12	Uruguay	78.00	78.35
14	Argentina	76.00	76.29
15	New Zealand	75.00	75.26
15	Thailand	75.00	75.26
17	Costa Rica	73.00	73.20
17	Peru	73.00	73.20
17	Sweden	73.00	73.20
20	China	72.00	72.16
20	Saudi Arabia	72.00	72.16
22	Australia	71.00	71.13
22	Denmark	71.00	71.13
24	Israel	70.00	70.10
24	Norway	70.00	70.10
24	United States	70.00	70.10
27	Colombia	69.00	69.07
27	Ecuador	69.00	69.07
27	Mexico	69.00	69.07
27	Portugal	69.00	69.07
31	Georgia	68.00	68.04
31	Mauritius	68.00	68.04
31	Mongolia	68.00	68.04
34	Canada	67.00	67.01
34	Philippines	67.00	67.01
34	Viet Nam	67.00	67.01
37	Brazil	66.00	65.98
37	Lithuania	66.00	65.98
37	United Kingdom	66.00	65.98
40	Belgium	65.00	64.95
40	Bolivia	65.00	64.95
40	Ireland	65.00	64.95
40	Japan	65.00	64.95
44	Luxembourg	64.00	63.92
44	Netherlands	64.00	63.92
44	Turkey	64.00	63.92
47	Hungary	62.00	61.86
47	Montenegro	62.00	61.86
47	Spain	62.00	61.86
47	Trinidad and Tobago	62.00	61.86
47	Tunisia	62.00	61.86
52	Finland	60.00	59.79
52	France	60.00	59.79
52	Lebanon	60.00	59.79
55	Dominican Republic	59.00	58.76
55	El Salvador	59.00	58.76
55	Greece	59.00	58.76
55	Indonesia	59.00	58.76
59	Cambodia	58.00	57.73
59	Italy	58.00	57.73
61	Estonia	57.00	56.70
61	Romania	57.00	56.70
63	Bulgaria	56.00	55.67
63	Jordan	56.00	55.67
63	Oman	56.00	55.67
63	Panama	56.00	55.67
63	Paraguay	56.00	55.67
68	Czech Republic	53.00	52.58
68	Latvia	53.00	52.58
68	North Macedonia	53.00	52.58
68	Slovenia	53.00	52.58
72	Bosnia and Herzegovina	52.00	51.55
72	Switzerland	52.00	51.55
74	Algeria	51.00	50.52
74	Armenia	51.00	50.52
74	Croatia	51.00	50.52
74	Kazakhstan	51.00	50.52
74	Slovakia	51.00	50.52
79	Austria	50.00	49.48
79	Poland	50.00	49.48
81	Albania	49.00	48.45
81	Cabo Verde	49.00	48.45
81	Morocco	49.00	48.45
84	Russian Federation	48.00	47.42
85	Germany	45.00	44.33
85	Guatemala	45.00	44.33
87	Jamaica	44.00	43.30
88	Botswana	43.00	42.27
88	Lao PDR	43.00	42.27
88	Ukraine	43.00	42.27
91	Honduras	42.00	41.24
91	Serbia	42.00	41.24
91	Venezuela	42.00	41.24
94	Belarus	41.00	40.21
94	Egypt	41.00	40.21
96	Iran, Islamic Rep.	40.00	39.18
97	Kyrgyzstan	39.00	38.14
98	Azerbaijan	37.00	36.08
98	South Africa	37.00	36.08
100	Moldova	35.00	34.02
100	Nepal	35.00	34.02
102	Sri Lanka	30.00	28.87
103	India	29.00	27.84
104	Namibia	28.00	26.80
105	Eswatini	23.00	21.65
106	Bangladesh	22.00	20.62
107	Senegal	21.00	19.59
108	Ghana	20.00	18.56
108	Lesotho	20.00	18.56
110	Côte d'Ivoire	19.00	17.53
111	Kenya	17.00	15.46
111	Pakistan	17.00	15.46
113	Gambia	16.00	14.43
114	Guinea	15.00	13.40
115	Cameroon	14.00	12.37
116	Nigeria	13.00	11.34
116	Zambia	13.00	11.34
118	Benin	9.20	7.42
119	Mali	8.50	6.70
119	Yemen	8.50	6.70
121	Madagascar	8.40	6.60
122	Mozambique	8.10	6.29
123	Burkina Faso	7.80	5.98
124	Tanzania	7.60	5.77
125	Tajikistan	7.00	5.15
126	Angola	6.80	4.95
127	Zimbabwe	6.60	4.74
128	Uganda	5.60	3.71
129	Ethiopia	5.50	3.61
130	Rwanda	4.80	2.89
131	Burundi	4.50	2.58
132	Congo, Dem. Rep.	3.50	1.55
133	Malawi	2.70	0.72
134	Chad	2.00	0.00

Source: We Are Social and Hootsuite (2020) Global Digital Report 2020 (<https://wearesocial.com/digital-2020>)

For some countries, the latest year for which data are available may differ from the year that appears at the top of the page. The cut-off year is 2009.

## 2.1.4 Tertiary enrollment

Gross enrollment ratio, tertiary education (%) | 2019

RANK	COUNTRY/ECONOMY	VALUE	SCORE
1	Greece	136.60	100.00
2	Australia	113.14	82.72
3	Korea, Rep.	94.35	68.88
4	Argentina	89.96	65.65
5	Spain	88.85	64.83
6	Chile	88.46	64.55
7	Finland	88.20	64.35
8	United States	88.17	64.33
9	Latvia	88.06	64.25
10	Belarus	87.43	63.78
11	Austria	85.06	62.04
12	Netherlands	84.98	61.98
13	Singapore	84.79	61.84
14	Ukraine	82.67	60.28
15	New Zealand	82.03	59.81
16	Norway	81.99	59.78
17	Russian Federation	81.91	59.72
18	Denmark	80.62	58.77
19	Belgium	79.66	58.06
20	Venezuela	79.30	57.80
21	Slovenia	78.59	57.27
22	Ireland	77.78	56.68
23	Hong Kong (China)	76.92	56.05
24	Cyprus	75.94	55.32
25	Lithuania	72.42	52.73
26	Iceland	71.85	52.31
27	Bulgaria	71.03	51.71
28	Peru	70.74	51.49
29	Germany	70.25	51.13
30	Estonia	69.64	50.68
31	Canada	68.92	50.15
32	Iran, Islamic Rep.	68.12	49.56
33	Saudi Arabia	68.04	49.50
34	Croatia	67.87	49.38
35	Poland	67.83	49.35
36	Serbia	67.16	48.86
37	Sweden	66.99	48.73
38	France	65.63	47.73
39	Mongolia	65.60	47.70
40	Czech Republic	64.08	46.59
41	Portugal	63.94	46.48
42	Georgia	63.92	46.47
43	Israel	63.35	46.05
44	Uruguay	63.13	45.88
45	Italy	61.93	45.01
46	Kazakhstan	61.75	44.87
47	United Kingdom	60.00	43.58
48	Dominican Republic	59.92	43.52
49	Switzerland	59.56	43.26
50	Montenegro	56.08	40.70
51	Colombia	55.33	40.14
52	Costa Rica	55.21	40.05
53	Albania	54.96	39.87
54	Armenia	54.57	39.58
55	Kuwait	54.36	39.43
56	Malta	54.26	39.36
57	Algeria	51.37	37.22
58	Brazil	51.34	37.21
59	China	50.60	36.66
60	Bahrain	50.48	36.57
61	Romania	49.38	35.76
62	Thailand	49.29	35.69
63	Hungary	48.50	35.11
64	Panama	47.80	34.60
65	Slovakia	46.63	33.74
66	Malaysia	45.13	32.63
67	Ecuador	44.89	32.46
68	North Macedonia	42.46	30.66
69	Kyrgyzstan	41.27	29.79
70	Mauritius	40.60	29.29
71	Mexico	40.23	29.02
72	Moldova	39.82	28.72
73	Oman	38.04	27.41
74	Indonesia	36.31	26.14
75	Morocco	35.94	25.86
76	Philippines	35.48	25.52
77	Egypt	35.16	25.29
78	Paraguay	34.63	24.90
79	Jordan	34.42	24.74
80	Tunisia	31.75	22.77
81	Tajikistan	31.26	22.41
82	El Salvador	29.37	21.03
83	Viet Nam	28.54	20.42
84	India	28.06	20.06
85	Azerbaijan	27.71	19.80
86	Jamaica	27.13	19.37
87	Honduras	26.16	18.66
88	Botswana	24.86	17.70
89	Cabo Verde	23.62	16.79
90	Namibia	22.89	16.25
91	South Africa	22.37	15.87
92	Guatemala	21.78	15.44
93	Bangladesh	20.57	14.54
94	Sri Lanka	19.63	13.85
95	Luxembourg	19.15	13.50
96	Qatar	17.87	12.55
97	Ghana	15.69	10.95
98	Lao PDR	14.97	10.42
99	Cambodia	13.69	9.47
100	Senegal	12.76	8.79
101	Cameroon	12.76	8.79
102	Nepal	12.41	8.53
103	Benin	12.27	8.43
104	Guinea	11.56	7.91
105	Kenya	11.46	7.84
106	Lesotho	10.20	6.90
107	Nigeria	10.17	6.89
108	Yemen	10.15	6.87
109	Zimbabwe	10.01	6.76
110	Côte d'Ivoire	9.34	6.27
111	Angola	9.34	6.27
112	Pakistan	8.96	5.99
113	Ethiopia	8.11	5.36
114	Mozambique	7.31	4.78
115	Eswatini	6.75	4.36
116	Rwanda	6.73	4.35
117	Congo, Dem. Rep.	6.60	4.26
118	Burkina Faso	6.50	4.18
119	Burundi	6.05	3.85
120	Madagascar	5.35	3.33
121	Uganda	4.84	2.96
122	Mali	4.52	2.72
123	Zambia	4.12	2.42
124	Tanzania	4.01	2.35
125	Chad	3.25	1.79
126	Gambia	2.72	1.40
127	Malawi	0.82	0.00
	Bolivia	n/a	n/a
	Bosnia and Herzegovina	n/a	n/a
	Japan	n/a	n/a
	Lebanon	n/a	n/a
	Trinidad and Tobago	n/a	n/a
	Turkey	n/a	n/a
	United Arab Emirates	n/a	n/a

Source: UNESCO Institute for Statistics, UIS.Stat (<http://data.uis.unesco.org/>)

For some countries, the latest year for which data are available may differ from the year that appears at the top of the page. The cut-off year is 2009.

## 2.1.5 Adult literacy rate

Adult literacy rate (%) | 2018

RANK	COUNTRY/ECONOMY	VALUE	SCORE	RANK	COUNTRY/ECONOMY	VALUE	SCORE
1	Ukraine	99.97	100.00	69	Honduras	87.21	83.56
2	Latvia	99.89	99.89	70	South Africa	87.05	83.35
3	Estonia	99.89	99.89	71	Botswana	86.82	83.07
4	Lithuania	99.82	99.80	72	Cabo Verde	86.79	83.02
5	Tajikistan	99.80	99.78	73	Zambia	86.75	82.97
6	Azerbaijan	99.79	99.76	74	Iran, Islamic Rep.	85.54	81.42
7	Kazakhstan	99.78	99.75	75	Lao PDR	84.66	80.28
8	Belarus	99.76	99.72	76	Kenya	81.53	76.26
9	Armenia	99.74	99.69	77	Algeria	81.41	76.09
10	Russian Federation	99.73	99.69	78	Guatemala	81.29	75.94
11	Slovenia	99.70	99.65	79	Cambodia	80.53	74.96
12	Kyrgyzstan	99.59	99.50	80	Ghana	79.04	73.04
13	Georgia	99.36	99.21	81	Tunisia	79.04	73.04
14	Moldova	99.36	99.21	82	Tanzania	77.89	71.56
15	Italy	99.16	98.95	83	Cameroon	77.07	70.51
16	Croatia	99.13	98.91	84	Congo, Dem. Rep.	77.04	70.47
17	Hungary	99.10	98.87	85	Lesotho	76.64	69.95
18	Argentina	99.00	98.75	86	Uganda	76.53	69.81
19	Montenegro	98.85	98.55	87	Madagascar	74.80	67.59
20	Romania	98.84	98.55	88	India	74.37	67.04
21	Serbia	98.84	98.54	89	Bangladesh	73.91	66.44
22	Uruguay	98.70	98.36	90	Morocco	73.75	66.23
23	Trinidad and Tobago	98.70	98.36	91	Rwanda	73.22	65.54
24	Cyprus	98.68	98.33	92	Egypt	71.17	62.91
25	Spain	98.44	98.02	93	Burundi	68.38	59.31
26	Mongolia	98.42	98.00	94	Nepal	67.91	58.71
27	Bulgaria	98.35	97.91	95	Angola	66.03	56.29
28	Jordan	98.23	97.75	96	Malawi	62.14	51.29
29	Philippines	98.18	97.69	97	Nigeria	62.02	51.12
30	Albania	98.14	97.64	98	Mozambique	60.66	49.37
31	Greece	97.94	97.38	99	Pakistan	59.13	47.41
32	Costa Rica	97.86	97.28	100	Senegal	51.90	38.10
33	North Macedonia	97.80	97.20	101	Ethiopia	51.77	37.93
34	Bahrain	97.46	96.77	102	Gambia	50.78	36.65
35	Singapore	97.34	96.61	103	Côte d'Ivoire	47.17	32.00
36	Venezuela	97.13	96.33	104	Benin	42.36	25.82
37	Bosnia and Herzegovina	96.99	96.16	105	Burkina Faso	41.22	24.35
38	China	96.84	95.97	106	Mali	35.47	16.95
39	Chile	96.40	95.40	107	Guinea	32.00	12.48
40	Turkey	96.15	95.08	108	Chad	22.31	0.00
41	Portugal	96.14	95.06		Australia	n/a	n/a
42	Kuwait	96.06	94.96		Austria	n/a	n/a
43	Indonesia	95.66	94.44		Belgium	n/a	n/a
44	Oman	95.65	94.43		Canada	n/a	n/a
45	Panama	95.41	94.13		Czech Republic	n/a	n/a
46	Mexico	95.38	94.08		Denmark	n/a	n/a
47	Saudi Arabia	95.33	94.02		Finland	n/a	n/a
48	Colombia	95.09	93.71		France	n/a	n/a
49	Lebanon	95.07	93.68		Germany	n/a	n/a
50	Viet Nam	95.00	93.60		Hong Kong (China)	n/a	n/a
51	Malaysia	94.85	93.41		Iceland	n/a	n/a
52	Malta	94.50	92.96		Ireland	n/a	n/a
53	Peru	94.41	92.83		Israel	n/a	n/a
54	Paraguay	94.02	92.33		Japan	n/a	n/a
55	Dominican Republic	93.78	92.02		Korea, Rep.	n/a	n/a
56	Thailand	93.77	92.01		Luxembourg	n/a	n/a
57	Qatar	93.46	91.62		Netherlands	n/a	n/a
58	Brazil	93.23	91.31		New Zealand	n/a	n/a
59	United Arab Emirates	93.23	91.31		Norway	n/a	n/a
60	Ecuador	92.83	90.80		Poland	n/a	n/a
61	Bolivia	92.46	90.32		Slovakia	n/a	n/a
62	Sri Lanka	91.71	89.36		Sweden	n/a	n/a
63	Namibia	91.53	89.12		Switzerland	n/a	n/a
64	Mauritius	91.33	88.86		United Kingdom	n/a	n/a
65	El Salvador	89.01	85.88		United States	n/a	n/a
66	Zimbabwe	88.69	85.47		Yemen	n/a	n/a
67	Eswatini	88.42	85.12				
68	Jamaica	88.10	84.71				

Source: UNESCO Institute for Statistics, UIS.Stat (<http://data.uis.unesco.org/>)

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## 2.1.6 ICT skills

Average answer to the question: In your country, to what extent does the active population possess sufficient digital skills (e.g. computer skills, basic coding, digital reading)? [1 = not at all; 7 = to a great extent] | 2018-19

RANK	COUNTRY/ECONOMY	VALUE	SCORE	RANK	COUNTRY/ECONOMY	VALUE	SCORE
1	Finland	5.83	100.00	69	Italy	4.17	51.01
2	Iceland	5.67	95.31	70	Pakistan	4.15	50.23
3	Sweden	5.67	95.14	71	Lao PDR	4.14	49.99
4	Netherlands	5.63	93.94	72	Greece	4.11	49.14
5	Singapore	5.58	92.69	73	Iran, Islamic Rep.	4.11	49.10
6	Israel	5.50	90.16	74	Serbia	4.09	48.56
7	Switzerland	5.47	89.20	75	Cabo Verde	4.03	46.94
8	Estonia	5.43	88.00	76	Gambia	4.03	46.90
9	Denmark	5.42	87.71	77	Argentina	4.01	46.18
10	Malaysia	5.37	86.39	78	Albania	3.99	45.72
11	Qatar	5.33	85.28	79	Algeria	3.97	45.09
12	United States	5.33	85.19	80	Hungary	3.97	45.07
13	Saudi Arabia	5.33	85.11	81	Rwanda	3.96	44.78
14	United Arab Emirates	5.32	84.93	82	Cameroon	3.90	42.89
15	Norway	5.29	84.15	83	Zimbabwe	3.90	42.83
16	Hong Kong (China)	5.24	82.65	84	Morocco	3.88	42.41
17	Luxembourg	5.19	81.03	85	Tanzania	3.87	41.95
18	Azerbaijan	5.09	78.23	86	Kyrgyzstan	3.85	41.58
19	Canada	5.07	77.60	87	Trinidad and Tobago	3.84	41.24
20	Germany	5.07	77.38	88	Jamaica	3.84	41.12
21	Philippines	5.06	77.28	89	Colombia	3.80	39.91
22	Lebanon	5.05	76.85	90	Côte d'Ivoire	3.79	39.57
23	Australia	5.02	76.02	91	Mongolia	3.78	39.32
24	Korea, Rep.	4.99	75.16	92	Viet Nam	3.77	38.98
25	Ireland	4.99	75.12	93	Ecuador	3.76	38.86
26	Russian Federation	4.95	73.95	94	Mexico	3.76	38.83
27	Bahrain	4.94	73.66	95	Ethiopia	3.75	38.52
28	United Kingdom	4.94	73.58	96	Croatia	3.72	37.51
29	New Zealand	4.93	73.41	97	Bosnia and Herzegovina	3.70	37.00
30	Jordan	4.92	73.05	98	Botswana	3.69	36.86
31	Oman	4.89	72.21	99	Benin	3.68	36.53
32	Costa Rica	4.89	72.12	100	Nepal	3.67	36.17
33	Cyprus	4.86	71.23	101	North Macedonia	3.67	36.16
34	Lithuania	4.85	71.03	102	Georgia	3.66	35.76
35	Belgium	4.83	70.43	103	Namibia	3.63	35.10
36	Slovenia	4.83	70.42	104	Honduras	3.63	35.04
37	Latvia	4.79	69.13	105	Mali	3.60	34.02
38	Austria	4.78	68.95	106	Dominican Republic	3.58	33.61
39	Czech Republic	4.78	68.87	107	Cambodia	3.57	33.12
40	Malta	4.72	67.18	108	Venezuela	3.57	33.10
41	Kazakhstan	4.69	66.29	109	Bangladesh	3.55	32.60
42	Egypt	4.66	65.44	110	Yemen	3.53	31.98
43	China	4.66	65.37	111	Turkey	3.52	31.87
44	Bulgaria	4.65	65.24	112	Panama	3.52	31.78
45	Slovakia	4.59	63.21	113	Zambia	3.50	31.17
46	Kenya	4.55	62.03	114	Lesotho	3.49	30.82
47	Armenia	4.54	61.81	115	Eswatini	3.47	30.18
48	Portugal	4.52	61.35	116	Uganda	3.42	28.87
49	Indonesia	4.51	60.88	117	Nigeria	3.42	28.86
50	Romania	4.49	60.43	118	Peru	3.36	26.93
51	France	4.49	60.43	119	Guinea	3.35	26.85
52	Moldova	4.45	59.31	120	Guatemala	3.35	26.58
53	Ukraine	4.45	59.25	121	South Africa	3.27	24.43
54	Tajikistan	4.44	58.99	122	Burundi	3.22	22.97
55	Japan	4.43	58.68	123	Bolivia	3.22	22.91
56	India	4.43	58.68	124	El Salvador	3.16	21.02
57	Mauritius	4.34	56.09	125	Madagascar	3.13	20.13
58	Spain	4.34	56.00	126	Brazil	3.09	18.95
59	Montenegro	4.32	55.28	127	Paraguay	2.91	13.62
60	Poland	4.27	53.92	128	Burkina Faso	2.89	13.16
61	Chile	4.26	53.72	129	Chad	2.89	13.08
62	Uruguay	4.26	53.65	130	Malawi	2.84	11.72
63	Thailand	4.26	53.51	131	Congo, Dem. Rep.	2.83	11.36
64	Tunisia	4.23	52.77	132	Mozambique	2.74	8.67
65	Sri Lanka	4.23	52.61	133	Angola	2.45	0.00
66	Ghana	4.21	52.14		Belarus	n/a	n/a
67	Kuwait	4.21	52.03				
68	Senegal	4.21	52.01				

Source: World Economic Forum, Executive Opinion Survey 2018–2019 (<http://reports.weforum.org>)

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## 2.2.1 Firms with website

Firms with website (% of total) | 2018

RANK	COUNTRY/ECONOMY	VALUE	SCORE
1	Finland	95.64	100.00
2	Denmark	93.92	98.01
3	Japan	92.40	96.24
4	Netherlands	91.89	95.65
5	Switzerland	91.74	95.48
6	Sweden	89.65	93.05
7	Austria	89.45	92.82
8	Germany	88.21	91.38
9	Belgium	86.72	89.65
10	United Kingdom	83.88	86.35
11	Luxembourg	83.67	86.11
12	Czech Republic	83.31	85.69
13	Malta	83.30	85.68
14	Slovenia	82.76	85.05
15	Iceland	82.57	84.83
16	Estonia	81.18	83.22
17	New Zealand	81.05	83.07
18	Lithuania	79.96	81.80
19	Serbia	79.10	80.80
20	Chile	78.70	80.34
21	Ireland	78.68	80.32
22	Canada	78.50	80.11
23	Ecuador	78.30	79.87
24	Norway	78.22	79.79
25	Australia	77.37	78.79
26	Jordan	77.10	78.48
27	Spain	75.87	77.05
28	Armenia	75.60	76.74
29	Croatia	74.90	75.93
30	Belarus	73.50	74.30
31	Slovakia	73.18	73.94
32	United States	72.85	73.55
33	Italy	72.08	72.66
34	Paraguay	71.60	72.10
35	France	71.54	72.02
36	Cyprus	71.50	71.98
37	Poland	70.22	70.49
38	Argentina	69.30	69.43
39	Peru	69.20	69.31
40	Uruguay	69.10	69.19
41	Bosnia and Herzegovina	68.10	68.03
42	Colombia	67.81	67.70
43	Romania	67.80	67.68
44	Israel	67.20	66.99
45	Tunisia	66.30	65.94
46	China	66.10	65.71
47	Korea, Rep.	65.44	64.94
48	Latvia	64.15	63.45
49	Ukraine	63.90	63.16
50	Lebanon	63.50	62.69
50	North Macedonia	63.50	62.69
52	Eswatini	62.50	61.53
53	Hungary	62.47	61.49
54	Albania	59.80	58.40
55	Greece	59.30	57.81
56	Zambia	59.00	57.47
57	Portugal	58.61	57.01
58	Russian Federation	58.50	56.89
59	Guatemala	58.00	56.31
60	Kyrgyzstan	57.20	55.38
61	Morocco	55.40	53.29
62	Costa Rica	54.00	51.66
63	Brazil	52.90	50.38
64	Philippines	52.40	49.81
65	Egypt	51.70	48.99
66	Turkey	51.51	48.78
67	Venezuela	51.50	48.76
68	Georgia	51.20	48.41
69	Kazakhstan	50.40	47.48
70	Bolivia	49.40	46.32
71	India	48.90	45.74
72	Viet Nam	48.60	45.39
73	Moldova	48.10	44.81
74	Kenya	47.30	43.88
75	Pakistan	46.90	43.42
76	Bulgaria	45.70	42.03
77	Thailand	45.50	41.79
78	Malawi	44.90	41.10
79	Honduras	43.50	39.47
80	Rwanda	42.60	38.43
81	El Salvador	42.50	38.31
82	Mali	42.20	37.96
83	Dominican Republic	42.00	37.73
84	Mexico	41.45	37.09
85	Montenegro	41.00	36.57
86	Panama	40.50	35.99
87	Mozambique	40.30	35.76
88	Namibia	39.40	34.71
89	Zimbabwe	38.70	33.90
90	Benin	38.30	33.44
91	Mongolia	37.50	32.51
92	Botswana	36.60	31.46
93	Jamaica	36.40	31.23
94	South Africa	36.00	30.77
95	Mauritius	35.90	30.65
96	Ethiopia	34.80	29.37
97	Senegal	34.60	29.14
98	Ghana	33.20	27.51
99	Azerbaijan	33.00	27.28
100	Malaysia	31.50	25.54
101	Lao PDR	30.90	24.84
102	Trinidad and Tobago	30.80	24.73
103	Madagascar	29.50	23.22
104	Angola	28.90	22.52
105	Tajikistan	28.20	21.71
106	Bangladesh	26.30	19.50
107	Nepal	26.10	19.27
108	Burundi	25.60	18.69
109	Cambodia	24.20	17.07
110	Cameroon	22.60	15.21
110	Tanzania	22.60	15.21
112	Gambia	22.40	14.98
113	Nigeria	22.30	14.86
114	Yemen	21.00	13.35
115	Indonesia	20.50	12.77
116	Cabo Verde	19.20	11.26
116	Uganda	19.20	11.26
118	Guinea	19.00	11.03
119	Sri Lanka	18.60	10.56
120	Côte d'Ivoire	18.10	9.98
121	Burkina Faso	17.20	8.94
122	Congo, Dem. Rep.	17.00	8.71
123	Lesotho	14.90	6.27
124	Chad	9.50	0.00
	Algeria	n/a	n/a
	Bahrain	n/a	n/a
	Hong Kong (China)	n/a	n/a
	Iran, Islamic Rep.	n/a	n/a
	Kuwait	n/a	n/a
	Oman	n/a	n/a
	Qatar	n/a	n/a
	Saudi Arabia	n/a	n/a
	Singapore	n/a	n/a
	United Arab Emirates	n/a	n/a

Source: OECD, ICT Access and Use by Businesses, OECD Telecommunications and Internet Statistics (database) (<https://doi.org/10.1787/9d2cb97b-en>); World Bank, Enterprise Surveys ([www.enterprisesurveys.org](http://www.enterprisesurveys.org))

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## 2.2.2 Ease of doing business

Ease of doing business index | 2019

RANK	COUNTRY/ECONOMY	VALUE	SCORE	RANK	COUNTRY/ECONOMY	VALUE	SCORE
1	New Zealand	86.76	100.00	69	Costa Rica	69.24	69.00
2	Singapore	86.20	99.00	70	Jordan	68.97	68.53
3	Hong Kong (China)	85.32	97.44	71	Peru	68.70	68.04
4	Denmark	85.29	97.39	72	Qatar	68.67	67.98
5	Korea, Rep.	84.00	95.11	73	Tunisia	68.66	67.97
6	United States	84.00	95.10	74	Greece	68.42	67.55
7	Georgia	83.73	94.64	75	Kyrgyzstan	67.82	66.49
8	United Kingdom	83.55	94.31	76	Mongolia	67.77	66.40
9	Norway	82.63	92.68	77	Albania	67.75	66.36
10	Sweden	81.99	91.56	78	Kuwait	67.40	65.75
11	Lithuania	81.62	90.90	79	South Africa	67.02	65.07
12	Malaysia	81.47	90.64	80	Zambia	66.94	64.92
13	Mauritius	81.47	90.63	81	Panama	66.56	64.26
14	Australia	81.22	90.18	82	Botswana	66.20	63.62
15	United Arab Emirates	80.91	89.65	83	Malta	66.14	63.51
16	North Macedonia	80.75	89.36	84	Bosnia and Herzegovina	65.44	62.28
17	Estonia	80.62	89.12	85	El Salvador	65.25	61.94
18	Latvia	80.28	88.53	86	Nepal	63.19	58.29
19	Finland	80.18	88.35	87	Philippines	62.83	57.66
20	Thailand	80.09	88.20	88	Guatemala	62.60	57.24
21	Germany	79.71	87.52	89	Sri Lanka	61.81	55.85
22	Canada	79.64	87.40	90	Uruguay	61.54	55.38
23	Ireland	79.58	87.28	91	Namibia	61.35	55.04
24	Kazakhstan	79.56	87.25	92	Trinidad and Tobago	61.29	54.94
25	Iceland	78.96	86.20	93	Tajikistan	61.27	54.90
26	Austria	78.75	85.81	94	Pakistan	60.95	54.34
27	Russian Federation	78.16	84.78	95	Malawi	60.94	54.31
28	Japan	78.00	84.49	96	Côte d'Ivoire	60.69	53.87
29	Spain	77.94	84.38	97	Egypt	60.05	52.75
30	China	77.93	84.37	98	Dominican Republic	59.99	52.63
31	France	76.80	82.38	99	Uganda	59.98	52.62
32	Turkey	76.79	82.36	100	Ghana	59.96	52.58
33	Azerbaijan	76.71	82.21	101	Eswatini	59.49	51.76
34	Israel	76.68	82.15	102	Lesotho	59.43	51.64
35	Switzerland	76.62	82.05	103	Senegal	59.27	51.37
36	Slovenia	76.52	81.87	104	Brazil	59.08	51.03
37	Rwanda	76.48	81.81	105	Paraguay	59.05	50.98
38	Portugal	76.47	81.78	106	Argentina	58.96	50.82
39	Poland	76.38	81.63	107	Iran, Islamic Rep.	58.55	50.08
40	Czech Republic	76.34	81.56	108	Ecuador	57.72	48.62
41	Netherlands	76.10	81.14	109	Nigeria	56.88	47.13
42	Bahrain	76.03	81.00	110	Honduras	56.27	46.05
43	Serbia	75.65	80.34	111	Cabo Verde	55.04	43.88
44	Slovakia	75.59	80.22	112	Mozambique	55.00	43.80
45	Belgium	74.99	79.17	113	Zimbabwe	54.47	42.87
46	Armenia	74.49	78.29	114	Tanzania	54.46	42.86
47	Moldova	74.39	78.11	115	Lebanon	54.33	42.63
48	Belarus	74.29	77.93	116	Cambodia	53.84	41.76
49	Montenegro	73.82	77.10	117	Mali	52.94	40.17
50	Croatia	73.62	76.75	118	Benin	52.40	39.22
51	Hungary	73.42	76.39	119	Bolivia	51.66	37.89
52	Morocco	73.38	76.32	120	Burkina Faso	51.40	37.44
53	Cyprus	73.35	76.27	121	Lao PDR	50.82	36.42
54	Romania	73.33	76.24	122	Gambia	50.29	35.48
55	Kenya	73.22	76.03	123	Guinea	49.43	33.95
56	Italy	72.85	75.39	124	Algeria	48.60	32.48
57	Chile	72.58	74.91	125	Ethiopia	47.98	31.38
58	Mexico	72.36	74.51	126	Madagascar	47.73	30.94
59	Bulgaria	71.97	73.84	127	Burundi	46.77	29.26
60	Saudi Arabia	71.56	73.10	128	Cameroon	46.10	28.06
61	India	71.05	72.19	129	Bangladesh	45.05	26.20
62	Ukraine	70.21	70.72	130	Angola	41.29	19.55
63	Colombia	70.06	70.45	131	Chad	36.94	11.85
64	Oman	69.98	70.32	132	Yemen	31.76	2.70
65	Viet Nam	69.77	69.93	133	Venezuela	30.24	0.00
66	Jamaica	69.68	69.78		Congo, Dem. Rep.	n/a	n/a
67	Luxembourg	69.60	69.64				
68	Indonesia	69.58	69.60				

Source: World Bank, Doing Business 2020: Comparing Business Regulation in 190 Economies (<https://www.doingbusiness.org/en/reports/global-reports/doing-business-2020>)

For some countries, the latest year for which data are available may differ from the year that appears at the top of the page. The cut-off year is 2009.

## 2.2.3 Professionals

### Professionals (%) | 2019

RANK	COUNTRY/ECONOMY	VALUE	SCORE	RANK	COUNTRY/ECONOMY	VALUE	SCORE
1	Luxembourg	40.90	100.00	69	Mauritius	9.77	23.20
2	Sweden	29.73	72.42	70	Mexico	9.42	22.34
3	Denmark	27.70	67.43	71	Kyrgyzstan	9.38	22.22
4	Norway	27.57	67.11	72	Qatar	9.07	21.46
5	Netherlands	27.00	65.69	73	Zambia	8.92	21.10
6	Switzerland	26.50	64.46	74	Jamaica	8.91	21.07
7	United Kingdom	26.40	64.22	75	Cabo Verde	8.26	19.47
8	Finland	26.28	63.92	76	Dominican Republic	8.19	19.30
9	Iceland	26.22	63.78	77	Nepal	8.18	19.27
10	Israel	25.60	62.24	78	Lao PDR	7.87	18.50
11	Belgium	25.28	61.46	79	Namibia	7.64	17.93
12	Russian Federation	24.57	59.70	80	Bahrain	7.61	17.86
13	Ireland	24.08	58.49	81	Ecuador	7.59	17.81
14	Lithuania	23.71	57.58	82	Hong Kong (China)	7.58	17.79
15	Slovenia	23.23	56.41	83	Tajikistan	7.58	17.78
16	United States	22.65	54.97	84	Ghana	7.46	17.48
17	Australia	22.12	53.66	85	Oman	7.37	17.27
18	Estonia	21.43	51.96	86	Yemen	7.25	16.97
19	Belarus	20.98	50.85	87	Peru	7.23	16.93
20	Poland	20.63	49.98	88	Bolivia	7.19	16.82
21	Singapore	20.41	49.44	89	Sri Lanka	6.97	16.28
22	Korea, Rep.	20.40	49.43	90	Paraguay	6.88	16.07
23	Austria	20.09	48.66	91	Botswana	6.77	15.79
24	Portugal	19.30	46.70	92	El Salvador	6.77	15.78
25	Greece	19.24	46.57	93	Tunisia	6.75	15.74
26	Cyprus	19.02	46.00	94	Viet Nam	6.56	15.28
27	Malta	18.98	45.92	95	Rwanda	6.24	14.49
28	France	18.96	45.85	96	Uganda	6.15	14.26
29	Canada	18.73	45.30	97	Nigeria	6.14	14.24
30	Spain	18.54	44.82	98	Trinidad and Tobago	6.10	14.14
31	Ukraine	18.41	44.51	99	Indonesia	5.95	13.78
32	Montenegro	18.25	44.11	100	Thailand	5.63	12.97
33	Germany	18.13	43.82	101	South Africa	5.62	12.95
34	Croatia	18.02	43.54	102	Guatemala	5.61	12.93
35	Latvia	17.55	42.37	103	Philippines	5.59	12.88
36	Moldova	17.21	41.55	104	Burkina Faso	5.54	12.75
37	Kazakhstan	17.02	41.08	105	Angola	5.41	12.43
38	Mongolia	16.91	40.81	106	Pakistan	5.26	12.05
39	Hungary	16.76	40.43	107	Honduras	5.08	11.63
40	Bulgaria	16.68	40.24	108	Cameroon	5.04	11.51
41	Czech Republic	16.12	38.85	109	Bangladesh	4.82	10.98
42	Romania	15.55	37.46	110	Côte d'Ivoire	4.74	10.78
43	United Arab Emirates	15.49	37.29	111	India	4.15	9.33
44	Italy	15.33	36.91	112	Senegal	4.06	9.09
45	Venezuela	15.01	36.12	113	Zimbabwe	3.48	7.68
46	Armenia	14.88	35.79	114	Cambodia	3.38	7.43
47	North Macedonia	14.69	35.33	115	Malawi	2.96	6.39
48	Serbia	13.78	33.09	116	Ethiopia	2.56	5.40
49	Slovakia	13.50	32.40	117	Congo, Dem. Rep.	2.40	5.01
50	Chile	13.11	31.43	118	Colombia	2.19	4.49
51	Azerbaijan	12.55	30.05	119	Madagascar	2.05	4.15
52	Georgia	12.48	29.88	120	Mozambique	2.04	4.13
53	Malaysia	12.35	29.56	121	Mali	1.99	3.99
54	Albania	12.30	29.44	122	Morocco	1.80	3.53
55	Uruguay	12.17	29.11	123	Lesotho	1.18	2.00
56	Eswatini	11.94	28.54	124	Tanzania	0.85	1.17
57	Egypt	11.83	28.28	125	Burundi	0.37	0.00
58	Saudi Arabia	11.66	27.85		Benin	n/a	n/a
59	Brazil	11.29	26.93		Chad	n/a	n/a
60	Turkey	11.27	26.88		China	n/a	n/a
61	Gambia	10.99	26.20		Guinea	n/a	n/a
62	Iran, Islamic Rep.	10.96	26.13		Japan	n/a	n/a
63	Panama	10.75	25.61		Jordan	n/a	n/a
64	Costa Rica	10.72	25.53		Kenya	n/a	n/a
65	Kuwait	10.45	24.87		Lebanon	n/a	n/a
66	Bosnia and Herzegovina	10.33	24.58		New Zealand	n/a	n/a
67	Argentina	10.07	23.93				
68	Algeria	9.93	23.59				

Source: International Labour Organization, ILOSTAT (<https://ilostat.ilo.org>)

For some countries, the latest year for which data are available may differ from the year that appears at the top of the page. The cut-off year is 2009.

## 2.2.4 Technicians and associate professionals

Technicians and associate professionals (%) | 2019

RANK	COUNTRY/ECONOMY	VALUE	SCORE
1	Germany	23.05	100.00
2	Japan	22.82	99.01
3	Singapore	21.85	94.76
4	Nigeria	21.09	91.41
5	France	19.95	86.43
6	Hong Kong (China)	19.75	85.56
7	Finland	19.35	83.80
8	Sweden	18.38	79.53
9	Denmark	17.93	77.58
10	Italy	17.56	75.97
11	Korea, Rep.	17.44	75.43
12	Austria	17.20	74.37
13	Czech Republic	17.14	74.12
14	Switzerland	17.11	73.98
15	Canada	16.84	72.80
16	Netherlands	16.42	70.95
17	Luxembourg	16.10	69.55
18	Norway	15.91	68.74
19	Slovakia	15.71	67.86
20	Malta	14.72	63.49
21	Latvia	14.59	62.93
22	Estonia	14.59	62.92
23	Hungary	14.49	62.51
24	United States	14.28	61.60
25	Croatia	14.15	61.01
26	Belgium	13.94	60.09
27	Trinidad and Tobago	13.30	57.30
28	Poland	13.09	56.36
29	Montenegro	13.05	56.20
30	Australia	12.98	55.88
31	Iceland	12.96	55.77
32	Russian Federation	12.95	55.73
33	Israel	12.88	55.43
34	Costa Rica	12.80	55.11
35	Slovenia	12.79	55.05
36	United Kingdom	12.34	53.07
37	Cyprus	12.33	53.04
38	Kazakhstan	12.00	51.58
39	Chile	11.69	50.23
40	Saudi Arabia	11.57	49.70
41	Ireland	11.38	48.87
42	Serbia	11.32	48.63
43	Spain	11.31	48.54
44	Ukraine	11.20	48.09
45	Mauritius	11.11	47.68
46	United Arab Emirates	11.09	47.61
47	Portugal	11.04	47.38
48	Malaysia	10.40	44.57
49	Belarus	10.22	43.78
50	North Macedonia	10.08	43.15
51	Lithuania	9.66	41.33
52	Argentina	9.47	40.51
53	Azerbaijan	9.34	39.92
54	Bulgaria	9.22	39.40
55	Bosnia and Herzegovina	9.21	39.38
56	Colombia	8.80	37.56
57	South Africa	8.67	36.99
58	Sri Lanka	8.26	35.21
59	Egypt	8.07	34.36
60	Armenia	8.01	34.12
61	Greece	7.98	33.96
62	Kyrgyzstan	7.84	33.35
63	Botswana	7.80	33.17
64	Brazil	7.71	32.77
65	Georgia	7.63	32.43
66	Uruguay	7.58	32.23
67	Tunisia	7.57	32.17
68	Paraguay	7.52	31.96
69	Kuwait	7.49	31.82
70	Oman	7.43	31.55
71	Panama	7.26	30.79
72	Mexico	7.05	29.90
73	Moldova	7.01	29.70
74	Qatar	6.81	28.83
75	Peru	6.40	27.05
76	Romania	6.37	26.91
77	Bahrain	6.20	26.16
78	Honduras	6.14	25.90
79	Turkey	6.13	25.85
80	Dominican Republic	5.96	25.10
81	Gambia	5.81	24.46
82	Tajikistan	5.77	24.29
83	Iran, Islamic Rep.	5.63	23.66
84	Jamaica	5.61	23.57
85	Congo, Dem. Rep.	5.56	23.37
86	Namibia	5.46	22.90
87	Cabo Verde	5.43	22.79
88	Bolivia	4.76	19.86
89	Algeria	4.76	19.85
90	Albania	4.76	19.83
91	Burkina Faso	4.75	19.81
92	Thailand	4.49	18.68
93	Zambia	4.49	18.65
94	Nepal	4.44	18.44
95	Ecuador	4.42	18.35
96	Morocco	4.40	18.27
97	Côte d'Ivoire	4.33	17.96
98	Lesotho	4.20	17.39
99	Philippines	4.15	17.19
100	El Salvador	4.13	17.07
101	India	4.06	16.80
102	Eswatini	4.06	16.79
103	Pakistan	3.97	16.39
104	Angola	3.63	14.90
105	Yemen	3.47	14.20
106	Indonesia	3.11	12.63
107	Mongolia	3.08	12.47
108	Cameroon	2.89	11.64
109	Uganda	2.88	11.61
110	Viet Nam	2.80	11.24
111	Guatemala	2.64	10.57
112	Lao PDR	2.63	10.49
113	Ghana	2.55	10.14
114	Mali	2.14	8.35
115	Tanzania	2.08	8.09
116	Bangladesh	1.86	7.14
117	Burundi	1.62	6.08
118	Zimbabwe	1.60	5.99
119	Senegal	1.49	5.51
120	Mozambique	1.47	5.41
121	Cambodia	1.39	5.08
122	Rwanda	1.33	4.80
123	Ethiopia	1.30	4.67
124	Madagascar	0.86	2.74
125	Malawi	0.23	0.00
	Benin	n/a	n/a
	Chad	n/a	n/a
	China	n/a	n/a
	Guinea	n/a	n/a
	Jordan	n/a	n/a
	Kenya	n/a	n/a
	Lebanon	n/a	n/a
	New Zealand	n/a	n/a
	Venezuela	n/a	n/a

Source: International Labour Organization, ILOSTAT (<https://ilostat.ilo.org/>)

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## 2.2.5 Business use of digital tools

Average answer to the question: In your country, to what extent do businesses make good use of the latest digital tools to sell their goods and services (e-commerce, digital payment, mobile web stores, social media stores)? [1 = not at all; 7 = to a great extent] | 2018–19

RANK	COUNTRY/ECONOMY	VALUE	SCORE	RANK	COUNTRY/ECONOMY	VALUE	SCORE
1	United States	6.21	100.00	69	Jamaica	4.63	57.87
2	Netherlands	6.18	99.21	70	Côte d'Ivoire	4.63	57.73
3	Korea, Rep.	6.18	99.20	71	Ukraine	4.62	57.68
4	Estonia	6.16	98.58	72	Montenegro	4.62	57.67
5	Israel	6.08	96.50	73	Iran, Islamic Rep.	4.59	56.75
6	Sweden	6.08	96.36	74	Lebanon	4.57	56.29
7	Finland	5.88	90.99	75	Moldova	4.57	56.25
8	Luxembourg	5.82	89.47	76	Greece	4.57	56.17
9	Lithuania	5.80	88.91	77	Panama	4.55	55.83
10	Germany	5.75	87.66	78	Namibia	4.55	55.69
11	United Kingdom	5.71	86.57	79	Ecuador	4.52	54.99
12	Australia	5.71	86.56	80	Kazakhstan	4.46	53.36
13	Saudi Arabia	5.68	85.73	81	Tajikistan	4.44	52.81
14	Slovakia	5.67	85.56	82	Serbia	4.44	52.69
15	Denmark	5.67	85.44	83	Croatia	4.44	52.68
16	Latvia	5.64	84.81	84	Morocco	4.40	51.62
17	Japan	5.61	83.87	85	Mauritius	4.39	51.57
18	Iceland	5.60	83.67	86	Algeria	4.39	51.40
19	Singapore	5.60	83.57	87	Pakistan	4.37	51.04
20	Switzerland	5.60	83.55	88	Guatemala	4.36	50.73
21	United Arab Emirates	5.55	82.41	89	Peru	4.35	50.39
22	Malaysia	5.55	82.30	90	Gambia	4.32	49.72
23	France	5.53	81.81	91	Cambodia	4.32	49.53
24	Hong Kong (China)	5.52	81.61	92	Tanzania	4.31	49.31
25	New Zealand	5.51	81.24	93	Ghana	4.29	48.81
26	Czech Republic	5.49	80.65	94	El Salvador	4.26	48.13
27	Portugal	5.48	80.46	95	Lao PDR	4.25	47.65
28	Spain	5.47	80.21	96	Benin	4.22	47.00
29	Romania	5.45	79.57	97	Venezuela	4.20	46.40
30	Chile	5.42	78.94	98	Uganda	4.19	46.18
31	Canada	5.42	78.84	99	Zimbabwe	4.16	45.31
32	Azerbaijan	5.37	77.54	100	Paraguay	4.14	44.93
33	Bahrain	5.34	76.71	101	Bangladesh	4.13	44.54
34	Slovenia	5.33	76.57	102	Sri Lanka	4.08	43.30
35	Indonesia	5.31	75.86	103	North Macedonia	4.08	43.13
36	Poland	5.27	74.78	104	Zambia	4.08	43.11
37	Costa Rica	5.21	73.40	105	Bosnia and Herzegovina	4.06	42.73
38	Kenya	5.19	72.88	106	Cabo Verde	4.03	41.86
39	Brazil	5.19	72.82	107	Cameroon	3.93	39.27
40	Bulgaria	5.19	72.75	108	Eswatini	3.86	37.38
41	Russian Federation	5.19	72.73	109	Madagascar	3.84	36.83
42	Ireland	5.19	72.69	110	Albania	3.77	35.07
43	Austria	5.18	72.43	111	Trinidad and Tobago	3.77	34.83
44	Thailand	5.17	72.13	112	Tunisia	3.75	34.51
45	Malta	5.14	71.44	113	Bolivia	3.70	33.23
46	Qatar	5.13	71.05	114	Mali	3.70	33.07
47	Uruguay	5.12	71.02	115	Botswana	3.70	33.06
48	Egypt	5.11	70.60	116	Mozambique	3.69	32.72
49	South Africa	5.10	70.45	117	Kyrgyzstan	3.66	32.03
50	Nigeria	5.03	68.38	118	Nepal	3.63	31.19
51	Jordan	4.99	67.36	119	Angola	3.45	26.48
52	Dominican Republic	4.98	67.26	120	Burundi	3.44	26.07
53	Turkey	4.90	64.97	121	Mongolia	3.28	21.86
54	Argentina	4.89	64.81	122	Yemen	3.21	19.93
55	Senegal	4.88	64.58	123	Malawi	3.14	18.14
56	Kuwait	4.85	63.75	124	Lesotho	3.13	18.00
57	Guinea	4.82	63.00	125	Congo, Dem. Rep.	3.07	16.41
58	Oman	4.82	62.93	126	Ethiopia	3.04	15.60
59	Armenia	4.82	62.89	127	Burkina Faso	2.98	13.89
60	Italy	4.82	62.78	128	Chad	2.46	0.00
61	Hungary	4.79	61.99		Belarus	n/a	n/a
62	Mexico	4.74	60.88		Belgium	n/a	n/a
63	Viet Nam	4.74	60.78		China	n/a	n/a
64	Colombia	4.74	60.64		Georgia	n/a	n/a
65	Philippines	4.69	59.44		Honduras	n/a	n/a
66	Cyprus	4.69	59.38		Norway	n/a	n/a
67	India	4.65	58.48				
68	Rwanda	4.64	58.23				

Source: World Economic Forum, Executive Opinion Survey 2018–2019 (<http://reports.weforum.org>)

For some countries, the latest year for which data are available may differ from the year that appears at the top of the page. The cut-off year is 2009.

## 2.2.6 R&D expenditure by businesses

Gross domestic expenditure on R&D performed by business enterprise (% of GDP) | 2018

RANK	COUNTRY/ECONOMY	VALUE	SCORE	RANK	COUNTRY/ECONOMY	VALUE	SCORE
1	Israel	3.91	100.00	69	Philippines	0.06	1.54
2	Korea, Rep.	3.62	92.41	70	El Salvador	0.06	1.43
3	Japan	2.53	64.69	71	Montenegro	0.05	1.35
4	Switzerland	2.39	61.17	72	Kazakhstan	0.05	1.34
5	Sweden	2.35	60.02	73	Rwanda	0.05	1.16
6	Austria	2.22	56.65	74	Moldova	0.04	1.13
7	Germany	2.09	53.53	75	Namibia	0.04	0.98
8	United States	2.04	52.08	76	Sri Lanka	0.04	0.93
9	Denmark	1.97	50.33	77	Algeria	0.04	0.92
10	Finland	1.80	45.98	78	Kyrgyzstan	0.03	0.79
11	Belgium	1.76	44.87	79	Egypt	0.03	0.71
12	China	1.66	42.53	80	Bahrain	0.02	0.52
13	France	1.42	36.28	81	Indonesia	0.02	0.42
14	Slovenia	1.39	35.56	82	Cambodia	0.02	0.40
15	Iceland	1.38	35.17	83	Mauritius	0.01	0.29
16	Singapore	1.30	33.34	84	Mongolia	0.01	0.22
17	Netherlands	1.15	29.45	85	Trinidad and Tobago	0.01	0.18
18	Czech Republic	1.13	28.76	86	Uganda	0.01	0.18
19	United Kingdom	1.12	28.73	87	Ethiopia	0.01	0.15
20	Norway	1.12	28.61	88	Azerbaijan	0.00	0.11
21	Australia	1.03	26.21	89	Guatemala	0.00	0.07
22	Hungary	0.99	25.19	90	Eswatini	0.00	0.04
23	Italy	0.83	21.22	91	Mozambique	0.00	0.03
24	Malaysia	0.81	20.77	92	Senegal	0.00	0.03
25	Canada	0.81	20.64	93	Panama	0.00	0.02
26	United Arab Emirates	0.81	20.62	94	Ghana	0.00	0.01
27	Thailand	0.80	20.52	95	Paraguay	0.00	0.00
28	Ireland	0.74	18.78		Albania	n/a	n/a
29	Luxembourg	0.68	17.32		Angola	n/a	n/a
30	Poland	0.67	17.04		Armenia	n/a	n/a
31	Portugal	0.67	17.00		Bangladesh	n/a	n/a
32	Russian Federation	0.67	17.00		Benin	n/a	n/a
33	Spain	0.66	16.90		Bolivia	n/a	n/a
34	New Zealand	0.63	16.11		Brazil	n/a	n/a
35	Estonia	0.61	15.54		Burkina Faso	n/a	n/a
36	Greece	0.55	14.04		Burundi	n/a	n/a
37	Turkey	0.55	13.96		Cabo Verde	n/a	n/a
38	Bulgaria	0.53	13.50		Cameroon	n/a	n/a
39	Slovakia	0.48	12.20		Chad	n/a	n/a
40	Croatia	0.42	10.69		Congo, Dem. Rep.	n/a	n/a
41	Belarus	0.42	10.68		Côte d'Ivoire	n/a	n/a
42	Hong Kong (China)	0.39	9.87		Dominican Republic	n/a	n/a
43	Viet Nam	0.38	9.83		Gambia	n/a	n/a
44	Serbia	0.36	9.20		Georgia	n/a	n/a
45	South Africa	0.34	8.66		Guinea	n/a	n/a
46	Malta	0.34	8.61		Honduras	n/a	n/a
47	Lithuania	0.32	8.12		Jamaica	n/a	n/a
48	Romania	0.29	7.30		Jordan	n/a	n/a
49	Ukraine	0.28	7.04		Kuwait	n/a	n/a
50	Morocco	0.21	5.46		Lao PDR	n/a	n/a
51	Iran, Islamic Rep.	0.21	5.32		Lebanon	n/a	n/a
52	Cyprus	0.20	5.16		Lesotho	n/a	n/a
53	India	0.19	4.94		Madagascar	n/a	n/a
54	Ecuador	0.19	4.78		Malawi	n/a	n/a
55	Mexico	0.15	3.79		Mali	n/a	n/a
56	Chile	0.14	3.55		Nepal	n/a	n/a
57	Latvia	0.14	3.54		Nigeria	n/a	n/a
58	Argentina	0.14	3.45		Pakistan	n/a	n/a
59	Costa Rica	0.13	3.33		Peru	n/a	n/a
60	Tunisia	0.12	3.09		Saudi Arabia	n/a	n/a
61	Uruguay	0.12	2.95		Tajikistan	n/a	n/a
62	North Macedonia	0.11	2.84		Tanzania	n/a	n/a
63	Colombia	0.11	2.71		Venezuela	n/a	n/a
64	Botswana	0.10	2.42		Yemen	n/a	n/a
65	Qatar	0.09	2.28		Zambia	n/a	n/a
66	Bosnia and Herzegovina	0.07	1.76		Zimbabwe	n/a	n/a
67	Oman	0.07	1.74				
68	Kenya	0.07	1.73				

Source: UNESCO Institute for Statistics, UIS.Stat (<http://data.uis.unesco.org/>)

For some countries, the latest year for which data are available may differ from the year that appears at the top of the page. The cut-off year is 2009.

## 2.3.1 Government online services

### Government Online Service Index | 2020

RANK	COUNTRY/ECONOMY	VALUE	SCORE	RANK	COUNTRY/ECONOMY	VALUE	SCORE
1	Korea, Rep.	1.00	100.00	68	Mauritius	0.70	69.09
2	Estonia	0.99	99.39	70	Saudi Arabia	0.69	67.88
3	Denmark	0.97	96.97	71	Costa Rica	0.68	67.28
3	Finland	0.97	96.97	71	Indonesia	0.68	67.28
5	Singapore	0.96	96.36	71	Ukraine	0.68	67.28
6	United Kingdom	0.96	95.76	74	Kenya	0.68	66.67
7	Australia	0.95	94.55	75	Belgium	0.66	64.85
7	Austria	0.95	94.55	75	Qatar	0.66	64.85
7	United States	0.95	94.55	77	Viet Nam	0.65	64.24
10	New Zealand	0.93	92.73	78	Kyrgyzstan	0.65	63.64
11	Kazakhstan	0.92	92.12	79	Ghana	0.64	62.43
12	China	0.91	90.30	80	Pakistan	0.63	61.82
12	Japan	0.91	90.30	81	Panama	0.62	61.21
12	Netherlands	0.91	90.30	81	Tunisia	0.62	61.21
15	Sweden	0.90	89.70	83	Rwanda	0.62	60.60
15	United Arab Emirates	0.90	89.70	84	Bangladesh	0.61	60.00
17	Spain	0.89	88.48	84	Trinidad and Tobago	0.61	60.00
18	France	0.88	87.88	86	Georgia	0.59	57.57
19	Norway	0.88	87.28	86	Iran, Islamic Rep.	0.59	57.57
20	Brazil	0.87	86.67	88	Bolivia	0.58	56.98
20	Cyprus	0.87	86.67	88	Latvia	0.58	56.98
22	Poland	0.86	85.45	88	Uganda	0.58	56.98
22	Turkey	0.86	85.45	91	El Salvador	0.58	56.37
24	Chile	0.85	84.84	92	Egypt	0.57	55.76
24	India	0.85	84.84	93	Tanzania	0.55	53.94
24	Lithuania	0.85	84.84	94	Montenegro	0.54	52.73
24	Malaysia	0.85	84.84	95	Bosnia and Herzegovina	0.54	52.12
24	Oman	0.85	84.84	96	Mongolia	0.53	51.51
24	Slovenia	0.85	84.84	97	Morocco	0.52	50.91
30	Argentina	0.85	84.25	97	Namibia	0.52	50.91
31	Albania	0.84	83.64	97	Zimbabwe	0.52	50.91
31	Canada	0.84	83.64	100	Mozambique	0.52	50.30
31	Kuwait	0.84	83.64	100	Nigeria	0.52	50.30
31	Uruguay	0.84	83.64	102	Benin	0.51	49.70
35	Portugal	0.84	83.03	102	Guatemala	0.51	49.70
36	Italy	0.83	82.42	104	Cabo Verde	0.50	48.49
36	Switzerland	0.83	82.42	105	Senegal	0.49	47.88
38	Mexico	0.82	81.82	106	Angola	0.49	47.27
39	Russian Federation	0.82	81.21	106	Eswatini	0.49	47.27
40	Ecuador	0.81	80.61	108	Cameroon	0.47	45.46
40	Malta	0.81	80.61	109	Burkina Faso	0.46	44.85
42	Iceland	0.79	78.79	109	Honduras	0.46	44.85
42	Serbia	0.79	78.79	111	Cambodia	0.45	43.63
42	Thailand	0.79	78.79	111	Côte d'Ivoire	0.45	43.63
45	Bahrain	0.79	78.18	113	Malawi	0.42	40.60
46	Bulgaria	0.77	76.37	114	Lebanon	0.42	40.00
46	Ireland	0.77	76.37	115	Nepal	0.40	38.18
48	Colombia	0.76	75.76	116	Jamaica	0.39	36.97
48	Dominican Republic	0.76	75.76	117	Botswana	0.36	34.55
48	Luxembourg	0.76	75.76	117	Ethiopia	0.36	34.55
51	Croatia	0.75	74.54	119	Jordan	0.36	33.94
51	Moldova	0.75	74.54	120	Burundi	0.35	33.33
51	Peru	0.75	74.54	120	Lesotho	0.35	33.33
54	Hungary	0.75	73.94	122	Mali	0.35	32.73
54	Israel	0.75	73.94	123	Yemen	0.32	30.30
54	South Africa	0.75	73.94	124	Tajikistan	0.32	29.69
57	North Macedonia	0.74	73.34	124	Venezuela	0.32	29.69
58	Germany	0.74	72.73	126	Madagascar	0.29	26.66
59	Philippines	0.73	72.12	127	Algeria	0.28	25.46
60	Czech Republic	0.72	71.51	128	Zambia	0.26	23.63
60	Romania	0.72	71.51	129	Guinea	0.22	19.39
62	Slovakia	0.72	70.90	130	Chad	0.20	17.58
62	Sri Lanka	0.72	70.90	131	Lao PDR	0.19	16.97
64	Azerbaijan	0.71	69.70	132	Congo, Dem. Rep.	0.13	10.30
64	Belarus	0.71	69.70	133	Gambia	0.03	0.00
64	Greece	0.71	69.70		Hong Kong (China)	n/a	n/a
64	Paraguay	0.71	69.70				
68	Armenia	0.70	69.09				

Source: United Nations Department of Economic and Social Affairs (UNDESA), UN E-Government Knowledgebase (<https://publicadministration.un.org/egovkb/en-us>)  
For some countries, the latest year for which data are available may differ from the year that appears at the top of the page. The cut-off year is 2009.

## 2.3.2 Publication and use of open data

### Open Data Barometer | 2016

RANK	COUNTRY/ECONOMY	VALUE	SCORE
1	United Kingdom	100.00	100.00
2	Canada	89.54	89.54
3	France	85.13	85.13
4	United States	81.62	81.62
5	Korea, Rep.	81.16	81.16
6	Australia	81.15	81.15
7	New Zealand	79.38	79.38
8	Japan	75.16	75.16
9	Netherlands	74.95	74.95
10	Norway	73.81	73.81
11	Mexico	73.45	73.45
12	Spain	73.36	73.36
13	Denmark	70.52	70.52
14	Austria	70.22	70.22
15	Sweden	69.84	69.84
16	Germany	69.52	69.52
17	Uruguay	60.85	60.85
18	Brazil	58.86	58.86
19	Switzerland	57.46	57.46
20	Italy	55.93	55.93
21	Finland	55.89	55.89
22	Philippines	54.70	54.70
23	Singapore	52.69	52.69
24	Colombia	51.65	51.65
25	Russian Federation	48.53	48.53
26	Ireland	47.44	47.44
27	Chile	47.41	47.41
28	Israel	46.26	46.26
29	Belgium	45.28	45.28
30	Slovakia	44.90	44.90
31	Czech Republic	44.44	44.44
32	Moldova	43.68	43.68
33	India	42.80	42.80
34	Portugal	41.89	41.89
35	Kenya	40.42	40.42
36	Greece	38.94	38.94
37	Iceland	38.87	38.87
38	Indonesia	38.35	38.35
39	Argentina	37.51	37.51
40	Georgia	37.44	37.44
41	Bulgaria	37.14	37.14
42	Jamaica	36.95	36.95
43	Turkey	36.88	36.88
44	Estonia	36.31	36.31
45	Ukraine	35.96	35.96
46	South Africa	34.43	34.43
47	Poland	33.95	33.95
48	Peru	33.33	33.33
49	North Macedonia	32.58	32.58
50	Albania	32.43	32.43
51	Dominican Republic	32.21	32.21
52	Tunisia	32.17	32.17
53	Paraguay	28.07	28.07
54	Malaysia	28.06	28.06
55	Latvia	27.89	27.89
56	Bolivia	27.87	27.87
57	Thailand	27.55	27.55
58	Croatia	26.75	26.75
59	Mauritius	26.30	26.30
60	United Arab Emirates	26.17	26.17
61	Kazakhstan	26.10	26.10
62	Ghana	25.96	25.96
63	Guatemala	23.72	23.72
64	Hungary	23.30	23.30
65	Serbia	22.77	22.77
66	Tanzania	21.73	21.73
67	Burkina Faso	21.63	21.63
68	Ecuador	21.62	21.62
69	Nigeria	20.97	20.97
70	Costa Rica	19.87	19.87
71	China	19.64	19.64
72	Rwanda	19.62	19.62
73	Qatar	19.26	19.26
74	Bahrain	18.91	18.91
75	Saudi Arabia	18.66	18.66
76	Trinidad and Tobago	17.99	17.99
77	Panama	17.90	17.90
78	Morocco	16.86	16.86
79	Viet Nam	16.79	16.79
80	Ethiopia	16.14	16.14
81	Nepal	15.49	15.49
82	Montenegro	14.54	14.54
83	Egypt	13.89	13.89
84	El Salvador	13.88	13.88
85	Kyrgyzstan	13.24	13.24
86	Jordan	12.58	12.58
87	Congo, Dem. Rep.	12.38	12.38
88	Venezuela	11.62	11.62
89	Uganda	11.59	11.59
90	Côte d'Ivoire	11.48	11.48
91	Belarus	10.95	10.95
92	Bangladesh	10.57	10.57
93	Malawi	10.51	10.51
94	Tajikistan	9.70	9.70
95	Namibia	9.08	9.08
96	Senegal	8.74	8.74
97	Bosnia and Herzegovina	8.02	8.02
98	Benin	7.32	7.32
99	Botswana	5.89	5.89
100	Lebanon	5.82	5.82
101	Cameroon	5.15	5.15
102	Zambia	3.82	3.82
103	Pakistan	3.59	3.59
104	Mozambique	3.46	3.46
105	Mali	2.46	2.46
106	Zimbabwe	1.87	1.87
107	Eswatini	0.28	0.28
108	Yemen	0.00	0.00
	Algeria	n/a	n/a
	Angola	n/a	n/a
	Armenia	n/a	n/a
	Azerbaijan	n/a	n/a
	Burundi	n/a	n/a
	Cabo Verde	n/a	n/a
	Cambodia	n/a	n/a
	Chad	n/a	n/a
	Cyprus	n/a	n/a
	Gambia	n/a	n/a
	Guinea	n/a	n/a
	Honduras	n/a	n/a
	Hong Kong (China)	n/a	n/a
	Iran, Islamic Rep.	n/a	n/a
	Kuwait	n/a	n/a
	Lao PDR	n/a	n/a
	Lesotho	n/a	n/a
	Lithuania	n/a	n/a
	Luxembourg	n/a	n/a
	Madagascar	n/a	n/a
	Malta	n/a	n/a
	Mongolia	n/a	n/a
	Oman	n/a	n/a
	Romania	n/a	n/a
	Slovenia	n/a	n/a
	Sri Lanka	n/a	n/a

Source: World Wide Web Foundation (2017), Open Data Barometer 4th Edition – Global Report (<https://opendatabarometer.org/4thedition/>)

For some countries, the latest year for which data are available may differ from the year that appears at the top of the page. The cut-off year is 2009.



### 2.3.3 Government promotion of investment in emerging technologies

Average answer to survey questions concerning the extent to which government foster investment in five types of emerging technology | 2018–19

RANK	COUNTRY/ECONOMY	VALUE	SCORE	RANK	COUNTRY/ECONOMY	VALUE	SCORE
1	Singapore	5.85	100.00	69	India	3.09	35.62
2	Luxembourg	5.65	95.30	70	Bangladesh	3.07	35.22
3	United Arab Emirates	5.19	84.66	71	Argentina	3.06	34.98
4	Saudi Arabia	5.18	84.33	72	Tanzania	3.05	34.83
5	Israel	5.14	83.60	73	Costa Rica	3.04	34.44
6	Finland	5.14	83.43	74	Tajikistan	3.02	34.01
7	United States	4.94	78.86	75	Iran, Islamic Rep.	3.01	33.90
8	Hong Kong (China)	4.93	78.59	76	Namibia	3.01	33.79
9	Korea, Rep.	4.89	77.75	77	Jamaica	3.00	33.63
10	Malaysia	4.85	76.69	78	Benin	3.00	33.50
11	France	4.78	75.02	79	Morocco	2.99	33.39
12	Canada	4.75	74.43	80	Romania	2.96	32.57
13	Germany	4.72	73.72	81	Albania	2.95	32.54
14	Malta	4.71	73.44	82	Guinea	2.94	32.13
15	Japan	4.64	71.92	83	South Africa	2.92	31.77
16	Sweden	4.63	71.71	84	Dominican Republic	2.92	31.62
17	Bahrain	4.61	71.20	85	Cambodia	2.90	31.34
18	Qatar	4.58	70.33	86	Gambia	2.90	31.30
19	Azerbaijan	4.53	69.32	87	Cyprus	2.87	30.46
20	Netherlands	4.43	66.87	88	Slovakia	2.85	30.15
21	United Kingdom	4.42	66.69	89	Cameroon	2.84	29.80
22	Thailand	4.33	64.58	90	Botswana	2.83	29.70
23	Oman	4.23	62.28	91	Ethiopia	2.83	29.66
24	Indonesia	4.16	60.62	92	Panama	2.80	28.98
25	Kazakhstan	4.13	59.95	93	Lebanon	2.79	28.75
26	Ireland	4.05	57.98	94	Brazil	2.78	28.57
27	Switzerland	4.03	57.55	95	North Macedonia	2.73	27.25
28	Armenia	4.00	56.97	96	Uganda	2.73	27.21
29	Portugal	3.91	54.71	97	Ghana	2.71	26.86
30	Viet Nam	3.89	54.36	98	Cabo Verde	2.69	26.48
31	Rwanda	3.89	54.32	99	Peru	2.65	25.40
32	Austria	3.87	53.85	100	Nepal	2.59	23.98
33	Russian Federation	3.81	52.56	101	Ecuador	2.49	21.83
34	Estonia	3.79	52.05	102	Burundi	2.47	21.29
35	New Zealand	3.78	51.81	103	Eswatini	2.43	20.41
36	Australia	3.76	51.42	104	Mongolia	2.41	19.92
37	Lithuania	3.74	50.80	105	Burkina Faso	2.35	18.48
38	Turkey	3.72	50.38	106	Croatia	2.34	18.29
39	Czech Republic	3.67	49.33	107	Greece	2.33	17.92
40	Sri Lanka	3.67	49.22	108	Zambia	2.33	17.87
41	Algeria	3.65	48.79	109	Nigeria	2.31	17.46
42	Ukraine	3.61	47.94	110	Kyrgyzstan	2.29	17.14
43	Egypt	3.61	47.93	111	Madagascar	2.29	17.02
44	Lao PDR	3.61	47.92	112	Mali	2.27	16.64
45	Iceland	3.58	47.15	113	Trinidad and Tobago	2.15	13.71
46	Hungary	3.56	46.68	114	Mozambique	2.12	13.02
47	Jordan	3.55	46.50	115	Yemen	2.10	12.71
48	Slovenia	3.53	46.03	116	Zimbabwe	2.03	10.90
49	Bulgaria	3.53	45.90	117	Malawi	2.01	10.51
50	Tunisia	3.49	44.95	118	Chad	1.95	9.22
51	Uruguay	3.43	43.69	119	Guatemala	1.94	8.94
52	Pakistan	3.40	42.98	120	Angola	1.92	8.39
53	Moldova	3.39	42.65	121	Congo, Dem. Rep.	1.90	8.01
54	Montenegro	3.34	41.54	122	Paraguay	1.85	6.76
55	Senegal	3.32	40.95	123	Bolivia	1.85	6.71
56	Kenya	3.31	40.90	124	El Salvador	1.81	5.95
57	Côte d'Ivoire	3.26	39.78	125	Bosnia and Herzegovina	1.76	4.61
58	Philippines	3.25	39.40	126	Lesotho	1.56	0.08
59	Mauritius	3.24	39.15	127	Venezuela	1.56	0.00
60	Serbia	3.22	38.78		Belarus	n/a	n/a
61	Kuwait	3.22	38.68		Belgium	n/a	n/a
62	Spain	3.20	38.29		China	n/a	n/a
63	Chile	3.20	38.19		Denmark	n/a	n/a
64	Colombia	3.19	38.11		Georgia	n/a	n/a
65	Poland	3.19	38.08		Honduras	n/a	n/a
66	Latvia	3.17	37.49		Norway	n/a	n/a
67	Mexico	3.14	36.90				
68	Italy	3.10	35.87				

Source: World Economic Forum, Executive Opinion Survey 2018–2019 (<http://reports.weforum.org>)

For some countries, the latest year for which data are available may differ from the year that appears at the top of the page. The cut-off year is 2009.

## 2.3.4 R&D expenditure by governments and higher education

Gross domestic expenditure on R&D performed by government and higher education institutions (% of GDP) | 2018

RANK	COUNTRY/ECONOMY	VALUE	SCORE	RANK	COUNTRY/ECONOMY	VALUE	SCORE
1	Denmark	107.58	100.00	69	Ethiopia	25.74	22.11
2	Norway	99.02	91.85	70	Montenegro	25.44	21.83
3	Sweden	97.87	90.76	71	Ecuador	24.91	21.32
4	Finland	93.53	86.63	72	Indonesia	24.84	21.25
5	Switzerland	92.91	86.04	73	North Macedonia	24.69	21.11
6	Germany	92.78	85.92	74	Pakistan	23.60	20.07
7	Austria	92.53	85.68	75	Bulgaria	21.74	18.30
8	Korea, Rep.	87.33	80.73	76	Romania	21.66	18.23
9	Singapore	86.16	79.62	77	Moldova	21.04	17.63
10	Australia	85.16	78.66	78	Malta	20.30	16.93
11	Belgium	82.55	76.18	79	Chile	19.91	16.56
12	Netherlands	80.80	74.51	80	Ukraine	19.58	16.24
13	Iceland	75.08	69.07	81	Thailand	19.37	16.04
14	Canada	73.86	67.91	82	Eswatini	19.30	15.98
15	France	72.98	67.07	83	Belarus	19.01	15.70
16	Egypt	69.55	63.81	84	Armenia	18.91	15.61
17	Burkina Faso	68.41	62.72	85	Azerbaijan	18.03	14.77
18	Estonia	66.23	60.65	86	Mali	15.98	12.82
19	Czech Republic	66.02	60.45	87	Uganda	15.86	12.71
20	Japan	63.69	58.23	88	Oman	15.11	11.99
21	United States	63.49	58.04	89	Viet Nam	14.01	10.94
22	Portugal	63.06	57.63	90	Bosnia and Herzegovina	12.77	9.76
23	Kenya	62.62	57.21	91	Burundi	12.62	9.62
24	Malaysia	62.29	56.89	92	El Salvador	12.50	9.51
25	Iran, Islamic Rep.	61.41	56.05	93	Paraguay	11.33	8.39
26	New Zealand	60.25	54.95	94	Madagascar	10.59	7.69
27	Israel	58.92	53.68	95	Philippines	10.01	7.14
28	Luxembourg	57.81	52.64	96	Tajikistan	9.70	6.84
29	Rwanda	57.06	51.92	97	Mongolia	9.41	6.57
30	Greece	56.92	51.79	98	Côte d'Ivoire	9.40	6.55
31	Lithuania	56.75	51.63	99	Trinidad and Tobago	8.45	5.65
32	Serbia	56.10	51.00	100	Colombia	8.35	5.56
33	Senegal	55.12	50.07	101	Bahrain	7.99	5.22
34	Spain	54.05	49.05	102	Kyrgyzstan	7.57	4.82
35	Tunisia	53.32	48.36	103	Peru	7.57	4.82
36	Tanzania	51.46	46.58	104	Sri Lanka	7.18	4.44
37	Algeria	50.61	45.78	105	Kuwait	6.19	3.50
38	United Kingdom	50.30	45.48	106	Panama	5.88	3.21
39	Morocco	50.06	45.26	107	Cambodia	5.84	3.17
40	Italy	49.86	45.06	108	Kazakhstan	5.72	3.05
41	United Arab Emirates	49.61	44.83	109	Lesotho	4.80	2.17
42	China	48.08	43.37	110	Angola	3.23	0.68
43	Hong Kong (China)	47.46	42.78	111	Honduras	3.00	0.46
44	Slovenia	46.64	42.00	112	Guatemala	2.51	0.00
45	South Africa	45.64	41.05		Albania	n/a	n/a
46	Croatia	44.61	40.07		Bangladesh	n/a	n/a
47	Russian Federation	43.64	39.15		Benin	n/a	n/a
48	Qatar	42.94	38.48		Bolivia	n/a	n/a
49	Turkey	41.44	37.05		Brazil	n/a	n/a
50	Slovakia	40.14	35.81		Cabo Verde	n/a	n/a
51	Argentina	40.13	35.80		Cameroon	n/a	n/a
52	Congo, Dem. Rep.	39.66	35.36		Dominican Republic	n/a	n/a
53	India	37.77	33.56		Gambia	n/a	n/a
54	Ghana	37.60	33.39		Guinea	n/a	n/a
55	Latvia	37.14	32.96		Jamaica	n/a	n/a
56	Uruguay	36.48	32.33		Jordan	n/a	n/a
57	Poland	36.37	32.23		Lao PDR	n/a	n/a
58	Hungary	34.86	30.79		Lebanon	n/a	n/a
59	Botswana	34.23	30.19		Malawi	n/a	n/a
60	Mauritius	32.36	28.41		Nepal	n/a	n/a
61	Mexico	30.73	26.86		Nigeria	n/a	n/a
62	Ireland	30.52	26.66		Saudi Arabia	n/a	n/a
63	Georgia	30.46	26.60		Venezuela	n/a	n/a
64	Chad	30.05	26.21		Yemen	n/a	n/a
65	Costa Rica	29.20	25.40		Zambia	n/a	n/a
66	Cyprus	28.55	24.78		Zimbabwe	n/a	n/a
67	Namibia	27.51	23.79				
68	Mozambique	27.16	23.46				

Source: UNESCO Institute for Statistics, UIS.Stat (<http://data.uis.unesco.org/>)

For some countries, the latest year for which data are available may differ from the year that appears at the top of the page. The cut-off year is 2009.







3rd pillar:

**Governance**



### 3.1.1 Secure Internet servers

Secure Internet servers (per million population) | 2019

RANK	COUNTRY/ECONOMY	VALUE	SCORE
1	Denmark	277133.68	100.00
2	Netherlands	130369.85	93.98
3	United States	124014.18	93.58
4	Singapore	122481.38	93.48
5	Switzerland	95788.23	91.52
6	Ireland	95278.02	91.48
7	Estonia	83332.45	90.41
8	Germany	77932.67	89.88
9	Iceland	70758.59	89.11
10	Hong Kong (China)	60546.13	87.86
11	Finland	57706.14	87.48
12	Czech Republic	56198.25	87.27
13	Slovenia	42538.94	85.05
14	Bulgaria	40238.05	84.60
15	Luxembourg	39871.20	84.53
16	Australia	36720.85	83.87
17	Norway	36180.96	83.75
18	United Kingdom	35989.50	83.71
19	Canada	35900.84	83.69
20	Lithuania	31537.11	82.66
21	France	29396.28	82.10
22	Austria	26306.77	81.21
23	Hungary	26243.74	81.19
24	Sweden	25671.89	81.02
25	Croatia	22742.96	80.05
26	Poland	20603.13	79.26
27	New Zealand	20375.43	79.17
28	Slovakia	20091.59	79.06
29	Latvia	19868.37	78.97
30	Belgium	19663.96	78.89
31	Portugal	19182.00	78.69
32	Romania	19179.56	78.69
33	Japan	18701.35	78.49
34	Spain	17716.31	78.06
35	Italy	15168.85	76.82
36	South Africa	14353.11	76.38
37	Israel	11115.73	74.34
38	Chile	11013.70	74.26
39	Malta	10870.32	74.16
40	Russian Federation	9339.02	72.95
41	Cyprus	8221.43	71.93
42	Serbia	8072.17	71.78
43	Ukraine	7867.20	71.58
44	Malaysia	6723.93	70.33
45	Greece	6650.60	70.24
46	Belarus	5722.07	69.04
47	Turkey	5438.19	68.63
48	Korea, Rep.	4543.84	67.20
49	Moldova	4537.87	67.19
50	Argentina	3018.49	63.94
51	Georgia	2776.33	63.27
52	Brazil	2740.91	63.17
53	Bosnia and Herzegovina	2656.16	62.92
54	Viet Nam	2596.99	62.74
55	Kazakhstan	2358.98	61.97
56	United Arab Emirates	1912.08	60.29
57	Panama	1893.12	60.21
58	Uruguay	1808.92	59.85
59	Mongolia	1690.46	59.31
60	Indonesia	1683.85	59.28
61	Thailand	1403.81	57.83
62	Costa Rica	1310.34	57.28
63	Iran, Islamic Rep.	1035.07	55.40
64	Colombia	780.66	53.15
65	Albania	767.29	53.01
66	China	734.98	52.67
67	Montenegro	691.17	52.18
68	North Macedonia	690.20	52.16
69	Cabo Verde	549.16	50.34
70	Mauritius	515.13	49.83
71	Armenia	478.75	49.25
72	Kuwait	438.31	48.54
73	Qatar	436.08	48.50
74	India	389.20	47.60
75	Bahrain	388.75	47.59
76	Peru	384.65	47.50
77	Morocco	369.57	47.18
78	Azerbaijan	368.84	47.17
79	Paraguay	348.35	46.71
80	Sri Lanka	328.44	46.24
81	Ecuador	313.58	45.87
82	Trinidad and Tobago	312.55	45.85
83	Kyrgyzstan	287.91	45.19
84	Mexico	271.49	44.73
85	Tunisia	270.98	44.71
86	Kenya	248.16	44.01
87	Venezuela	217.11	42.94
88	Botswana	210.97	42.72
89	Lebanon	206.40	42.54
90	Nepal	188.89	41.83
91	Saudi Arabia	182.56	41.56
92	Oman	182.51	41.56
93	Bolivia	172.59	41.12
94	Cambodia	159.28	40.48
95	Namibia	146.72	39.82
96	Jamaica	144.49	39.70
97	Dominican Republic	113.14	37.75
98	Philippines	111.31	37.62
99	Jordan	108.10	37.39
100	Bangladesh	100.18	36.79
101	El Salvador	94.21	36.30
102	Guatemala	93.89	36.27
103	Honduras	93.37	36.23
104	Eswatini	93.20	36.21
105	Nigeria	74.82	34.46
106	Rwanda	71.28	34.08
107	Tajikistan	71.13	34.06
108	Zimbabwe	67.67	33.67
109	Lesotho	63.05	33.11
110	Pakistan	62.56	33.04
111	Algeria	50.03	31.27
112	Ghana	45.01	30.43
113	Côte d'Ivoire	44.52	30.35
114	Tanzania	39.10	29.32
115	Zambia	36.28	28.72
116	Egypt	35.33	28.51
117	Lao PDR	31.24	27.54
118	Gambia	22.15	24.83
119	Uganda	21.98	24.77
120	Mozambique	20.52	24.23
121	Senegal	19.39	23.78
122	Malawi	16.37	22.46
123	Cameroon	15.15	21.85
124	Angola	14.74	21.63
125	Mali	10.33	18.87
126	Benin	9.91	18.55
127	Burundi	9.19	17.97
128	Madagascar	8.42	17.29
129	Guinea	4.93	13.22
130	Yemen	4.42	12.41
131	Burkina Faso	3.40	10.45
132	Congo, Dem. Rep.	3.03	9.62
133	Ethiopia	1.47	4.61
134	Chad	0.69	0.00

Source: World Bank, World Development Indicators (<http://data.worldbank.org/data-catalog/world-development-indicators>)

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## 3.1.2 Cybersecurity

### Global Cybersecurity Index | 2018

RANK	COUNTRY/ECONOMY	VALUE	SCORE
1	United Kingdom	0.93	100.00
2	United States	0.93	99.46
3	France	0.92	98.59
4	Lithuania	0.91	97.51
5	Estonia	0.90	97.18
6	Singapore	0.90	96.42
7	Spain	0.90	96.21
8	Malaysia	0.89	95.88
9	Canada	0.89	95.77
9	Norway	0.89	95.77
11	Australia	0.89	95.56
12	Luxembourg	0.89	95.12
13	Netherlands	0.88	95.02
14	Saudi Arabia	0.88	94.58
15	Japan	0.88	94.47
15	Mauritius	0.88	94.47
17	Korea, Rep.	0.87	93.72
18	Oman	0.87	93.17
19	Qatar	0.86	92.31
20	Georgia	0.86	91.98
21	Finland	0.86	91.87
22	Turkey	0.85	91.55
23	Denmark	0.85	91.44
24	Germany	0.85	91.12
25	Egypt	0.84	90.36
26	Croatia	0.84	90.14
27	Italy	0.84	89.82
28	Russian Federation	0.84	89.71
29	China	0.83	88.84
30	Austria	0.83	88.62
31	Poland	0.81	87.43
32	Belgium	0.81	87.32
33	Hungary	0.81	87.11
34	Sweden	0.81	86.89
35	United Arab Emirates	0.81	86.57
36	North Macedonia	0.80	85.81
37	Thailand	0.80	85.37
38	New Zealand	0.79	84.62
39	Switzerland	0.79	84.51
40	Ireland	0.78	84.07
41	Israel	0.78	83.97
42	Kazakhstan	0.78	83.42
43	Indonesia	0.78	83.21
44	Portugal	0.76	81.26
45	Kenya	0.75	80.17
45	Latvia	0.75	80.17
47	Slovakia	0.73	78.11
48	Bulgaria	0.72	77.25
49	India	0.72	77.03
50	Slovenia	0.70	75.08
51	Rwanda	0.70	74.65
52	Viet Nam	0.69	74.21
53	Uruguay	0.68	72.91
54	Moldova	0.66	70.86
55	Ukraine	0.66	70.75
56	Azerbaijan	0.65	69.88
57	Cyprus	0.65	69.77
57	South Africa	0.65	69.77
59	Nigeria	0.65	69.56
60	Philippines	0.64	68.80
60	Serbia	0.64	68.80
62	Tanzania	0.64	68.69
63	Iran, Islamic Rep.	0.64	68.58
64	Montenegro	0.64	68.36
65	Albania	0.63	67.50
66	Mexico	0.63	67.28
67	Uganda	0.62	66.41
68	Paraguay	0.60	64.46
69	Kuwait	0.60	64.14
70	Bahrain	0.58	62.51
71	Belarus	0.58	61.76
72	Brazil	0.58	61.65
73	Czech Republic	0.57	60.78
74	Romania	0.57	60.67
75	Colombia	0.56	60.35
76	Jordan	0.56	59.37
77	Tunisia	0.54	57.20
78	Greece	0.53	56.23
79	Bangladesh	0.52	56.01
80	Armenia	0.50	52.76
81	Benin	0.48	51.68
82	Malta	0.48	51.03
83	Chile	0.47	50.05
84	Sri Lanka	0.47	49.62
85	Mongolia	0.47	49.51
86	Côte d'Ivoire	0.46	48.54
87	Iceland	0.45	47.78
88	Botswana	0.44	46.80
89	Ghana	0.44	46.48
90	Zambia	0.44	46.37
91	Cameroon	0.43	45.94
92	Dominican Republic	0.43	45.72
93	Morocco	0.43	45.61
94	Argentina	0.41	43.23
94	Jamaica	0.41	43.23
94	Pakistan	0.41	43.23
97	Peru	0.40	42.58
98	Burkina Faso	0.40	42.47
99	Panama	0.37	39.11
100	Ecuador	0.37	38.89
101	Venezuela	0.35	37.49
102	Senegal	0.30	32.18
103	Gambia	0.28	29.47
104	Ethiopia	0.28	29.25
105	Malawi	0.28	28.93
106	Tajikistan	0.26	27.63
107	Algeria	0.26	27.52
108	Nepal	0.26	27.30
109	Kyrgyzstan	0.25	26.65
110	Guatemala	0.25	26.33
111	Costa Rica	0.22	23.08
112	Bosnia and Herzegovina	0.20	21.24
113	Madagascar	0.20	20.37
114	Lao PDR	0.20	20.26
115	Guinea	0.19	19.83
116	Trinidad and Tobago	0.19	19.50
117	Lebanon	0.19	19.28
117	Zimbabwe	0.19	19.28
119	Cambodia	0.16	16.58
120	Mozambique	0.16	16.25
121	Bolivia	0.14	14.19
122	Eswatini	0.13	13.54
123	Namibia	0.13	12.89
124	El Salvador	0.12	12.57
125	Chad	0.10	9.75
126	Angola	0.10	9.64
127	Burundi	0.09	8.56
128	Mali	0.09	8.34
129	Cabo Verde	0.05	4.66
129	Lesotho	0.05	4.66
131	Honduras	0.04	3.90
132	Yemen	0.02	1.19
133	Congo, Dem. Rep.	0.01	0.00
	Hong Kong (China)	n/a	n/a

Source: ITU (2019) Global Cybersecurity Index (GCI) 2018 ([https://www.itu.int/dms\\_pub/itu-d/obj/str/D-STR-GCI.01-2018-PDF-E.pdf](https://www.itu.int/dms_pub/itu-d/obj/str/D-STR-GCI.01-2018-PDF-E.pdf))

For some countries, the latest year for which data are available may differ from the year that appears at the top of the page. The cut-off year is 2009.



### 3.1.3 Online access to financial account

People who used a mobile phone or the internet to access a financial institution account in the past year (% with a financial institution account, age 15+) | 2017

RANK	COUNTRY/ECONOMY	VALUE	SCORE	RANK	COUNTRY/ECONOMY	VALUE	SCORE
1	Norway	0.85	100.00	69	Burkina Faso	0.24	27.27
2	Denmark	0.83	97.24	70	Italy	0.24	26.71
3	Finland	0.80	93.95	71	Moldova	0.23	25.65
4	Sweden	0.80	93.08	72	Mali	0.22	24.23
5	Netherlands	0.76	89.01	73	Cameroon	0.22	24.15
6	New Zealand	0.74	86.73	74	Côte d'Ivoire	0.21	23.87
7	United States	0.72	84.40	75	Romania	0.21	23.59
8	Estonia	0.71	82.82	76	Greece	0.21	23.33
9	Korea, Rep.	0.71	82.64	77	Argentina	0.21	22.93
10	Canada	0.70	81.53	78	Thailand	0.20	22.52
11	Australia	0.68	79.37	79	Brazil	0.18	19.93
12	Czech Republic	0.65	75.65	80	Nigeria	0.18	19.70
13	Belgium	0.63	73.15	81	Tajikistan	0.18	19.40
14	Germany	0.61	71.20	82	Serbia	0.17	18.74
15	Poland	0.60	70.34	83	Mauritius	0.16	18.11
16	Latvia	0.60	69.36	84	Trinidad and Tobago	0.16	17.67
17	Luxembourg	0.57	66.56	85	Armenia	0.16	17.52
18	Kenya	0.57	66.35	86	Colombia	0.16	17.15
19	Switzerland	0.57	66.23	87	Guinea	0.15	16.91
20	Lithuania	0.52	60.65	88	North Macedonia	0.15	16.85
21	France	0.52	60.62	89	Montenegro	0.15	16.36
22	Austria	0.52	59.89	90	Mexico	0.15	16.28
23	United Arab Emirates	0.51	59.16	91	El Salvador	0.15	16.25
24	Slovakia	0.51	58.94	92	Bulgaria	0.15	16.23
25	Israel	0.50	58.49	93	Georgia	0.15	15.90
26	China	0.50	57.53	94	Indonesia	0.14	14.96
27	Singapore	0.49	56.92	95	Rwanda	0.13	14.35
28	United Kingdom	0.48	55.84	96	Bangladesh	0.13	14.08
29	Hong Kong (China)	0.45	52.51	97	Philippines	0.13	13.55
30	Slovenia	0.45	52.32	98	Panama	0.12	13.18
31	Malta	0.44	51.17	99	Dominican Republic	0.12	12.98
32	Ireland	0.44	50.93	100	Lebanon	0.12	12.96
33	Iran, Islamic Rep.	0.44	50.73	101	Bolivia	0.12	12.41
34	Russian Federation	0.44	50.60	102	Pakistan	0.11	11.51
35	Namibia	0.42	48.77	103	Bosnia and Herzegovina	0.10	10.71
36	Mongolia	0.40	46.58	104	Kyrgyzstan	0.10	10.62
37	Venezuela	0.40	46.32	105	Tunisia	0.10	10.37
38	Belarus	0.40	46.02	106	Paraguay	0.10	10.29
39	Zimbabwe	0.38	44.27	107	Peru	0.10	10.13
40	Croatia	0.38	43.89	108	Honduras	0.10	9.92
41	Hungary	0.38	43.79	109	Ecuador	0.09	9.80
42	Malaysia	0.38	43.40	110	Sri Lanka	0.09	9.76
43	Turkey	0.38	43.39	111	Jordan	0.09	9.24
44	Cyprus	0.37	42.11	112	Albania	0.08	8.62
45	Saudi Arabia	0.36	40.98	113	Guatemala	0.08	7.65
46	Zambia	0.35	40.46	114	Azerbaijan	0.07	6.93
47	Bahrain	0.35	40.00	115	Nepal	0.07	6.34
48	Chile	0.34	39.41	116	India	0.06	5.99
49	Japan	0.34	38.84	117	Cambodia	0.06	5.27
50	Spain	0.32	36.31	118	Lao PDR	0.06	5.12
51	Botswana	0.32	36.21	119	Algeria	0.05	4.16
52	Tanzania	0.31	35.69	120	Morocco	0.04	3.56
53	Kazakhstan	0.31	35.30	121	Egypt	0.04	3.38
54	Portugal	0.30	34.56	122	Ethiopia	0.01	0.00
55	Mozambique	0.30	34.30		Angola	n/a	n/a
56	Kuwait	0.30	34.02		Burundi	n/a	n/a
57	Congo, Dem. Rep.	0.29	33.51		Cabo Verde	n/a	n/a
58	Ukraine	0.29	32.53		Chad	n/a	n/a
59	Ghana	0.28	32.31		Eswatini	n/a	n/a
60	Malawi	0.27	31.01		Gambia	n/a	n/a
61	Lesotho	0.27	30.94		Iceland	n/a	n/a
62	Senegal	0.27	30.80		Jamaica	n/a	n/a
63	Benin	0.27	30.59		Madagascar	n/a	n/a
64	Uganda	0.27	30.31		Oman	n/a	n/a
65	Costa Rica	0.26	29.47		Qatar	n/a	n/a
66	Viet Nam	0.25	28.29		Yemen	n/a	n/a
67	South Africa	0.25	28.13				
68	Uruguay	0.25	27.88				

Source: World Bank, Global Findex database (<https://globalfindex.worldbank.org/>)

For some countries, the latest year for which data are available may differ from the year that appears at the top of the page. The cut-off year is 2009.

### 3.1.4 Internet shopping

People who used the Internet to buy something online in the past year (%) | 2017

RANK	COUNTRY/ECONOMY	VALUE	SCORE	RANK	COUNTRY/ECONOMY	VALUE	SCORE
1	Denmark	77.97	100.00	69	Indonesia	9.88	12.64
2	Netherlands	75.72	97.11	70	Kenya	9.25	11.83
3	Norway	75.63	96.99	71	Philippines	9.09	11.62
4	United Kingdom	74.74	95.86	72	Armenia	8.51	10.88
5	Korea, Rep.	72.47	92.94	73	Colombia	8.43	10.78
6	Sweden	71.65	91.90	74	South Africa	7.86	10.05
7	United States	70.43	90.33	75	Tajikistan	7.55	9.65
8	New Zealand	69.11	88.63	76	Dominican Republic	7.44	9.51
9	Canada	68.57	87.95	77	Mongolia	7.40	9.46
10	Australia	67.69	86.81	78	Jordan	7.10	9.08
11	Germany	66.84	85.73	79	Mexico	6.99	8.94
12	Finland	60.76	77.92	80	Albania	6.67	8.51
13	Ireland	59.49	76.29	81	Panama	6.12	7.81
14	Belgium	57.27	73.44	82	Ecuador	6.03	7.70
15	Switzerland	56.02	71.84	83	Lao PDR	5.57	7.11
16	France	55.51	71.18	84	Tanzania	5.35	6.82
17	Italy	54.94	70.45	85	Bolivia	5.18	6.61
18	Spain	54.18	69.47	86	Zambia	5.09	6.50
19	Czech Republic	54.05	69.31	87	Guatemala	5.07	6.47
20	Luxembourg	51.12	65.55	88	Azerbaijan	4.82	6.15
21	United Arab Emirates	49.62	63.63	89	Tunisia	4.67	5.96
22	Singapore	48.03	61.58	90	Peru	4.36	5.56
23	Poland	47.79	61.28	91	Georgia	4.34	5.54
24	Estonia	46.69	59.87	92	Mozambique	4.30	5.48
25	Malta	46.59	59.74	93	Ghana	4.24	5.41
26	Japan	45.90	58.85	94	Nigeria	4.09	5.21
27	Slovenia	45.50	58.35	95	Uganda	3.85	4.91
28	China	45.28	58.06	96	Zimbabwe	3.79	4.83
29	Austria	44.14	56.59	97	Botswana	3.61	4.60
30	Hong Kong (China)	42.55	54.55	98	Honduras	3.56	4.53
31	Slovakia	41.74	53.52	99	Côte d'Ivoire	3.24	4.12
32	Lithuania	41.24	52.88	100	El Salvador	3.08	3.91
33	Israel	40.22	51.57	101	Cambodia	3.05	3.88
34	Latvia	34.51	44.25	102	India	2.86	3.63
35	Malaysia	33.90	43.46	103	Kyrgyzstan	2.85	3.62
36	Cyprus	32.33	41.45	104	Algeria	2.80	3.56
37	Belarus	30.03	38.49	105	Cameroon	2.76	3.51
38	Croatia	29.62	37.96	106	Guinea	2.74	3.47
39	Hungary	28.76	36.86	107	Sri Lanka	2.72	3.45
40	Russian Federation	26.90	34.47	108	Mali	2.62	3.32
41	Iran, Islamic Rep.	25.71	32.95	109	Benin	2.61	3.31
42	Portugal	25.15	32.24	110	Senegal	2.55	3.24
43	Bahrain	25.04	32.09	111	Paraguay	2.54	3.22
44	Saudi Arabia	24.93	31.95	112	Egypt	2.43	3.09
45	Uruguay	24.27	31.10	113	Malawi	2.31	2.93
46	Chile	22.92	29.38	114	Lesotho	2.05	2.59
47	Greece	22.16	28.40	115	Congo, Dem. Rep.	1.83	2.31
48	Bulgaria	21.78	27.91	116	Nepal	1.75	2.20
49	Ukraine	21.70	27.80	117	Chad	1.67	2.10
50	Turkey	21.31	27.31	118	Morocco	1.62	2.04
51	Kuwait	20.21	25.89	119	Burkina Faso	1.59	2.00
52	Serbia	19.64	25.17	120	Bangladesh	1.27	1.59
53	Viet Nam	18.74	24.00	121	Madagascar	0.99	1.24
54	Moldova	18.37	23.53	122	Rwanda	0.99	1.23
55	Costa Rica	18.06	23.13	123	Pakistan	0.85	1.05
56	North Macedonia	16.85	21.59	124	Ethiopia	0.03	0.00
57	Thailand	16.82	21.54		Angola	n/a	n/a
58	Trinidad and Tobago	16.47	21.09		Burundi	n/a	n/a
59	Romania	15.61	19.99		Cabo Verde	n/a	n/a
60	Kazakhstan	14.68	18.79		Eswatini	n/a	n/a
61	Argentina	14.46	18.52		Gambia	n/a	n/a
62	Mauritius	14.42	18.46		Iceland	n/a	n/a
63	Brazil	14.21	18.19		Jamaica	n/a	n/a
64	Lebanon	13.78	17.64		Oman	n/a	n/a
65	Montenegro	13.45	17.23		Qatar	n/a	n/a
66	Venezuela	12.91	16.52		Yemen	n/a	n/a
67	Namibia	12.14	15.54				
68	Bosnia and Herzegovina	11.77	15.07				

Source: World Bank, Global Findex database (<https://globalfindex.worldbank.org/>)

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## 3.2.1 Regulatory quality

Regulatory quality indicator | 2018

RANK	COUNTRY/ECONOMY	VALUE	SCORE	RANK	COUNTRY/ECONOMY	VALUE	SCORE
1	Hong Kong (China)	2.21	100.00	69	Mongolia	-0.03	50.76
2	Singapore	2.13	98.36	70	Kuwait	-0.04	50.63
3	Netherlands	2.02	95.86	71	El Salvador	-0.04	50.56
4	New Zealand	1.98	95.00	72	Saudi Arabia	-0.05	50.40
5	Australia	1.93	93.91	73	Turkey	-0.05	50.37
6	Sweden	1.80	91.06	74	Moldova	-0.05	50.33
7	Finland	1.79	90.76	75	Namibia	-0.05	50.26
8	Switzerland	1.78	90.63	76	Indonesia	-0.07	49.84
9	United Kingdom	1.76	90.22	77	Dominican Republic	-0.08	49.71
10	Norway	1.76	90.14	78	Ghana	-0.08	49.65
11	Luxembourg	1.76	90.12	79	Senegal	-0.11	49.04
12	Germany	1.75	89.94	80	Paraguay	-0.12	48.68
13	Denmark	1.68	88.35	81	China	-0.14	48.44
14	Canada	1.67	88.09	82	Sri Lanka	-0.15	48.06
15	Ireland	1.60	86.55	83	India	-0.18	47.37
16	United States	1.58	86.17	84	Côte d'Ivoire	-0.19	47.21
17	Estonia	1.56	85.83	85	Guatemala	-0.20	47.11
18	Austria	1.54	85.44	86	Bosnia and Herzegovina	-0.21	46.87
19	Iceland	1.42	82.64	87	Ukraine	-0.22	46.57
20	Chile	1.34	81.00	88	Kenya	-0.23	46.42
21	Malta	1.34	80.86	89	Cabo Verde	-0.24	46.10
22	Japan	1.33	80.69	90	Morocco	-0.24	46.06
23	Czech Republic	1.26	79.20	91	Argentina	-0.24	46.06
24	Israel	1.25	78.89	92	Uganda	-0.25	45.88
25	Belgium	1.23	78.59	93	Brazil	-0.31	44.51
26	Latvia	1.19	77.62	94	Benin	-0.34	43.94
27	France	1.17	77.25	95	Lebanon	-0.34	43.89
28	Georgia	1.12	76.14	96	Kyrgyzstan	-0.35	43.71
29	Lithuania	1.11	75.93	97	Azerbaijan	-0.38	43.03
30	Korea, Rep.	1.09	75.53	98	Viet Nam	-0.39	42.92
31	Mauritius	1.03	74.04	99	Burkina Faso	-0.39	42.90
32	Cyprus	1.02	73.82	100	Tunisia	-0.41	42.36
33	Spain	0.95	72.23	101	Zambia	-0.44	41.67
34	United Arab Emirates	0.93	71.93	102	Honduras	-0.47	41.09
35	Portugal	0.89	71.02	103	Lesotho	-0.50	40.48
36	Poland	0.88	70.84	104	Cambodia	-0.50	40.29
37	Slovakia	0.81	69.27	105	Russian Federation	-0.54	39.51
38	Slovenia	0.69	66.72	106	Mali	-0.55	39.31
39	Malaysia	0.68	66.44	107	Eswatini	-0.60	38.11
40	Italy	0.67	66.20	108	Tanzania	-0.61	37.92
41	Hungary	0.60	64.68	109	Gambia	-0.63	37.50
42	Bulgaria	0.58	64.11	110	Pakistan	-0.64	37.22
43	North Macedonia	0.52	62.98	111	Belarus	-0.66	36.88
44	Peru	0.52	62.83	112	Malawi	-0.67	36.64
45	Qatar	0.52	62.76	113	Mozambique	-0.73	35.42
46	Uruguay	0.50	62.41	114	Madagascar	-0.73	35.26
47	Costa Rica	0.48	61.97	115	Nepal	-0.75	34.99
48	Botswana	0.45	61.43	116	Guinea	-0.78	34.28
49	Croatia	0.45	61.27	117	Lao PDR	-0.79	33.97
50	Bahrain	0.45	61.24	118	Cameroon	-0.80	33.81
51	Romania	0.45	61.22	119	Bangladesh	-0.83	33.22
52	Panama	0.40	60.26	120	Egypt	-0.87	32.32
53	Montenegro	0.36	59.40	121	Nigeria	-0.88	31.98
54	Colombia	0.33	58.63	122	Ecuador	-0.89	31.81
55	Oman	0.31	58.24	123	Bolivia	-0.89	31.71
56	Greece	0.30	57.91	124	Ethiopia	-0.97	29.97
57	Albania	0.28	57.62	125	Burundi	-0.98	29.77
58	Jamaica	0.28	57.55	126	Angola	-1.00	29.39
59	Armenia	0.27	57.34	127	Tajikistan	-1.05	28.32
60	South Africa	0.17	55.20	128	Chad	-1.11	26.92
61	Mexico	0.15	54.74	129	Algeria	-1.26	23.58
62	Kazakhstan	0.14	54.51	130	Iran, Islamic Rep.	-1.30	22.86
63	Thailand	0.11	53.87	131	Congo, Dem. Rep.	-1.47	18.95
64	Rwanda	0.08	53.27	132	Yemen	-1.54	17.58
65	Jordan	0.08	53.25	133	Zimbabwe	-1.58	16.53
66	Philippines	0.05	52.42	134	Venezuela	-2.33	0.00
67	Serbia	0.01	51.58				
68	Trinidad and Tobago	-0.02	50.96				

Source: World Bank, Worldwide Governance Indicators 2019 Update ([www.govindicators.org](http://www.govindicators.org))

For some countries, the latest year for which data are available may differ from the year that appears at the top of the page. The cut-off year is 2009.

## 3.2.2 ICT regulatory environment

### ICT Regulatory Tracker | 2018

RANK	COUNTRY/ECONOMY	VALUE	SCORE	RANK	COUNTRY/ECONOMY	VALUE	SCORE
1	Italy	97.33	100.00	67	United Arab Emirates	83.00	83.40
2	Hungary	97.00	99.62	70	Venezuela	82.50	82.82
2	Ireland	97.00	99.62	71	Rwanda	82.33	82.62
4	Norway	95.50	97.88	72	Honduras	82.00	82.24
5	Lithuania	95.00	97.30	72	Iran, Islamic Rep.	82.00	82.24
5	Malta	95.00	97.30	74	Korea, Rep.	81.67	81.86
5	United Kingdom	95.00	97.30	75	Ukraine	81.50	81.66
8	Australia	94.50	96.72	76	Cabo Verde	81.33	81.47
8	Dominican Republic	94.50	96.72	76	Thailand	81.33	81.47
8	Turkey	94.50	96.72	78	Egypt	80.83	80.89
11	Belgium	94.00	96.14	78	Mauritius	80.83	80.89
11	Croatia	94.00	96.14	80	New Zealand	80.50	80.51
11	France	94.00	96.14	81	Mali	80.33	80.31
11	Montenegro	94.00	96.14	82	Senegal	80.00	79.93
11	Portugal	94.00	96.14	83	Congo, Dem. Rep.	79.33	79.15
16	Germany	93.50	95.56	84	Chile	79.00	78.77
16	Slovenia	93.50	95.56	84	Colombia	79.00	78.77
16	Switzerland	93.50	95.56	86	Jamaica	78.50	78.19
19	Bosnia and Herzegovina	93.00	94.98	87	Nigeria	78.33	77.99
19	Netherlands	93.00	94.98	88	India	75.50	74.71
21	Georgia	92.50	94.41	89	Bangladesh	74.67	73.75
21	Serbia	92.50	94.41	89	Tunisia	74.67	73.75
23	Finland	92.00	93.83	91	Kyrgyzstan	74.50	73.55
23	Romania	92.00	93.83	92	Zimbabwe	74.00	72.98
23	Saudi Arabia	92.00	93.83	93	Gambia	73.67	72.59
26	Bulgaria	91.50	93.25	94	El Salvador	73.50	72.40
26	Singapore	91.50	93.25	95	Indonesia	72.50	71.24
28	Greece	91.33	93.05	95	Japan	72.50	71.24
29	Latvia	90.50	92.09	97	Zambia	71.67	70.28
30	Oman	90.33	91.89	98	Israel	71.50	70.08
31	Mexico	90.00	91.51	99	South Africa	71.33	69.88
32	Austria	89.50	90.93	100	Namibia	70.67	69.12
33	Czech Republic	89.00	90.35	101	Azerbaijan	70.50	68.92
33	Sweden	89.00	90.35	102	Mongolia	69.67	67.96
35	Brazil	88.50	89.77	102	Qatar	69.67	67.96
35	Moldova	88.50	89.77	104	Madagascar	69.50	67.76
35	Morocco	88.50	89.77	105	Guinea	68.33	66.41
35	Poland	88.50	89.77	106	Nepal	68.00	66.03
35	United States	88.50	89.77	107	Lesotho	67.83	65.83
40	Slovakia	88.17	89.39	108	Philippines	67.00	64.87
41	Ghana	88.00	89.19	108	Uruguay	67.00	64.87
41	Pakistan	88.00	89.19	110	Viet Nam	66.00	63.71
43	Denmark	87.67	88.81	111	Cambodia	65.33	62.93
44	Kenya	87.50	88.61	112	Benin	65.00	62.55
45	Bahrain	87.33	88.42	113	Angola	64.67	62.17
46	Estonia	87.00	88.03	114	Burundi	64.00	61.39
46	Malawi	87.00	88.03	114	Cameroon	64.00	61.39
46	Malaysia	87.00	88.03	116	Kuwait	63.00	60.23
46	North Macedonia	87.00	88.03	117	Sri Lanka	62.33	59.46
46	Peru	87.00	88.03	118	Côte d'Ivoire	61.83	58.88
51	Argentina	86.00	86.88	118	Paraguay	61.83	58.88
51	Iceland	86.00	86.88	120	Algeria	61.50	58.50
51	Panama	86.00	86.88	121	Eswatini	59.33	55.98
51	Spain	86.00	86.88	122	Chad	58.33	54.82
51	Uganda	86.00	86.88	123	Mozambique	57.67	54.06
56	Cyprus	85.67	86.49	124	Kazakhstan	54.00	49.81
57	Armenia	85.50	86.30	125	Guatemala	53.17	48.85
57	Canada	85.50	86.30	126	China	49.00	44.02
57	Ecuador	85.50	86.30	127	Belarus	44.50	38.80
60	Trinidad and Tobago	85.33	86.10	128	Russian Federation	42.00	35.91
61	Botswana	85.00	85.72	129	Lao PDR	36.67	29.73
61	Costa Rica	85.00	85.72	130	Bolivia	34.50	27.22
61	Tanzania	85.00	85.72	131	Lebanon	31.67	23.94
64	Jordan	84.50	85.14	132	Ethiopia	29.00	20.85
65	Burkina Faso	84.00	84.56	133	Tajikistan	14.00	3.48
66	Hong Kong (China)	83.83	84.36	134	Yemen	11.00	0.00
67	Albania	83.00	83.40				
67	Luxembourg	83.00	83.40				

Source: International Telecommunication Union (ITU), ICT Regulatory Tracker 2018 (<https://www.itu.int/net4/itu-d/irt/>)

For some countries, the latest year for which data are available may differ from the year that appears at the top of the page. The cut-off year is 2009.

### 3.2.3 Legal framework's adaptability to emerging technologies

Average answer to survey questions concerning the extent to which the legal framework is adapting to five types of emerging technology | 2018–19

RANK	COUNTRY/ECONOMY	VALUE	SCORE	RANK	COUNTRY/ECONOMY	VALUE	SCORE
1	Finland	5.75	100.00	69	Colombia	3.23	39.33
2	Luxembourg	5.37	90.97	70	Moldova	3.21	39.00
3	United States	5.25	88.10	71	Kuwait	3.20	38.64
4	Singapore	5.20	86.76	72	Serbia	3.18	38.25
5	Switzerland	5.13	85.14	73	Senegal	3.16	37.76
6	Israel	5.13	85.12	74	Kenya	3.16	37.75
7	Sweden	5.09	84.19	75	Dominican Republic	3.08	35.81
8	Netherlands	5.00	82.05	76	Namibia	3.08	35.76
9	France	4.83	77.92	77	Lebanon	3.00	33.80
10	Canada	4.82	77.69	78	Greece	2.99	33.58
11	Germany	4.82	77.61	79	Croatia	2.98	33.24
12	Saudi Arabia	4.80	77.22	80	Philippines	2.91	31.69
13	United Arab Emirates	4.71	75.04	81	Tanzania	2.89	31.11
14	United Kingdom	4.68	74.30	82	Guatemala	2.88	30.99
15	Estonia	4.67	74.05	83	Côte d'Ivoire	2.88	30.90
16	Hong Kong (China)	4.62	72.79	84	Mauritius	2.87	30.79
17	Australia	4.53	70.66	85	Tunisia	2.86	30.45
18	Austria	4.41	67.88	86	Ecuador	2.84	30.08
19	Malaysia	4.40	67.58	87	Tajikistan	2.84	29.97
20	Korea, Rep.	4.40	67.46	88	Iran, Islamic Rep.	2.83	29.70
21	Malta	4.38	67.02	89	Ghana	2.81	29.16
22	Qatar	4.33	65.84	90	Morocco	2.79	28.78
23	New Zealand	4.33	65.82	91	North Macedonia	2.78	28.51
24	Iceland	4.28	64.65	92	Benin	2.74	27.61
25	Bahrain	4.28	64.62	93	Cameroon	2.69	26.29
26	Azerbaijan	4.27	64.46	94	Cabo Verde	2.69	26.27
27	Japan	4.23	63.37	95	Ethiopia	2.63	24.93
28	Portugal	4.19	62.61	96	Nepal	2.62	24.70
29	Spain	4.17	62.08	97	Peru	2.61	24.52
30	Oman	4.14	61.39	98	Jamaica	2.59	23.96
31	Lithuania	4.12	60.86	99	Nigeria	2.54	22.70
32	Ireland	4.09	60.15	100	Cambodia	2.53	22.46
33	Czech Republic	4.05	59.08	101	Botswana	2.52	22.24
34	Slovenia	4.03	58.57	102	Albania	2.46	20.74
35	Latvia	3.90	55.58	103	El Salvador	2.43	20.21
36	Indonesia	3.88	55.08	104	Bosnia and Herzegovina	2.40	19.36
37	Hungary	3.84	54.01	105	Bangladesh	2.35	18.21
38	Russian Federation	3.80	53.08	106	Uganda	2.34	17.92
39	Italy	3.75	51.95	107	Guinea	2.30	17.06
40	Uruguay	3.73	51.41	108	Burundi	2.26	15.98
41	South Africa	3.72	51.13	109	Zambia	2.22	15.07
42	Mexico	3.69	50.43	110	Mongolia	2.20	14.50
43	Ukraine	3.68	50.29	111	Paraguay	2.18	14.11
44	Sri Lanka	3.66	49.83	112	Madagascar	2.17	13.85
45	Chile	3.65	49.56	113	Kyrgyzstan	2.15	13.42
46	Jordan	3.64	49.14	114	Yemen	2.12	12.62
47	Thailand	3.61	48.48	115	Burkina Faso	2.10	12.07
48	Brazil	3.60	48.36	116	Eswatini	2.07	11.50
49	Cyprus	3.59	48.15	117	Angola	2.06	11.18
50	Slovakia	3.59	48.15	118	Trinidad and Tobago	2.05	10.95
51	Bulgaria	3.59	48.04	119	Mozambique	2.02	10.34
52	Romania	3.56	47.35	120	Zimbabwe	2.00	9.68
53	Algeria	3.52	46.28	121	Venezuela	1.99	9.42
54	Viet Nam	3.50	45.96	122	Malawi	1.96	8.87
55	Egypt	3.50	45.87	123	Congo, Dem. Rep.	1.96	8.86
56	Poland	3.49	45.62	124	Mali	1.90	7.40
57	Rwanda	3.44	44.54	125	Bolivia	1.86	6.48
58	Armenia	3.41	43.81	126	Chad	1.82	5.30
59	Pakistan	3.40	43.43	127	Lesotho	1.60	0.00
60	Costa Rica	3.39	43.34		Belarus	n/a	n/a
61	Turkey	3.39	43.18		Belgium	n/a	n/a
62	Kazakhstan	3.38	42.88		China	n/a	n/a
63	India	3.37	42.78		Denmark	n/a	n/a
64	Argentina	3.36	42.48		Georgia	n/a	n/a
65	Lao PDR	3.31	41.33		Honduras	n/a	n/a
66	Gambia	3.29	40.81		Norway	n/a	n/a
67	Panama	3.28	40.52				
68	Montenegro	3.27	40.33				

Source: World Economic Forum, Executive Opinion Survey 2018–2019 (<http://reports.weforum.org>)

For some countries, the latest year for which data are available may differ from the year that appears at the top of the page. The cut-off year is 2009.

### 3.2.4 E-commerce legislation

Global Cyberlaw Tracker | 2020

RANK	COUNTRY/ECONOMY	VALUE	SCORE
1	Argentina	4.00	100.00
1	Australia	4.00	100.00
1	Austria	4.00	100.00
1	Bahrain	4.00	100.00
1	Benin	4.00	100.00
1	Bosnia and Herzegovina	4.00	100.00
1	Brazil	4.00	100.00
1	Bulgaria	4.00	100.00
1	Cabo Verde	4.00	100.00
1	Canada	4.00	100.00
1	Chile	4.00	100.00
1	China	4.00	100.00
1	Colombia	4.00	100.00
1	Costa Rica	4.00	100.00
1	Côte d'Ivoire	4.00	100.00
1	Croatia	4.00	100.00
1	Cyprus	4.00	100.00
1	Czech Republic	4.00	100.00
1	Denmark	4.00	100.00
1	Dominican Republic	4.00	100.00
1	Ecuador	4.00	100.00
1	Estonia	4.00	100.00
1	Finland	4.00	100.00
1	France	4.00	100.00
1	Gambia	4.00	100.00
1	Germany	4.00	100.00
1	Ghana	4.00	100.00
1	Greece	4.00	100.00
1	Honduras	4.00	100.00
1	Hungary	4.00	100.00
1	Indonesia	4.00	100.00
1	Ireland	4.00	100.00
1	Israel	4.00	100.00
1	Italy	4.00	100.00
1	Jamaica	4.00	100.00
1	Japan	4.00	100.00
1	Kenya	4.00	100.00
1	Korea, Rep.	4.00	100.00
1	Kuwait	4.00	100.00
1	Latvia	4.00	100.00
1	Lithuania	4.00	100.00
1	Luxembourg	4.00	100.00
1	Madagascar	4.00	100.00
1	Malaysia	4.00	100.00
1	Malta	4.00	100.00
1	Mexico	4.00	100.00
1	Morocco	4.00	100.00
1	Nepal	4.00	100.00
1	Netherlands	4.00	100.00
1	New Zealand	4.00	100.00
1	Norway	4.00	100.00
1	Panama	4.00	100.00
1	Paraguay	4.00	100.00
1	Peru	4.00	100.00
1	Philippines	4.00	100.00
1	Poland	4.00	100.00
1	Portugal	4.00	100.00
1	Qatar	4.00	100.00
1	Romania	4.00	100.00
1	Senegal	4.00	100.00
1	Singapore	4.00	100.00
1	Slovakia	4.00	100.00
1	Slovenia	4.00	100.00
1	South Africa	4.00	100.00
1	Spain	4.00	100.00
1	Sweden	4.00	100.00
1	Switzerland	4.00	100.00
1	Thailand	4.00	100.00
1	Trinidad and Tobago	4.00	100.00
1	Turkey	4.00	100.00
1	Ukraine	4.00	100.00
1	United Kingdom	4.00	100.00
1	United States	4.00	100.00
1	Uruguay	4.00	100.00
1	Viet Nam	4.00	100.00
1	Zambia	4.00	100.00
77	Albania	3.00	75.00
77	Angola	3.00	75.00
77	Armenia	3.00	75.00
77	Azerbaijan	3.00	75.00
77	Bangladesh	3.00	75.00
77	Belarus	3.00	75.00
77	Belgium	3.00	75.00
77	Burkina Faso	3.00	75.00
77	Cameroon	3.00	75.00
77	Egypt	3.00	75.00
77	El Salvador	3.00	75.00
77	Guatemala	3.00	75.00
77	Guinea	3.00	75.00
77	Iceland	3.00	75.00
77	India	3.00	75.00
77	Iran, Islamic Rep.	3.00	75.00
77	Jordan	3.00	75.00
77	Kazakhstan	3.00	75.00
77	Kyrgyzstan	3.00	75.00
77	Lao PDR	3.00	75.00
77	Lebanon	3.00	75.00
77	Malawi	3.00	75.00
77	Mali	3.00	75.00
77	Mauritius	3.00	75.00
77	Moldova	3.00	75.00
77	Mongolia	3.00	75.00
77	Montenegro	3.00	75.00
77	Nigeria	3.00	75.00
77	North Macedonia	3.00	75.00
77	Oman	3.00	75.00
77	Rwanda	3.00	75.00
77	Serbia	3.00	75.00
77	Sri Lanka	3.00	75.00
77	Tajikistan	3.00	75.00
77	Tanzania	3.00	75.00
77	Tunisia	3.00	75.00
77	Uganda	3.00	75.00
77	Venezuela	3.00	75.00
115	Algeria	2.00	50.00
115	Bolivia	2.00	50.00
115	Botswana	2.00	50.00
115	Cambodia	2.00	50.00
115	Ethiopia	2.00	50.00
115	Georgia	2.00	50.00
115	Lesotho	2.00	50.00
115	Mozambique	2.00	50.00
115	Pakistan	2.00	50.00
115	Saudi Arabia	2.00	50.00
115	United Arab Emirates	2.00	50.00
115	Yemen	2.00	50.00
127	Burundi	1.00	25.00
127	Chad	1.00	25.00
127	Russian Federation	1.00	25.00
127	Zimbabwe	1.00	25.00
131	Congo, Dem. Rep.	0.00	0.00
131	Eswatini	0.00	0.00
131	Namibia	0.00	0.00
	Hong Kong (China)	n/a	n/a

Source: United Nations Conference on Trade and Development (UNCTAD), Global Cyberlaw Tracker ([https://unctad.org/en/Pages/DTL/STL\\_and ICTs/ICT4D-Legislation/eCom-Global-Legislation.aspx](https://unctad.org/en/Pages/DTL/STL_and ICTs/ICT4D-Legislation/eCom-Global-Legislation.aspx))

For some countries, the latest year for which data are available may differ from the year that appears at the top of the page. The cut-off year is 2009.

### 3.2.5 Privacy protection by law content

Average answer to the question: What does the legal framework to protect Internet users' privacy and their data stipulate? | 2019

RANK	COUNTRY/ECONOMY	VALUE	SCORE	RANK	COUNTRY/ECONOMY	VALUE	SCORE
1	Portugal	1.84	100.00	69	Kuwait	-1.01	28.56
2	Sweden	1.82	99.35	70	Algeria	-1.02	28.44
3	Slovenia	1.73	97.02	71	Nepal	-1.04	27.96
4	Latvia	1.72	96.82	72	Pakistan	-1.12	25.79
5	Norway	1.67	95.75	73	Cameroon	-1.20	23.96
6	Croatia	1.66	95.45	74	Venezuela	-1.20	23.76
7	Hungary	1.65	95.22	75	Nigeria	-1.24	22.81
8	Lithuania	1.52	92.00	76	Viet Nam	-1.41	18.71
9	Cyprus	1.46	90.50	77	Moldova	-1.69	11.61
10	France	1.46	90.47	78	Russian Federation	-1.77	9.50
11	Estonia	1.39	88.64	79	Belarus	-1.99	4.00
12	Bulgaria	1.37	88.07	80	Rwanda	-2.07	2.18
13	Japan	1.35	87.72	81	Lebanon	-2.15	0.00
14	Slovakia	1.33	87.04		Angola	n/a	n/a
15	Mexico	1.31	86.57		Australia	n/a	n/a
16	Luxembourg	1.23	84.64		Azerbaijan	n/a	n/a
17	Spain	1.22	84.39		Bahrain	n/a	n/a
18	Belgium	1.18	83.49		Bangladesh	n/a	n/a
19	Finland	1.18	83.42		Burkina Faso	n/a	n/a
20	Costa Rica	1.18	83.34		Burundi	n/a	n/a
21	Austria	1.14	82.37		Cambodia	n/a	n/a
22	Germany	1.12	81.94		Chad	n/a	n/a
23	Czech Republic	1.11	81.72		China	n/a	n/a
24	Gambia	1.10	81.44		Congo, Dem. Rep.	n/a	n/a
25	Albania	1.09	81.17		Côte d'Ivoire	n/a	n/a
26	Bosnia and Herzegovina	1.06	80.37		Dominican Republic	n/a	n/a
27	Greece	1.05	80.19		Ecuador	n/a	n/a
28	Mozambique	0.95	77.74		Egypt	n/a	n/a
29	Botswana	0.95	77.64		El Salvador	n/a	n/a
30	Denmark	0.94	77.29		Eswatini	n/a	n/a
31	Uruguay	0.93	77.16		Ethiopia	n/a	n/a
32	Paraguay	0.92	76.89		Guatemala	n/a	n/a
33	Serbia	0.86	75.34		Guinea	n/a	n/a
34	Argentina	0.86	75.26		Honduras	n/a	n/a
35	Israel	0.82	74.44		Hong Kong (China)	n/a	n/a
36	North Macedonia	0.81	74.21		Iceland	n/a	n/a
37	Cabo Verde	0.81	74.09		Iran, Islamic Rep.	n/a	n/a
38	Chile	0.77	73.21		Ireland	n/a	n/a
39	Korea, Rep.	0.77	73.04		Jamaica	n/a	n/a
40	Senegal	0.68	70.96		Jordan	n/a	n/a
41	Netherlands	0.58	68.26		Kazakhstan	n/a	n/a
42	Georgia	0.57	68.03		Kenya	n/a	n/a
43	Lesotho	0.54	67.41		Kyrgyzstan	n/a	n/a
44	Italy	0.53	67.13		Lao PDR	n/a	n/a
45	Brazil	0.48	66.01		Madagascar	n/a	n/a
46	South Africa	0.42	64.33		Malaysia	n/a	n/a
47	Philippines	0.40	63.96		Mali	n/a	n/a
48	Bolivia	0.34	62.38		Malta	n/a	n/a
49	Mauritius	0.33	62.18		Mongolia	n/a	n/a
50	Sri Lanka	0.26	60.48		Montenegro	n/a	n/a
51	Tunisia	0.20	58.83		Morocco	n/a	n/a
52	Colombia	0.11	56.70		Namibia	n/a	n/a
53	Ghana	0.06	55.38		New Zealand	n/a	n/a
54	Panama	0.02	54.30		Oman	n/a	n/a
55	Armenia	-0.05	52.70		Peru	n/a	n/a
56	Canada	-0.12	50.75		Saudi Arabia	n/a	n/a
57	Poland	-0.13	50.73		Switzerland	n/a	n/a
58	Malawi	-0.17	49.55		Tajikistan	n/a	n/a
59	Benin	-0.31	46.05		Tanzania	n/a	n/a
60	Romania	-0.39	44.15		Thailand	n/a	n/a
61	Singapore	-0.42	43.30		Trinidad and Tobago	n/a	n/a
62	Qatar	-0.65	37.67		Uganda	n/a	n/a
63	United States	-0.72	35.82		United Arab Emirates	n/a	n/a
64	India	-0.76	34.87		Yemen	n/a	n/a
65	Indonesia	-0.79	34.22		Zambia	n/a	n/a
66	United Kingdom	-0.88	31.79		Zimbabwe	n/a	n/a
67	Turkey	-0.93	30.57				
68	Ukraine	-1.00	28.89				

Source: Mechkova, Valeriya, Daniel Pemstein, Brigitte Seim, and Steven Wilson. (2020) Digital Society Project Dataset v2. (<http://digitalsocietyproject.org>)

For some countries, the latest year for which data are available may differ from the year that appears at the top of the page. The cut-off year is 2009.

### 3.3.1 E-Participation

#### E-Participation Index | 2020

RANK	COUNTRY/ECONOMY	VALUE	SCORE
1	Estonia	1.00	100.00
1	Korea, Rep.	1.00	100.00
1	United States	1.00	100.00
4	Japan	0.99	98.77
4	New Zealand	0.99	98.77
6	Austria	0.98	97.53
6	Singapore	0.98	97.53
6	United Kingdom	0.98	97.53
9	Australia	0.96	96.30
9	China	0.96	96.30
9	Denmark	0.96	96.30
9	Netherlands	0.96	96.30
9	Poland	0.96	96.30
14	Cyprus	0.95	95.06
14	Finland	0.95	95.06
16	Canada	0.94	93.83
16	United Arab Emirates	0.94	93.83
18	Brazil	0.90	90.13
18	France	0.90	90.13
18	Kuwait	0.90	90.13
18	Norway	0.90	90.13
18	Switzerland	0.90	90.13
23	Bulgaria	0.89	88.89
23	Croatia	0.89	88.89
23	Turkey	0.89	88.89
26	Kazakhstan	0.88	87.66
27	Colombia	0.87	86.42
27	Russian Federation	0.87	86.42
29	Argentina	0.86	85.18
29	Chile	0.86	85.18
29	India	0.86	85.18
29	Ireland	0.86	85.18
29	Malaysia	0.86	85.18
29	Slovenia	0.86	85.18
29	Uruguay	0.86	85.18
36	Albania	0.85	83.95
36	Spain	0.85	83.95
38	Malta	0.83	82.71
38	North Macedonia	0.83	82.71
38	Oman	0.83	82.71
41	Italy	0.82	81.48
41	Mexico	0.82	81.48
41	Portugal	0.82	81.48
41	Serbia	0.82	81.48
41	Sweden	0.82	81.48
46	Romania	0.81	80.24
46	Ukraine	0.81	80.24
48	Ecuador	0.80	79.01
49	Greece	0.79	77.78
50	Bahrain	0.77	76.54
50	Dominican Republic	0.77	76.54
50	Iceland	0.77	76.54
50	Thailand	0.77	76.54
54	Moldova	0.76	75.31
54	Peru	0.76	75.31
56	Armenia	0.75	74.07
56	Belarus	0.75	74.07
56	Germany	0.75	74.07
56	Indonesia	0.75	74.07
56	Paraguay	0.75	74.07
56	Philippines	0.75	74.07
56	South Africa	0.75	74.07
63	Lithuania	0.74	72.84
64	Czech Republic	0.73	71.61
65	Israel	0.71	70.37
65	Kyrgyzstan	0.71	70.37
65	Saudi Arabia	0.71	70.37
65	Sri Lanka	0.71	70.37
69	Luxembourg	0.70	69.14
69	Slovakia	0.70	69.14
69	Viet Nam	0.70	69.14
72	Azerbaijan	0.69	67.90
72	Tunisia	0.69	67.90
74	El Salvador	0.68	66.67
74	Hungary	0.68	66.67
76	Belgium	0.65	64.20
76	Costa Rica	0.65	64.20
76	Qatar	0.65	64.20
79	Georgia	0.64	62.97
79	Mauritius	0.64	62.97
81	Ghana	0.63	61.73
81	Rwanda	0.63	61.73
83	Trinidad and Tobago	0.62	60.49
84	Bosnia and Herzegovina	0.61	59.26
84	Mongolia	0.61	59.26
86	Bolivia	0.60	58.02
86	Kenya	0.60	58.02
88	Latvia	0.58	56.79
88	Panama	0.58	56.79
90	Bangladesh	0.57	55.55
90	Uganda	0.57	55.55
92	Tanzania	0.56	54.32
93	Benin	0.55	53.09
93	Montenegro	0.55	53.09
95	Mozambique	0.52	50.62
95	Pakistan	0.52	50.62
97	Burkina Faso	0.51	49.38
97	Egypt	0.51	49.38
97	Morocco	0.51	49.38
100	Guatemala	0.50	48.15
100	Namibia	0.50	48.15
102	Honduras	0.49	46.91
102	Nigeria	0.49	46.91
104	Iran, Islamic Rep.	0.46	44.45
105	Angola	0.45	43.21
105	Eswatini	0.45	43.21
105	Zimbabwe	0.45	43.21
108	Senegal	0.44	41.98
109	Cabo Verde	0.42	39.51
109	Cambodia	0.42	39.51
109	Cameroon	0.42	39.51
109	Malawi	0.42	39.51
113	Côte d'Ivoire	0.40	38.28
114	Botswana	0.37	34.56
114	Jamaica	0.37	34.56
114	Nepal	0.37	34.56
117	Lesotho	0.35	32.10
117	Tajikistan	0.35	32.10
119	Burundi	0.33	30.86
119	Ethiopia	0.33	30.86
119	Jordan	0.33	30.86
119	Lebanon	0.33	30.86
123	Mali	0.32	29.63
124	Guinea	0.31	28.39
124	Yemen	0.31	28.39
124	Zambia	0.31	28.39
127	Madagascar	0.30	27.16
128	Chad	0.26	23.46
129	Venezuela	0.24	20.99
130	Lao PDR	0.21	18.52
131	Congo, Dem. Rep.	0.20	17.29
132	Algeria	0.15	12.35
133	Gambia	0.04	0.00
	Hong Kong (China)	n/a	n/a

Source: United Nations Department of Economic and Social Affairs (UNDESA), UN E-Government Knowledgebase (<https://publicadministration.un.org/egovkb/en-us/>)

For some countries, the latest year for which data are available may differ from the year that appears at the top of the page. The cut-off year is 2009.



### 3.3.2 Socioeconomic gap in use of digital payments

Difference between rich and poor income groups that made or received digital payments in the past year (% age 15+) | 2017

RANK	COUNTRY/ECONOMY	VALUE	SCORE	RANK	COUNTRY/ECONOMY	VALUE	SCORE
1	Norway	1.00	100.00	69	Zimbabwe	0.70	65.03
2	Denmark	1.00	99.79	70	Paraguay	0.68	62.91
3	Canada	1.00	99.49	71	Côte d'Ivoire	0.68	62.90
4	New Zealand	1.00	99.29	72	North Macedonia	0.68	62.80
5	Finland	0.99	98.64	73	Argentina	0.68	62.32
6	Belgium	0.99	97.89	74	Bosnia and Herzegovina	0.67	62.05
7	Sweden	0.98	97.28	75	Namibia	0.67	61.49
8	Luxembourg	0.98	97.26	76	Bangladesh	0.67	61.43
9	Spain	0.98	97.21	77	Venezuela	0.66	60.92
10	Australia	0.98	96.86	78	Algeria	0.66	60.38
11	Netherlands	0.98	96.62	79	Madagascar	0.65	58.79
12	France	0.97	96.36	80	China	0.64	58.25
13	Germany	0.97	96.12	81	Brazil	0.64	58.01
14	Japan	0.97	95.69	82	Jamaica	0.63	57.26
15	Switzerland	0.97	95.67	83	Bolivia	0.63	56.89
16	Estonia	0.97	95.47	84	Colombia	0.62	55.86
17	Slovenia	0.96	95.23	85	Uruguay	0.61	54.89
18	Iran, Islamic Rep.	0.96	95.17	86	Jordan	0.61	54.62
19	Austria	0.96	95.06	87	Georgia	0.61	54.31
20	United Kingdom	0.95	94.21	88	Congo, Dem. Rep.	0.61	54.09
21	Korea, Rep.	0.94	93.01	89	Guatemala	0.60	53.69
22	Italy	0.94	92.79	90	Cambodia	0.57	50.34
23	Poland	0.94	92.30	91	India	0.57	50.15
24	Ireland	0.92	90.83	92	Bulgaria	0.57	50.14
25	Singapore	0.92	90.74	93	Dominican Republic	0.57	49.80
26	Mongolia	0.91	89.54	94	Zambia	0.57	49.51
27	Latvia	0.90	87.48	95	Moldova	0.56	49.27
28	Croatia	0.89	86.57	96	Nepal	0.55	47.57
29	Belarus	0.88	86.15	97	Honduras	0.55	47.39
30	Trinidad and Tobago	0.88	86.14	98	Armenia	0.54	46.09
31	United Arab Emirates	0.88	86.01	99	Botswana	0.52	44.09
32	Sri Lanka	0.87	83.98	100	Mexico	0.52	44.00
33	Russian Federation	0.86	83.18	101	Lesotho	0.51	43.06
34	Malta	0.86	83.08	102	Pakistan	0.50	42.35
35	Lithuania	0.85	82.71	103	Romania	0.50	41.96
36	Portugal	0.85	82.32	104	Chad	0.50	41.85
37	Cyprus	0.85	82.14	105	Indonesia	0.49	41.34
38	Israel	0.84	81.31	106	Azerbaijan	0.49	41.30
39	Slovakia	0.83	80.38	107	Panama	0.49	41.27
40	United States	0.83	79.64	108	El Salvador	0.49	41.00
41	Hungary	0.83	79.36	109	Cameroon	0.49	40.99
42	Thailand	0.83	79.33	110	Nigeria	0.49	40.81
43	Saudi Arabia	0.82	79.32	111	Rwanda	0.49	40.63
44	Hong Kong (China)	0.82	79.28	112	Burkina Faso	0.48	40.14
45	Greece	0.82	78.80	113	Malawi	0.48	39.05
46	Kuwait	0.82	78.29	114	Peru	0.47	38.38
47	Mali	0.82	78.28	115	Egypt	0.46	37.66
48	Bahrain	0.81	77.50	116	Mozambique	0.45	35.96
49	Malaysia	0.80	76.98	117	Tunisia	0.44	35.33
50	Czech Republic	0.80	76.14	118	Viet Nam	0.43	33.44
51	Chile	0.79	75.11	119	Ecuador	0.42	32.57
52	South Africa	0.79	74.94	120	Morocco	0.40	30.50
53	Mauritius	0.78	73.97	121	Lebanon	0.40	30.08
54	Montenegro	0.77	73.54	122	Albania	0.33	22.80
55	Serbia	0.77	73.24	123	Lao PDR	0.32	21.08
56	Benin	0.76	72.04	124	Ethiopia	0.30	19.44
57	Kenya	0.76	71.74	125	Angola	0.29	17.79
58	Ukraine	0.76	71.47	126	Philippines	0.29	17.77
59	Costa Rica	0.75	70.91	127	Burundi	0.21	8.40
60	Ghana	0.75	70.42	128	Yemen	0.14	0.00
61	Kyrgyzstan	0.74	70.09		Cabo Verde	n/a	n/a
62	Senegal	0.74	70.00		Eswatini	n/a	n/a
63	Turkey	0.73	68.25		Gambia	n/a	n/a
64	Kazakhstan	0.73	68.23		Iceland	n/a	n/a
65	Tajikistan	0.73	68.11		Oman	n/a	n/a
66	Tanzania	0.72	67.56		Qatar	n/a	n/a
67	Guinea	0.71	65.68				
68	Uganda	0.70	65.42				

Source: World Bank, Global Findex database (<https://globalfindex.worldbank.org/>)

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### 3.3.3 Availability of local online content

Average answer to the question: In your country, to what extent are Internet content and services tailored to the local population (e.g. in the local language, meeting local demand)? (1 = Not at all; 7 = To a great extent) | 2018–19

RANK	COUNTRY/ECONOMY	VALUE	SCORE	RANK	COUNTRY/ECONOMY	VALUE	SCORE
1	Sweden	6.19	100.00	69	Morocco	4.53	59.97
2	Japan	6.09	97.51	70	Kazakhstan	4.52	59.91
3	Netherlands	6.07	97.09	71	Armenia	4.50	59.29
4	Israel	6.02	95.79	72	India	4.45	58.20
5	Switzerland	6.00	95.34	73	Lao PDR	4.38	56.46
6	United States	5.92	93.52	74	Panama	4.36	56.08
7	Hong Kong (China)	5.91	93.10	75	Ukraine	4.29	54.32
8	Australia	5.90	93.01	76	Bosnia and Herzegovina	4.29	54.25
9	Singapore	5.84	91.63	77	Mauritius	4.28	54.02
10	Saudi Arabia	5.82	91.10	78	Colombia	4.27	53.85
11	United Kingdom	5.81	90.87	79	Tajikistan	4.26	53.71
12	Finland	5.78	89.99	80	North Macedonia	4.21	52.34
13	Bahrain	5.73	88.80	81	Georgia	4.18	51.78
14	Canada	5.72	88.53	82	Lebanon	4.18	51.76
15	Lithuania	5.68	87.56	83	Pakistan	4.17	51.53
16	Luxembourg	5.63	86.50	84	Tunisia	4.17	51.50
17	New Zealand	5.63	86.43	85	Rwanda	4.17	51.40
18	Czech Republic	5.62	86.28	86	Kenya	4.17	51.38
19	Estonia	5.61	85.94	87	Trinidad and Tobago	4.13	50.57
20	United Arab Emirates	5.60	85.87	88	Cabo Verde	4.13	50.38
21	Spain	5.59	85.49	89	Bangladesh	4.11	50.03
22	Austria	5.58	85.27	90	South Africa	4.10	49.81
23	Azerbaijan	5.57	85.01	91	Senegal	4.09	49.61
24	Belgium	5.55	84.52	92	Iran, Islamic Rep.	4.02	47.81
25	Germany	5.54	84.39	93	Algeria	4.02	47.78
26	Norway	5.53	84.01	94	Sri Lanka	3.99	47.12
27	France	5.51	83.71	95	Cambodia	3.91	45.15
28	Slovakia	5.48	82.95	96	Tanzania	3.89	44.69
29	Qatar	5.44	81.91	97	Honduras	3.84	43.45
30	Latvia	5.41	81.19	98	Mongolia	3.80	42.61
31	Korea, Rep.	5.40	81.00	99	Kyrgyzstan	3.75	41.25
32	Iceland	5.33	79.20	100	Peru	3.71	40.45
33	Denmark	5.32	79.08	101	Ecuador	3.66	39.20
34	Egypt	5.30	78.50	102	Guatemala	3.64	38.74
35	Bulgaria	5.28	78.10	103	Namibia	3.60	37.76
36	Portugal	5.26	77.58	104	Gambia	3.59	37.61
37	Ireland	5.24	77.00	105	Ghana	3.59	37.56
38	Malaysia	5.22	76.62	106	Paraguay	3.58	37.28
39	Russian Federation	5.22	76.58	107	El Salvador	3.52	35.79
40	Italy	5.15	74.99	108	Nepal	3.46	34.35
41	Oman	5.13	74.51	109	Madagascar	3.45	34.13
42	Jordan	5.13	74.42	110	Côte d'Ivoire	3.41	33.20
43	Cyprus	5.04	72.24	111	Venezuela	3.35	31.77
44	Romania	5.02	71.84	112	Ethiopia	3.30	30.50
45	Indonesia	4.95	70.21	113	Benin	3.26	29.61
46	Turkey	4.94	69.95	114	Mali	3.26	29.58
47	Kuwait	4.88	68.48	115	Yemen	3.24	29.18
48	Slovenia	4.87	68.28	116	Bolivia	3.21	28.29
49	Philippines	4.84	67.52	117	Zimbabwe	3.18	27.72
50	Brazil	4.84	67.46	118	Nigeria	3.17	27.51
51	Poland	4.82	67.13	119	Lesotho	3.13	26.44
52	Serbia	4.80	66.45	120	Burundi	3.12	26.19
53	Malta	4.79	66.43	121	Albania	3.12	26.14
54	Chile	4.79	66.30	122	Cameroon	3.06	24.87
55	Croatia	4.77	65.84	123	Uganda	3.01	23.57
56	Montenegro	4.76	65.63	124	Botswana	3.01	23.56
57	Hungary	4.75	65.42	125	Angola	2.99	23.19
58	Argentina	4.70	64.13	126	Eswatini	2.92	21.50
59	Thailand	4.69	64.00	127	Zambia	2.92	21.37
60	China	4.67	63.41	128	Mozambique	2.79	18.19
61	Moldova	4.64	62.70	129	Malawi	2.72	16.58
62	Uruguay	4.60	61.70	130	Guinea	2.47	10.64
63	Greece	4.58	61.34	131	Congo, Dem. Rep.	2.46	10.40
64	Viet Nam	4.57	61.05	132	Burkina Faso	2.38	8.47
65	Jamaica	4.54	60.38	133	Chad	2.03	0.00
66	Mexico	4.54	60.30		Belarus	n/a	n/a
67	Costa Rica	4.54	60.19				
68	Dominican Republic	4.53	59.97				

Source: World Economic Forum, Executive Opinion Survey 2018–2019 (<http://reports.weforum.org>)

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### 3.3.4 Gender gap in Internet use

Difference between female and male population in using the Internet | 2019

RANK	COUNTRY/ECONOMY	VALUE	SCORE
1	Mongolia	1.19	100.00
2	Jamaica	1.15	92.90
3	Oman	1.07	78.63
4	Panama	1.05	75.79
5	Sweden	1.03	72.47
6	Ireland	1.03	71.73
7	Paraguay	1.02	70.51
8	Colombia	1.02	69.45
9	Uruguay	1.01	69.30
10	Costa Rica	1.01	68.61
11	Norway	1.01	68.53
12	United Kingdom	1.01	68.19
13	Iceland	1.01	68.13
14	Dominican Republic	1.01	67.65
15	United Arab Emirates	1.01	67.60
16	Lithuania	1.01	67.59
17	Montenegro	1.00	67.45
18	Cyprus	1.00	67.33
19	Kuwait	1.00	67.24
20	Malta	1.00	66.93
21	Cambodia	1.00	66.71
21	Spain	1.00	66.71
23	Estonia	1.00	66.52
24	Slovakia	1.00	66.50
25	Bahrain	1.00	66.36
26	Denmark	1.00	66.36
27	Netherlands	1.00	66.16
28	Belarus	1.00	66.06
29	Poland	0.99	65.60
30	Qatar	0.99	65.50
31	Australia	0.99	64.91
32	Brazil	0.99	64.50
33	Singapore	0.99	64.36
34	Ecuador	0.98	63.21
35	Russian Federation	0.98	63.10
36	Luxembourg	0.98	62.99
37	Argentina	0.98	62.78
38	Cabo Verde	0.98	62.50
39	Korea, Rep.	0.98	62.42
40	Kazakhstan	0.97	62.14
41	Switzerland	0.97	62.12
42	Israel	0.97	62.00
43	Latvia	0.97	61.93
44	Finland	0.97	61.70
45	Romania	0.97	61.38
46	Belgium	0.97	61.30
47	Hong Kong (China)	0.97	61.23
48	Thailand	0.97	60.99
49	Hungary	0.97	60.87
50	Saudi Arabia	0.97	60.82
51	Chile	0.96	59.87
52	France	0.96	59.65
53	Bulgaria	0.96	59.35
54	Mexico	0.96	59.21
55	North Macedonia	0.96	59.18
56	Armenia	0.96	59.10
57	Portugal	0.96	58.97
58	Austria	0.95	58.74
59	Czech Republic	0.95	58.09
60	Japan	0.95	57.98
61	Greece	0.95	57.88
62	Georgia	0.95	57.81
63	Croatia	0.95	57.70
64	Slovenia	0.95	57.57
65	Malaysia	0.94	56.70
66	Germany	0.94	55.63
67	El Salvador	0.93	54.81
68	Italy	0.93	54.74
69	Bosnia and Herzegovina	0.93	54.04
70	Mauritius	0.93	53.85
71	Ukraine	0.92	52.09
72	Serbia	0.91	51.52
73	Peru	0.90	50.00
74	Azerbaijan	0.90	49.90
75	Iran, Islamic Rep.	0.90	48.78
76	Morocco	0.89	47.90
77	Bolivia	0.89	47.08
78	Indonesia	0.89	46.95
79	Moldova	0.88	45.86
80	Zambia	0.85	40.88
81	Turkey	0.84	38.99
82	Egypt	0.79	29.83
83	Algeria	0.78	28.16
84	Nigeria	0.74	22.17
85	Cameroon	0.70	14.60
86	Côte d'Ivoire	0.64	4.57
87	Burundi	0.38	0.00
87	Malawi	0.31	0.00
87	Pakistan	0.62	0.00
	Albania	n/a	n/a
	Angola	n/a	n/a
	Bangladesh	n/a	n/a
	Benin	n/a	n/a
	Botswana	n/a	n/a
	Burkina Faso	n/a	n/a
	Canada	n/a	n/a
	Chad	n/a	n/a
	China	n/a	n/a
	Congo, Dem. Rep.	n/a	n/a
	Eswatini	n/a	n/a
	Ethiopia	n/a	n/a
	Gambia	n/a	n/a
	Ghana	n/a	n/a
	Guatemala	n/a	n/a
	Guinea	n/a	n/a
	Honduras	n/a	n/a
	India	n/a	n/a
	Jordan	n/a	n/a
	Kenya	n/a	n/a
	Kyrgyzstan	n/a	n/a
	Lao PDR	n/a	n/a
	Lebanon	n/a	n/a
	Lesotho	n/a	n/a
	Madagascar	n/a	n/a
	Mali	n/a	n/a
	Mozambique	n/a	n/a
	Namibia	n/a	n/a
	Nepal	n/a	n/a
	New Zealand	n/a	n/a
	Philippines	n/a	n/a
	Rwanda	n/a	n/a
	Senegal	n/a	n/a
	South Africa	n/a	n/a
	Sri Lanka	n/a	n/a
	Tajikistan	n/a	n/a
	Tanzania	n/a	n/a
	Trinidad and Tobago	n/a	n/a
	Tunisia	n/a	n/a
	Uganda	n/a	n/a
	United States	n/a	n/a
	Venezuela	n/a	n/a
	Viet Nam	n/a	n/a
	Yemen	n/a	n/a
	Zimbabwe	n/a	n/a

Source: International Telecommunication Union (ITU), ITU World Telecommunication/ICT Indicators database 2020 (<http://www.itu.int/en/ITU-D/Statistics/Pages/publications/wtid.aspx>)  
For some countries, the latest year for which data are available may differ from the year that appears at the top of the page. The cut-off year is 2009.

### 3.3.5 Rural gap in use of digital payments

Difference between the rural population and the total population that made or received digital payments in the past year (% age 15+) | 2017

RANK	COUNTRY/ECONOMY	VALUE	SCORE	RANK	COUNTRY/ECONOMY	VALUE	SCORE
1	Jordan	1.12	100.00	69	Israel	0.95	65.55
2	Singapore	1.11	98.86	70	Chad	0.94	64.45
3	Algeria	1.07	89.99	71	China	0.94	64.25
4	Paraguay	1.03	81.99	72	Moldova	0.94	64.02
5	Montenegro	1.02	81.06	73	Guatemala	0.94	63.86
6	Croatia	1.02	80.46	74	Greece	0.94	63.76
7	Bangladesh	1.02	79.95	75	Malawi	0.94	63.63
8	Italy	1.02	79.77	76	Burkina Faso	0.94	63.01
9	Jamaica	1.02	79.63	77	Botswana	0.93	62.45
10	Austria	1.02	79.51	78	Serbia	0.93	62.00
11	Lithuania	1.01	79.18	79	Turkey	0.92	59.78
12	Iran, Islamic Rep.	1.01	78.75	80	North Macedonia	0.92	59.52
13	Mongolia	1.01	78.22	81	Benin	0.92	59.28
14	Belgium	1.01	78.08	82	Chile	0.91	58.69
15	Spain	1.01	77.36	83	India	0.91	57.80
16	Canada	1.00	77.09	84	Belarus	0.91	57.32
17	Finland	1.00	76.73	85	Malaysia	0.91	57.10
18	Estonia	1.00	76.59	86	Dominican Republic	0.91	57.03
19	Denmark	1.00	76.53	87	Bulgaria	0.90	55.45
20	Norway	1.00	76.50	88	Hungary	0.90	55.43
21	Luxembourg	1.00	76.25	89	Senegal	0.90	54.81
22	France	1.00	76.15	90	Côte d'Ivoire	0.89	54.56
23	United Kingdom	1.00	76.06	91	Uruguay	0.89	54.37
24	Sweden	1.00	75.98	92	Ghana	0.89	54.14
25	Netherlands	1.00	75.85	93	Ukraine	0.89	53.97
26	Portugal	1.00	75.82	94	Mozambique	0.89	53.79
27	Kenya	1.00	75.56	95	Egypt	0.89	53.11
28	Switzerland	1.00	75.53	96	Cambodia	0.89	52.97
29	Slovakia	1.00	75.42	97	Zambia	0.89	52.80
30	Brazil	1.00	75.26	98	Costa Rica	0.88	52.52
31	Bahrain	1.00	75.26	99	Ecuador	0.88	52.47
32	Germany	0.99	75.20	100	United Arab Emirates	0.88	52.36
33	Bosnia and Herzegovina	0.99	75.01	101	Burundi	0.88	52.33
34	Malta	0.99	74.97	102	El Salvador	0.88	50.94
35	South Africa	0.99	74.94	103	Ethiopia	0.87	50.20
36	Slovenia	0.99	74.54	104	Romania	0.87	49.73
37	Ireland	0.99	74.48	105	Pakistan	0.86	48.25
38	Uganda	0.99	74.20	106	Zimbabwe	0.86	47.15
39	New Zealand	0.99	73.94	107	Georgia	0.86	47.13
40	Trinidad and Tobago	0.99	73.91	108	Colombia	0.85	45.66
41	United States	0.99	73.90	109	Mali	0.85	44.85
42	Poland	0.99	73.79	110	Nepal	0.85	44.73
43	Bolivia	0.99	73.42	111	Viet Nam	0.83	42.27
44	Kazakhstan	0.98	73.16	112	Cameroon	0.83	41.37
45	Tajikistan	0.98	73.04	113	Honduras	0.82	39.05
46	Lesotho	0.98	72.92	114	Madagascar	0.82	38.73
47	Russian Federation	0.98	72.70	115	Yemen	0.82	38.40
48	Japan	0.98	71.73	116	Panama	0.81	37.42
49	Saudi Arabia	0.98	71.56	117	Congo, Dem. Rep.	0.79	33.34
50	Mauritius	0.98	71.42	118	Nigeria	0.77	28.59
51	Lebanon	0.98	71.37	119	Tunisia	0.76	27.44
52	Latvia	0.98	71.31	120	Mexico	0.75	24.03
53	Venezuela	0.97	70.54	121	Albania	0.75	24.03
54	Hong Kong (China)	0.97	70.25	122	Guinea	0.74	21.90
55	Czech Republic	0.97	70.07	123	Philippines	0.73	21.61
56	Cyprus	0.97	70.01	124	Azerbaijan	0.73	20.72
57	Kyrgyzstan	0.97	70.01	125	Lao PDR	0.69	11.95
58	Tanzania	0.97	69.69	126	Kuwait	0.67	7.53
59	Rwanda	0.97	69.65	127	Angola	0.64	2.34
60	Indonesia	0.97	69.30	128	Morocco	0.63	0.00
61	Peru	0.96	69.07		Cabo Verde	n/a	n/a
62	Armenia	0.96	68.63		Eswatini	n/a	n/a
63	Argentina	0.96	68.43		Gambia	n/a	n/a
64	Thailand	0.96	67.30		Iceland	n/a	n/a
65	Namibia	0.95	67.03		Oman	n/a	n/a
66	Australia	0.95	66.79		Qatar	n/a	n/a
67	Korea, Rep.	0.95	66.67				
68	Sri Lanka	0.95	66.10				

Source: World Bank, Global Findex database (<https://globalfindex.worldbank.org/>)

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4th pillar:  
Impact





## 4.1.1 Medium and high-tech industry

Proportion of medium and high-tech industry value added in total value added (%) | 2016

RANK	COUNTRY/ECONOMY	VALUE	SCORE	RANK	COUNTRY/ECONOMY	VALUE	SCORE
1	Singapore	78.13	100.00	69	Luxembourg	22.00	27.92
2	Switzerland	64.57	82.59	70	Oman	21.94	27.84
3	Korea, Rep.	63.66	81.42	71	Paraguay	21.92	27.82
4	Germany	61.45	78.58	72	Zimbabwe	21.82	27.69
5	Hungary	59.72	76.36	73	Senegal	21.65	27.47
6	Japan	56.21	71.85	74	Latvia	21.52	27.30
7	Ireland	54.35	69.46	75	Zambia	21.08	26.74
8	Denmark	54.22	69.29	76	Greece	20.92	26.53
9	Qatar	54.17	69.23	77	Costa Rica	20.82	26.40
10	Sweden	53.01	67.74	78	Azerbaijan	20.28	25.71
11	Czech Republic	52.40	66.96	79	Lebanon	19.95	25.29
12	Slovakia	51.38	65.65	80	El Salvador	19.13	24.23
13	France	50.08	63.98	81	Jamaica	18.77	23.77
14	Belgium	49.51	63.25	82	New Zealand	18.53	23.46
15	Netherlands	48.86	62.41	83	Bosnia and Herzegovina	18.41	23.31
16	United States	47.77	61.01	84	Chile	17.84	22.58
17	Austria	45.65	58.29	85	Moldova	16.38	20.70
18	United Kingdom	45.43	58.01	86	Ethiopia	16.07	20.30
19	Iran, Islamic Rep.	45.17	57.67	87	Peru	15.91	20.10
20	Philippines	44.68	57.04	88	Uruguay	15.29	19.30
21	Malaysia	44.12	56.32	89	Kenya	15.03	18.97
22	Italy	42.93	54.80	90	Côte d'Ivoire	14.99	18.92
23	Romania	42.53	54.28	91	Montenegro	14.86	18.75
24	Israel	42.40	54.12	92	Kazakhstan	14.20	17.90
25	Mexico	41.61	53.10	93	Egypt	13.98	17.62
26	China	41.45	52.90	94	Lao PDR	13.58	17.11
27	Finland	41.39	52.82	95	Iceland	13.05	16.42
28	Thailand	40.71	51.95	96	Ecuador	12.07	15.17
29	Belarus	40.56	51.75	97	Bolivia	11.67	14.65
30	Spain	39.85	50.84	98	Georgia	11.52	14.46
31	Norway	39.82	50.80	99	Malawi	11.34	14.23
32	Trinidad and Tobago	39.60	50.52	100	Uganda	11.07	13.88
33	India	38.76	49.44	101	Mozambique	10.89	13.65
34	Saudi Arabia	37.89	48.32	102	Mauritius	9.78	12.23
35	Viet Nam	37.77	48.17	103	Bangladesh	9.76	12.20
36	Slovenia	37.47	47.78	104	Nepal	8.38	10.43
37	Hong Kong (China)	37.38	47.67	105	Cameroon	7.61	9.44
38	Poland	35.43	45.17	106	Sri Lanka	7.57	9.39
39	Brazil	35.39	45.11	107	Namibia	7.35	9.10
40	Indonesia	35.08	44.72	108	Honduras	7.16	8.86
41	Venezuela	34.28	43.69	109	Tanzania	6.83	8.44
42	Tunisia	33.65	42.88	110	Albania	6.69	8.26
43	Nigeria	33.44	42.61	111	Rwanda	6.66	8.22
44	Malta	32.53	41.44	112	Panama	6.22	7.65
45	Turkey	31.45	40.05	113	Botswana	5.77	7.08
46	Croatia	30.77	39.18	114	Mongolia	5.55	6.79
47	Canada	30.57	38.92	115	Armenia	4.51	5.46
48	Ukraine	30.36	38.65	116	Gambia	3.90	4.67
49	Russian Federation	30.27	38.54	117	Madagascar	3.56	4.24
50	Bulgaria	29.73	37.85	118	Angola	3.37	3.99
51	Kuwait	29.27	37.25	119	Kyrgyzstan	2.96	3.47
52	Lithuania	27.90	35.50	120	Algeria	2.69	3.12
53	Estonia	27.81	35.38	121	Burundi	2.57	2.97
54	Morocco	27.75	35.30	122	Tajikistan	2.19	2.48
55	Cabo Verde	27.10	34.47	123	Yemen	2.06	2.31
56	Australia	27.03	34.38	124	Eswatini	1.65	1.79
57	Serbia	26.35	33.50	125	Ghana	0.80	0.69
58	Jordan	26.30	33.44	126	Cambodia	0.26	0.00
59	Argentina	26.00	33.06		Benin	n/a	n/a
60	Portugal	25.61	32.55		Burkina Faso	n/a	n/a
61	United Arab Emirates	25.46	32.36		Chad	n/a	n/a
62	Cyprus	25.39	32.27		Congo, Dem. Rep.	n/a	n/a
63	Pakistan	24.62	31.28		Dominican Republic	n/a	n/a
64	South Africa	24.43	31.04		Guinea	n/a	n/a
65	North Macedonia	23.03	29.24		Lesotho	n/a	n/a
66	Colombia	22.78	28.92		Mali	n/a	n/a
67	Guatemala	22.40	28.43				
68	Bahrain	22.17	28.14				

Source: United Nations Industrial Development Organization (UNIDO), UNIDO CIP 2018 Database (<https://stat.unido.org>), sourced from United Nations, Open SDG Data Hub (<http://www.sdg.org>). United Nations (2019), Metadata for Indicator 9.b.1 Proportion of medium and high-tech industry value added in total value added (<https://unstats.un.org/sdgs/metadata/files/Metadata-09-0B-01.pdf>), Galindo-Rueda, F. and F. Verger (2016), OECD Taxonomy of Economic Activities Based on R&D Intensity, OECD Science, Technology and Industry Working Papers, 2016/04, OECD Publishing, Paris (<http://dx.doi.org/10.1787/5jiv73sqpp8r-en>)  
For some countries, the latest year for which data are available may differ from the year that appears at the top of the page. The cut-off year is 2009.

## 4.1.2 High-tech exports

High technology manufactures exports (% of total exports of manufactured goods) | 2019

RANK	COUNTRY/ECONOMY	VALUE	SCORE	RANK	COUNTRY/ECONOMY	VALUE	SCORE
1	Hong Kong (China)	65.57	100.00	69	Slovenia	6.81	12.91
1	Malaysia	52.77	100.00	70	Côte d'Ivoire	6.81	12.90
1	Philippines	61.11	100.00	71	Portugal	6.69	12.68
4	Ethiopia	51.76	98.08	72	Burkina Faso	5.95	11.28
5	Singapore	51.72	98.01	73	Mozambique	5.64	10.69
6	Viet Nam	40.16	76.10	74	Ukraine	5.41	10.24
7	Lao PDR	37.13	70.36	75	Angola	5.32	10.09
8	Korea, Rep.	32.37	61.33	76	South Africa	5.32	10.08
9	China	31.44	59.57	77	Ecuador	5.28	10.00
10	Malta	29.44	55.79	78	Bosnia and Herzegovina	5.27	9.99
11	Kazakhstan	28.22	53.48	79	El Salvador	5.13	9.71
12	France	25.92	49.12	80	Argentina	5.12	9.71
13	Ireland	24.68	46.77	81	Mongolia	4.96	9.41
14	Iceland	23.47	44.48	82	Guatemala	4.92	9.32
15	United Kingdom	23.41	44.37	83	Cameroon	4.91	9.31
16	Thailand	23.34	44.23	84	Bolivia	4.86	9.20
17	Israel	22.83	43.26	85	Zimbabwe	4.78	9.07
18	Netherlands	22.68	42.97	86	Azerbaijan	4.61	8.74
19	Norway	21.23	40.23	87	Peru	4.57	8.65
20	Czech Republic	20.70	39.23	88	North Macedonia	4.22	8.00
21	Mexico	20.69	39.21	89	Kuwait	4.12	7.81
22	Cyprus	19.64	37.22	90	Morocco	4.00	7.58
23	United States	19.09	36.18	91	Belarus	3.98	7.55
24	Costa Rica	18.47	35.00	92	Kenya	3.62	6.86
25	Hungary	17.54	33.23	93	Uganda	3.54	6.70
26	Burundi	17.04	32.30	94	Montenegro	3.17	6.00
27	Japan	16.98	32.18	95	Honduras	3.13	5.93
28	Australia	16.71	31.66	96	Jordan	2.89	5.47
29	Canada	16.69	31.62	97	Benin	2.84	5.38
30	Latvia	16.60	31.45	98	Georgia	2.57	4.87
31	Germany	16.37	31.02	99	Moldova	2.53	4.80
32	Estonia	15.51	29.40	100	Lebanon	2.35	4.46
33	Sweden	14.57	27.61	101	Egypt	2.34	4.43
34	Denmark	13.89	26.32	102	Turkey	2.33	4.41
35	Switzerland	12.97	24.57	103	Pakistan	2.32	4.40
36	Brazil	12.95	24.54	104	Zambia	2.31	4.38
37	Rwanda	12.54	23.77	105	Mauritius	2.14	4.06
38	Greece	12.42	23.54	106	Jamaica	2.11	3.99
39	Lithuania	12.11	22.95	107	Nigeria	1.85	3.51
40	Belgium	11.95	22.64	108	Cambodia	1.40	2.66
41	Austria	11.64	22.05	109	Iran, Islamic Rep.	1.34	2.54
42	Malawi	11.51	21.81	110	Oman	1.26	2.39
43	Romania	11.07	20.98	111	Mali	1.24	2.36
44	Russian Federation	10.96	20.77	112	Nepal	1.18	2.24
45	United Arab Emirates	10.79	20.44	113	Sri Lanka	1.02	1.93
46	Slovakia	10.63	20.14	114	Guinea	0.96	1.82
47	Bulgaria	10.27	19.46	115	Senegal	0.94	1.77
48	Poland	10.10	19.14	116	Botswana	0.67	1.27
49	Armenia	9.87	18.70	117	Saudi Arabia	0.61	1.16
50	New Zealand	9.73	18.44	118	Algeria	0.60	1.14
51	Paraguay	9.69	18.37	119	Bahrain	0.45	0.85
52	Panama	9.19	17.41	120	Bangladesh	0.31	0.58
53	India	9.01	17.07	121	Madagascar	0.30	0.58
54	Finland	8.93	16.92	122	Eswatini	0.27	0.52
55	Croatia	8.89	16.85	123	Namibia	0.22	0.42
56	Dominican Republic	8.57	16.24	124	Lesotho	0.21	0.40
57	Ghana	8.26	15.65	125	Gambia	0.15	0.29
58	Italy	8.10	15.35	126	Trinidad and Tobago	0.14	0.26
59	Kyrgyzstan	8.05	15.26	127	Albania	0.05	0.09
60	Indonesia	8.02	15.19	128	Qatar	0.00	0.00
61	Yemen	8.02	15.19	129	Cabo Verde	0.00	0.00
62	Tunisia	7.39	14.01		Chad	n/a	n/a
63	Colombia	7.27	13.77		Congo, Dem. Rep.	n/a	n/a
64	Uruguay	7.20	13.64		Serbia	n/a	n/a
65	Spain	7.19	13.63		Tajikistan	n/a	n/a
66	Luxembourg	6.97	13.21		Venezuela	n/a	n/a
67	Chile	6.94	13.15				
68	Tanzania	6.89	13.05				

Source: World Bank, World Development Indicators (<http://data.worldbank.org/data-catalog/world-development-indicators>). The classification of exports is based on Lall, S. (2000), The Technological Structure and Performance of Developing Country Manufactured Exports, Oxford Development Studies, 28(3), 1985–1989

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### 4.1.3 PCT patent applications

Number of applications filed under the Patent Cooperation Treaty (PCT) (per million population) | 2017

RANK	COUNTRY/ECONOMY	VALUE	SCORE	RANK	COUNTRY/ECONOMY	VALUE	SCORE
1	Japan	355.09	100.00	69	Sri Lanka	1.21	0.34
2	Sweden	324.10	91.27	70	Argentina	1.13	0.31
3	Switzerland	317.53	89.42	71	Morocco	1.00	0.28
4	Korea, Rep.	302.23	85.11	72	Jordan	0.99	0.27
5	Finland	251.26	70.76	73	Bosnia and Herzegovina	0.93	0.26
6	Israel	245.20	69.05	74	Tunisia	0.61	0.17
7	Germany	228.88	64.46	75	Mongolia	0.48	0.13
8	Denmark	226.17	63.69	76	Egypt	0.44	0.12
9	Netherlands	184.11	51.85	77	Jamaica	0.34	0.09
10	Austria	177.76	50.06	78	Ecuador	0.33	0.09
11	United States	165.00	46.46	79	Philippines	0.27	0.07
12	Singapore	152.25	42.87	80	El Salvador	0.16	0.04
13	Norway	134.47	37.87	81	Algeria	0.16	0.04
14	Luxembourg	130.03	36.62	82	Kenya	0.15	0.04
15	Iceland	127.65	35.94	83	Guatemala	0.12	0.03
16	France	110.58	31.14	84	Zimbabwe	0.10	0.02
17	Belgium	106.75	30.06	85	Venezuela	0.08	0.02
18	Hong Kong (China)	98.67	27.78	86	Indonesia	0.05	0.01
19	Ireland	92.68	26.10	87	Pakistan	0.02	0.00
20	United Kingdom	91.90	25.88	88	Nigeria	0.02	0.00
21	Canada	80.54	22.68		Albania	n/a	n/a
22	Australia	74.32	20.93		Angola	n/a	n/a
23	Slovenia	61.14	17.21		Azerbaijan	n/a	n/a
24	Italy	58.68	16.52		Bahrain	n/a	n/a
25	New Zealand	51.73	14.56		Bangladesh	n/a	n/a
26	Estonia	36.86	10.38		Benin	n/a	n/a
27	Malta	36.70	10.33		Bolivia	n/a	n/a
28	Spain	35.44	9.98		Botswana	n/a	n/a
29	China	35.15	9.90		Burkina Faso	n/a	n/a
30	Hungary	22.80	6.42		Burundi	n/a	n/a
31	Portugal	19.68	5.54		Cabo Verde	n/a	n/a
32	Czech Republic	19.31	5.43		Cambodia	n/a	n/a
33	Saudi Arabia	18.18	5.12		Cameroon	n/a	n/a
34	Latvia	15.42	4.34		Chad	n/a	n/a
35	Turkey	13.27	3.73		Congo, Dem. Rep.	n/a	n/a
36	Lithuania	12.00	3.38		Côte d'Ivoire	n/a	n/a
37	Greece	11.28	3.17		Dominican Republic	n/a	n/a
38	Slovakia	11.24	3.16		Eswatini	n/a	n/a
39	Cyprus	10.24	2.88		Ethiopia	n/a	n/a
40	Poland	9.42	2.65		Gambia	n/a	n/a
41	Chile	9.05	2.54		Ghana	n/a	n/a
42	United Arab Emirates	8.88	2.50		Guinea	n/a	n/a
43	Croatia	8.33	2.34		Honduras	n/a	n/a
44	Russian Federation	7.79	2.19		Kyrgyzstan	n/a	n/a
45	Malaysia	7.76	2.18		Lao PDR	n/a	n/a
46	Bulgaria	7.56	2.13		Lesotho	n/a	n/a
47	South Africa	4.63	1.30		Madagascar	n/a	n/a
48	Costa Rica	3.86	1.08		Malawi	n/a	n/a
49	Panama	3.82	1.07		Mali	n/a	n/a
50	Armenia	3.78	1.06		Mauritius	n/a	n/a
51	Romania	3.54	0.99		Montenegro	n/a	n/a
52	Brazil	3.52	0.99		Mozambique	n/a	n/a
53	Ukraine	3.41	0.96		Namibia	n/a	n/a
54	Uruguay	2.95	0.83		Nepal	n/a	n/a
55	North Macedonia	2.88	0.81		Oman	n/a	n/a
56	Colombia	2.84	0.79		Paraguay	n/a	n/a
57	Belarus	2.65	0.74		Qatar	n/a	n/a
58	Trinidad and Tobago	2.53	0.71		Rwanda	n/a	n/a
59	Lebanon	2.36	0.66		Senegal	n/a	n/a
60	Mexico	2.29	0.64		Serbia	n/a	n/a
61	Georgia	2.13	0.59		Tajikistan	n/a	n/a
62	Peru	2.00	0.56		Tanzania	n/a	n/a
63	India	1.87	0.52		Uganda	n/a	n/a
64	Thailand	1.73	0.48		Viet Nam	n/a	n/a
65	Iran, Islamic Rep.	1.43	0.40		Yemen	n/a	n/a
66	Kazakhstan	1.38	0.38		Zambia	n/a	n/a
67	Kuwait	1.37	0.38				
68	Moldova	1.30	0.36				

Source: World Intellectual Property Organization (WIPO) PCT Data, sourced from Organisation for Economic Co-operation and Development (OECD), Patent Database (<http://www.oecd.org/sti/inn/intellectual-property-statistics-and-analysis.htm>). Population data sourced from World Bank, World Development Indicators (<http://data.worldbank.org/data-catalog/world-development-indicators>)

For some countries, the latest year for which data are available may differ from the year that appears at the top of the page. The cut-off year is 2009.

## 4.1.4 Labor productivity per employee

Labor productivity per person employed (2019 US\$) | 2019

RANK	COUNTRY/ECONOMY	VALUE	SCORE
1	Luxembourg	158553.07	100.00
2	Ireland	158400.50	99.90
3	Singapore	154078.98	97.14
4	United States	134593.72	84.69
5	Qatar	130405.16	82.01
6	Belgium	125957.74	79.17
7	Norway	124569.81	78.28
8	Saudi Arabia	122946.40	77.24
9	Hong Kong (China)	121018.61	76.01
10	Switzerland	119838.76	75.26
11	Denmark	116118.98	72.88
12	Austria	114152.26	71.62
13	France	112997.31	70.88
14	Sweden	110844.02	69.51
15	Netherlands	107058.42	67.09
16	Australia	104065.96	65.17
17	Finland	104019.97	65.14
18	Iceland	103373.10	64.73
19	Italy	103368.56	64.73
20	Germany	102748.65	64.33
21	Bahrain	102321.28	64.06
22	United Arab Emirates	101999.85	63.85
23	Spain	99598.90	62.32
24	Canada	98579.01	61.67
25	United Kingdom	97749.57	61.14
26	Malta	92189.08	57.58
27	Israel	88353.02	55.13
28	Kuwait	88112.25	54.98
29	Turkey	86997.33	54.26
30	Korea, Rep.	84494.17	52.66
31	New Zealand	82927.73	51.66
32	Cyprus	82564.74	51.43
33	Czech Republic	81919.35	51.02
34	Slovenia	80306.44	49.99
35	Poland	79760.20	49.64
36	Japan	78761.67	49.00
37	Greece	78460.44	48.81
38	Lithuania	77296.11	48.06
39	Estonia	76935.10	47.83
40	Slovakia	75354.45	46.82
41	Portugal	74964.51	46.57
42	Croatia	71636.35	44.45
43	Romania	69821.49	43.29
44	Hungary	69302.64	42.95
45	Latvia	68115.58	42.20
46	Malaysia	63016.67	38.94
47	Trinidad and Tobago	62363.26	38.52
48	Bosnia and Herzegovina	62197.12	38.41
49	Russian Federation	57740.98	35.56
50	Botswana	56909.36	35.03
51	Kazakhstan	56271.42	34.63
52	Chile	56240.63	34.61
53	Oman	53000.49	32.53
54	Mauritius	52326.39	32.10
55	Argentina	49617.86	30.37
56	Costa Rica	48269.26	29.51
57	Uruguay	48206.28	29.47
58	Egypt	47919.32	29.29
59	Mexico	47490.37	29.01
60	Bulgaria	47295.81	28.89
61	Lebanon	47092.97	28.76
62	South Africa	46441.90	28.34
63	Jordan	46099.51	28.12
64	Algeria	45942.06	28.02
65	Montenegro	45391.59	27.67
65	Serbia	45391.59	27.67
67	Armenia	44363.63	27.01
68	Belarus	43495.69	26.46
69	Iran, Islamic Rep.	42447.62	25.79
70	North Macedonia	41241.79	25.02
71	Dominican Republic	40886.54	24.79
72	Tunisia	38076.41	23.00
73	Sri Lanka	36509.71	21.99
74	Albania	36238.74	21.82
75	Thailand	35464.97	21.33
76	Colombia	34537.50	20.73
77	Namibia	34477.30	20.70
78	Ukraine	33849.01	20.29
79	Georgia	32001.35	19.11
80	Brazil	30877.44	18.39
81	Azerbaijan	30830.66	18.36
82	China	30428.50	18.11
83	Moldova	29752.39	17.68
84	Paraguay	27260.66	16.08
85	Indonesia	26156.89	15.38
86	Ecuador	26143.79	15.37
87	Peru	24567.16	14.36
88	Morocco	23303.35	13.55
89	Philippines	22576.38	13.09
90	Guatemala	22216.06	12.86
91	Jamaica	21919.48	12.67
92	Bolivia	19429.73	11.08
93	India	18836.72	10.70
94	Angola	17978.88	10.15
95	Pakistan	16103.10	8.95
96	Nigeria	15084.60	8.30
97	Viet Nam	15044.94	8.28
98	Kyrgyzstan	14610.20	8.00
99	Venezuela	13888.51	7.54
100	Yemen	13849.25	7.51
101	Tajikistan	13048.80	7.00
102	Bangladesh	12915.04	6.91
103	Senegal	12847.83	6.87
104	Zambia	12524.60	6.66
105	Kenya	10913.91	5.63
106	Ghana	10321.01	5.26
107	Zimbabwe	7910.82	3.72
108	Cambodia	7477.83	3.44
109	Mali	6982.86	3.12
110	Cameroon	6531.59	2.83
111	Uganda	6091.37	2.55
112	Tanzania	5995.81	2.49
113	Rwanda	4609.80	1.61
114	Burkina Faso	4559.13	1.57
115	Chad	4469.91	1.52
116	Ethiopia	4334.79	1.43
117	Mozambique	3677.85	1.01
118	Congo, Dem. Rep.	3475.37	0.88
119	Madagascar	2938.09	0.54
120	Côte d'Ivoire	2590.96	0.32
121	Malawi	2097.95	0.00
	Benin	n/a	n/a
	Burundi	n/a	n/a
	Cabo Verde	n/a	n/a
	El Salvador	n/a	n/a
	Eswatini	n/a	n/a
	Gambia	n/a	n/a
	Guinea	n/a	n/a
	Honduras	n/a	n/a
	Lao PDR	n/a	n/a
	Lesotho	n/a	n/a
	Mongolia	n/a	n/a
	Nepal	n/a	n/a
	Panama	n/a	n/a

Source: The Conference Board, Total Economy Database™ (Adjusted version) ([www.conference-board.org/data/economydatabase](http://www.conference-board.org/data/economydatabase))

For some countries, the latest year for which data are available may differ from the year that appears at the top of the page. The cut-off year is 2009.

## 4.1.5 Prevalence of gig economy

Average answer to the question: In your country, to what extent is the online gig economy prevalent?

[1 = Not at all; 7 = To a great extent] | 2018–19

RANK	COUNTRY/ECONOMY	VALUE	SCORE	RANK	COUNTRY/ECONOMY	VALUE	SCORE
1	United States	5.40	100.00	69	Tanzania	3.43	39.92
2	Netherlands	5.22	94.63	70	India	3.41	39.56
3	United Kingdom	5.19	93.80	71	Namibia	3.41	39.52
4	Saudi Arabia	5.08	90.33	72	Slovenia	3.41	39.47
5	Malaysia	5.07	90.19	73	Gambia	3.41	39.39
6	Egypt	5.05	89.46	74	Ghana	3.38	38.59
7	Israel	5.02	88.42	75	Romania	3.37	38.31
8	Canada	4.94	86.07	76	Slovakia	3.36	37.99
9	Singapore	4.92	85.52	77	Kazakhstan	3.35	37.65
10	United Arab Emirates	4.87	83.82	78	Dominican Republic	3.34	37.45
11	Australia	4.81	82.16	79	Austria	3.34	37.17
12	Germany	4.81	82.07	80	Colombia	3.33	37.01
13	Qatar	4.57	74.83	81	Argentina	3.33	37.00
14	New Zealand	4.54	73.86	82	Serbia	3.33	36.99
15	Azerbaijan	4.53	73.58	83	Cabo Verde	3.29	35.88
16	Indonesia	4.52	73.20	84	Mauritius	3.29	35.85
17	Hong Kong (China)	4.49	72.50	85	South Africa	3.28	35.60
18	Sweden	4.49	72.37	86	Cyprus	3.28	35.44
19	Korea, Rep.	4.47	71.77	87	Lesotho	3.27	35.11
20	France	4.42	70.10	88	Panama	3.22	33.59
21	Viet Nam	4.39	69.47	89	Mali	3.19	32.59
22	Finland	4.35	68.15	90	Burundi	3.18	32.45
23	Bulgaria	4.32	67.17	91	Mongolia	3.14	31.17
24	Bahrain	4.31	66.86	91	Nigeria	3.14	31.17
25	Russian Federation	4.31	66.77	93	Brazil	3.13	31.02
26	Estonia	4.30	66.54	94	Kyrgyzstan	3.10	30.02
27	Switzerland	4.28	66.09	95	Ethiopia	3.08	29.51
28	Iceland	4.26	65.25	96	Cambodia	3.07	29.12
29	Oman	4.25	65.07	97	Uruguay	3.07	29.09
30	Ireland	4.24	64.67	98	Hungary	3.06	28.80
31	Italy	4.23	64.53	99	Albania	3.04	28.16
32	Algeria	4.17	62.63	100	Iran, Islamic Rep.	3.02	27.55
33	Malta	4.17	62.52	101	Uganda	2.99	26.61
34	Guinea	4.13	61.34	102	Bangladesh	2.96	25.67
35	Philippines	4.11	60.82	103	Croatia	2.93	24.91
36	Portugal	4.11	60.68	104	Greece	2.92	24.40
36	Ukraine	4.11	60.68	105	Tajikistan	2.92	24.36
38	Jordan	4.09	60.24	106	Nepal	2.88	23.33
39	Latvia	4.06	59.25	107	Tunisia	2.88	23.30
40	Kenya	4.05	59.10	108	Bosnia and Herzegovina	2.87	22.92
41	Cameroon	4.05	58.96	109	Guatemala	2.80	20.84
42	Lao PDR	3.99	57.02	110	El Salvador	2.78	20.27
43	Lithuania	3.97	56.48	111	Trinidad and Tobago	2.78	20.09
44	Sri Lanka	3.96	56.16	112	Zambia	2.77	20.04
45	Kuwait	3.95	55.93	113	Peru	2.74	18.90
46	Poland	3.93	55.24	114	Yemen	2.69	17.52
47	Spain	3.88	53.85	115	Burkina Faso	2.67	16.77
48	Thailand	3.87	53.47	116	Ecuador	2.62	15.46
49	Japan	3.85	52.99	117	Venezuela	2.59	14.55
50	Luxembourg	3.85	52.86	118	Congo, Dem. Rep.	2.58	14.10
51	Costa Rica	3.69	48.05	119	Botswana	2.53	12.56
52	Pakistan	3.68	47.72	120	Chad	2.49	11.52
53	Czech Republic	3.68	47.65	121	Eswatini	2.47	10.79
54	Senegal	3.67	47.27	122	Mozambique	2.31	5.83
55	Rwanda	3.66	47.13	123	Angola	2.30	5.46
56	Jamaica	3.66	46.94	124	Bolivia	2.29	5.31
57	Armenia	3.65	46.85	125	Paraguay	2.29	5.26
58	Madagascar	3.64	46.40	126	Malawi	2.24	3.78
59	Benin	3.62	45.91	127	Zimbabwe	2.12	0.00
60	Mexico	3.59	44.84		Belarus	n/a	n/a
61	Moldova	3.57	44.20		Belgium	n/a	n/a
62	Montenegro	3.55	43.69		China	n/a	n/a
63	Côte d'Ivoire	3.53	42.96		Denmark	n/a	n/a
64	Chile	3.51	42.48		Georgia	n/a	n/a
65	Turkey	3.49	42.00		Honduras	n/a	n/a
66	Morocco	3.49	41.75		Norway	n/a	n/a
67	North Macedonia	3.44	40.36				
68	Lebanon	3.44	40.34				

Source: World Economic Forum, Executive Opinion Survey 2018–2019 (<http://reports.weforum.org>)

For some countries, the latest year for which data are available may differ from the year that appears at the top of the page. The cut-off year is 2009.

## 4.2.1 Happiness

Happiness score (life ladder) | 2019

RANK	COUNTRY/ECONOMY	VALUE	SCORE
1	Finland	7.78	100.00
2	Switzerland	7.69	98.31
3	Denmark	7.69	98.28
4	Iceland	7.53	95.13
5	Norway	7.44	93.35
6	Netherlands	7.43	93.02
7	Luxembourg	7.40	92.60
8	Sweden	7.40	92.49
9	Ireland	7.25	89.67
10	Australia	7.23	89.26
11	New Zealand	7.21	88.69
12	Austria	7.20	88.50
13	United Kingdom	7.16	87.75
14	Canada	7.11	86.80
15	Germany	7.04	85.36
16	Czech Republic	7.03	85.33
17	Costa Rica	7.00	84.61
18	United States	6.94	83.55
19	Israel	6.93	83.23
20	Oman	6.85	81.77
21	Belgium	6.77	80.18
22	Malta	6.73	79.41
23	United Arab Emirates	6.71	78.97
24	France	6.69	78.56
25	Slovenia	6.67	78.08
26	Uruguay	6.60	76.80
27	Saudi Arabia	6.56	76.03
28	Spain	6.46	73.99
29	El Salvador	6.45	73.94
30	Brazil	6.45	73.87
31	Italy	6.45	73.76
32	Mexico	6.43	73.49
33	Singapore	6.38	72.44
34	Qatar	6.37	72.36
35	Colombia	6.35	71.89
36	Kazakhstan	6.27	70.35
37	Philippines	6.27	70.26
38	Guatemala	6.26	70.15
39	Slovakia	6.24	69.79
40	Poland	6.24	69.76
41	Serbia	6.24	69.75
42	Mauritius	6.24	69.74
43	Bahrain	6.23	69.47
44	Trinidad and Tobago	6.19	68.77
45	Cyprus	6.14	67.69
46	Romania	6.13	67.56
47	Kuwait	6.11	67.09
48	Portugal	6.10	66.88
49	Panama	6.09	66.69
50	Argentina	6.09	66.68
51	Lithuania	6.06	66.26
52	Estonia	6.03	65.68
53	Thailand	6.02	65.44
54	Bosnia and Herzegovina	6.02	65.31
55	Dominican Republic	6.00	65.08
56	Hungary	6.00	65.01
57	Peru	6.00	64.99
58	Latvia	5.97	64.41
59	Greece	5.95	64.06
60	Chile	5.94	63.87
61	Honduras	5.93	63.63
62	Japan	5.91	63.19
63	Korea, Rep.	5.90	63.09
64	Jamaica	5.89	62.83
65	Belarus	5.82	61.49
66	Ecuador	5.81	61.25
67	Moldova	5.80	61.14
68	Kyrgyzstan	5.69	58.81
69	Bolivia	5.67	58.60
70	Hong Kong (China)	5.66	58.30
71	Paraguay	5.65	58.17
72	Croatia	5.63	57.64
73	Mongolia	5.56	56.41
74	Russian Federation	5.51	55.44
75	Senegal	5.49	54.95
76	Pakistan	5.47	54.61
77	Viet Nam	5.47	54.53
78	Tajikistan	5.46	54.46
79	Nepal	5.45	54.16
80	Malaysia	5.43	53.76
81	Côte d'Ivoire	5.39	53.05
82	Montenegro	5.39	52.93
83	Indonesia	5.35	52.15
84	Lao PDR	5.20	49.21
85	Azerbaijan	5.17	48.75
86	Gambia	5.16	48.56
87	China	5.14	48.18
88	Bangladesh	5.11	47.59
89	Bulgaria	5.11	47.47
90	Venezuela	5.08	46.93
91	Armenia	5.06	46.57
92	Morocco	5.06	46.46
93	South Africa	5.03	46.03
94	North Macedonia	5.02	45.65
95	Iran, Islamic Rep.	5.01	45.46
96	Cambodia	5.00	45.31
97	Albania	5.00	45.25
98	Mali	4.99	45.11
99	Benin	4.98	44.88
100	Ghana	4.97	44.69
101	Uganda	4.95	44.32
102	Cameroon	4.94	44.10
103	Mozambique	4.93	44.01
104	Georgia	4.89	43.22
105	Turkey	4.87	42.83
106	Guinea	4.77	40.78
107	Algeria	4.74	40.32
108	Burkina Faso	4.74	40.25
109	Ukraine	4.70	39.48
110	Kenya	4.62	37.85
111	Jordan	4.45	34.58
112	Namibia	4.44	34.25
113	Eswatini	4.40	33.47
114	Nigeria	4.36	32.69
115	Madagascar	4.34	32.35
116	Egypt	4.33	32.13
117	Tunisia	4.32	31.89
118	Congo, Dem. Rep.	4.31	31.80
119	Chad	4.25	30.61
120	Sri Lanka	4.21	29.88
121	Yemen	4.20	29.55
122	Ethiopia	4.10	27.64
123	Lebanon	4.02	26.16
124	Malawi	3.87	23.11
125	Angola	3.79	21.65
126	Burundi	3.78	21.27
127	Tanzania	3.64	18.61
128	Lesotho	3.51	16.09
129	Botswana	3.47	15.29
130	Zambia	3.31	12.06
131	Rwanda	3.27	11.30
132	India	3.25	10.92
133	Zimbabwe	2.69	0.00
	Cabo Verde	n/a	n/a

Source: The Gallup World Poll (2005–2019) (<https://www.gallup.com/analytics/232838/world-poll.aspx>), sourced from Helliwell, John F., Richard Layard, Jeffrey Sachs, and Jan-Emmanuel De Neve, eds. 2020. World Happiness Report 2020. New York: Sustainable Development Solutions Network (<https://worldhappiness.report/>)

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## 4.2.2 Freedom to make life choices

Freedom to make life choices score | 2019

RANK	COUNTRY/ECONOMY	VALUE	SCORE	RANK	COUNTRY/ECONOMY	VALUE	SCORE
1	Denmark	0.96	100.00	69	Peru	0.81	74.78
2	Iceland	0.96	99.35	70	Zambia	0.81	74.14
3	Cambodia	0.96	98.89	71	Georgia	0.81	74.05
4	Norway	0.95	98.42	72	Armenia	0.81	73.56
5	Viet Nam	0.95	98.16	73	Japan	0.81	73.36
6	Finland	0.95	97.33	74	Hungary	0.80	71.93
7	Slovenia	0.95	96.96	75	Nepal	0.79	70.62
8	Sweden	0.94	96.30	76	Czech Republic	0.79	70.59
9	Singapore	0.94	95.71	77	Ghana	0.79	70.13
10	Luxembourg	0.93	94.40	78	Moldova	0.78	69.49
11	China	0.93	93.89	79	Lithuania	0.78	68.91
12	Costa Rica	0.93	93.80	80	Spain	0.78	68.52
13	Qatar	0.92	93.38	81	Albania	0.78	68.41
14	Malta	0.92	93.32	82	Belgium	0.78	68.22
15	Kyrgyzstan	0.92	92.72	83	Egypt	0.77	67.84
16	Australia	0.92	92.22	84	Pakistan	0.77	67.60
17	Oman	0.92	92.01	85	Slovakia	0.77	67.36
18	Malaysia	0.92	91.93	86	Benin	0.77	67.23
19	Switzerland	0.91	91.48	87	Malawi	0.76	66.29
20	New Zealand	0.91	91.29	88	Senegal	0.76	65.27
21	Canada	0.91	91.20	89	Morocco	0.76	64.92
22	United Arab Emirates	0.91	91.19	90	Ethiopia	0.75	64.37
23	Philippines	0.91	90.88	91	Serbia	0.75	64.19
24	Lao PDR	0.91	90.29	92	Cyprus	0.74	62.08
25	Bahrain	0.91	90.24	93	Croatia	0.74	61.95
26	Austria	0.90	89.83	94	Namibia	0.74	61.91
27	Mexico	0.90	89.82	95	South Africa	0.74	61.79
28	Uruguay	0.90	89.70	96	Côte d'Ivoire	0.74	61.34
29	Bangladesh	0.90	89.57	97	Nigeria	0.73	60.26
30	Guatemala	0.90	89.36	98	Russian Federation	0.73	60.25
31	Thailand	0.90	88.95	99	Hong Kong (China)	0.73	59.84
32	Mauritius	0.89	88.08	100	Jordan	0.73	59.65
33	Ireland	0.89	87.96	101	North Macedonia	0.72	59.47
34	Saudi Arabia	0.89	87.73	102	Israel	0.72	59.47
35	Estonia	0.89	86.95	103	Bosnia and Herzegovina	0.72	58.94
36	Netherlands	0.89	86.80	104	Lesotho	0.72	58.05
37	Germany	0.88	86.66	105	Ukraine	0.72	57.88
38	Panama	0.88	86.35	106	Cameroon	0.71	57.23
39	Poland	0.88	86.34	107	Mongolia	0.71	57.09
40	Portugal	0.88	86.25	108	Italy	0.71	56.89
41	Bolivia	0.88	86.07	109	Korea, Rep.	0.71	56.30
42	Dominican Republic	0.88	85.41	110	Uganda	0.70	56.02
43	El Salvador	0.88	85.41	111	Congo, Dem. Rep.	0.70	56.00
44	Paraguay	0.88	85.18	112	Latvia	0.70	54.93
45	India	0.88	85.09	113	Montenegro	0.69	54.29
46	Mozambique	0.87	84.12	114	Guinea	0.69	53.82
47	Rwanda	0.87	83.98	115	Burkina Faso	0.68	51.46
48	Kuwait	0.87	83.69	116	Gambia	0.68	51.30
49	Indonesia	0.87	83.45	117	Mali	0.67	50.25
50	Jamaica	0.86	82.57	118	Tunisia	0.66	48.37
51	Trinidad and Tobago	0.86	82.31	119	Chile	0.66	48.34
52	Azerbaijan	0.85	81.48	120	Belarus	0.66	47.96
53	United Kingdom	0.85	81.44	121	Yemen	0.65	47.01
54	Kazakhstan	0.85	81.16	122	Burundi	0.65	46.17
55	Tanzania	0.85	80.78	123	Zimbabwe	0.63	43.71
56	Romania	0.85	80.34	124	Turkey	0.63	43.57
57	Honduras	0.85	80.11	125	Venezuela	0.63	42.63
58	United States	0.84	78.40	126	Iran, Islamic Rep.	0.62	42.25
59	Botswana	0.83	77.79	127	Greece	0.61	40.60
60	Tajikistan	0.83	77.70	128	Eswatini	0.60	37.73
61	Brazil	0.83	77.39	129	Madagascar	0.55	29.72
62	Ecuador	0.83	77.28	130	Chad	0.54	27.63
63	France	0.83	76.89	131	Lebanon	0.45	12.31
64	Sri Lanka	0.82	76.38	132	Algeria	0.39	1.79
65	Bulgaria	0.82	75.99	133	Angola	0.37	0.00
66	Colombia	0.82	75.91		Cabo Verde	n/a	n/a
67	Kenya	0.82	75.28				
68	Argentina	0.82	75.16				

Source: The Gallup World Poll (2005–2019) (<https://www.gallup.com/analytics/232838/world-poll.aspx>), sourced from Helliwell, John F., Richard Layard, Jeffrey Sachs, and Jan-Emmanuel De Neve, eds. 2020. World Happiness Report 2020. New York: Sustainable Development Solutions Network (<https://worldhappiness.report/>)

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## 4.2.3 Income inequality

Gini index | 2018

RANK	COUNTRY/ECONOMY	VALUE	SCORE
1	Slovenia	24.20	100.00
2	Czech Republic	24.90	98.20
3	Belarus	25.20	97.42
3	Slovakia	25.20	97.42
5	Moldova	25.70	96.13
6	Ukraine	26.10	95.10
7	Iceland	26.80	93.30
8	Norway	27.00	92.78
9	Belgium	27.40	91.75
9	Finland	27.40	91.75
11	Kazakhstan	27.50	91.49
12	Algeria	27.60	91.24
13	Kyrgyzstan	27.70	90.98
14	Netherlands	28.50	88.92
15	Denmark	28.70	88.40
16	Sweden	28.80	88.14
17	Malta	29.20	87.11
18	Austria	29.70	85.82
18	Poland	29.70	85.82
20	Croatia	30.40	84.02
20	Estonia	30.40	84.02
22	Hungary	30.60	83.51
23	Cyprus	31.40	81.44
24	Egypt	31.50	81.19
25	France	31.60	80.93
25	Korea, Rep.	31.60	80.93
27	Lebanon	31.80	80.41
28	Germany	31.90	80.15
29	Bangladesh	32.40	78.87
30	United Arab Emirates	32.50	78.61
31	Mongolia	32.70	78.09
31	Switzerland	32.70	78.09
33	Ireland	32.80	77.84
33	Nepal	32.80	77.84
33	Tunisia	32.80	77.84
36	Japan	32.90	77.58
37	Bosnia and Herzegovina	33.00	77.32
37	Mali	33.00	77.32
39	Albania	33.20	76.80
40	Pakistan	33.50	76.03
41	Guinea	33.70	75.52
41	Jordan	33.70	75.52
43	Canada	33.80	75.26
43	Portugal	33.80	75.26
45	Tajikistan	34.00	74.74
46	North Macedonia	34.20	74.23
47	Armenia	34.40	73.71
47	Australia	34.40	73.71
47	Greece	34.40	73.71
50	Spain	34.70	72.94
51	United Kingdom	34.80	72.68
52	Luxembourg	34.90	72.42
53	Ethiopia	35.00	72.16
54	Burkina Faso	35.30	71.39
55	Latvia	35.60	70.62
56	Viet Nam	35.70	70.36
57	Gambia	35.90	69.85
57	Italy	35.90	69.85
59	Romania	36.00	69.59
60	Serbia	36.20	69.07
61	Georgia	36.40	68.56
61	Lao PDR	36.40	68.56
61	Thailand	36.40	68.56
64	Yemen	36.70	67.78
65	Mauritius	36.80	67.53
66	Lithuania	37.30	66.24
67	Russian Federation	37.50	65.72
68	India	37.80	64.95
69	China	38.50	63.14
70	Burundi	38.60	62.89
70	El Salvador	38.60	62.89
72	Indonesia	39.00	61.86
72	Israel	39.00	61.86
72	Montenegro	39.00	61.86
75	Morocco	39.50	60.57
76	Uruguay	39.70	60.05
77	Sri Lanka	39.80	59.79
78	Senegal	40.30	58.51
79	Bulgaria	40.40	58.25
80	Tanzania	40.50	57.99
81	Iran, Islamic Rep.	40.80	57.22
81	Kenya	40.80	57.22
83	Malaysia	41.00	56.70
84	Argentina	41.40	55.67
84	United States	41.40	55.67
86	Côte d'Ivoire	41.50	55.41
87	Turkey	41.90	54.38
88	Congo, Dem. Rep.	42.10	53.87
89	Bolivia	42.20	53.61
90	Cabo Verde	42.40	53.09
91	Madagascar	42.60	52.58
92	Peru	42.80	52.06
92	Uganda	42.80	52.06
94	Nigeria	43.00	51.55
95	Chad	43.30	50.77
96	Ghana	43.50	50.26
97	Dominican Republic	43.70	49.74
97	Rwanda	43.70	49.74
99	Zimbabwe	44.30	48.20
100	Chile	44.40	47.94
100	Philippines	44.40	47.94
102	Malawi	44.70	47.16
103	Lesotho	44.90	46.65
104	Ecuador	45.40	45.36
104	Mexico	45.40	45.36
106	Paraguay	46.20	43.30
107	Cameroon	46.60	42.27
108	Benin	47.80	39.18
109	Costa Rica	48.00	38.66
110	Guatemala	48.30	37.89
111	Panama	49.20	35.57
112	Colombia	50.40	32.47
113	Angola	51.30	30.15
114	Honduras	52.10	28.09
115	Botswana	53.30	25.00
116	Brazil	53.90	23.45
117	Mozambique	54.00	23.20
118	Eswatini	54.60	21.65
119	Zambia	57.10	15.21
120	Namibia	59.10	10.05
121	South Africa	63.00	0.00
	Azerbaijan	n/a	n/a
	Bahrain	n/a	n/a
	Cambodia	n/a	n/a
	Hong Kong (China)	n/a	n/a
	Jamaica	n/a	n/a
	Kuwait	n/a	n/a
	New Zealand	n/a	n/a
	Oman	n/a	n/a
	Qatar	n/a	n/a
	Saudi Arabia	n/a	n/a
	Singapore	n/a	n/a
	Trinidad and Tobago	n/a	n/a
	Venezuela	n/a	n/a

Source: World Bank, World Development Indicators (<http://data.worldbank.org/data-catalog/world-development-indicators>)

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## 4.2.4 Healthy life expectancy at birth

Healthy life expectancy at birth (years) | 2016

RANK	COUNTRY/ECONOMY	VALUE	SCORE	RANK	COUNTRY/ECONOMY	VALUE	SCORE
1	Singapore	76.17	100.00	69	Lithuania	66.07	65.85
2	Japan	74.81	95.40	70	Brazil	66.04	65.74
3	Spain	73.81	92.01	71	Turkey	66.02	65.71
4	Switzerland	73.47	90.87	72	Mauritius	65.80	64.96
5	France	73.38	90.58	73	Saudi Arabia	65.66	64.48
6	Cyprus	73.33	90.41	74	Oman	65.61	64.31
7	Canada	73.19	89.94	75	Algeria	65.53	64.04
8	Italy	73.17	89.87	76	El Salvador	65.51	63.98
9	Korea, Rep.	73.04	89.40	77	Belarus	65.45	63.77
10	Iceland	73.04	89.40	78	Iran, Islamic Rep.	65.40	63.58
11	Norway	73.03	89.38	79	Morocco	65.29	63.23
12	Australia	73.00	89.27	80	Paraguay	65.27	63.14
13	Israel	72.94	89.09	81	Dominican Republic	65.23	63.03
14	New Zealand	72.84	88.73	82	Georgia	64.92	61.97
15	Luxembourg	72.56	87.79	83	Azerbaijan	64.88	61.85
16	Sweden	72.43	87.36	84	Cabo Verde	64.53	60.64
17	Austria	72.40	87.26	85	Guatemala	64.22	59.60
18	Malta	72.21	86.60	86	Ukraine	64.03	58.97
19	Ireland	72.12	86.29	87	Moldova	63.57	57.42
20	Netherlands	72.07	86.13	88	Kyrgyzstan	63.54	57.29
21	Greece	72.02	85.96	89	Tajikistan	63.47	57.06
22	Portugal	71.99	85.85	90	Russian Federation	63.46	57.04
23	United Kingdom	71.93	85.67	91	Kazakhstan	63.36	56.69
24	Denmark	71.82	85.28	92	Bangladesh	63.31	56.53
25	Finland	71.66	84.77	93	Trinidad and Tobago	63.25	56.33
26	Belgium	71.60	84.54	94	Bolivia	63.01	55.53
27	Germany	71.56	84.41	95	Mongolia	61.94	51.90
28	Costa Rica	70.86	82.05	96	Philippines	61.71	51.12
29	Slovenia	70.51	80.85	97	Indonesia	61.66	50.97
30	Chile	69.74	78.27	98	Nepal	61.28	49.66
31	Panama	69.43	77.21	99	Egypt	61.11	49.08
32	Czech Republic	69.26	76.66	100	Cambodia	60.82	48.11
33	Croatia	68.98	75.70	101	Rwanda	59.92	45.06
34	Uruguay	68.84	75.23	102	India	59.25	42.82
35	China	68.67	74.65	103	Kenya	58.92	41.68
36	Qatar	68.64	74.53	104	Senegal	58.76	41.14
37	Poland	68.53	74.16	105	Madagascar	58.33	39.70
38	United States	68.51	74.10	106	Lao PDR	57.86	38.12
39	Argentina	68.37	73.62	107	Pakistan	57.73	37.67
40	Slovakia	68.27	73.30	108	Ethiopia	57.49	36.87
41	Estonia	68.19	73.03	109	Botswana	57.47	36.79
42	Montenegro	68.13	72.83	110	Tanzania	56.47	33.42
43	Albania	68.13	72.81	111	Ghana	56.39	33.15
44	Bahrain	68.07	72.61	112	Malawi	56.20	32.51
45	Ecuador	67.87	71.94	113	Namibia	55.94	31.62
46	Mexico	67.71	71.41	114	Angola	55.79	31.10
47	Viet Nam	67.49	70.67	115	South Africa	55.71	30.83
48	Peru	67.47	70.58	116	Yemen	55.07	28.67
49	Serbia	67.40	70.37	117	Uganda	54.89	28.08
50	Bosnia and Herzegovina	67.17	69.59	118	Gambia	54.40	26.42
51	North Macedonia	67.15	69.51	119	Zimbabwe	54.40	26.41
52	Colombia	67.06	69.19	120	Zambia	54.34	26.21
53	Jamaica	66.89	68.64	121	Benin	53.46	23.23
54	Hungary	66.85	68.48	122	Burkina Faso	52.91	21.39
55	Thailand	66.84	68.45	123	Burundi	52.56	20.21
56	Sri Lanka	66.83	68.43	124	Congo, Dem. Rep.	52.52	20.05
57	Honduras	66.80	68.32	125	Mozambique	52.18	18.91
58	United Arab Emirates	66.68	67.91	126	Guinea	52.17	18.89
59	Romania	66.65	67.81	127	Cameroon	51.07	15.18
60	Malaysia	66.62	67.72	128	Mali	50.70	13.92
61	Jordan	66.44	67.11	129	Eswatini	50.15	12.05
62	Bulgaria	66.37	66.86	130	Nigeria	48.95	7.99
63	Kuwait	66.33	66.75	131	Côte d'Ivoire	48.27	5.71
64	Armenia	66.30	66.62	132	Chad	47.23	2.19
65	Tunisia	66.28	66.58	133	Lesotho	46.58	0.00
66	Latvia	66.17	66.20		Hong Kong (China)	n/a	n/a
67	Venezuela	66.09	65.94				
68	Lebanon	66.08	65.89				

Source: World Health Organization, Global Health Observatory (GHO) database (<https://www.who.int/gho>)

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## 4.3.1 SDG 3 Good Health and Well-Being

### Universal health coverage | 2017

RANK	COUNTRY/ECONOMY	VALUE	SCORE
1	Canada	89.00	100.00
2	Australia	87.00	96.72
2	New Zealand	87.00	96.72
2	Norway	87.00	96.72
2	United Kingdom	87.00	96.72
6	Korea, Rep.	86.00	95.08
6	Netherlands	86.00	95.08
6	Singapore	86.00	95.08
6	Sweden	86.00	95.08
10	Belgium	84.00	91.80
10	Iceland	84.00	91.80
10	United States	84.00	91.80
13	Germany	83.00	90.16
13	Japan	83.00	90.16
13	Luxembourg	83.00	90.16
13	Spain	83.00	90.16
13	Switzerland	83.00	90.16
18	Israel	82.00	88.52
18	Italy	82.00	88.52
18	Malta	82.00	88.52
18	Portugal	82.00	88.52
22	Denmark	81.00	86.89
23	Thailand	80.00	85.25
23	Uruguay	80.00	85.25
25	Austria	79.00	83.61
25	Brazil	79.00	83.61
25	China	79.00	83.61
25	Panama	79.00	83.61
25	Slovenia	79.00	83.61
30	Algeria	78.00	81.97
30	Cyprus	78.00	81.97
30	Finland	78.00	81.97
30	France	78.00	81.97
34	Bahrain	77.00	80.33
34	Costa Rica	77.00	80.33
34	Ecuador	77.00	80.33
34	Peru	77.00	80.33
34	Slovakia	77.00	80.33
39	Argentina	76.00	78.69
39	Belarus	76.00	78.69
39	Colombia	76.00	78.69
39	Czech Republic	76.00	78.69
39	El Salvador	76.00	78.69
39	Ireland	76.00	78.69
39	Jordan	76.00	78.69
39	Kazakhstan	76.00	78.69
39	Kuwait	76.00	78.69
39	Mexico	76.00	78.69
39	United Arab Emirates	76.00	78.69
50	Estonia	75.00	77.05
50	Greece	75.00	77.05
50	Poland	75.00	77.05
50	Viet Nam	75.00	77.05
54	Dominican Republic	74.00	75.41
54	Hungary	74.00	75.41
54	Romania	74.00	75.41
54	Russian Federation	74.00	75.41
54	Saudi Arabia	74.00	75.41
54	Trinidad and Tobago	74.00	75.41
54	Turkey	74.00	75.41
54	Venezuela	74.00	75.41
62	Lebanon	73.00	73.77
62	Lithuania	73.00	73.77
62	Malaysia	73.00	73.77
65	Iran, Islamic Rep.	72.00	72.13
65	North Macedonia	72.00	72.13
67	Croatia	71.00	70.49
67	Latvia	71.00	70.49

RANK	COUNTRY/ECONOMY	VALUE	SCORE
69	Chile	70.00	68.85
69	Kyrgyzstan	70.00	68.85
69	Morocco	70.00	68.85
69	Tunisia	70.00	68.85
73	Armenia	69.00	67.21
73	Cabo Verde	69.00	67.21
73	Moldova	69.00	67.21
73	Oman	69.00	67.21
73	Paraguay	69.00	67.21
73	South Africa	69.00	67.21
79	Bolivia	68.00	65.57
79	Egypt	68.00	65.57
79	Montenegro	68.00	65.57
79	Qatar	68.00	65.57
79	Tajikistan	68.00	65.57
79	Ukraine	68.00	65.57
85	Bulgaria	66.00	62.30
85	Georgia	66.00	62.30
85	Sri Lanka	66.00	62.30
88	Azerbaijan	65.00	60.66
88	Honduras	65.00	60.66
88	Jamaica	65.00	60.66
88	Serbia	65.00	60.66
92	Eswatini	63.00	57.38
92	Mauritius	63.00	57.38
94	Mongolia	62.00	55.74
94	Namibia	62.00	55.74
96	Bosnia and Herzegovina	61.00	54.10
96	Botswana	61.00	54.10
96	Philippines	61.00	54.10
99	Cambodia	60.00	52.46
100	Albania	59.00	50.82
101	Indonesia	57.00	47.54
101	Rwanda	57.00	47.54
103	Guatemala	55.00	44.26
103	India	55.00	44.26
103	Kenya	55.00	44.26
106	Zimbabwe	54.00	42.62
107	Zambia	53.00	40.98
108	Lao PDR	51.00	37.70
109	Bangladesh	48.00	32.79
109	Lesotho	48.00	32.79
109	Nepal	48.00	32.79
112	Côte d'Ivoire	47.00	31.15
112	Ghana	47.00	31.15
114	Cameroon	46.00	29.51
114	Malawi	46.00	29.51
114	Mozambique	46.00	29.51
117	Pakistan	45.00	27.87
117	Senegal	45.00	27.87
117	Uganda	45.00	27.87
120	Gambia	44.00	26.23
121	Tanzania	43.00	24.59
122	Burundi	42.00	22.95
122	Nigeria	42.00	22.95
122	Yemen	42.00	22.95
125	Congo, Dem. Rep.	41.00	21.31
126	Angola	40.00	19.67
126	Benin	40.00	19.67
126	Burkina Faso	40.00	19.67
129	Ethiopia	39.00	18.03
130	Mali	38.00	16.39
131	Guinea	37.00	14.75
132	Chad	28.00	0.00
132	Madagascar	28.00	0.00
	Hong Kong (China)	n/a	n/a

Source: Tracking universal health coverage: 2019 Global Monitoring Report. Geneva, WHO 2019. ([http://www.who.int/healthinfo/universal\\_health\\_coverage/report/2019/en/](http://www.who.int/healthinfo/universal_health_coverage/report/2019/en/)) Sourced from United Nations, Open SDG Data Hub (<http://www.sdg.org>)

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## 4.3.2 SDG 4 Quality Education

PISA average scores in mathematics | 2018

RANK	COUNTRY/ECONOMY	VALUE	SCORE
1	China	591.39	100.00
2	Singapore	569.01	91.59
3	Hong Kong (China)	551.15	84.89
4	Japan	526.97	75.81
5	Korea, Rep.	525.93	75.42
6	Estonia	523.41	74.47
7	Netherlands	519.23	72.90
8	Poland	515.65	71.56
9	Switzerland	515.31	71.43
10	Canada	512.02	70.19
11	Denmark	509.40	69.21
12	Slovenia	508.90	69.02
13	Belgium	508.07	68.71
14	Finland	507.30	68.42
15	Sweden	502.39	66.58
16	United Kingdom	501.77	66.34
17	Norway	500.96	66.04
18	Germany	500.04	65.70
19	Ireland	499.63	65.54
20	Czech Republic	499.47	65.48
21	Austria	498.94	65.28
22	Latvia	496.13	64.22
23	Viet Nam	495.68	64.06
24	France	495.41	63.95
25	Iceland	495.19	63.87
26	New Zealand	494.49	63.61
27	Portugal	492.49	62.86
28	Australia	491.36	62.43
29	Russian Federation	487.79	61.09
30	Italy	486.59	60.64
31	Slovakia	486.16	60.48
32	Luxembourg	483.42	59.45
33	Spain	481.39	58.69
34	Lithuania	481.19	58.62
35	Hungary	481.08	58.58
36	United States	478.24	57.51
37	Belarus	471.87	55.11
38	Malta	471.72	55.06
39	Croatia	464.20	52.24
40	Israel	463.03	51.80
41	Turkey	453.51	48.22
42	Ukraine	453.12	48.07
43	Greece	451.37	47.42
44	Cyprus	450.68	47.16
45	Serbia	448.28	46.26
46	Malaysia	440.21	43.23
47	Albania	437.22	42.10
48	Bulgaria	436.04	41.66
49	United Arab Emirates	434.95	41.25
50	Azerbaijan	430.98	39.76
51	Romania	429.92	39.36
52	Montenegro	429.61	39.25
53	Kazakhstan	423.15	36.82
54	Moldova	420.60	35.86
55	Mauritius	420.00	35.64
56	Thailand	418.56	35.09
57	Uruguay	417.66	34.76
58	Chile	417.41	34.66
59	Trinidad and Tobago	417.24	34.60
60	Qatar	414.23	33.47
61	Mexico	408.80	31.43
62	Bosnia and Herzegovina	406.38	30.52
63	Costa Rica	402.33	29.00
64	Peru	399.84	28.07
65	Jordan	399.76	28.04
66	Georgia	397.59	27.22
67	North Macedonia	394.45	26.04
68	Lebanon	393.45	25.67
69	Colombia	390.93	24.72
70	Brazil	383.57	21.96
71	Argentina	379.45	20.41
72	Indonesia	378.67	20.12
73	Saudi Arabia	373.24	18.08
74	Morocco	367.73	16.01
75	Tunisia	366.82	15.67
76	Algeria	359.61	12.96
77	Panama	352.85	10.42
78	Philippines	352.57	10.31
79	Kyrgyzstan	331.16	2.27
80	Dominican Republic	325.10	0.00
	Angola	n/a	n/a
	Armenia	n/a	n/a
	Bahrain	n/a	n/a
	Bangladesh	n/a	n/a
	Benin	n/a	n/a
	Bolivia	n/a	n/a
	Botswana	n/a	n/a
	Burkina Faso	n/a	n/a
	Burundi	n/a	n/a
	Cabo Verde	n/a	n/a
	Cambodia	n/a	n/a
	Cameroon	n/a	n/a
	Chad	n/a	n/a
	Congo, Dem. Rep.	n/a	n/a
	Côte d'Ivoire	n/a	n/a
	Ecuador	n/a	n/a
	Egypt	n/a	n/a
	El Salvador	n/a	n/a
	Eswatini	n/a	n/a
	Ethiopia	n/a	n/a
	Gambia	n/a	n/a
	Ghana	n/a	n/a
	Guatemala	n/a	n/a
	Guinea	n/a	n/a
	Honduras	n/a	n/a
	India	n/a	n/a
	Iran, Islamic Rep.	n/a	n/a
	Jamaica	n/a	n/a
	Kenya	n/a	n/a
	Kuwait	n/a	n/a
	Lao PDR	n/a	n/a
	Lesotho	n/a	n/a
	Madagascar	n/a	n/a
	Malawi	n/a	n/a
	Mali	n/a	n/a
	Mongolia	n/a	n/a
	Mozambique	n/a	n/a
	Namibia	n/a	n/a
	Nepal	n/a	n/a
	Nigeria	n/a	n/a
	Oman	n/a	n/a
	Pakistan	n/a	n/a
	Paraguay	n/a	n/a
	Rwanda	n/a	n/a
	Senegal	n/a	n/a
	South Africa	n/a	n/a
	Sri Lanka	n/a	n/a
	Tajikistan	n/a	n/a
	Tanzania	n/a	n/a
	Uganda	n/a	n/a
	Venezuela	n/a	n/a
	Yemen	n/a	n/a
	Zambia	n/a	n/a
	Zimbabwe	n/a	n/a

Source: OECD Programme for International Student Assessment (PISA) ([www.oecd.org/pisa](http://www.oecd.org/pisa))

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### 4.3.3 SDG 5 Gender Equality

#### Gender Development Index | 2018

RANK	COUNTRY/ECONOMY	VALUE	SCORE
1	Qatar	1.04	100.00
2	Mongolia	1.03	95.66
3	Latvia	1.03	95.62
4	Lithuania	1.03	94.82
5	Lesotho	1.03	93.99
6	Uruguay	1.02	90.79
7	Estonia	1.02	90.68
8	Russian Federation	1.01	90.43
9	Venezuela	1.01	89.66
10	Belarus	1.01	88.86
11	Namibia	1.01	88.56
12	Poland	1.01	88.25
13	Moldova	1.01	87.75
14	Panama	1.00	86.92
15	Philippines	1.00	86.62
16	Dominican Republic	1.00	86.51
17	Burundi	1.00	86.47
18	Viet Nam	1.00	86.29
19	Slovenia	1.00	86.24
20	Trinidad and Tobago	1.00	86.08
21	Kuwait	1.00	85.12
22	Kazakhstan	1.00	84.90
23	Thailand	1.00	83.85
24	Ukraine	1.00	83.72
25	Brazil	1.00	83.72
26	Bulgaria	0.99	82.88
27	Slovakia	0.99	82.80
28	United States	0.99	82.48
29	Norway	0.99	82.14
30	Finland	0.99	81.94
31	Botswana	0.99	81.84
32	Canada	0.99	81.68
33	Croatia	0.99	81.52
34	Singapore	0.99	81.37
35	Argentina	0.99	81.29
36	Colombia	0.99	80.75
37	Romania	0.99	80.74
38	Jamaica	0.99	80.66
39	France	0.98	80.11
40	South Africa	0.98	80.02
41	Portugal	0.98	79.98
42	Hungary	0.98	79.92
43	Cabo Verde	0.98	79.92
44	Cyprus	0.98	79.67
45	Czech Republic	0.98	79.64
46	Sweden	0.98	79.24
47	Spain	0.98	78.85
48	Denmark	0.98	78.78
49	Ecuador	0.98	78.58
50	Georgia	0.98	78.23
51	Costa Rica	0.98	77.66
52	Japan	0.98	77.44
53	Serbia	0.98	77.40
54	Australia	0.98	76.98
55	Ireland	0.97	76.91
56	Mauritius	0.97	76.47
57	Armenia	0.97	75.96
58	Belgium	0.97	75.80
59	Israel	0.97	75.78
60	Malaysia	0.97	75.77
61	Albania	0.97	75.69
62	Honduras	0.97	75.39
63	Luxembourg	0.97	75.34
64	El Salvador	0.97	75.02
65	Germany	0.97	74.59
66	Paraguay	0.97	74.58
67	Italy	0.97	74.33
68	United Kingdom	0.97	74.14
69	Netherlands	0.97	74.10
70	Iceland	0.97	73.91
71	Montenegro	0.97	73.74
72	United Arab Emirates	0.97	73.61
73	Malta	0.96	73.42
74	New Zealand	0.96	73.04
75	Switzerland	0.96	73.02
76	Hong Kong (China)	0.96	73.00
77	Austria	0.96	72.89
78	Greece	0.96	72.80
79	Eswatini	0.96	72.65
80	Chile	0.96	72.52
81	China	0.96	72.13
82	Kyrgyzstan	0.96	71.66
83	Mexico	0.96	70.95
84	Peru	0.95	68.87
85	Zambia	0.95	68.29
86	North Macedonia	0.95	67.45
87	Madagascar	0.95	67.30
88	Guatemala	0.94	66.15
89	Rwanda	0.94	66.14
90	Oman	0.94	66.03
91	Azerbaijan	0.94	65.28
92	Sri Lanka	0.94	64.29
93	Indonesia	0.94	64.22
94	Bahrain	0.94	63.98
95	Bolivia	0.94	63.81
96	Tanzania	0.94	63.64
97	Korea, Rep.	0.93	62.95
98	Kenya	0.93	62.89
99	Malawi	0.93	61.75
100	Lao PDR	0.93	61.55
101	Zimbabwe	0.92	60.03
102	Turkey	0.92	59.69
103	Bosnia and Herzegovina	0.92	59.66
104	Cambodia	0.92	58.10
105	Ghana	0.91	55.71
106	Angola	0.90	52.27
107	Mozambique	0.90	52.11
108	Tunisia	0.90	51.14
109	Nepal	0.90	50.76
110	Bangladesh	0.90	50.11
111	Lebanon	0.89	48.46
112	Benin	0.88	46.07
113	Saudi Arabia	0.88	44.61
114	Egypt	0.88	44.33
115	Burkina Faso	0.87	43.11
116	Iran, Islamic Rep.	0.87	42.87
117	Senegal	0.87	42.70
118	Cameroon	0.87	41.16
119	Jordan	0.87	40.95
120	Nigeria	0.87	40.74
121	Algeria	0.86	39.70
122	Uganda	0.86	39.06
123	Congo, Dem. Rep.	0.84	32.77
124	Ethiopia	0.84	32.72
125	Morocco	0.83	28.98
126	Gambia	0.83	28.75
127	India	0.83	27.58
128	Mali	0.81	20.31
129	Guinea	0.81	19.96
130	Tajikistan	0.80	17.43
131	Côte d'Ivoire	0.80	16.65
132	Chad	0.77	9.30
133	Pakistan	0.75	0.00
133	Yemen	0.46	0.00

Source: United Nations Development Programme (UNDP), Human Development Indices and Indicators: 2018 Statistical Update (<http://hdr.undp.org/en/content/gender-development-index-gdi>)  
For some countries, the latest year for which data are available may differ from the year that appears at the top of the page. The cut-off year is 2009.

### 4.3.4 SDG 7 Affordable and Clean Energy

Energy intensity | 2016

RANK	COUNTRY/ECONOMY	VALUE	SCORE	RANK	COUNTRY/ECONOMY	VALUE	SCORE
1	Hong Kong (China)	1.52	100.00	69	Gambia	4.49	78.54
2	Malta	1.58	99.57	70	Slovenia	4.60	77.75
3	Ireland	1.94	96.97	71	Rwanda	4.62	77.60
4	Sri Lanka	2.02	96.39	72	Malaysia	4.65	77.38
5	Switzerland	2.08	95.95	73	Jordan	4.74	76.73
6	Panama	2.16	95.38	74	Guatemala	4.83	76.08
7	Dominican Republic	2.44	93.35	75	Senegal	4.93	75.36
8	Singapore	2.47	93.14	76	Cameroon	4.95	75.22
9	Mauritius	2.61	92.12	77	Belgium	4.96	75.14
10	Colombia	2.62	92.05	77	United Arab Emirates	4.96	75.14
11	Denmark	2.63	91.98	79	Tajikistan	5.00	74.86
11	Peru	2.63	91.98	80	Australia	5.04	74.57
13	Mali	2.68	91.62	81	Bolivia	5.06	74.42
14	Luxembourg	2.80	90.75	82	Jamaica	5.19	73.48
15	Cabo Verde	2.85	90.39	83	New Zealand	5.24	73.12
16	Albania	2.89	90.10	84	Czech Republic	5.25	73.05
16	Costa Rica	2.89	90.10	84	United States	5.25	73.05
18	United Kingdom	2.90	90.03	86	Armenia	5.29	72.76
19	Italy	3.01	89.23	87	Madagascar	5.32	72.54
20	Yemen	3.02	89.16	88	Thailand	5.36	72.25
21	Turkey	3.03	89.09	89	Kuwait	5.38	72.11
22	Bangladesh	3.06	88.87	90	Saudi Arabia	5.41	71.89
23	Philippines	3.07	88.80	91	Oman	5.72	69.65
24	Botswana	3.08	88.73	92	Burkina Faso	5.74	69.51
25	Chad	3.11	88.51	93	Cambodia	5.81	69.00
25	Romania	3.11	88.51	94	Georgia	5.82	68.93
27	Morocco	3.13	88.37	95	Qatar	5.83	68.86
28	Uruguay	3.16	88.15	95	Venezuela	5.83	68.86
29	Spain	3.24	87.57	97	Lao PDR	5.94	68.06
30	Portugal	3.31	87.07	98	Bulgaria	6.00	67.63
31	Cyprus	3.36	86.71	99	Mongolia	6.04	67.34
32	Norway	3.40	86.42	100	Honduras	6.09	66.98
33	Indonesia	3.43	86.20	101	Viet Nam	6.14	66.62
34	Israel	3.44	86.13	102	Nigeria	6.21	66.11
35	Namibia	3.47	85.91	103	China	6.24	65.90
36	Ghana	3.49	85.77	104	Estonia	6.25	65.82
37	Ecuador	3.51	85.62	105	Côte d'Ivoire	6.45	64.38
38	Mexico	3.53	85.48	106	Finland	6.53	63.80
39	Germany	3.55	85.33	107	Belarus	6.58	63.44
40	Austria	3.59	85.04	108	Korea, Rep.	6.59	63.37
41	Greece	3.64	84.68	109	Serbia	6.60	63.29
42	Egypt	3.65	84.61	110	Guinea	6.66	62.86
43	Japan	3.67	84.47	111	Iran, Islamic Rep.	6.98	60.55
44	Tunisia	3.75	83.89	112	Bosnia and Herzegovina	7.09	59.75
45	Lithuania	3.77	83.74	113	Canada	7.48	56.94
46	Azerbaijan	3.81	83.45	114	Kenya	7.67	55.56
47	Latvia	3.82	83.38	115	Zambia	7.69	55.42
48	Netherlands	3.88	82.95	116	Tanzania	7.96	53.47
49	Croatia	3.90	82.80	117	Kyrgyzstan	8.03	52.96
50	Chile	3.91	82.73	118	Nepal	8.07	52.67
51	Angola	3.97	82.30	119	Kazakhstan	8.19	51.81
52	Algeria	3.98	82.23	120	Burundi	8.27	51.23
53	France	4.02	81.94	121	Benin	8.53	49.35
54	El Salvador	4.03	81.86	122	South Africa	8.54	49.28
55	Eswatini	4.05	81.72	123	Russian Federation	8.56	49.13
56	Brazil	4.08	81.50	124	Moldova	9.03	45.74
56	North Macedonia	4.08	81.50	125	Bahrain	9.59	41.69
58	Lebanon	4.09	81.43	126	Uganda	9.72	40.75
59	Montenegro	4.14	81.07	127	Lesotho	10.05	38.37
60	Paraguay	4.15	81.00	128	Ukraine	12.08	23.70
61	Malawi	4.20	80.64	129	Ethiopia	13.10	16.33
62	Poland	4.21	80.56	130	Iceland	14.46	6.50
63	Hungary	4.26	80.20	131	Congo, Dem. Rep.	19.56	0.00
64	Pakistan	4.27	80.13	131	Mozambique	16.98	0.00
65	Slovakia	4.35	79.55	131	Trinidad and Tobago	18.95	0.00
66	Argentina	4.43	78.97	131	Zimbabwe	15.36	0.00
67	Sweden	4.46	78.76				
68	India	4.47	78.68				

Source: Energy Balances, UN Statistics Division (2018) and IEA (2018), World Energy Balances. Sourced from United Nations, Open SDG Data Hub (<http://www.sdg.org>)  
For some countries, the latest year for which data are available may differ from the year that appears at the top of the page. The cut-off year is 2009.

### 4.3.5 SDG 11 Sustainable Cities and Communities

Urban safety and sustainability | 2016

RANK	COUNTRY/ECONOMY	VALUE	SCORE	RANK	COUNTRY/ECONOMY	VALUE	SCORE
1	Sweden	96.01	100.00	69	Guatemala	66.80	62.13
2	Norway	95.51	99.35	70	Lao PDR	66.30	61.47
3	Switzerland	93.71	97.02	71	Bosnia and Herzegovina	65.99	61.07
4	Finland	93.37	96.57	72	Paraguay	65.32	60.21
5	United Kingdom	92.98	96.06	73	Ecuador	65.15	59.99
6	Ireland	92.86	95.92	74	Cambodia	64.91	59.67
7	Spain	92.17	95.02	75	Turkey	62.42	56.44
8	Denmark	91.95	94.73	76	Armenia	62.22	56.18
9	Canada	91.50	94.15	77	Malaysia	61.31	55.01
10	Australia	91.38	93.99	78	Lebanon	60.72	54.24
11	Netherlands	91.13	93.67	79	Oman	59.23	52.30
12	Japan	91.07	93.59	80	El Salvador	59.10	52.13
13	Estonia	90.93	93.42	81	Morocco	58.45	51.30
14	Germany	90.92	93.39	82	Botswana	58.10	50.85
15	Iceland	90.69	93.10	83	Mongolia	57.44	49.99
16	New Zealand	89.14	91.09	84	Côte d'Ivoire	56.98	49.39
17	Singapore	89.03	90.95	85	Eswatini	56.59	48.89
18	France	89.01	90.92	86	United Arab Emirates	55.77	47.82
19	Austria	88.98	90.88	87	Tajikistan	55.43	47.38
20	Luxembourg	88.70	90.52	88	Iran, Islamic Rep.	54.88	46.67
21	Portugal	88.49	90.24	89	Angola	54.59	46.30
22	Belgium	87.89	89.47	90	South Africa	53.86	45.34
23	Malta	86.86	88.13	91	Mali	53.47	44.84
24	Italy	86.81	88.07	92	Pakistan	52.16	43.14
25	Cyprus	86.66	87.87	93	Tunisia	51.36	42.10
26	Czech Republic	86.47	87.63	94	Madagascar	51.30	42.03
27	Israel	86.40	87.54	95	Guinea	51.30	42.03
28	Lithuania	85.61	86.51	96	Jordan	51.14	41.82
29	Slovenia	85.40	86.24	97	Ghana	50.53	41.02
30	Slovakia	84.84	85.51	98	Cabo Verde	50.36	40.81
31	Hungary	83.56	83.85	99	Mozambique	50.34	40.79
32	Latvia	83.10	83.26	100	China	50.14	40.53
33	Croatia	82.34	82.28	101	Kenya	49.93	40.24
34	United States	81.79	81.56	102	Viet Nam	49.73	39.99
35	Greece	81.57	81.27	103	Senegal	49.47	39.66
36	Azerbaijan	80.85	80.34	104	Bangladesh	49.00	39.05
37	Romania	80.83	80.31	105	Namibia	48.14	37.94
38	Moldova	80.71	80.16	106	Tanzania	48.13	37.91
39	Belarus	80.65	80.08	107	Dominican Republic	47.74	37.41
40	Uruguay	79.70	78.85	108	Malawi	47.56	37.18
41	Serbia	79.23	78.24	109	Venezuela	47.37	36.93
42	Bulgaria	78.41	77.18	110	Lesotho	47.31	36.85
43	North Macedonia	78.33	77.07	111	Ethiopia	46.66	36.01
44	Poland	78.13	76.82	112	Kuwait	46.46	35.75
45	Indonesia	77.45	75.94	113	Benin	46.25	35.48
46	Argentina	77.06	75.43	114	Nigeria	45.93	35.06
47	Panama	77.01	75.36	115	Egypt	44.98	33.84
48	Montenegro	76.95	75.28	116	Zimbabwe	43.98	32.54
49	Jamaica	76.81	75.11	117	Gambia	43.70	32.17
50	Mauritius	76.51	74.72	118	Thailand	42.89	31.12
51	Philippines	75.73	73.70	119	Burkina Faso	40.00	27.37
52	Korea, Rep.	75.72	73.69	120	Qatar	39.30	26.46
53	Albania	74.21	71.73	121	Rwanda	38.87	25.91
54	Chile	73.96	71.40	122	Uganda	35.53	21.57
55	Trinidad and Tobago	73.95	71.39	123	Congo, Dem. Rep.	35.07	20.98
56	Sri Lanka	73.88	71.30	124	India	34.96	20.84
57	Ukraine	73.83	71.24	125	Chad	34.88	20.74
58	Mexico	73.66	71.02	126	Burundi	34.81	20.64
59	Kazakhstan	72.34	69.30	127	Nepal	27.86	11.63
60	Kyrgyzstan	71.56	68.29	128	Cameroon	24.48	7.26
61	Costa Rica	71.03	67.61	129	Saudi Arabia	18.89	0.00
62	Peru	70.74	67.23		Algeria	n/a	n/a
63	Russian Federation	70.41	66.80		Bahrain	n/a	n/a
64	Bolivia	70.23	66.57		Hong Kong (China)	n/a	n/a
65	Georgia	69.96	66.22		Yemen	n/a	n/a
66	Brazil	69.31	65.38		Zambia	n/a	n/a
67	Colombia	68.87	64.80				
68	Honduras	68.62	64.48				

Source: World Health Organization, Global Health Observatory (GHO) database (<https://www.who.int/gho>)

For some countries, the latest year for which data are available may differ from the year that appears at the top of the page. The cut-off year is 2009.









# Appendix I:

## Technical Notes



# Structure of the Network Readiness Index

Network readiness is a multi-dimensional concept. The NRI is therefore a composite index constructed on the basis of several levels. The first level consists of four pillars that make up the fundamental dimensions of network readiness: Technology, People, Governance, and Impact. Each of these pillars are divided into three sub-pillars that constitute the second level:

- **TECHNOLOGY:** Access, Content, Future Technologies
- **PEOPLE:** Individuals, Businesses, Governments
- **GOVERNANCE:** Trust, Regulation, Inclusion
- **IMPACT:** Economy, Quality of Life, SDG Contribution

The third, and final, level consists of individual indicators that have been distributed across the different sub-pillars and pillars. Any given indicator thus belongs to a pillar and a sub-pillar. For that reason, each indicator is identified by three digits, where the first digit refers to the pillar, the second digit concerns the sub-pillar, and the third digit denotes the indicator. For instance, indicator 1.2.3 refers to the third indicator (Internet domain registrations) that is placed in the second sub-pillar (Content), which, in turn, belongs to the first pillar (Technology).

A total of 60 indicators have been identified for the NRI 2020. Of these indicators, 30 are hard/quantitative data, 13 are index/composite indicator data, and 17 are survey/qualitative data.

The complete structure of the NRI with its respective pillars, sub-pillars, and indicators is shown on the next page.

## Computation of the NRI

The computation of the NRI is based on successive aggregations of scores, from the indicator level (i.e., the most disaggregated level) to the overall NRI score. In general, the unweighted arithmetic mean has been used to aggregate (i) individual indicators within each sub-pillar, (ii) sub-pillars within each pillar, and (iii) the pillars comprising the overall index.

To be clear, the computation is based on data for all indicators, including confidential data related to indicator 1.2.3 Internet domain registrations (which has been kindly provided by ZookNIC on the condition of confidentiality).

## Country and data coverage

The inclusion of countries and indicators is based on the double threshold approach. In terms of country coverage, this means that only countries with data available for at least 70 percent of all indicators are included in the NRI. In addition, countries need a sub-pillar level data availability of at least 40 percent. In terms of indicator coverage, only indicators with data available for at least 50 percent of all countries are included in the NRI. Missing values are denoted as “n/a” and are not taken into account in the computation of scores.

## Network Readiness Index 2020

A. Technology pillar	B. People pillar
<b>1st sub-pillar: Access</b>	<b>1st sub-pillar: Individuals</b>
1.1.1 Mobile tariffs	2.1.1 Internet users
1.1.2 Handset prices	2.1.2 Active mobile-broadband subscriptions
1.1.3 Internet access	2.1.3 Use of virtual social networks
1.1.4 4G mobile network coverage	2.1.4 Tertiary enrollment
1.1.5 Fixed-broadband subscriptions	2.1.5 Adult literacy rate
1.1.6 International Internet bandwidth	2.1.6 ICT skills
1.1.7 Internet access in schools	
<b>2nd sub-pillar: Content</b>	<b>2nd sub-pillar: Businesses</b>
1.2.1 GitHub commits	2.2.1 Firms with website
1.2.2 Wikipedia edits	2.2.2 Ease of doing business
1.2.3 Internet domain registrations	2.2.3 Professionals
1.2.4 Mobile app development	2.2.4 Technicians and associate professionals
	2.2.5 Business use of digital tools
	2.2.6 R&D expenditure by businesses
<b>3rd sub-pillar: Future Technologies</b>	<b>3rd sub-pillar: Governments</b>
1.3.1 Adoption of emerging technologies	2.3.1 Government online services
1.3.2 Investment in emerging technologies	2.3.2 Publication and use of open data
1.3.3 ICT PCT patent applications	2.3.3 Government promotion of investment in emerging technologies
1.3.4 Computer software spending	2.3.4 R&D expenditure by governments and higher education
1.3.5 Robot density	
<b>C. Governance pillar</b>	<b>D. Impact pillar</b>
<b>1st sub-pillar: Trust</b>	<b>1st sub-pillar: Economy</b>
3.1.1 Secure Internet servers	4.1.1 Medium- and high-tech industry
3.1.2 Cybersecurity	4.1.2 High-tech exports
3.1.3 Online access to financial account	4.1.3 PCT patent applications
3.1.4 Internet shopping	4.1.4 Labor productivity per employee
	4.1.5 Prevalence of gig economy
<b>2nd sub-pillar: Regulation</b>	<b>2nd sub-pillar: Quality of Life</b>
3.2.1 Regulatory quality	4.2.1 Happiness
3.2.2 ICT regulatory environment	4.2.2 Freedom to make life choices
3.2.3 Legal framework's adaptability to emerging technologies	4.2.3 Income inequality
3.2.4 E-commerce legislation	4.2.4 Healthy life expectancy at birth
3.2.5 Privacy protection by law content	
<b>3rd sub-pillar: Inclusion</b>	<b>3rd sub-pillar: SDG Contribution</b>
3.3.1 E-participation	4.3.1 SDG 3: Good Health and Well-Being
3.3.2 Socioeconomic gap in use of digital payments	4.3.2 SDG 4: Quality Education
3.3.3 Availability of local online content	4.3.3 SDG 5: Gender Equality
3.3.4 Gender gap in Internet use	4.3.4 SDG 7: Affordable and Clean Energy
3.3.5 Rural gap in use of digital payments	4.3.5 SDG 11: Sustainable Cities and Communities

## Treatment of series with outliers

The presence of outliers in an indicator can potentially bias rankings. Therefore, outliers should be detected and removed before the normalization of scores. To do so, a rule of thumb is applied whereby an absolute value of skewness greater than 2 and kurtosis greater than 3.5 indicates the presence of outliers.<sup>3</sup> The treatment of outliers is carried out in one of two ways. First, indicators that have no more than four outliers are winsorized, whereby the value affecting the distribution is assigned the next highest/lowest value method. The winsorization process continues until the reported skewness and/or kurtosis fall within the ranges specified above.

Second, indicators with at least five outliers are transformed by natural logarithms according to the following formula:

$$\ln \left[ (\max \text{ x factor} - 1) \times \frac{(\text{value} - \text{min})}{(\max - \text{min})} + 1 \right]$$

For the NRI 2020, outliers were detected in nine indicators. Six<sup>4</sup> indicators had fewer than five outliers, and three<sup>5</sup> indicators had five outliers or more.

## Normalization

The indicators need to be normalized in order to make them comparable for data aggregation. The NRI applies the min-max normalization method so that all values fall

into the [0, 100] range, with higher scores representing better outcomes. Most indicators are “goods” in that higher values indicate higher outcomes. For these indicators, the following normalization formula is applied:

$$100 \times \frac{(\text{value} - \text{min})}{(\max - \text{min})}$$

For indicators where higher values imply worse outcomes (i.e. “bads”), the following reverse normalization formula is applied:<sup>6</sup>

$$100 \times \frac{(\max - \text{value})}{(\max - \text{min})}$$

## References

Groeneveld, R. A. & Meeden, G. (1984). Measuring skewness and kurtosis. *Journal of the Royal Statistical Society, Series D (The Statistician)*, 33, 391–399.

OECD & EC JRC (2008). *Handbook on constructing composite indicators: Methodology and user guide*. Paris: OECD, available at <http://www.oecd.org/std/42495745.pdf>

<sup>3</sup> Adopted from Groeneveld & Meeden (1984).

<sup>4</sup> 1.2.3 Internet domain registrations; 1.3.5 Robot density; 3.3.4 Gender gap in Internet use; 4.1.2 High-tech exports; 4.3.3. SDG 5: Gender Equality; and 4.3.4 SDG 7: Affordable and Clean Energy.

<sup>5</sup> 1.1.6 International Internet bandwidth; 1.3.4 ICT PCT patent applications; and 3.1.3 Secure Internet servers.

<sup>6</sup> For the NRI 2020, reverse normalisation was needed for two indicators: 4.2.3 Income inequality and 4.3.5 SDG 11: Sustainable Cities and Communities (in its construction using variables on pollution and road safety).





# Appendix II:

## Sources and Definitions





# 1st pillar: Technology

## 1.1 Access

### 1.1.1 Mobile tariffs

#### Mobile tariffs sub-index | 2018

This indicator is based on the Mobile tariffs sub-index that is included in the Affordability pillar of the Mobile Connectivity Index published by the GSM Association. The sub-index relates to the cost of three different basket profiles that are partly distinguished by monthly usage allowance (100 MB, 500 MB, and 1 GB, respectively). The tariffs are given as a percentage of monthly GDP per capita. The main source for the data is Tarifica (<https://tarifica.com/>).

Source: GSM Association, The GSMA Mobile Connectivity Index 2019 (<http://www.mobileconnectivityindex.com>)

### 1.1.2 Handset prices

#### Cost of cheapest Internet-enabled device (% of monthly GDP per capita) | 2018

This is one of the indicators included in the Affordability pillar of the Mobile Connectivity Index published by the GSM Association. It relates to the cheapest smartphone or feature phone that allows users access to the Internet. The main source for the data is Tarifica (<https://tarifica.com/>).

Source: GSM Association, The GSMA Mobile Connectivity Index 2019 (<http://www.mobileconnectivityindex.com>)

### 1.1.3 Internet access

#### Estimated proportion of households with Internet access at home (%) | 2018

This is the share of households with Internet access at home via a fixed or mobile network. A household with Internet access is defined as the Internet being available for use by all members of the household at any time. This indicator can include both estimates and survey data corresponding to the proportion of individuals using the Internet based on results from national household surveys. The number should reflect the total population of the country, or at least individuals of 5 years and older.

Source: International Telecommunication Union (ITU), ITU World Telecommunication/ICT Indicators database 2019 (<http://www.itu.int/en/ITU-D/Statistics/Pages/publications/wtid.aspx>)

### 1.1.4 4G mobile network coverage

#### Population covered by at least an LTE/WiMAX mobile network (%) | 2018

This indicator measures the percentage of inhabitants out of the total population who are within range of an advanced mobile cellular signal, such as LTE/LTE-Advanced and mobile WiMAX/WirelessMAN networks, irrespective of whether they are subscribers.

Source: International Telecommunication Union (ITU), ITU World Telecommunication/ICT Indicators database 2019 (<http://www.itu.int/en/ITU-D/Statistics/Pages/publications/wtid.aspx>)

### 1.1.5 Fixed-broadband subscriptions

#### Fixed-broadband subscriptions that are equal to or above 10 Mbit/s (% of total subscriptions) | 2018

This indicator refers to the number of fixed subscriptions by residences and organizations to high-speed access to the public Internet (a TCP/IP connection) at downstream speeds equal to or greater than 10 Mbit/s, expressed as a percentage of total fixed-broadband subscriptions.

Source: International Telecommunication Union (ITU), ITU World Telecommunication/ICT Indicators database 2019 (<http://www.itu.int/en/ITU-D/Statistics/Pages/publications/wtid.aspx>)

### 1.1.6 International Internet bandwidth

#### International Internet bandwidth per Internet user (bit/s) | 2018

This indicator refers to the usage of all international links including fiber-optic cables, radio links, and traffic processed by satellite ground stations and teleports to orbital satellites.

Source: International Telecommunication Union (ITU), ITU World Telecommunication/ICT Indicators database 2019 (<http://www.itu.int/en/ITU-D/Statistics/Pages/publications/wtid.aspx>)

### 1.1.7 Internet access in schools

#### Proportion of primary schools with access to Internet for pedagogical purposes (%) | 2019

This refers to the share of primary schools with access to the Internet via fixed narrowband, fixed broadband, or mobile network. Internet for pedagogical purposes means Internet that enhances teaching and learning and that provides pupils with access to a number of communications services through various devices.

Source: UNESCO Institute for Statistics, UIS.Stat (<http://data.uis.unesco.org/>)

## 1.2 Content

### 1.2.1 GitHub commits

#### GitHub commits per 1,000 population | 2018

GitHub is the world's largest host of source code, and a commit is the term used for a saved change on this platform. Thus, "GitHub commits" refers to the number of commits on the GitHub website that are publicly available. One limitation of the data is that only a minority of GitHub users are geolocated, and therefore the indicator does not concern all commits. However, as pointed out by Ojanperä, Graham, and Zook (2019), this limitation probably does not entail any geographic bias, and the indicator is therefore "an appropriate, if imperfect, proxy for otherwise hard to measure programming skills."

Source: Gousios, Georgios. (2013) The GHTorrent dataset and tool suite. MSR 2013: 233-236. Data accessed through Google BigQuery. Data on population are sourced from World Development Indicators (<http://data.worldbank.org/data-catalog/world-development-indicators>).

### 1.2.2 Wikipedia edits

#### Wikipedia yearly page edits (per million population 15-69 years old) | 2019

"Wikipedia edits" refers to data from economies with more than 100,000 edit counts on the Wikipedia website for the given year.

Source: Wikimedia Foundation; United Nations, Department of Economic and Social Affairs, Population Division (2014–17). World Population Prospects: The 2017 Revision (population). (<https://wikimediafoundation.org>; <https://esa.un.org/unpd/wpp/>). Data have been sourced from INSEAD, Cornell University, and World Intellectual Property Organization, The Global Innovation Index 2020 (<https://www.globalinnovationindex.org>).

### 1.2.3 Internet domain registrations

#### Generic top-level domains (gTLDs) and country-code top-level domains (ccTLDs) per person | 2019

This indicator provides a measure of the production of Internet content. It refers to two types of top-level domains: generic top-level domains and country code top-level domains. The gTLDs cover domain names that use com, net, org, biz, info, and mobi. As in Ojanperä, Graham, and Zook (2019), a small number of countries have been excluded because a high volume of their ccTLDs are due to the specific meaning of the domain rather than any content produced in the country itself (e.g. the use of the Tuvalu.tv domain by the entertainment industry).

Source: Data on Internet domain registrations kindly provided by ZookNIC. Data on population are sourced from World Development Indicators (<http://data.worldbank.org/data-catalog/world-development-indicators>).

### 1.2.4 Mobile app development

#### Number of active mobile applications developed per person | 2018

This indicator is included in the Mobile Connectivity Index published by the GSM Association. It is one of four indicators that make up the Local Relevance sub-index, which, in turn, is part of the Content & Services pillar. The original data is sourced from AppFigures (<https://appfigures.com/>).

Source: GSM Association, The GSMA Mobile Connectivity Index 2019 (<http://www.mobileconnectivityindex.com>)

## 1.3 Future Technologies

### 1.3.1 Adoption of emerging technologies

#### Average answer to survey questions concerning the extent to which companies adopt five types of emerging technology | 2018–19

The World Economic Forum's Executive Opinion Survey (EOS) is conducted on an annual basis to gather information from business leaders on topics for which hard data sources are scarce or nonexistent. It is part of the effort to supplement The Global Competitiveness Report in assessing issues that drive national competitiveness. The data refer to the simple mean of the average answers to a similarly worded question regarding five different emerging technologies: In your country, to what extent are companies adopting Artificial intelligence|Robotics|App- and web-enabled markets|Big data analytics|Cloud computing? (1: not at all; 7: to a great extent—on par with the most technologically advanced economies)

Source: World Economic Forum, Executive Opinion Survey 2018–2019 (<http://reports.weforum.org>)

### 1.3.2 Investment in emerging technologies

**Average answer to the question: In your country, to what extent do companies invest in emerging technologies (e.g. Internet of Things, advanced analytics and artificial intelligence, augmented virtual reality and wearables, advanced robotics, 3D printing)? [1 = not at all; 7 = to a great extent] | 2017–18**

The World Economic Forum's Executive Opinion Survey (EOS) is conducted on an annual basis to gather information from business leaders on topics for which hard data sources are scarce or nonexistent. It is part of the effort to supplement The Global Competitiveness Report in assessing issues that drive national competitiveness.

Source: World Economic Forum, Executive Opinion Survey 2017–2018 (<http://reports.weforum.org>)

### 1.3.3 ICT PCT patent applications

**Number of applications for information and communication technology-related patents filed under the Patent Cooperation Treaty (PCT) (per million population) | 2017**

This indicator refers to the count of applications filed under the Patent Cooperation Treaty (PCT) in the technology domain of information and communication technologies by priority date and inventor nationality. The count is divided per million people in population. The classification for ICT-related patents is based on the International Patent Classification (IPC), as described in Inaba and Squicciarini (2017).

Source: World Intellectual Property Organization (WIPO) PCT Data, sourced from Organisation for Economic Co-operation and Development (OECD), Patent Database (<http://www.oecd.org/sti/inno/intellectual-property-statistics-and-analysis.htm>). Population data sourced from World Bank, World Development Indicators (<http://data.worldbank.org/data-catalog/world-development-indicators>). The IPC classification is discussed in Inaba, T. and M. Squicciarini (2017), "ICT: A new taxonomy based on the international patent classification," OECD Science, Technology and Industry Working Papers, No. 2017/01, OECD Publishing, Paris (<https://doi.org/10.1787/ab16c396-en>)

### 1.3.4 Computer software spending

**Total computer software spending (% of GDP) | 2019**

"Computer software spending" includes the total value of purchased or leased packaged software such as operating systems, database systems, programming tools, utilities, and applications. It excludes expenditures for internal software development and outsourced custom software development. The data are a combination of actual figures and estimates. Data are reported as a percentage of GDP.

Source: IHS Markit, Information and Communication Technology Database (<https://www.ih.com/index.html>). Sourced from INSEAD, Cornell University, and World Intellectual Property Organization, The Global Innovation Index 2020 (<https://www.globalinnovationindex.org>)

### 1.3.5 Robot density

**Number of robots in operation per 10,000 employees in the manufacturing industry | 2019**

"Robot density" refers to the estimated number of multipurpose industrial robots per 10,000 persons employed in the manufacturing industry (ISIC rev.4: C). The International Federation of Robotics (IFR) collects country-level data on operational stock of industrial robots and, for some countries, computes robot densities. The computed robot densities are published in the annual World Robotics report.

Source: Data on robot density and operational stock of industrial robots for 2019 kindly provided by the International Federation of Robotics (IFR, <https://ifr.org>). Data on employment in manufacturing in the countries for which IFR has not computed robot densities are sourced from the International Labour Organization, ILOSTAT (<https://ilostat.ilo.org/>)

## 2nd pillar: People

### 2.1 Individuals

#### 2.1.1 Internet users

##### Individuals using the Internet (%) | 2018

“Internet users” refers to the proportion of individuals who used the Internet in the last 12 months. Data are generally based on national household surveys where the percentage should reflect the total population of the country.

Source: International Telecommunication Union (ITU), ITU World Telecommunication/ICT Indicators database 2019 (<http://www.itu.int/en/ITU-D/Statistics/Pages/publications/wtid.aspx>)

#### 2.1.2 Active mobile-broadband subscriptions

##### Active mobile-broadband subscriptions (per 100 inhabitants) | 2018

This indicator refers to the sum of active handset-based and computer-based mobile-broadband subscriptions to the public Internet, where users have accessed the Internet in the last three months. It covers actual subscribers, not potential subscribers, even though the latter may have broadband-enabled handsets.

Source: International Telecommunication Union (ITU), ITU World Telecommunication/ICT Indicators database 2019 (<http://www.itu.int/en/ITU-D/Statistics/Pages/publications/wtid.aspx>)

#### 2.1.3 Use of virtual social networks

##### Number of active social media users (% of population) | 2019

This indicator refers to the penetration of active social media users, expressed as a percentage of total population. The original data come from a variety of sources, including company statements and reports in reputable media.

Source: We Are Social and Hootsuite (2020) Global Digital Report 2020 (<https://wearesocial.com/digital-2020>)

#### 2.1.4 Tertiary enrollment

##### Gross enrollment ratio, tertiary education (%) | 2019

“Tertiary enrollment” refers to the ratio of total tertiary enrollment, regardless of age, to the population of the age group that officially corresponds to the tertiary level of education. Tertiary education, whether or not to an advanced research qualification, normally requires the successful completion of education at the secondary level as a minimum condition of admission. The tertiary level is based on International Standard Classification of Education (ISCED) levels 5–8.

Source: UNESCO Institute for Statistics, UIS.Stat (<http://data.uis.unesco.org/>)

#### 2.1.5 Adult literacy rate

##### Adult literacy rate (%) | 2018

“Adult literacy rate” is defined as the percentage of the population aged 15 years and over who can read, write, and understand a short, simple statement on his/her everyday life.

Source: UNESCO Institute for Statistics, UIS.Stat (<http://data.uis.unesco.org/>)

#### 2.1.6 ICT skills

**Average answer to the question: In your country, to what extent does the active population possess sufficient digital skills (e.g. computer skills, basic coding, digital reading)? [1 = not at all; 7 = to a great extent] | 2018-19**

The World Economic Forum’s Executive Opinion Survey (EOS) is conducted on an annual basis to gather information from business leaders on topics for which hard data sources are scarce or nonexistent. It is part of the effort to supplement The Global Competitiveness Report in assessing issues that drive national competitiveness.

Source: World Economic Forum, Executive Opinion Survey 2018–2019 (<http://reports.weforum.org>)

## 2.2 Businesses

### 2.2.1 Firms with website

#### Firms with website (% of total) | 2019

The data for this indicator are based on enterprise surveys conducted by the OECD and the World Bank. The former source is used for OECD countries and accession countries or key partners, while the latter source is used for all other countries.

Source: OECD, ICT Access and Use by Businesses, OECD Telecommunications and Internet Statistics (database) (<https://doi.org/10.1787/9d2cb97b-en>); World Bank, Enterprise Surveys ([www.enterprisesurveys.org](http://www.enterprisesurveys.org))

### 2.2.2 Ease of doing business

#### Ease of doing business index | 2019

The ease of doing business index aggregates a country's percentile rankings on 10 topics covered in the World Bank's Doing Business report series. The topics are: starting a business, dealing with construction permits, getting electricity, registering property, getting credit, protecting minority investors, paying taxes, trading across borders, enforcing contracts, and resolving insolvency. A high ranking indicates that the regulatory environment is more conducive to setting up a business.

Source: World Bank, Doing Business 2020: Comparing Business Regulation in 190 Economies (<https://www.doingbusiness.org/en/reports/global-reports/doing-business-2020>)

### 2.2.3 Professionals

#### Professionals (%) | 2019

"Professionals" refers to the number of professionals as a share of the total workforce. The employment by occupation is based on the International Standard Classification of Occupation (ISCO) Revision 2008 (data based on ISCO Rev. 1988 is used for those countries where ISCO Rev. 2008 is not available). It includes physical, mathematical, and engineering science professionals; life science and health professionals; teaching professionals; and other professionals (business, legal, archivists, librarians, social science, religious professionals, writers, and creative or performing artists).

Source: International Labour Organization, ILOSTAT (<https://ilostat.ilo.org/>)

### 2.2.4 Technicians and associate professionals

#### Technicians and associate professionals (%) | 2019

This indicator refers to the number of technicians and associate professionals as a share of the total workforce. The employment by occupation is based on the International Standard Classification of Occupation (ISCO) Revision 2008 (data based on ISCO Rev. 1988 is used for those countries where ISCO Rev. 2008 is not available). It includes physical and engineering science associate professionals, life science and health associate professionals, teaching associate professionals, and other associate professionals (finance and sales, social work, artistic, entertainment and sports, religious associate professionals, police inspectors and detectives, administrative, customs, and tax and related government associate professionals).

Source: International Labour Organization, ILOSTAT (<https://ilostat.ilo.org/>)

### 2.2.5 Business use of digital tools

**Average answer to the question: In your country, to what extent do businesses make good use of the latest digital tools to sell their goods and services (e-commerce, digital payment, mobile web stores, social media stores)? [1 = not at all; 7 = to a great extent] | 2018–19**

The World Economic Forum's Executive Opinion Survey (EOS) is conducted on an annual basis to gather information from business leaders on topics for which hard data sources are scarce or nonexistent. It is part of the effort to supplement The Global Competitiveness Report in assessing issues that drive national competitiveness.

Source: World Economic Forum, Executive Opinion Survey 2018–2019 (<http://reports.weforum.org>)

### 2.2.6 R&D expenditure by businesses

**Gross domestic expenditure on R&D performed by business enterprise (% of GDP) | 2018**

This indicator refers to business enterprise expenditure on research and development (R&D) as a percentage of GDP. This includes both private enterprises and public enterprises. R&D expenditure is defined as all current expenditure plus gross fixed capital expenditure for R&D performed by businesses, whatever the source of funds.

Source: UNESCO Institute for Statistics, UIS.Stat (<http://data.uis.unesco.org/>)

## 2.3 Governments

### 2.3.1 Government online services

#### Government Online Service Index | 2020

The Government Online Service Index (OIS) is one of the three main components of the E-Government Development Index (EGDI) constructed and published by the United Nations Department of Economic and Social Affairs. The OIS assesses the quality of a government's delivery of online services on a 0-to-1 (best) scale. The assessment is carried out by researchers, who evaluate "each country's national website in the native language, including the national portal, e-services portal, and e-participation portal, as well as the websites of the related ministries of education, labor, social services, health, finance, and environment, as applicable."

Source: United Nations Department of Economic and Social Affairs (UNDESA), UN E-Government Knowledgebase (<https://publicadministration.un.org/egovkb/en-us/>)

### 2.3.2 Publication and use of open data

#### Open Data Barometer | 2016

This indicator refers to the fourth edition of the Open Data Barometer, an index that provides a measure of how governments publish and use open data based on the following three dimensions (weights given in parentheses): readiness (35 percent), implementation (35 percent), and impact (30 percent).

Source: World Wide Web Foundation (2017), Open Data Barometer 4th Edition – Global Report (<https://opendatabarometer.org/4thedition/>)

### 2.3.3 Government promotion of investment in emerging technologies

#### Average answer to survey questions concerning the extent to which governments foster investment in five types of emerging technology | 2018–19

The World Economic Forum's Executive Opinion Survey (EOS) is conducted on an annual basis to gather information from business leaders on topics for which hard data sources are scarce or nonexistent. It is part of the effort to supplement The Global Competitiveness Report in assessing issues that drive national competitiveness. The data refer to the simple mean of the average answers to a similarly worded question regarding five different emerging technologies: In

your country, to what extent does the government foster investment (public and private) in Artificial intelligence and machine learning|Robotics|App- and web-enabled markets|Big data analytics|Cloud computing? (1: not at all; 7: to a great extent)

Source: World Economic Forum, Executive Opinion Survey 2018–2019 (<http://reports.weforum.org>)

### 2.3.4 R&D expenditure by governments and higher education

#### Gross domestic expenditure on R&D performed by government and higher education institutions (% of GDP) | 2018

This indicator refers to the combined expenditure by governments and higher education institutions on research and development (R&D) as a percentage of GDP. The government sector comprises all units of central, regional, and municipal government, but excludes public enterprises (which fall under the business enterprise category). Higher education institutions are those that primarily focus on providing formal tertiary education (i.e. levels 5–8 of the International Standard Classification of Education, ISCED). R&D expenditure is defined as all current expenditure plus gross fixed capital expenditure for R&D performed by government and higher education institutions, whatever the source of funds.

Source: UNESCO Institute for Statistics, UIS.Stat (<http://data.uis.unesco.org/>)

## 3rd pillar: Governance

### 3.1 Trust

#### 3.1.1 Secure Internet servers

##### Secure Internet servers (per million population) | 2019

“Secure Internet servers” are servers that use encryption technology in Internet transactions.

Source: World Bank, World Development Indicators (<http://data.worldbank.org/data-catalog/world-development-indicators>)

#### 3.1.2 Cybersecurity

##### Global Cybersecurity Index | 2018

The Global Cybersecurity Index (GCI) provides a measure of the level of cybersecurity commitment of countries. It is a composite index made up of 25 indicators that are distributed across five main pillars: Legal Measures, Technical Measures, Organizational Measures, Capacity Building Measures, and Cooperation Measures. Scores are standardized to a scale of 0 to 1.

Source: ITU (2019) Global Cybersecurity Index (GCI) 2018 ([https://www.itu.int/dms\\_pub/itu-d/opb/str/D-STR-GCI.01-2018-PDF-E.pdf](https://www.itu.int/dms_pub/itu-d/opb/str/D-STR-GCI.01-2018-PDF-E.pdf))

#### 3.1.3 Online access to financial account

##### People who used a mobile phone or the Internet to access a financial institution account in the past year (% with a financial institution account, age 15+) | 2017

This indicator refers to the percentage who report using a mobile phone or the Internet to access their financial institution account in the past 12 months, among those respondents who have a financial institution account.

Source: World Bank, Global Findex database (<https://globalfindex.worldbank.org/>)

#### 3.1.4 Internet shopping

##### People who used the Internet to buy something online in the past year (%) | 2017

This indicator refers to the percentage of respondents aged at least 15 years old who have used the Internet in the past year to buy something online. The data stem from a triennial survey that is carried out in more than 140 economies.

Source: World Bank, Global Findex database (<https://globalfindex.worldbank.org/>)

### 3.2 Regulation

#### 3.2.1 Regulatory quality

##### Regulatory quality indicator | 2018

The regulatory quality indicator captures perceptions of the ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development. Scores are standardized to a scale from -2.5 (worst) to 2.5 (best).

Source: World Bank, Worldwide Governance Indicators 2019 Update ([www.govindicators.org](http://www.govindicators.org))

#### 3.2.2 ICT Regulatory Environment

##### ICT Regulatory Tracker | 2018

This indicator is based on a composite index—the ICT Regulatory Tracker—that provides a measure of the existence and features of ICT legal and regulatory frameworks. The index covers 50 indicators that are distributed across four pillars: Regulatory Authority, Regulatory Mandate, Regulatory Regime, and Competition Framework. Scores are standardized to a scale of 0 to 2.

Source: International Telecommunication Union (ITU), ICT Regulatory Tracker 2018 (<https://www.itu.int/net4/itu-d/irt/>)

### 3.2.3 Legal framework's adaptability to emerging technologies

#### Average answer to survey questions concerning the extent to which the legal framework is adapting to five types of emerging technology | 2018–19

The World Economic Forum's Executive Opinion Survey (EOS) is conducted on an annual basis to gather information from business leaders on topics for which hard data sources are scarce or nonexistent. It is part of the effort to supplement The Global Competitiveness Report in assessing issues that drive national competitiveness. The data refer to the simple mean of the average answers to a similarly worded question regarding five different emerging technologies: In your country, how adequately is the legal framework adapting to Artificial intelligence|Robotics|App- and web-enabled markets|Big data analytics|Cloud computing? (1: not at all; 7: to a great extent - the legal framework is up-to-date)

Source: World Economic Forum, Executive Opinion Survey 2018–2019 (<http://reports.weforum.org>)

### 3.2.4 E-commerce legislation

#### Global Cyberlaw Tracker | 2020

This indicator refers to countries' adoption of E-commerce legislation. The Global Cyberlaw Tracker provides information on whether a country has adopted legislation (or has a draft law pending adoption) in four areas: electronic transactions, consumer protection, privacy and data protection, and cybercrime. Scores range from 0 (no legislation) to 4 (adopted legislation in all four areas).

Source: United Nations Conference on Trade and Development (UNCTAD), Global Cyberlaw Tracker ([https://unctad.org/en/Pages/DTL/STI\\_and ICTs/ICT4D-Legislation/eCom-Global-Legislation.aspx](https://unctad.org/en/Pages/DTL/STI_and ICTs/ICT4D-Legislation/eCom-Global-Legislation.aspx))

### 3.2.5 Privacy protection by law content

#### Average answer to the question: What does the legal framework to protect Internet users' privacy and their data stipulate? | 2019

This indicator refers to responses on privacy protection given by multiple country experts on a 0-to-4 scale. The responses have been aggregated and, taking disagreement and measurement error into account, a probability distribution has been computed over country-year scores on a standardized interval scale. The point estimates are the median values of these distributions for each country-year. The scale of a measurement model variable is similar to a normal ("Z") score (e.g. typically between -5 and 5, with

0 approximately representing the mean for all country-years in the sample), though it does not necessarily follow normal distribution. Only estimates based on at least four ratings are included in the data.

Source: Mechkova, Valeriya, Daniel Pemstein, Brigitte Seim, and Steven Wilson. (2020) Digital Society Project Dataset v2. (<http://digitalsocietyproject.org>)

## 3.3 Inclusion

### 3.3.1 E-Participation

#### E-Participation Index | 2020

The E-Participation Index assesses, on a 0-to-1 (best) scale, the quality, relevance, and usefulness of government websites in providing online information and participatory tools and services to their citizens. Within the E-Participation Index, countries are benchmarked in three areas: e-information, e-consultation, and e-decision-making. As such, the index indicates both the capacity and the willingness of the state in encouraging the citizen to promote deliberative, participatory decision-making in public policy and of the reach of its own socially inclusive governance program.

Source: United Nations Department of Economic and Social Affairs (UNDESA), UN E-Government Knowledgebase (<https://publicadministration.un.org/egovkb/en-us/>)

### 3.3.2 Socioeconomic gap in use of digital payments

#### Difference between rich and poor income groups that made or received digital payments in the past year (% age 15+) | 2017

This indicator refers to the share of, respectively, the poorest 40 percent and richest 60 percent in a country that made or received a digital payment in the past 12 months. Making a digital payment includes "using mobile money, a debit or credit card, or a mobile phone to make a payment from an account, or report using the Internet to pay bills or to buy something online." Receiving a digital payment includes receiving money "directly from or into a financial institution account or through a mobile money account." Scores are calculated as the ratio of the share related to the poorest 40 percent over the share related to the richest 60 percent.

Source: World Bank, Global Findex database (<https://globalfindex.worldbank.org/>)



### 3.3.3 Availability of local online content

**Average answer to the question: In your country, to what extent are Internet content and services tailored to the local population (e.g. in the local language, meeting local demand)? (1 = Not at all; 7 = To a great extent) | 2018–19**

The World Economic Forum’s Executive Opinion Survey (EOS) is conducted on an annual basis to gather information from business leaders on topics for which hard data sources are scarce or nonexistent. It is part of the effort to supplement The Global Competitiveness Report in assessing issues that drive national competitiveness.

Source: World Economic Forum, Executive Opinion Survey 2018–2019 (<http://reports.weforum.org>)

### 3.3.4 Gender gap in Internet use

**Difference between female and male population in using the Internet | 2019**

This indicator refers to the share of, respectively, women and men in a country that use the Internet. Scores are calculated as the ratio of the share related to the female population over the share related to the male population.

Source: International Telecommunication Union (ITU), ITU World Telecommunication/ICT Indicators database 2020 (<http://www.itu.int/en/ITU-D/Statistics/Pages/publications/wtid.aspx>)

### 3.3.5 Rural gap in use of digital payments

**Difference between the rural population and the total population that made or received digital payments in the past year (% age 15+) | 2017**

This indicator refers to the share of, respectively, the rural population and the total population in a country that made or received digital payments in the past 12 months. Making a digital payment includes “using mobile money, a debit or credit card, or a mobile phone to make a payment from an account, or report using the Internet to pay bills or to buy something online.” Receiving a digital payment includes receiving money “directly from or into a financial institution account or through a mobile money account.” Scores are calculated as the ratio of the share related to the rural population over the share related to the total population.

Source: World Bank, Global Findex database (<https://globalfindex.worldbank.org/>)

## 4th pillar: Impact

### 4.1 Economy

#### 4.1.1 Medium- and high-tech industry

##### Proportion of medium- and high-tech industry value added in total value added (%) | 2016

This indicator refers to the percentage of the value added of medium- and high-tech industry out of the total value added of manufacturing. The manufacturing sector relates to sector D in the International Standard Industrial Classification of all Economic Activities (ISIC) revision 3 (1990) or sector C in ISIC revision 4 (2008). The definition of “medium- and high-tech industry” is based on the R&D intensity of economic activities. See United Nations (2019) or Galindo-Rueda & Verger (2016) for details on the classification.

Source: United Nations Industrial Development Organization (UNIDO), UNIDO CIP 2018 Database (<https://stat.unido.org>), sourced from United Nations, Open SDG Data Hub (<http://www.sdg.org>). United Nations (2019), Metadata for Indicator 9.b.1 Proportion of medium and high-tech industry value added in total value added (<https://unstats.un.org/sdgs/metadata/files/Metadata-09-0B-01.pdf>). Galindo-Rueda, F. and F. Verger (2016). OECD Taxonomy of Economic Activities Based on R&D Intensity, OECD Science, Technology and Industry Working Papers, 2016/04, OECD Publishing, Paris (<http://dx.doi.org/10.1787/5jlv73sqqp8r-en>)

#### 4.1.2 High-tech exports

##### High-technology manufactured exports (% of total exports of manufactured goods) | 2019

“High-value exports” refers to high-technology manufactures (electronic and electrical and other), as calculated according to the Lall classification, out of all exports of manufactured goods.

Source: World Bank, World Development Indicators (<http://data.worldbank.org/data-catalog/world-development-indicators>). The classification of exports is based on Lall, S. (2000), The Technological Structure and Performance of Developing Country Manufactured Exports, Oxford Development Studies, 28(3), 1985–1989

#### 4.1.3 PCT patent applications

##### Number of applications filed under the Patent Cooperation Treaty (PCT) (per million population) | 2017

This indicator refers to the total count of applications filed under the Patent Cooperation Treaty (PCT), by priority date and inventor nationality, using fractional count if an application is filed by multiple inventors. The count is divided per million people in population.

Source: World Intellectual Property Organization (WIPO) PCT Data, sourced from Organisation for Economic Co-operation and Development (OECD), Patent Database (<http://www.oecd.org/sti/inno/intellectual-property-statistics-and-analysis.htm>). Population data sourced from World Bank, World Development Indicators (<http://data.worldbank.org/data-catalog/world-development-indicators>)

#### 4.1.4 Labor productivity per employee

##### Labor productivity per person employed (2019 US\$) | 2019

The Conference Board provides two calculations of its estimates on output, labor, and labor productivity: an original version based on official GDP data and an adjusted version based on GDP growth and levels that take into account rapidly falling ICT prices. “Labor productivity per employee” is based on the estimates of the adjusted version.

Source: The Conference Board, Total Economy Database™ (Adjusted version) ([www.conference-board.org/data/economydatabase](http://www.conference-board.org/data/economydatabase))

#### 4.1.5 Prevalence of gig economy

##### Average answer to the question: In your country, to what extent is the online gig economy prevalent? [1 = Not at all; 7 = To a great extent] | 2018–19

The World Economic Forum’s Executive Opinion Survey (EOS) is conducted on an annual basis to gather information from business leaders on topics for which hard data sources are scarce or nonexistent. It is part of the effort to supplement The Global Competitiveness Report in assessing issues that drive national competitiveness. The gig economy refers to a labor market that is specific to digital platforms and to working arrangements that are

focused on short-term contracts and task-based work.

Source: World Economic Forum, Executive Opinion Survey 2018–2019 (<http://reports.weforum.org>)

## 4.2 Quality of Life

### 4.2.1 Happiness

#### Happiness score (life ladder) | 2019

“Happiness” refers to the national average response to the following survey question included in the Gallup World Poll: “Please imagine a ladder, with steps numbered from 0 at the bottom to 10 at the top. The top of the ladder represents the best possible life for you and the bottom of the ladder represents the worst possible life for you. On which step of the ladder would you say you personally feel you stand at this time?” The indicator is also referred to as the “Cantril life ladder,” “life ladder,” or “subjective well-being.”

Source: The Gallup World Poll (2005–2019) (<https://www.gallup.com/analytics/232838/world-poll.aspx>), sourced from Helliwell, John F., Richard Layard, Jeffrey Sachs, and Jan-Emmanuel De Neve, eds. 2020. *World Happiness Report 2020*. New York: Sustainable Development Solutions Network (<https://worldhappiness.report/>)

### 4.2.2 Freedom to make life choices

#### Freedom to make life choices score | 2019

“Freedom to make life choices” refers to the national average response to the following survey question included in the Gallup World Poll: “Are you satisfied or dissatisfied with your freedom to choose what you do with your life?”

Source: The Gallup World Poll (2005–2019) (<https://www.gallup.com/analytics/232838/world-poll.aspx>), sourced from Helliwell, John F., Richard Layard, Jeffrey Sachs, and Jan-Emmanuel De Neve, eds. 2020. *World Happiness Report 2020*. New York: Sustainable Development Solutions Network (<https://worldhappiness.report/>)

### 4.2.3 Income inequality

#### Gini index | 2018

The Gini index is a measure of income inequality in an economy. Technically, it is based on a Lorenz curve that “plots the cumulative percentages of total income received against the cumulative number of recipients” and where the Gini index refers to the area between the Lorenz curve and the (hypothetical) line of perfect equality. The scale of the Gini index ranges from 0 (perfect equality) to 100 (perfect inequality).

Source: World Bank, World Development Indicators (<http://data.worldbank.org/data-catalog/world-development-indicators>)

### 4.2.4 Healthy life expectancy at birth

#### Healthy life expectancy at birth (years) | 2016

This indicator is defined as the “average number of years that a person can expect to live in ‘full health’ by taking into account years lived in less than full health due to disease and/or injury.” The number of years lost due to ill health in a country is estimated by the disability rate per capita (adjusted for independent comorbidity), broken down by age and sex.

Source: World Health Organization, Global Health Observatory (GHO) database (<https://www.who.int/gho>)

## 4.3 SDG Contribution

### 4.3.1 SDG 3: Good Health and Well-Being

#### Universal health coverage | 2017

The indicator refers to the Universal Health Coverage (UHC) service coverage index and is one of the official indicators related to SDG 3: Ensure healthy lives and promote well-being for all at all ages (indicator 3.8.1). The UHC service coverage index encompasses essential health services that include reproductive, maternal, newborn, and child health; infectious diseases; non-communicable diseases; and service capacity and access, among the general and the most disadvantaged population. Scores are reported on a scale of 0–100 and are computed as the geometric mean of 14 tracer indicators of health service coverage. The tracer indicators on service coverage are broken down into four components: 1. Reproductive, maternal, newborn, and child health; 2. Infectious diseases; 3. Noncommunicable diseases; and 4. Service capacity and access.

Source: Tracking universal health coverage: 2019 Global Monitoring Report. Geneva, WHO 2019. ([http://www.who.int/healthinfo/universal\\_health\\_coverage/report/2019/en/](http://www.who.int/healthinfo/universal_health_coverage/report/2019/en/)) Sourced from United Nations, Open SDG Data Hub (<http://www.sdg.org>)

### 4.3.2 SDG 4: Quality Education

#### PISA average scores in mathematics | 2018

This indicator is captured by the OECD’s Programme for International Student Assessment (PISA), which are triennial surveys that examine 15-year-old students’ performance

in reading, mathematics, and science. The scores are calculated so that the mean is 500 and the standard deviation is 100. The scores for China come from Beijing-Shanghai-Jiangsu-Guangdong.

Source: OECD Programme for International Student Assessment (PISA) ([www.oecd.org/pisa](http://www.oecd.org/pisa))

### 4.3.3 SDG 5: Gender Equality

#### Gender Development Index | 2018

The Gender Development Index (GDI) refers to disparities between women and men in three basic dimensions of human development—health, knowledge, and living standards. Based on the same methodology and component indicators as the Human Development Index (HDI), the GDI is a direct measure of gender gap showing the female HDI as a percentage of the male HDI.

Source: United Nations Development Programme (UNDP), Human Development Indices and Indicators: 2018 Statistical Update (<http://hdr.undp.org/en/content/gender-development-index-gdi>)

### 4.3.4 SDG 7: Affordable and Clean Energy

#### Energy intensity | 2016

This indicator refers to the energy intensity level of primary energy (megajoules per constant 2011 purchasing power parity GDP) and is one of the official indicators related to SDG 7: Ensure access to affordable, reliable, sustainable, and modern energy for all (indicator 7.3.1).

Source: Energy Balances, UN Statistics Division (2018) and IEA (2018), World Energy Balances. Sourced from United Nations, Open SDG Data Hub (<http://www.sdg.org>)

### 4.3.5 SDG 11: Sustainable Cities and Communities

#### Urban safety and sustainability | 2016

The safety and sustainability of cities is captured by two indicators: urban pollution and road safety. Urban pollution is an official indicator related to SDG 11: Make cities and human settlements inclusive, safe, resilient, and sustainable (indicator 11.6.2) and is measured by annual mean concentrations of fine particulate matter in urban areas that are less than 2.5 microns in diameter. Road safety refers to death rate due to road traffic injuries per 100,000 people. It is an official indicator related to SDG 3: Ensure healthy lives and promote well-being for all at all ages (indicator 3.6.1), but it is also associated with SDG Target 11.2: By 2030, provide access to safe, affordable, accessible, and sustainable

transport systems for all, improving road safety, notably by expanding public transport, with special attention to the needs of those in vulnerable situations, women, children, persons with disabilities, and older persons. The data refers to the simple mean of the reversed normalized scores of the two indicators.

Source: World Health Organization, Global Health Observatory (GHO) database (<https://www.who.int/gho>)







# Appendix III:

## JRC Statistical Audit of the 2020 Network Readiness Index





# JRC Statistical Audit of the 2020 Network Readiness Index

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## 1. Introduction

The redesigned Network Readiness Index 2020 (NRI 2020) aims to reflect ICT deployment issue better than the NRI 2016 without losing continuity with previous exercises. It has the additional goal of being future-proof in capturing the integration of people and technology, its governance, and its economic impact. The challenges of the emerging information society and economy and the increasing importance of technology, artificial intelligence and data motivates the NRI and its goals.

NRI 2020 is composed of four pillars: Technology, People, Governance, and Impact. Technology seeks to assess the level of technology in a given country; People is concerned with the application of ICT by individuals, businesses, and governments; Governance assess the national environment in terms of trust, regulation, and inclusion; and Impact tries to capture the economic, social, and human impact of participation in the network economy. Each pillar has the same weight in the computation of the index. All pillars are composed of three sub-pillars that are weighted equally. The number of indicators making up each sub-pillars varies. They are equally weighted in each sub-pillar, therefore the weight of each individual indicator in the overall index varies.

NRI 2020 is timely in tackling how technology benefits the general population and the economy and in its approach highlighting the importance of regulations, economic benefits, well-being and the achievement of SDGs. The NRI 2020 framework is well constructed and a lot of thought has clearly been put into it. However, conceptual and practical challenges are inevitable when trying to summarise with a single composite indicator the complexity of the emerging economic order within the information society, its regulation and its economic impact. Challenges are even more complicated when considering the changing nature of Technology and NRI's future-proof ambitions.

The European Commission's Competence Centre on Composite Indicators and Scoreboards at the Joint Research Centre (JRC) has performed this audit upon the invitation of the developers. The analysis herein aims at shedding light on the consistency, transparency and reliability of the NRI 2020 and thus to enabling policymakers to derive accurate, meaningful and consistent conclusions. The JRC assessment of the NRI 2020 presented here focuses on two main issues: the statistical coherence of the structure, and the impact of key modelling assumptions. The statistical analysis is based on the adequacy of aggregating indicators into pillars, and pillars into the overall index. Finally, the JRC analysis complements the reported country rankings for the NRI index 2020 with estimated intervals, in order to better appreciate the robustness of these ranks to the modelling choices.

## 2. Conceptual framework

The structure of the NRI is summarized in Table 1. Variables were selected for their relevance to a specific pillar on the basis of the literature review, expert opinion, country coverage, and timeliness.

In view of further evolution of the index, the developers may consider further exploration of the Network economy specific measures, which would make the framework more consistent with the changing nature of technology and NRI's goal of being future-proof. Many aspects of the digital economy and its conceptualization, its economic benefits, drawbacks and consequent governance are still under discussion and beyond current state of knowledge. This makes NRI future-proof goal difficult to conceptualize and audit. Some notable conceptualization efforts are being done from social scientists and developers may consider them in future editions. Far from aiming to make a complete literature review we suggest few references on conceptualizing<sup>1</sup> and quantifying<sup>2</sup> specific aspects of the digital economy.

<sup>1</sup> Martens, B., 2016, An economic policy perspective on online platforms, Institute for Prospective Technical Studies Digital Economy Working Paper 2016/05.  
Pedraza Garcia, P. de and Vollbracht, I., (2019) The semicircular flow of the data economy, Publications Office of the European Union, Luxembourg, ISBN 978-92-76-09232-2, doi: 10.2760/40733.  
Khan, L. M. 2017. Amazon's Antitrust Paradox. The Yale Law Journal, vol. 126, number 3, pp. 710-805

<sup>2</sup> Liem, C., and Petropoulos, G., 2016, 'The economic value of personal data for online platforms, firms and consumers', Bruegel blogspot, 14 January  
Steel, E., 2013, 'Companies scramble for consumer data', Financial Times, 12 June  
Steel, E., Locke, C., Cadman, E. and Freese, B., 2013, 'How much is your personal data worth? Use our calculator to check how much multibillion-dollar data broker industry might pay for your personal data', Financial Times, 12 June

TABLE 1. CONCEPTUAL FRAMEWORK OF THE NRI 2020

1. TECHNOLOGY	1.1 Access	Mobile tariffs
		Handset prices
		Internet access
		4G mobile network coverage
		Fixed-broadband subscriptions
		International Internet bandwidth
	1.2 Content	Internet access in schools
		GitHub commits
		Wikipedia edits
		Internet domain registrations
	1.3 Future Technology	Mobile apps development
		Adoption of emerging technologies
Investment in emerging technologies		
ICT PCT patent applications		
Computer software spending		
2. PEOPLE	2.1 Individuals	Robot density
		Internet users
		Active mobile-broadband subscriptions
		Use of virtual social networks
		Tertiary enrolment
		Adult literacy rate
	2.2 Business	ICT skills
		Firms with website
		Ease of doing business
		Professionals
		Technicians and associate professionals
	2.3 Governments	Business use of digital tools
		R&D expenditure by businesses
		Government online services
		Publication and use of open data
3. GOVERNANCE	3.1 Trust	Government promotion of investment in emerging technologies
		R&D expenditure by governments and higher education
		Secure Internet servers
		Cybersecurity
	3.2 Regulation	Online access to financial account
		Internet shopping
		Regulatory quality
		ICT regulatory environment
		Legal framework's adaptability to emerging technologies
	3.3 Inclusion	e-commerce legislation
		Privacy protection by law content
		E-Participation
Socioeconomic gap in use of digital payments		
Availability of local online content		
Gender gap in Internet use		
Rural gap in use of digital payments		

<b>4. IMPACT</b>	<b>4.1 Economy</b>	Medium and high-tech industry
		High-tech exports
		PCT patent applications
		Labour productivity per employee
		Prevalence of gig economy
	<b>4.2 Quality of life</b>	Happiness
		Freedom to make life choices
		Income inequality
		Healthy life expectancy at birth
	<b>4.3 SDG Contribution</b>	SDG 3: Good Health and Well-Being
		SDG 4: Quality Education
		SDG 5: Gender Equality
		SDG 7: Affordable and Clean Energy
SDG 11: Sustainable Cities and Communities		

Source: Elaborated by European Commission's Joint Research Centre from the NRI, 2020.

### 3. Data quality and availability

Regarding data coverage, the general practice is to establish a threshold above which an indicator is excluded from the framework. For the NRI development, the inclusion of countries and indicators is based on the double threshold approach. In terms of country coverage, this means that only countries with data available for at least 70% of all indicators are included in the NRI. In addition, countries need to pass a sub-pillar level data availability of at least 40%. In terms of indicator coverage, only indicators with availability of at least 50% of countries are included in the NRI. Despite the absence of an absolute golden standard, the JRC-team suggest to include only indicators with maximum one-third of missing values (33%). When an indicator represents a very specific and central concept, also a looser threshold of 40% missing countries could be integrated in the structure.

Following this principle, seven indicators (ind. 07, 14, 16, 41, 45, 49, and 57) are showing poor coverage. These indicators could be the focus of future refinement, with the aim of improving their coverage or excluding/modifying them.

The presence of outliers, which could potentially bias the effect of the indicators on the aggregates, was properly tackled by developers. They identified outliers when the variables have simultaneously absolute skewness greater than 2.0 and kurtosis greater than 3.5 and treated values accordingly. Six indicators were treated via winsorization. Moreover, three indicators, cases when the outliers are at least five, were treated via logarithmic transformation. After the treatment implementation, none of the indicators used in the calculation of the NRI Index shows critical skewness and kurtosis values.

Some indicators represent other composite indicators, whose composition, methodology and statistical coherence are not audited here.

#### 3.1 NORMALISATION

The indicators are rescaled to a 0–100 scale using the MIN-MAX formula, with 0 as the lowest score achieved by countries, and 100 as the highest, which is a common and usually desired practice in the composite indicators' construction. The normalisation formula is selected in order to obtain always higher scores representing better outcomes. The direction of some indicators may not be extremely intuitive for a non-expert reader, we suggest to reconsider the naming of some of the variables or be sure to supply clear explanations in the report. Here are some examples.

First, according to developers, only two indicators were consider to have a negative effect on the network economy before normalisation: indicator 58 (4.2.3 SDG 5: Income inequality) and indicators 59 (4.3.4 SDG 7: Affordable and Clean Energy). Developers may consider whether name assigned to indicator 59 is misleading.

Second, from a conceptual point of view, higher tariffs (indicators 1, 1.1.1 mobile tariffs) and prices (indicator 2, 1.1.2 handset prices) make technological devices less affordable and, in principle, should be considered negative. However, correlations show that both are positively correlate to other indicators. This situation may be pointing to the fact that, for example, better 4G and internet infrastructure are found in countries with higher prices and taxes. Future editions can explore this issue further and, for instance, consider the use of purchasing power parity.

Third, some consideration may be needed for indicators measuring different kinds of gaps and inequalities in sub-pillar 3.3 Inclusion. First, the definition of gap is not consistent across indicators, some are defined as ratios and some as differences. Gender gap (3.3.4) is defined as: Ratio of female over male population in using the Internet. It takes values above one in some countries. This means that, if considered positive, the bigger the gap between women and men the better, in case women are more connected. Similar situation occurs with SDG5 Gender equality that shows the female HDI (Human Development Index) as a percentage of the male HDI (4.3.3). The developers may consider exploring further UNDP's Gender Development, and the way its developers communicate it. Is positive discrimination generally accepted as good? Rural gap (3.3.5) is defined as: Difference between (percentages) of rural and total population that made or received digital payments in the past year where some countries also score above 1. Again, the higher the difference the better in case rural areas are more connected.

Finally, socioeconomic gap in use of digital payments (3.3.2) measures the difference between rich (i.e. richest 60%) and poor (i.e. poorest 40%) income groups that made or received digital payments in the past year. While, this indicator may be reflecting high internet penetration across socio economic groups, it may be also driven by inequality. Considering it as a positive indicator may represent a confusing element of the index.

## 4. Statistical coherence

The statistical coherence is based on a multi-level analysis of the correlations of indicators and aggregates, and a comparison of the index's rankings with the ranks defined by the pillars.

### 4.1 CORRELATION ANALYSIS

The statistical coherence of an index should be considered a necessary but not a sufficient condition for a sound index. Given that the statistical coherence is mostly based on correlations, the correspondence of each composite indicator to a real world phenomenon needs to be critically addressed because "correlations do not necessarily represent the real influence of the individual indicators on the phenomenon being measured" (OECD & JRC, 2008)<sup>3</sup>. This relies on the interplay between both conceptual and statistical soundness. The degree of coherence between the conceptual framework and the statistical structure of the data is an important factor for the reliability of an index, among other things.

The correlation analysis is used to address to what extent the data support the conceptual framework. In the ideal

case, there should be positive significant correlations within every level of the index. This effectively ensures that the overall index scores adequately reflect the underlying indicator values. Redundancy should be avoided in the framework because if two indicators are collinear, this may amount to double counting (and therefore over-weighting) the same phenomenon.

#### 4.1.1 Correlation analysis between indicators and aggregates

The exploration of correlations among indicators in the same sub-pillar shows that most of the sub-pillars are statistically consistent especially with very high but not excessive correlations. Only two relevant exceptions are found in pillar 4 related to Impact.

In sub-pillar 4.2 quality of life, the correlation between indicator 54, Income inequality, and 53, freedom to make choices, is very low (0.13). Both indicators show good correlations with the other indicators in the sub-pillar, so there is no absolute evidence of incoherence. The best practice in this case could be the monitoring of these indicators, especially ind. 54 because of its lower coverage (9% of missing values). In sub-pillar 4.3, SDG contribution, indicator 59 shows no correlation with indicators 57 and 58. This may depend on the intrinsic meaning of the indicators, representing different goals, respectively Affordable and Clean Energy (59), Quality Education (57), and Gender Equality (58). In general, indicator 59 is poorly correlate with all the elements of the sub-pillar. This behaviour of Ind. 59 makes, from a statistical point of view, sub-pillar 4.3 weaker than the others included in the framework.

In sub-pillar 3.2 regulation, the correlation between indicators 41 privacy protection, and 39 legal framework adaptability to emerging technologies is low (0.21). It may be important recalling that indicator 41 also suffers from availability problems. This result may not be expected because both indicators seem to be very close from a conceptual point of view. Developers may consider the improvement of the coverage in indicator 41 as a priority, or alternatively consider excluding it. In sub-pillar 3.3, inclusion, indicator 46 that measure rural gap is not strongly correlated with indicators 42, and 45 gender gap. Whilst the level of correlation is below the threshold of 0.30, this is hardly a severe problem. The suggestion is to keep a special attention for the way gaps have been calculated.

The exploration of correlation coefficients between indicators and their corresponding sub-pillar shows that all correlations are significant and positive. All the correlations are usually very high, some of them even higher than 0.92 which sometime represents an over-representation of the element in the aggregate. Most indicators are also very

<sup>3</sup> OECD/EC JRC (Organisation for Economic Co-operation and Development/European Commission, Joint Research Centre). 2008. Handbook on Constructing Composite Indicators: Methodology and User Guide. Paris: OECD.

highly correlated with other sub-pillars and pillars. From a correlation point of view, many of them could be included in several sub-pillars and pillars. There are hardly any indicators with low correlations. The lowest correlation of an indicators with its sub-pillar is 0.50 which is acceptable. It is found between indicator 59, SDG7 affordable clean energy and its sub-pillar 4.3, SDG contribution. The main source of concern in the statistical framework is represented by the risk of redundancy, suggested by the numerous indicators with correlation over 0.92. This kind of result does not represent an error per-se but may suggest the presence of redundant elements in the structure. So, it suggests the option of simplification and reduction of the index.

Correlations of indicators with pillars and overall index are in general very high, especially in the first two pillars (**Table2**). Some indicators, although significant, are associated to the overall index in a lower extend than the majority of the indicators (between 0.4 and 0.5). That is the

case of several indicators in pillars 3 such as indicator 38, ICT regulatory environment, indicator 41, privacy protection and indicator 46, rural gap. Similarly, in pillar 4 indicator 48, high-tech exports, and indicators, 53, and 54, freedom to make choices, income inequality respectively have lower, but still significant, correlation with its pillar and the overall index than most of the indicators. In the case of Indicator 59 correlations with its pillar (4. Impact) and the overall NRI, are 0.34 and 0.29 respectively (table 3). Which implies that indicator 59 is not contributing to the overall index in a significant way.

Few indicators display very high correlation with the overall index and tend to dominate it, having correlation higher than 0.91. This is the case of indicators 11, Apps development and 12, adoption of emerging technologies in pillar 1; 33, secure internet and 44, availability of internet content in pillar 2; and 36 internet shopping in pillar 3.

**TABLE 2. CORRELATIONS BETWEEN INDICATORS, PILLARS AND OVERALL INDEX.**

Indicator name		1. Technology	2. People	3. Governance	4. Impact	NRI
Mobile tariffs	ind.01	0.78	0.78	0.78	0.76	0.80
Handset prices	ind.02	0.84	0.81	0.81	0.81	0.84
Internet access	ind.03	0.86	0.89	0.84	0.82	0.87
4G mobile network coverage	ind.04	0.73	0.75	0.71	0.70	0.74
Fixed-broadband subscriptions	ind.05	0.81	0.78	0.79	0.76	0.80
International Internet bandwidth	ind.06	0.65	0.66	0.64	0.65	0.67
Internet access in schools	ind.07	0.83	0.82	0.80	0.78	0.83
GitHub commits	ind.08	0.85	0.74	0.79	0.77	0.81
Wikipedia edits	ind.09	0.87	0.85	0.82	0.84	0.87
Internet domain registrations	ind.10	0.83	0.70	0.74	0.73	0.77
Mobile apps development	ind.11	<b>0.92</b>	0.91	0.88	0.89	<b>0.92</b>
Adoption of emerging technologies	ind.12	<b>0.91</b>	0.90	0.87	0.87	<b>0.92</b>
Investment in emerging technologies	ind.13	0.81	0.76	0.75	0.76	0.79
ICT PCT patent applications	ind.14	0.89	0.86	0.81	0.85	0.88
Computer software spending	ind.15	0.72	0.63	0.64	0.65	0.68
Robot density	ind.16	0.71	0.70	0.64	0.72	0.72
Internet users	ind.17	0.84	0.89	0.82	0.84	0.87
Active mobile-broadband subscriptions	ind.18	0.73	0.80	0.74	0.74	0.77
Use of virtual social networks	ind.19	0.70	0.77	0.68	0.76	0.74
Tertiary enrollment	ind.20	0.74	0.82	0.76	0.74	0.78
Adult literacy rate	ind.21	0.68	0.72	0.63	0.67	0.70

ICT skills	ind.22	0.82	0.83	0.76	0.79	0.82
Firms with website	ind.23	0.79	0.83	0.77	0.78	0.81
Ease of doing business	ind.24	0.79	0.82	0.83	0.75	0.82
Professionals	ind.25	0.84	0.82	0.80	0.79	0.83
Technicians and associate professionals	ind.26	0.82	0.82	0.80	0.78	0.83
Business use of digital tools	ind.27	0.84	0.88	0.85	0.80	0.87
R&D expenditure by businesses	ind.28	0.72	0.75	0.67	0.71	0.73
Government online services	ind.29	0.76	0.83	0.82	0.76	0.81
Publication and use of open data	ind.30	0.78	0.80	0.79	0.77	0.81
Government promotion of investment in emerging technologies	ind.31	0.76	0.78	0.71	0.74	0.77
R&D expenditure by governments and higher education	ind.32	0.68	0.68	0.67	0.60	0.68
Secure Internet servers	ind.33	0.91	0.89	0.90	0.86	0.91
Cybersecurity	ind.34	0.75	0.80	0.83	0.71	0.79
Online access to financial account	ind.35	0.72	0.70	0.79	0.65	0.74
Internet shopping	ind.36	0.91	0.87	0.91	0.87	0.92
Regulatory quality	ind.37	0.90	0.85	0.90	0.85	0.90
ICT regulatory environment	ind.38	0.48	0.47	0.60	0.43	0.51
Legal framework's adaptability to emerging technologies	ind.39	0.90	0.89	0.86	0.85	0.90
e-commerce legislation	ind.40	0.49	0.48	0.58	0.55	0.54
Privacy protection by law content	ind.41	0.37	0.34	0.49	0.38	0.41
E-Participation	ind.42	0.74	0.81	0.80	0.75	0.80
Socioeconomic gap in use of digital payments	ind.43	0.72	0.70	0.81	0.67	0.75
Availability of local online content	ind.44	0.90	0.91	0.88	0.89	0.92
Gender gap in Internet use	ind.45	0.48	0.51	0.56	0.55	0.54
Rural gap in use of digital payments	ind.46	0.44	0.43	0.53	0.41	0.46
Medium and high-tech industry	ind.47	0.70	0.71	0.69	0.73	0.73
High-tech exports	ind.48	0.40	0.39	0.34	0.51	0.41
PCT patent applications	ind.49	0.75	0.75	0.67	0.74	0.75
Labor productivity per employee	ind.50	0.90	0.85	0.85	0.86	0.89
Prevalence of gig economy	ind.51	0.70	0.70	0.66	0.68	0.70
Happiness	ind.52	0.78	0.75	0.77	0.83	0.80
Freedom to make life choices	ind.53	0.47	0.45	0.49	0.57	0.50
Income inequality	ind.54	0.49	0.48	0.45	0.53	0.50
Healthy life expectancy at birth	ind.55	0.82	0.85	0.81	0.88	0.86
SDG 3: Good Health and Well-Being	ind.56	0.81	0.86	0.79	0.84	0.85
SDG 4: Quality Education	ind.57	0.79	0.74	0.79	0.79	0.81
SDG 5: Gender Equality	ind.58	0.49	0.53	0.55	0.56	0.54
SDG 7: Affordable and Clean Energy	ind.59	0.29	0.28	0.25	0.34	0.29
SDG 11: Sustainable Cities and Communities	ind.60	0.78	0.74	0.75	0.79	0.78

Numbers represent the Pearson correlation coefficients. Good correlations (i.e. Pearson correlation coefficients greater than 0.30 and lower than 0.92) are written in black. Correlations with low values (between -0.30 and 0.30) are written in **grey**. Correlations at risk of redundancy (here >0.91) are written in **green**. Correlations with meaningful negative value (here <-0.30) are written in **red**. Source: Elaborated by European Commission's Joint Research Centre, 2020.

#### 4.1.2 Correlation analysis between sub-pillars, pillars and index

The values in **Table 3** represent the correlation between the aggregates. This level is the most important as it represents the consistency of the general concepts. All pillars appear consistent, with the sub-pillars being well correlated with each other. Correlations between sub-pillars and pillars and the index show again that the NRI has a strong correlation structure being too high correlations the main concern.

First, some sub-pillars dominate their pillar. That is the case of sub-pillar 1.2 Content and pillar 1 (0.95), sub-pillar 2.2 business (0.94) and pillar 2, and 3.1 trust and pillar 3 (0.96). However, also the other sub-pillars and pillars have a high correlation. The highest aggregation step, from pillars to NRI, could be the main focus for future development of the index.

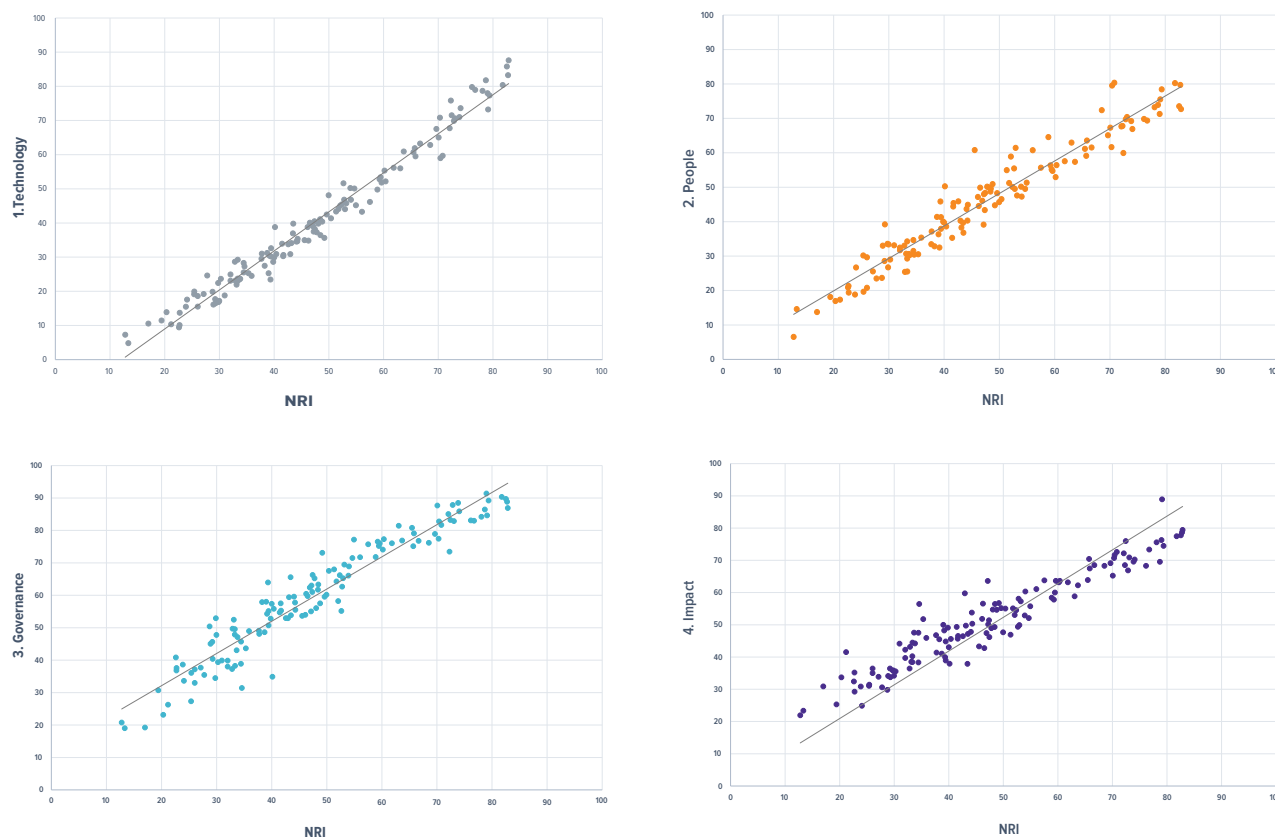
High statistical reliability among the main components can be the result of redundancy of information. In overall, NRI indicators, pillars and sub-pillars seem to be measuring similar phenomena. In **Figure 1** the relation between pillars and the index is visualised. The structure of the NRI Index allows for a dual narrative. On the one hand, it's a strong index in terms of statistical consistency that shows that ICT deployment is a multifaceted phenomenon where technology, users and several aspects of ICT regulation go hand in hand, especially in developed economies with high quality of life. On the other hand, taking into account several generally accepted problematics of ICT deployment, the picture may reflect the repetition of some concepts and even double counting of them. Possible suggestion for the future may be centred on the exploration of new indicators capturing vaster and more specific aspects of ICT deployment aspects. For instance, Artificial intelligence transparency, data portability, data sharing, and anti-trust concerns digital economy paradoxes.

**TABLE 3. CORRELATIONS BETWEEN SUB-PILLARS, PILLARS AND OVERALL INDEX.**

Indicator name		1. Technology	2. People	3. Governance	4. Impact	NRI
1.1 Access	sp.01	0.92	0.92	0.89	0.88	0.93
1.2 Content	sp.02	0.95	0.88	0.88	0.88	0.92
1.3 Future Technology	sp.03	0.86	0.78	0.78	0.81	0.83
2.1 Individuals	sp.04	0.82	0.90	0.81	0.84	0.86
2.2 Businesses	sp.05	0.91	0.94	0.89	0.86	0.92
2.3 Governments	sp.06	0.89	0.92	0.89	0.86	0.92
3.1 Trust	sp.07	0.92	0.91	0.96	0.88	0.94
3.2 Regulation	sp.08	0.84	0.81	0.90	0.82	0.87
3.3 Inclusion	sp.09	0.86	0.88	0.94	0.84	0.91
4.1 Economy	sp.10	0.85	0.82	0.78	0.87	0.85
4.2 Quality of life	sp.11	0.83	0.83	0.82	0.91	0.87
4.3 SDG Contribution	sp.12	0.82	0.81	0.81	0.87	0.85
1. Technology	p.01	1.00				0.99
2. People	p.02	0.95	1.00			0.97
3. Governance	p.03	0.94	0.93	1.00		0.96
4. Impact	p.04	0.94	0.92	0.91	1.00	0.95

Numbers represent the Pearson correlation coefficients. Good correlations (i.e. Pearson correlation coefficients greater than 0.30 and lower than 0.92) are written in **black**. Correlations with low values (between -0.30 and 0.30) are written in **grey**. Correlations at risk of redundancy (here >0.91) are written in **green**. Correlations with meaningful negative value (here -0.30) are written in **red**. Source: Elaborated by European Commission's Joint Research Centre, 2020.

FIGURE 1. RELATIONSHIP BETWEEN THE PILLARS AND THE NRI.



#### 4.2 ADDED VALUE OF THE NETWORK READINESS INDEX

The high statistical reliability and coherence of an Index may sometime determine a partial overlap among the concepts represented by the pillars. From 12% to 22% of the countries included in the index, the NRI ranking and the pillar's rankings differ by 10 positions or more (see Table 4). This suggests that the NRI ranking highlights aspects

of countries' network readiness that do not emerge by looking into the four pillars separately, but only for a minority of countries. This result suggests a strong concordance among the aggregates, and implies the presence of room for simplification. In such a situation, the developers may consider excluding some elements of the index, and hence improve readability, without jeopardise the integrity of the pillars and overall Index.

TABLE 4. DISTRIBUTION OF DIFFERENCES BETWEEN PILLARS AND NRI RANKINGS

Shift respect to NRI	Technology	People	Governance	Impact
More than 30 positions	2%	2%	7%	8%
11 to 20 positions	10%	16%	13%	14%
More than 10 positions	12%	18%	20%	22%
6 to 10 positions	25%	24%	26%	27%
Up to 5 positions	57%	51%	48%	41%
0 positions	6%	7%	6%	10%

Source: European Commission's Joint Research Centre, 2020.



## 5. Impact of modelling assumptions on the NRI results

A fundamental step in the statistical analysis of a composite indicator is to assess the effect of different modelling assumptions on the scores and country rankings. Despite the efforts at the development process, there is an unavoidable subjectivity (or uncertainty) in the resulting choices. This subjectivity can be explored by comparing the results obtained under different – alternative – assumptions.

The literature on this topic<sup>4</sup> suggests to assess the robustness of the index by means of a Monte Carlo simulation and by applying a multi-modelling approach, assuming ‘error free’ data as eventual errors have already been corrected in the preliminary stage of the index construction.

The NRI 2020, as most composite indicators, is the outcome of several choices concerning, among other things, the underlying theoretical framework, the indicators selected, the normalisation method, the weights assigned, and the aggregation method. Some of these choices may be based on expert opinion or other considerations, driven by statistical analysis or by the need to ease communication and draw attention to specific issues.

This section aims to test the impact of varying some of these assumptions within a range of plausible alternatives in an uncertainty analysis. The objective is therefore to try to quantify the uncertainty in the ranks of the NRI 2020, which can demonstrate the extent to which countries can be differentiated by their scores.

The modelling issues considered in the robustness assessment of the NRI 2020 are the aggregation formula, method of missing data imputation and pillars’ weights.

**Imputation of missing values.** The NRI development team, for transparency and replicability, opted not to estimate the missing data. The ‘no imputation’ choice, which is common

in similar contexts, might encourage countries not to report low data values. The consequence of the ‘no imputation’ choice in an arithmetic average is that it is equivalent to replacing an indicator’s missing value for a given country with the respective mean of the other indicators that are being aggregated. Hence, the available data (indicators) in the incomplete pillar may dominate, sometimes biasing the ranks up or down. To test the impact of this assumption, the JRC team estimated missing data using the K-Nearest Neighbour (kNN) algorithm<sup>5</sup>.

**Aggregation formula.** For this edition of the index, the NRI team opted for the arithmetic averaging of the four pillars, which implies a strong compensability allowing for an outstanding performance in some aspects to balance the weaknesses in others and vice-versa. This approach puts at the same level countries with both high and low results with more “balanced” countries showing average results. To assess the impact of this choice, the JRC included in the analysis a comparison with the geometric mean. The comparison of the two aggregation approaches should be able to highlight countries with unbalanced profiles, since the geometric mean tends to penalize low values, especially in the presence of other values that are not so low (unbalanced profiles).

**Weights.** The simulation comprised 1,000 runs of different set of weights for the pillars constituting the Index. In the 1,000 runs, the weights are the result of a random extraction based on uniform continuous distributions centred in the reference value (1/4) plus or minus 25% of this value. All simulated 1,000 runs are then used in all the scenaria determined by the other assumptions.

As summarised in **Table 5**, four models were tested comparing the different aggregation formulas, the different imputation methods and applying the 1,000 runs of different sets of weights resulting in a total of 4,000 runs of simulations.

<sup>4</sup> Saisana, M., B. D’Hombres, and A. Saltelli. 2011. ‘Rickety Numbers: Volatility of University Rankings and Policy Implications’. *Research Policy* 40: 165–77.

Saisana, M., A. Saltelli, and S. Tarantola. 2005. ‘Uncertainty and Sensitivity Analysis Techniques as Tools for the Analysis and Validation of Composite Indicators’. *Journal of the Royal Statistical Society A* 168 (2): 307–23.

<sup>5</sup> In the kNN algorithm, the missing value of a country is imputed as the weighted average of the values of the k closest countries. In the estimations reported here k = 5, and the closeness depends on the variables that are observed within the same sub-pillar of the missing value.

**TABLE 5. ALTERNATIVE ASSUMPTIONS CONSIDERED IN THE ANALYSIS.**

	Reference	Alternative
<b>I. Imputation method</b>	No Imputation	K- Nearest Neighbour
<b>II. Aggregation formula</b>	Arithmetic average	Geometric average
<b>III. Weighting system</b>	Equal weights	Varying
Technology	0,25	U [ 0.1875; 0.3125 ]
People	0,25	U [ 0.1875; 0.3125 ]
Governance	0,25	U [ 0.1875; 0.3125 ]
Impact	0,25	U [ 0.1875; 0.3125 ]

Source: European Commission, Joint Research Centre, 2020.

The main results obtained from the robustness analysis are shown in **Figure 2**, with median ranks and 90% intervals computed across the 4,000 Monte Carlo simulations. Countries are ordered from best to worst according to their NRI rank where the blue dots represent the median rank among the simulations. For each country, the error bars represent the 90% interval across all simulations, that is, from the 5th to the 95th percentile of the countries' rank among all the simulations.

NRI ranks are shown to be representative of a plurality of scenarios and extremely robust to changes in the assumptions. Considering the median rank across the simulated scenarios, as being representative of these scenarios, then the fact that the NRI rank is close to the median rank (less than five positions away) for 100% of the countries suggests that NRI is a suitable and stable summary measure. Furthermore, the majority of the countries' ranks hardly vary across simulations (less than 10 positions for all

countries but Laos). These results imply that the NRI ranks are robust to changes in the pillars' weights, aggregation formula and imputation of data.

Only Laos is showing a simulated interval larger than 10 positions. Considering the correlation structure among pillars and Index it is not surprising to have very stable intervals for all countries. The source of the uncertainty of Laos is investigated in the sensitivity analysis.

Overall, country ranks in NRI are highly robust to changes for all the countries considered, enough to allow for meaningful inferences to be drawn. For full transparency and information, **Table 6** reports the NRI country ranks together with the simulated intervals (central 90 percentiles observed among the 4,000 scenarios) in order to better appreciate the robustness of these ranks to the computation methodology, and to ease the analysis of the behaviour of specific countries respect to perturbations.

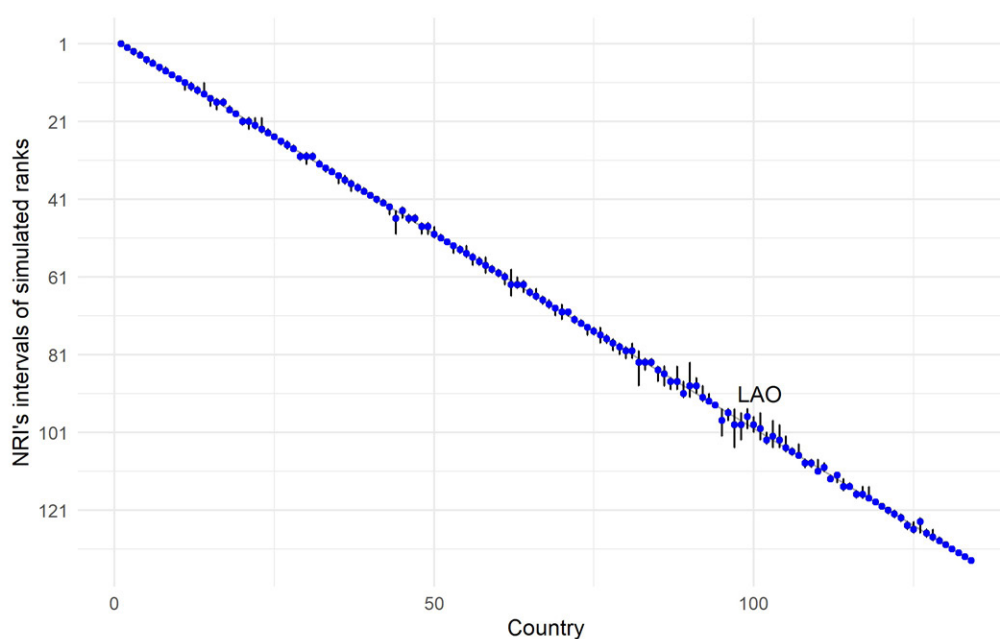
**FIGURE 2. ROBUSTNESS ANALYSIS ON RANKS (NRI RANK VS MEDIAN RANK AND 90% INTERVALS).**

TABLE 6. NRI RANK AND 90% INTERVAL OF ALL COUNTRIES.

Country	NRI ranks	Interval	Country	NRI ranks	Interval
Sweden	1	[1-1]	Croatia	43	[43-45]
Denmark	2	[2-2]	Oman	44	[44-50]
Singapore	3	[3-4]	Greece	45	[43-46]
Netherlands	4	[3-4]	Bulgaria	46	[45-47]
Switzerland	5	[5-6]	Uruguay	47	[45-47]
Finland	6	[5-6]	Russia	48	[47-50]
Norway	7	[7-8]	Romania	49	[47-50]
United States	8	[7-8]	Chile	50	[48-51]
Germany	9	[9-9]	Thailand	51	[50-51]
United Kingdom	10	[10-10]	Serbia	52	[52-52]
Luxembourg	11	[11-13]	Kuwait	53	[53-55]
Australia	12	[11-13]	Costa Rica	54	[53-55]
Canada	13	[12-14]	Armenia	55	[53-56]
South Korea	14	[11-14]	Kazakhstan	56	[55-58]
Japan	15	[15-17]	Turkey	57	[56-58]
New Zealand	16	[15-18]	Montenegro	58	[56-60]
France	17	[15-17]	Brazil	59	[58-60]
Austria	18	[17-18]	Argentina	60	[59-61]
Ireland	19	[19-19]	Mauritius	61	[60-63]
Belgium	20	[20-22]	Vietnam	62	[59-66]
Iceland	21	[20-23]	Mexico	63	[61-64]
Hong Kong (China)	22	[20-23]	Ukraine	64	[62-65]
Estonia	23	[20-24]	Belarus	65	[64-66]
Israel	24	[23-24]	Azerbaijan	66	[64-67]
Spain	25	[25-25]	North Macedonia	67	[66-68]
Malta	26	[26-27]	Georgia	68	[67-69]
Slovenia	27	[26-28]	Jordan	69	[69-71]
Czech Republic	28	[27-28]	Jamaica	70	[68-72]
Lithuania	29	[29-31]	Moldova	71	[70-71]
United Arab Emirates	30	[29-32]	Colombia	72	[71-73]
Portugal	31	[29-31]	Indonesia	73	[72-73]
Italy	32	[31-32]	Philippines	74	[74-76]
Poland	33	[33-34]	Dominican Republic	75	[74-76]
Malaysia	34	[33-34]	South Africa	76	[74-78]
Slovakia	35	[35-37]	Panama	77	[76-78]
Cyprus	36	[35-37]	Albania	78	[77-80]
Latvia	37	[36-39]	Iran	79	[78-81]
Qatar	38	[37-39]	Peru	80	[79-82]
Hungary	39	[38-39]	Trinidad and Tobago	81	[78-82]
China	40	[40-40]	Kenya	82	[80-89]
Saudi Arabia	41	[41-42]	Sri Lanka	83	[82-85]
Bahrain	42	[41-42]	Egypt	84	[82-84]

Country	NRI ranks	Interval
Ecuador	85	[84-88]
Cabo Verde	86	[84-89]
Bosnia and Herzegovina	87	[87-90]
India	88	[84-90]
Mongolia	89	[88-92]
Lebanon	90	[83-92]
Tunisia	91	[87-91]
Paraguay	92	[89-93]
Morocco	93	[91-93]
Kyrgyzstan	94	[94-94]
El Salvador	95	[95-102]
Rwanda	96	[95-98]
Laos	97	[95-105]
Ghana	98	[96-103]
Botswana	99	[95-100]
Senegal	100	[97-101]
Bolivia	101	[96-103]
Honduras	102	[101-104]
Namibia	103	[98-105]
Cambodia	104	[99-105]
Bangladesh	105	[102-106]
Guatemala	106	[105-107]
Algeria	107	[104-107]
Venezuela	108	[108-110]
Tajikistan	109	[108-110]

Country	NRI ranks	Interval
Tanzania	110	[108-111]
Pakistan	111	[109-111]
Benin	112	[112-113]
Nepal	113	[112-114]
Uganda	114	[113-116]
Côte d'Ivoire	115	[114-115]
Zambia	116	[116-118]
Nigeria	117	[115-118]
Cameroon	118	[115-118]
Gambia	119	[119-119]
Guinea	120	[120-120]
Lesotho	121	[121-122]
Eswatini	122	[121-123]
Mali	123	[122-124]
Madagascar	124	[124-126]
Burkina Faso	125	[124-127]
Zimbabwe	126	[123-127]
Malawi	127	[126-128]
Mozambique	128	[126-129]
Ethiopia	129	[128-129]
Burundi	130	[130-130]
Angola	131	[131-131]
Yemen	132	[132-132]
Democratic Republic of the Congo	133	[133-133]
Chad	134	[134-134]

**Source:** European Commission, Joint Research Centre, 2020.

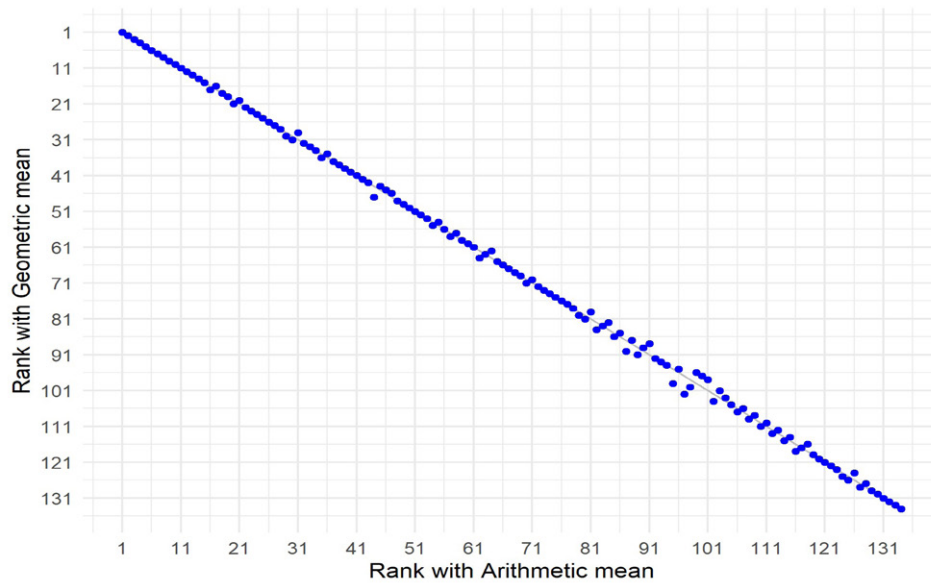
The uncertainty analysis is also complemented by a sensitivity exercise, in which the NRI ranking is compared with the rankings resulting from specific changes in the modelling assumptions separately so to better identify sources of uncertainty.

**Figure 3** compares the ranks derived from NRI 2020 with the ranks obtained by changing the aggregation procedure from arithmetic to geometric mean. This comparison allows us to inquire whether the variability in the rank intervals is originating from the modelling assumptions underlying the aggregation procedure or by the weights' perturbation. When countries are placed under the main diagonal their values are worse in rank positions when computed with the geometric mean. This is probably the case of countries penalised by the geometric mean because of their unbalanced profiles. In any case, the aggregation formula is

not a very relevant assumption in the NRI 2020. This result is mainly determined by the very strong correlation structure of the Index described in section 4.1 above. Basically, when the pillars are so correlated it is difficult to have countries with unbalanced values, hence the result obtained from the arithmetic mean and the geometric mean do not differ very much and the later does not penalise any country.

**Figure 4** compares NRI ranks with ranks obtained after imputation of missing data. The differences among the two rankings are not significantly large. Only Laos and Oman show a difference of ranks above the ten positions, probably due to their low data coverage (respectively 78.3% and 81.7% of indicators available). Other countries with similar data coverage are not meaningfully affected by use of the KNN method as opposed to no imputation.

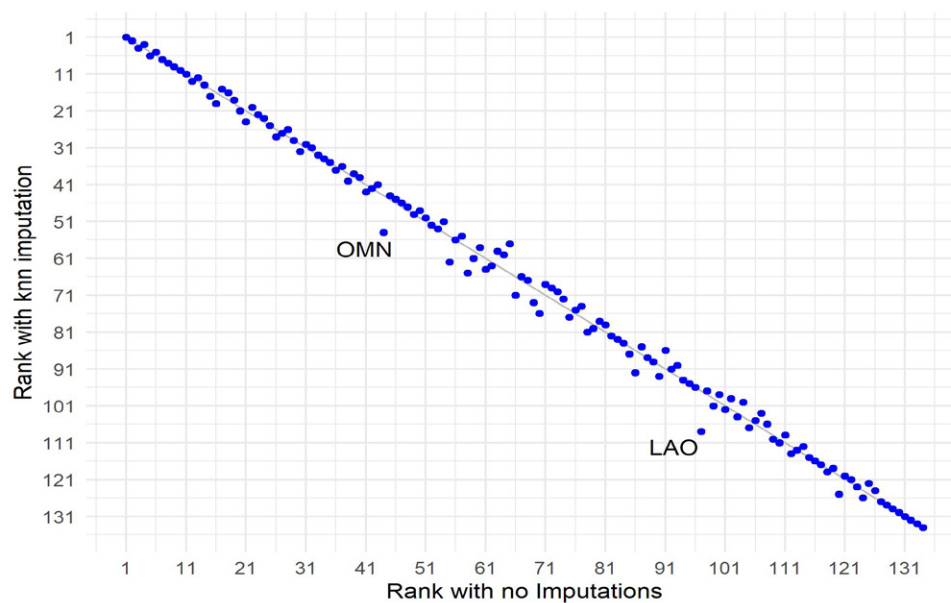
FIGURE 3. SENSITIVITY ANALYSIS: COMPARISON OF RANKS ACCORDING TO ARITHMETIC AND GEOMETRIC MEAN.



**Source:** European Commission, Joint Research Centre, 2020.

**Note:** countries are labelled when they show a shift of at least 10 positions between the two aggregation formulas

FIGURE 4. SENSITIVITY ANALYSIS: COMPARISON OF RANKS WITH AND WITHOUT IMPUTATION OF MISSING DATA.



**Source:** European Commission, Joint Research Centre, 2020.

**Note:** countries are labelled when they show a shift of at least 10 positions between the two treatments of missing data.

The uncertainty analysis and sensitivity analysis portray the NRI as a deeply stable index. This result allows for inference on the ranks and suggests also the presence of similar concepts across the pillars. Thanks to the correlation structure of the index, the developers could consider

simplifying the framework excluding some indicators, often described by the other indicators of the same sub-pillars and pillars, without any worries about the coherence of the index.

## 6. Conclusions

The JRC statistical audit delves into the extensive work carried out by the developers of the NRI 2020 with the aim of suggesting improvements in terms of data characteristics, structure and methods used. The analysis aims to ensure the transparency of the index methodology and the reliability of the results.

The NRI 2020 is a strong index in terms of conceptual and statistical consistency. It shows that ICT deployment is a multifaceted phenomenon where technology, users and several aspects of ICT regulation go hand in hand.

The data coverage of the framework is good. Most indicators contain no or very few missing values. Some indicators, 8 out of 60, may be candidates for special attention as their percentage of missing values is above what is normally recommended. Developers decided not to impute them. The sensitivity analyses showed how such this assumption do not significantly affect results with respect to an alternative non-parametric imputation method (k-Nearest Neighbour).

The index is statistically well balanced with respect to its indicators, sub-pillars and pillars. Correlations between each pillar and the respective sub-pillar are mostly significant and positive. Most of the indicators are meaningfully correlated with the index and relative pillars. The possible presence of redundancy is the only concern in the analysis of the NRI. The suggestion is to use the very stable and correlated structure of the index to explore and open to some even more specific aspects of the network economy.

Treatment of outliers conducted by the NRI developers is appropriate. Finally, assumptions regarding aggregation method and weights do not significantly affect results.

JRC analysed a series of different choices that are made during the index construction. The results of the uncertainty analysis reveal that NRI is a robust summary measure in general, the present audit confirms that the NRI 2020 Index is reliable, with a statistically coherent framework and acknowledges the important efforts done by the developers' team. The Index can serve as a tool to provide insights for measuring the ICT deployment issues.

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## About STL

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## About Portulans Institute

Co-founded in 2019 by Soumitra Dutta and Bruno Lanvin, the Portulans Institute (PI) is an independent nonprofit, nonpartisan research and educational institute based in Washington DC.

### OUR MISSION

Portulans Institute's areas of expertise include technology competitiveness, innovation readiness, and people and global talent. Our mission includes:

- To develop cross-community knowledge and dialogue on how people, technology, and innovation contribute to sustainable and inclusive growth.
- To inform policymakers by producing independent, data-based research.
- To collaborate with private sector leaders in driving a business agenda that invests in people, technology and innovation.
- To host and co-organize events and conferences on the above issues affecting human-centric sustainable economic prosperity.

### WHERE OUR NAME AND LOGO COME FROM

Portulans (or portolans) are ancient nautical maps, first made in the 13th century in the Mediterranean basin and later expanded to include other regions. The word portolan comes from the Italian portulano, meaning "related to ports or harbors," and which since at least the 17th century designates "a collection of sailing directions." In these maps, only a few harbors were visible, and much of the coastlines were hypothetical.

This is how we see our mission: In an uncertain world, much is yet to be explored, and many opportunities have yet to be identified. Like the navigators of the 16th century, modern leaders have to make decisions on the basis of imperfect information and incomplete maps.

The Portulans Institute aims to provide them with the best available data and analysis, and the directions that they need. This is why our logo combines a compass and pi, which is not only a powerful number found in geometry, algebra, physics, and arts, but also an infinite series of digits, with no pre-written rule telling us what the next one might be.

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and [www.networkreadinessindex.org](http://www.networkreadinessindex.org).

## The NRI team



### Dr. Michael Bratt

Michael is an economist and independent consultant. Currently, he leads the analytical work of the Global Talent Competitiveness Index published by INSEAD, where he is responsible for the calculation and analysis of country and city rankings. Prior to this role, he was a consultant and associate economic affairs officer at the United Nations Conference on Trade and Development (UNCTAD), working primarily on issues of trade and development related to the least-developed countries and landlocked developing countries. Other past work experience includes consulting for the World Trade Organization and working as an analyst at the Swedish National Board of Trade, CUTS International, and Mintel International. He holds a Ph.D. in Economics from the University of Geneva and a Master of International Law and Economics from the World Trade Institute (University of Bern).



### Prof. Soumitra Dutta

Soumitra Dutta is a professor of management and the former founding dean of the Cornell SC Johnson College of Business (April 2016 to January 2018). Previously, he was the Anne and Elmer Lindseth Dean of the Samuel Curtis Johnson Graduate School of Management. Prior to coming to Cornell in 2012, he was on the faculty and leadership team of INSEAD, a leading international business school in France and Singapore. He is an authority on technology and innovation policy and is the co-editor and author of The Global Information Technology Report, published by the World Economic Forum, and The Global Innovation Index, published by the World Intellectual Property Organization—two influential reports in technology and innovation policy.

Mr. Dutta is on the global boards of Sodexo and Dassault Systèmes. He is also a member of the Shareholder Council of Chicago-based ZS Associates. In addition, he is a member of the advisory boards of several business schools including HEC, Montreal; ESADE, Barcelona; and ESCP, Paris. He has co-founded two firms, including Fisheye Analytics, which the WPP Group acquired. He is currently chair of the board of directors of the Global Business School Network, a Washington D.C.-based not-for-profit organization focused on improving management capacity in emerging markets.

He was previously the chair of AACSB, the leading global body for the accreditation of business schools. Mr. Dutta is a member of the Davos Circle, an association of long-time participants in the World Economic Forum Annual Meeting in Davos, and has engaged in a number of multi-stakeholder initiatives to shape global, regional, and industry agendas. He is also currently the co-chair of the World Economic Forum's Global Future Council on Innovation Ecosystems. Mr. Dutta received a Bachelor of Technology in Electrical Engineering and Computer Science from the Indian Institute of Technology (IIT), New Delhi, a Master of Science in both business administration and computer science, and a PhD in computer science from the University of California at Berkeley. In 2017, he received the Distinguished Alumnus Award from his alma mater, IIT Delhi.



### Anna Henry

Anna is a senior project manager and independent consultant. Currently, she leads various projects on inclusion and prosperity and on the Global Talent Competitiveness Index (GTCI, published by INSEAD), holding responsibilities such as the building of the report, event management, media relations, and dissemination. Prior to this role, she was a team coordinator at Procter & Gamble (P&G) and a project coordinator at the World Economic Forum (WEF), working primarily on digital economy and multilateral projects on Internet and connectivity (dealing with academia, governments, public and private organizations, and organizing world-class conferences in Davos).

She holds an MBA from the University of Geneva and in 2019, co-founded an LLC called PminD, collaborating on various projects related to the digital architecture of smart cities and innovation.

Anna has lived in nine countries and is fluent in four languages. Her volunteer experience includes the New Zealand winter games and education in Ecuador. In her free time, she reads extensively and travels the world.



### Dr. Bruno Lanvin

Bruno Lanvin is INSEAD's executive director for global indices. He is also the founder and CEO of DL Partners SA, a Geneva-based consultancy, and the president of the Smart City Observatory.

From 2007 to 2015, he was the executive director of INSEAD's eLab, managing INSEAD's teams in Paris, Singapore, and Abu Dhabi, and then executive director for INSEAD's European Competitiveness Initiative (IECI). From 2000 to 2007, Dr. Lanvin worked for the World Bank, where he was inter alia senior advisor for e-strategies and regional coordinator in Europe and Central Asia for information and communication technology (ICT) and e-government issues. He also headed the Capacity Building Practice of the World Bank's Global ICT Department and was chairman of the bank's e-Thematic Group.

From June 2001 to December 2003, he was the manager of the Information for Development Program (infoDev) at the World Bank. In 2000, Dr. Lanvin was appointed executive secretary of the G8-DOT Force. Until then, he was head of Electronic Commerce in the United Nations Conference on Trade and Development (UNCTAD) in Geneva, and occupied various senior positions including chief of the Cabinet of the Director General of the United Nations in New York, head of strategic planning, and later chief of the SME Trade Competitiveness Unit of UNCTAD/SITE. He was the main drafter, team leader, and editor of *Building Confidence: Electronic Commerce and Development*, published in January 2000.

Since 2002, he has been co-authoring *The Global Information Technology Report* (Cornell University-INSEAD-World Economic Forum), and is currently the co-editor of *The Global Innovation Index Report* (Cornell University-INSEAD-WIPO). In 2013, he created and launched the first edition of the Global Talent Competitiveness Index (GTCI), and is still the co-editor of this annual report. He holds a Bachelor of Arts in mathematics and physics from the University of Valenciennes, France, a Master's of Business Administration from Ecole des Hautes Etudes Commerciales (HEC) in Paris, France, a PhD in economics from the University of Paris I (La Sorbonne) in France, and is an alumnus of INSEAD (IDP-C).



### Joseph Naim

Joseph is currently a Master of Global Affairs candidate at the Munk School of Global Affairs and Public Policy at the University of Toronto. Formerly working in the Federal Government of Canada within the Industrial Security Sector, Joseph recently completed work as a summer intern in Tunis, Tunisia with the international NGO Access Now, where he focused on policy issues dealing with artificial intelligence, content moderation and the overall intersection between human rights and technology. Joseph has also worked as a research assistant at Carleton University studying the health-ethnicity gradient in Canada. He has a bachelor's degree in political science and economics from Carleton University in Ottawa, Canada.



### Carolina Rossini

Carolina Rossini has over 20 years of experience in technology law and policy, including ICT for development, Internet, intellectual property, open innovation, and telecommunications. She is the founding CEO of Portulans Institute, founder of iNova Partners Consulting—assisting non-profits in executing effective and long-term change and impact, and Young Global Leader with the World Economic Forum.

She serves on the advisory board of InternetLab (Brazil), Derechos Digitales (Chile), Lighthouse Collective (USA), Instituto EducaDigital (Brazil) and #IamtheCode (Global).

She is a results-oriented, decisive leader with proven success in policy change and advocacy impact, strategic organizational development and growth, and fundraising. Previously based in Washington DC, she served as the RightsCon director at Access Now for the Tunisia edition (3,000+ attendants), as a global policy manager for connectivity at Facebook, and as the vice president for international policy at Public Knowledge (PK). While living in San Francisco, she was the international director for the Electronic Frontier Foundation (EFF) and a consultant to Wikimedia Foundation. Previously, while in Boston, she was a fellow at Harvard University's Berkman Klein Center for Internet and Society.

Back in Brazil, where she was born, she was an in-house counsel Telefonica, and a law lecturer at the Center for Technology and Society at Fundação Getulio Vargas (CTS/FGV).

Carolina has an LLM in intellectual property from Boston University (2008), an MA in international economic negotiations (2006) from UNICAMP/UNESP, an MBA from Instituto de Empresas (2004), and a JD from the University of Sao Paulo – USP. (2000)



### Isabella Wilkinson

Isabella Wilkinson is pursuing a master's degree in democracy and governance at Georgetown University (graduating December 2020) with a focus on the intersection of disruptive innovation, emerging technology, and governance (democratic, authoritarian, and everything in between). Wilkinson graduated from the London School of Economics with a bachelor's degree in international relations, history, and chinese, with honors.

Wilkinson is a former researcher for the Marshall Center for Security Studies, where she prepared the research groundwork and helped facilitate the Mediterranean Discourse on Regional Security conference. Additionally, Wilkinson has worked as a researcher for Georgetown University's Government department and the National Endowment for Democracy, focusing broadly on digital democracy.

Wilkinson is a native English speaker and proficient in both French and Mandarin Chinese. In addition to her master's degree, Wilkinson is pursuing certificates in artificial intelligence and Python and has recently gained proficiency in digital mapping.

## Our Technical Advisory Board



### Chris Ferguson

Chris Ferguson was a member of the original senior management team that built the UK's Government Digital Service. In 2011, he was brought into the Cabinet Office to take on the digital identity challenge and created the team that developed GOV.UK Verify. In January 2015, Chris became the GDS director responsible for the digital group comprising GOV.UK, GOV.UK Verify, and the Government-as-a-Platform delivery team. In February 2017, Chris established the National, International & Research Group within GDS. This will focus on how GDS engages and collaborates with the UK's wider public sector, devolved administrations, and partner organizations worldwide. Chris is the chair of the cross-government Digital Leaders network and head of the digital profession within HM Government. Prior to his involvement with the digital transformation of public services, Chris's career mainly focused on diplomacy and security in the UK and overseas.



### John Garrity

John Garrity is an economist, policy advisor, and program manager focusing on digital inclusion through pro-poor information and communications technology (ICT) policy and projects to foster universal Internet access and adoption. Currently he is an independent consultant to public sector and private sector organizations, including Connectivity Capital, a sector-focused investment management firm providing debt capital to Internet Service Providers (ISPs), UNDP as the technical advisor on a national rollout of free public WiFi in Southeast Asia, and with the UN Broadband Commission. Previously, John was the senior connectivity advisor in the Global Development Lab at USAID. Before USAID, John spent 10 years at Cisco, and prior to that, John was in the Corporate Strategy Group at the World Bank and held previous roles at the Federal Trade Commission and in state government. John has co-authored several reports on technology and development and has presented around the world on efforts to close the digital divide.



### Elena Kvochko

Elena Kvochko is Chief Trust Officer working in the field of cybersecurity and started with SAP in 2020. She is a former COO of cybersecurity technologies at Bank of America, CISSP, CEH. She also served as a technology, cybersecurity, and business operations executive. Kvochko is a Certified Information Security Professional (CISSP) and Certified Ethical Hacker (CEH). She was named one of the Top 100 CIOs and is a member of the Wall Street Journal CIO Council. Kvochko was named one of Fortune magazine's Most Powerful Women International, one of the "Leading CIOs Who Happen to Be Female" by CIO Magazine, and Business Role Model of the Year by Women in IT. She is also a published author and an inventor with patents pending in security, privacy, and digital payments technology.



### **Irene Mia**

Dr Mia is an experienced professional (economist by training) with a successful 20 year track-record in economic and policy research and on engaging with policy-makers and senior corporate leaders. Dr Mia has expertise in managing large teams with proven strategic, financial, planning and team building skills. Dr Mia holds a PHD in International Economic and Trade Law from L. Bocconi University and MA in Latin American studies from the Institute for Latin American Studies, London University. Before her recent appointment as Senior Fellow for Latin America at the International Institute for Strategic Studies (IISS), Dr Mia was the Global Editorial Director for Thought Leadership at Economist Group, Economist Intelligence Unit.



### **Andrew Puddephatt**

Andrew is the founder and director of Cedar Partners, a network of individuals working to improve life for all, and the founder and director of Adapt, a new startup helping companies manage user data ethically. Andrew also is the chair of the Internet Watch Foundation, which helps prevent child sex abuse online, board chair of the Board of Global Partners Digital, focusing on human rights implications of Internet policy, and deputy chair of the Sigrid Rausing Trust and management committee member of European Council of Foreign Relations.



### **Michaela Saisana**

Michaela Saisana is acting head of the Monitoring, Indicators and Impact Evaluation Unit, and she also leads the European Commission's Competence Centre on Composite Indicators and Scoreboards (COIN) at the Joint Research Centre in Italy. She has been working in the JRC since 1998, where she was awarded "best young scientist of the year" in 2004 and, along with her team, the "JRC policy impact award" for the Social Scoreboard of the European Pillar of Social Rights in 2018. As a scientist and engineer specializing in process optimization and spatial statistics, she collaborates, by auditing performance indices, with over 150 international organizations and world-class universities, including the United Nations, Transparency International, Oxfam, the World Economic Forum, INSEAD and WIPO. She is the author of about 30 articles in academic journals, 100 working papers, and a co-author of two books: 2008 OECD/JRC Handbook on Composite Indicators and 2008 Global Sensitivity Analysis-The Primer (Wiley).

## Our Advisory Board



### Dr. Hessa Al-Jaber

Dr. Hessa Al-Jaber is the chairperson of Trio Investment, a technology investment company that invests in innovative technology that addresses some of the most pressing health problems in the MENA region. As an expert in technology, media, and telecom practice, her focus is the impact of a digital economy on productivity and competitiveness. Dr. Hessa was the former and the first-ever Minister of Information and Communication Technology in Qatar. Prior to becoming a minister, Dr. Hessa held the position of Secretary General of the Supreme Council of Information and Communication Technology since its inception in 2005. Dr. Al Jaber was a member of the United Nations ITU Broadband Commission for Sustainable Development and a member at the Network of Global Agenda Councils of the World Economic Forum (WEF). Dr. Al Jaber is currently the Chairperson of Qatar Satellite Company, and Malomatia, in addition to being a member of several boards including Volkswagen (AG) Supervisory Board in Germany, Qatar University's Board of Regents, Qatar Museums Authority's Board. Dr. Hessa holds a Bachelor of Science in Engineering from Kuwait University, and a Master's Degree and Ph.D in Computer Science from George Washington University, Washington, DC.



### Dr. Tawfik Jelassi

Tawfik Jelassi is Professor of Strategy and Technology Management at IMD Business School in Lausanne (Switzerland). He is also Co-Director of the "Orchestrating Winning Performance" program in Lausanne, Singapore and Dubai, which is IMD's signature program and its biggest executive education offering (with more than 650 participants enrolled in it annually). Before joining IMD, Dr. Jelassi was Minister of Higher Education, Scientific Research, and Information & Communication Technologies in the post-Arab Spring Tunisian Government, which was mandated to finalize the democratic transition in the country. Dr. Jelassi was Chairman of the Board of Directors of Ooredoo Tunisia, the leading mobile telecom operator in the country. Between 2000 and 2013, he was Professor and Dean of the Business School of Ecole Nationale des Ponts et Chaussées in Paris (the oldest Grande Ecole of France). Prior to that, he was Associate Professor and Coordinator of the Technology Management academic area at INSEAD, Fontainebleau. Dr. Jelassi holds a Ph.D. degree in Management Information Systems (MIS) from the Stern School of Business at New York University (USA).



### Diego Molano

Diego Molano is an international consultant on digital transformation of companies and governments. He was the minister of information and communication technologies (ICT) of Colombia from 2010 to 2015. He transformed his country with his policy plan "Vive Digital," which aims to reduce poverty and create jobs using technology. Mr. Molano has a long career in the technology industry and has had responsibilities in more than 20 countries. He has been a board member of international organizations and corporations in the telecommunications, TV, radio, and postal services sectors. He is currently senior advisor to the Inter-American Development Bank, senior advisor to McKinsey & Co. in Washington DC. Mr. Molano is an electronics engineer and economist from Xavier University in Colombia and holds an MBA from IMD in Switzerland.





## Osman Sultan

Osman Sultan brings 35 years of leadership, rich with achievements in the telecom sector. His vast knowledge and expertise in the field as early as the pre-Internet period placed him as one of the pioneers in Europe, the US, Japan, and the entire MENA region. His distinguished achievements ranked him as one of the most powerful executives in the worldwide telecom industry twice on the “GTBPower100 List” in both 2010 and 2011. Sultan has developed several strategies that helped produce the profound transformations that the telecom and information sectors have been creating in our lives. Sultan has been a board member for various institutions in the telecom industry, technology space, and academic world. incl. the advisory board of the Mohammed bin Rashid School of Communications (MBRSC), the Global Blockchain Advisory Council of the WEF, the Board of Endeavor UAE, and many others.

## About the Network Readiness Index:

The 2020 NRI is the second edition of a renewed NRI model, and it ranks a total of 134 economies based on their performance across 60 variables. This year's edition is grounded on the Portulans Institute-hosted Digital Transformation Dialogue Series, which interviewed high-level experts from across the globe on various aspects of digital transformation—from the role of business and governments to issues of inclusion, and more.

Recognizing the pervasiveness of digital technologies in today's networked world, the index is grounded in four fundamental dimensions: Technology, People, Governance, and Impact. This holistic approach means that the NRI covers issues ranging from future technologies such as AI and the Internet of Things to the role of the digital economy in reaching the Sustainable Development Goals (SDGs).

Origins: The Network Readiness Index (NRI) was first published in 2002 and provided a holistic framework for assessing the multi-faceted impact of ICT on society and the development of nations. Until 2016, the NRI was part of the Global Information Technology Report (GITR) published by the World Economic Forum (WEF), Cornell University, and INSEAD. The NRI anticipated various aspects that would become critical in the following years. Early on, it identified three essential stakeholders for ICT: individuals/society, businesses, and governments, and it included elements of ICT application that were novel for the time.

At a time when the primary concerns in ICT revolved around infrastructure issues, the NRI provided a forward-looking and holistic perspective on the application of ICT within national economies. The NRI rapidly developed into a global benchmark for the application and utilization of ICT. Many economies utilized the NRI to design their ICT strategies, and the NRI was used and frequently quoted by leaders from the public and private sectors.

Over the ensuing two decades, the NRI framework underwent one major revision, which led to an explicit focus on the impact of ICT. Despite the challenges inherent in collecting data from more than 130 economies, the NRI retained its extensive global coverage as the key metric of the use of ICT for development and competitiveness.

This year, the renewed and revised NRI covers more than 130 nations across over 60 variants and is a publication of the Portulans Institute, whose co-founders—Bruno Lanvin and Soumitra Dutta—have also been the co-editors of the GITR in previous years.

All editions of the NRI are available at [www.networkreadinessindex.org](http://www.networkreadinessindex.org)

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