



**PORTULANS**  
— INSTITUTE —

# Network Readiness Around the World

Focus on Taiwan and Uzbekistan

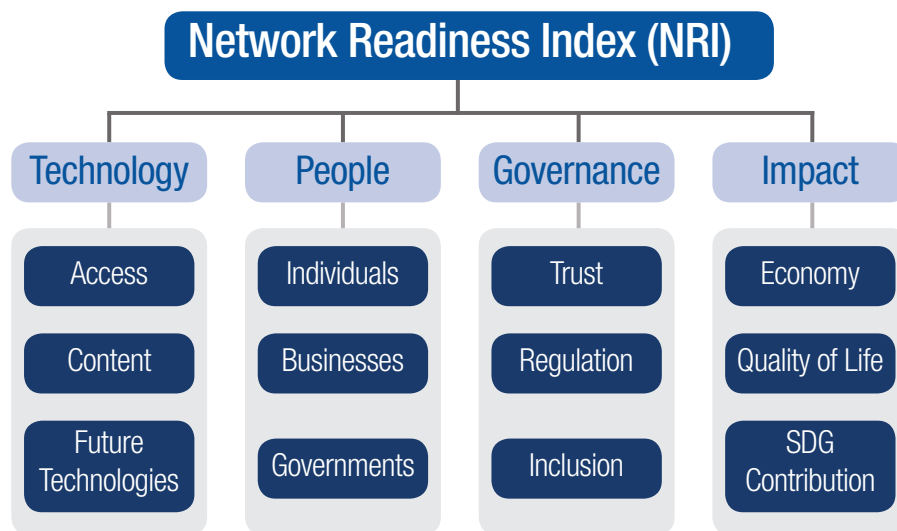
Soumitra Dutta and  
Bruno Lanvin  
Editors

# Focus on Taiwan and Uzbekistan

The Network Readiness Index (NRI) is one of the leading global indices on the application and utilization of information and communication technology (ICT). In its latest version (2019), the NRI Report maps the network-based readiness landscape of 121 economies based on their performances in four different pillars: Technology, People,

Governance, and Impact. Each of these pillars is itself comprised of three sub-pillars (see Figure 1) that have been populated by a total of 62 indicators. Pre-specified threshold values have determined what indicators and economies have been eventually included in the NRI 2019 rankings.

Figure 1: The NRI 2019 model



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 artificial intelligence (AI) and Internet of Things (IoT).

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. Therefore, the People pillar is 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 captures the cultural and legal norms and initiatives that enable readiness. It includes:

- **Regulation:** The extent to which the government promotes participation in the network economy through regulation.
- **Trust:** How safe individuals and firms are in the context of the network economy. This not only relates to actual crime and security, but also to perceptions of safety and privacy.
- **Inclusion:** The digital divides within countries where governance can address issues such as inequality based on gender, disability, or socioeconomic status.

Ultimately, readiness in the network economy is a means to improve the growth and well-being in society and the economy. The Impact pillar—a core one in the NRI—therefore seeks to assess the economic, social, and human impact of participation in the network economy, casting light on the effects of the elements covered by the previous pillars. It covers:

**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.

Two economies that did not meet the thresholds are Taiwan and Uzbekistan. In the case of the former, there was not enough data for the Impact pillar—primarily because of the lack of data collection by international organizations, including the United Nations, a core source of primary data for the NRI. In the latter case, there was a lack of data relating to the Technology pillar. Because each economy therefore has sufficient data for three of the four pillars, a partial assessment of their network readiness can certainly be made. Portulans Institute has thus produced the following two case studies that summarize how Taiwan and Uzbekistan, respectively, perform against the economies that are covered in NRI 2019 in those dimensions where data is available.

**Note:** It should be underlined that the rankings displayed are hypothetical and do not have any bearing on the full rankings of the NRI 2019. Rather, they provide an indication of the network readiness of Taiwan and Uzbekistan, as these are not covered in the NRI 2019 rankings themselves, as published in December 2019.

# The Network Readiness of Uzbekistan

Uzbekistan would be **hypothetically** ranked 83rd out of 122 economies when considering its performance in only three (of the four) pillars of the NRI: People, Governance, and Impact. Its strongest dimension relates to Impact, where Uzbekistan makes it into the top quartile when it comes to Quality of Life.

## INTRODUCTION

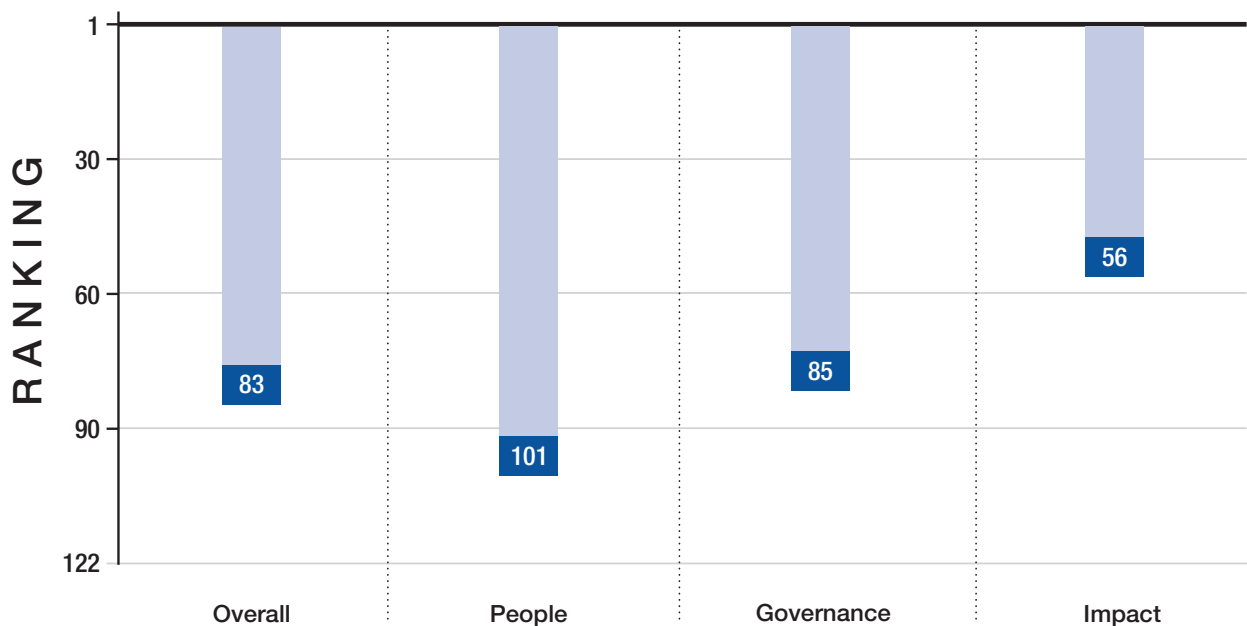
NRI 2019 is based on a model comprised of four fundamental pillars: Technology, People, Governance, and Impact. Economies need to have sufficient data on a pre-specified number of dimensions in order to be included in the index. Because there is not enough readily available data on the Technology pillar, Uzbekistan does not feature in the full NRI rankings. However, since there is sufficient data in the other three pillars, this case study evaluates the country's network readiness with regard to this subset of dimensions.

## OVERALL PERFORMANCE

Uzbekistan would be hypothetically ranked 83rd out of 122 economies when considering its

performance in the People, Governance, and Impact pillars. As can be seen in Figure 3, its greatest strength relates to the Impact (56th) pillar. More specifically, Uzbekistan has a high level of Quality of Life (26th) and performs relatively well in terms of SDG Contribution (43rd). The strong showing in these sub-pillars is, however, offset by a below-par performance in the Economy (115th) sub-pillar. The country's greatest challenge in raising network readiness concerns the People (101st) pillar, where there is room for improvement in ICT usage and skills at the level of Individuals (94th), Businesses (122nd), and Governments (68th). As for the Governance (85th) pillar, more could be done to enhance Regulation (111th) in particular.

Figure 3: Uzbekistan's performance in three NRI pillars (hypothetical rankings)



## PERFORMANCE AGAINST ITS RELEVANT INCOME GROUP

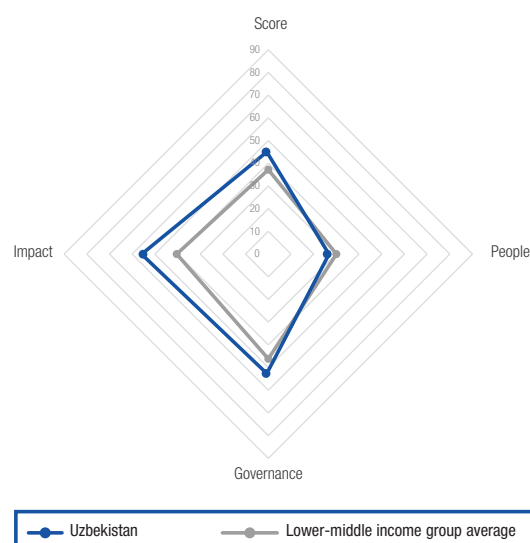
Uzbekistan falls into the group of lower-middle-income economies based on its GDP per capita (PPP) performance. As can be seen in the radar chart on the data page (see next page), Uzbekistan has a higher aggregate score across the three pillars than lower-middle-income countries on average: 45.1 against 39.1. Consequently, within its income group it would be among the better performers, with a hypothetical rank of 7th out of 26 countries. The country's strength in the Impact pillar is evident in a comparison against lower-middle-income countries (rank: 3rd). This is particularly the case when it comes to the sub-pillars Quality of Life and SDG Contribution, where Uzbekistan is the income-group leader. The country also does very well in the Inclusion sub-pillar (ranking 2nd within its income group), which contributes to a score in the Governance pillar that is greater than the average lower-middle-income country (ranking 9th out of the 26 countries). As for the People pillar, it lags behind most countries within its income group (rank: 16th). In fact, among all lower-middle-income countries, it is the worst-performing country in the sub-pillar related to ICT usage and skills of Businesses.

## PERFORMANCE AGAINST ITS RELEVANT REGION

As for its region—the Commonwealth of Independent States (CIS)—Uzbekistan would be ranked 6th out of 8 economies. The only dimension where it outperforms its region is, unsurprisingly, Impact (rank: 3rd). It is the regional leader when it comes to the Quality of Life sub-pillar and is also one of the better performers with respect to SDG Contribution (regional rank of 3). Uzbekistan ranks 6th in the Governance pillar out of all the countries in the CIS group, with strong showings in the Trust and Inclusion sub-pillars (ranking 3rd in both), offset by the region's lowest score in the Regulation sub-pillar. As for the country's weakest dimension—People—it is only ahead of neighboring Tajikistan. Uzbekistan has the region's lowest score when it comes to the Businesses sub-pillar and the second-lowest score in the Individuals sub-pillar. It has a higher-than-average score in terms of ICT usage and skills of Governments, albeit it ranks 5th within its region.

# Uzbekistan

	Hypothetical Rank (out of 122)	Score
<b>Network Readiness (excl. Technology pillar)</b>	<b>83</b>	<b>45.07</b>
<b>B. People pillar</b>	<b>101</b>	<b>27.44</b>
1st sub-pillar: Individuals	94	36.13
2nd sub-pillar: Businesses	122	3.12
3rd sub-pillar: Governments	68	43.08
<b>C. Governance pillar</b>	<b>85</b>	<b>52.60</b>
1st sub-pillar: Trust	80	49.27
2nd sub-pillar: Regulation	111	39.95
3rd sub-pillar: Inclusion	47	68.58
<b>D. Impact pillar</b>	<b>56</b>	<b>55.17</b>
1st sub-pillar: Economy	115	4.86
2nd sub-pillar: Quality of Life	26	74.24
3rd sub-pillar: SDG Contribution	43	86.42



## Performance in detail

INDICATOR	RANK/122	SCORE
<b>B. People pillar</b>		
<b>1st sub-pillar: Individuals</b>		
2.1.1 Internet users	89	47.31
2.1.2 Active mobile-broadband subscriptions	82	23.10
2.1.3 Use of virtual social networks	117	3.43
2.1.4 Tertiary enrolment	104	6.81
2.1.5 Adult literacy rate	1	100.00
2.1.6 ICT skills	NA	NA
<b>2nd sub-pillar: Businesses</b>		
2.2.1 Firms with website	104	5.19
2.2.2 Internet shopping	109	2.34
2.2.3 Professionals	NA	NA
2.2.4 Technicians and associate professionals	NA	NA
2.2.5 Extent of staff training	NA	NA
2.2.6 R&D expenditure by businesses	65	1.83
<b>3rd sub-pillar: Governments</b>		
2.3.1 Government online services	48	76.93
2.3.2 Publication and use of open data	NA	NA
2.3.3 ICT use and government efficiency	NA	NA
2.3.4 R&D expenditure by governments and higher education	91	9.24
<b>C. Governance pillar</b>		
<b>1st sub-pillar: Trust</b>		
3.1.1 Rule of law	116	28.85
3.1.2 Software piracy rate	NA	NA
3.1.3 Secure Internet servers	78	48.03
3.1.4 Cybersecurity	54	70.94
3.1.5 Online trust and safety	NA	NA
<b>2nd sub-pillar: Regulation</b>		
3.2.1 Regulatory quality	117	27.12
3.2.2 Ease of doing business	63	70.13

INDICATOR	RANK/122	SCORE
3.2.3 Legal framework's adaptability to digital business models	NA	NA
3.2.4 E-commerce legislation	100	50.00
3.2.5 Social safety net protection	NA	NA
3.2.6 ICT regulatory environment	120	12.54
<b>3rd sub-pillar: Inclusion</b>		
3.3.1 E-Participation	59	72.61
3.3.2 Socioeconomic gap in use of digital payments	61	69.64
3.3.3 Availability of local online content	NA	NA
3.3.4 Gender gap in internet use	NA	NA
3.3.5 Rural gap in use of digital payments	72	63.48
<b>D. Impact pillar</b>		
<b>1st sub-pillar: Economy</b>		
4.1.1 Medium and high-tech industry	NA	NA
4.1.2 High-tech exports	NA	NA
4.1.3 PCT patent applications	85	0.02
4.1.4 Labour productivity per employee	89	9.70
<b>2nd sub-pillar: Quality of Life</b>		
4.2.1 Happiness	41	65.57
4.2.2 Freedom to make life choices	1	100.00
4.2.3 Income inequality	NA	NA
4.2.4 Healthy life expectancy at birth	83	57.14
<b>3rd sub-pillar: SDG Contribution</b>		
4.3.1 Access to basic services	37	98.57
4.3.2 Pollution	84	77.92
4.3.3 Road safety	47	72.50
4.3.4 Reading proficiency in schools	NA	NA
4.3.5 Maths proficiency in schools	NA	NA
4.3.6 Use of clean fuels and technology	69	96.67