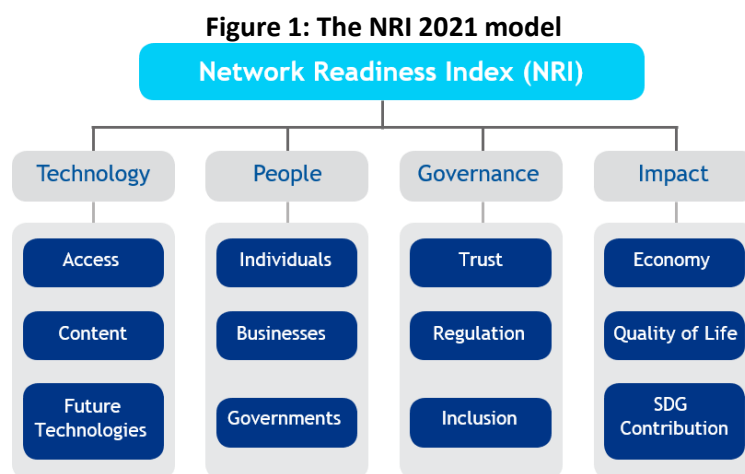


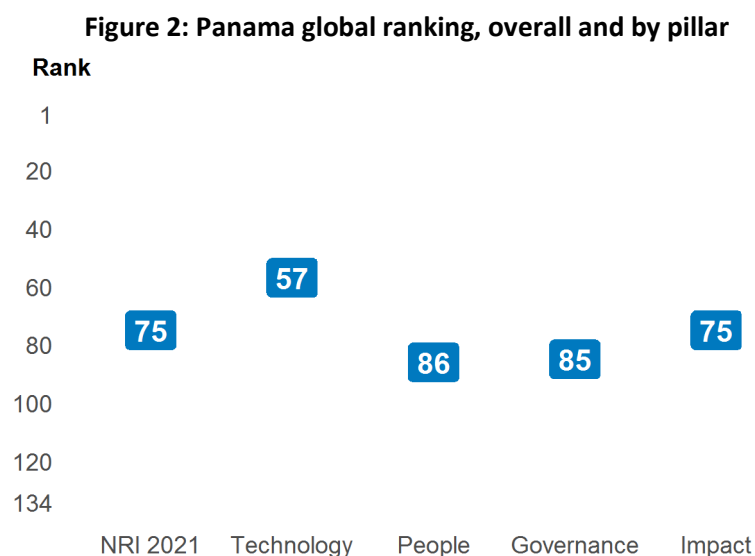
Network Readiness Index 2021 Panama

The Network Readiness Index (NRI) is one of the leading global indices on the application and impact of information and communication technology (ICT) in economies around the world. In its latest version of 2021 the NRI Report maps the network-based readiness landscape of 130 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 60 variables.



Global NRI position of Panama

Panama ranks 75th out of the 130 economies included in the NRI 2021 (Figure 2). Its main strength relates to Technology. The greatest scope for improvement, meanwhile, concerns People.



Performance at sub-pillar level

When it comes to sub-pillars, the strongest showings of Panama relate to Access, Regulation and Future Technologies, among others (Table 1). More could be done, though, to improve the economy's performances in the Inclusion, Governments and Trust sub-pillars.

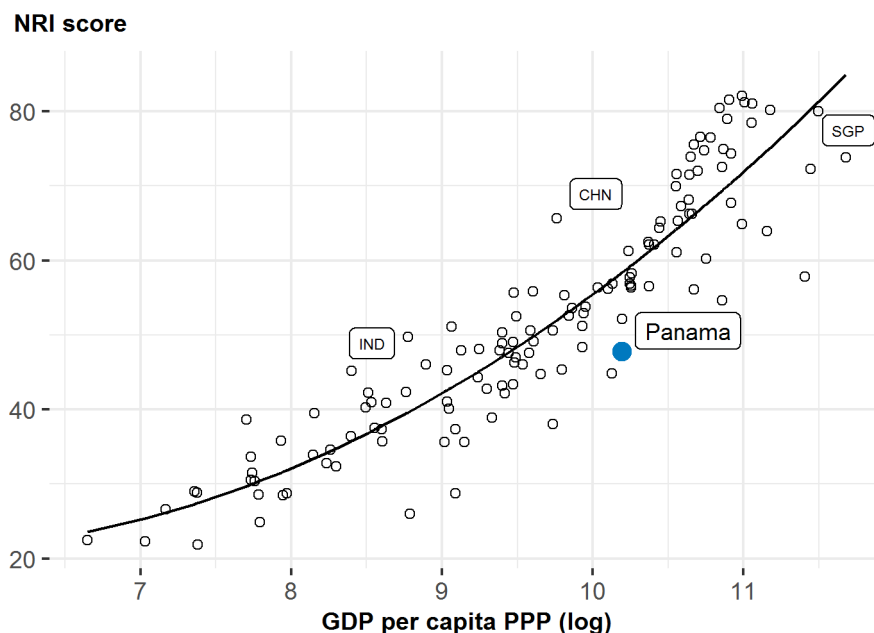
Table 1: Panama rankings by sub-pillar

Sub-pillar	Rank	Sub-pillar	Rank
Access	43	Content	72
Regulation	53	Businesses	80
Future Technologies	54	Economy	90
Individuals	54	Inclusion	95
Quality of Life	66	Governments	100
SDG Contribution	70	Trust	101

NRI score and income

Figure 3 shows the position of Panama in terms of both NRI score and GDP per capita (PPP). The trend line shows the expected NRI score given an economy's income level. As can be seen, Panama is well below the trend line, which suggests that it is underachieving and that one would expect it could raise its network readiness in view of its income level.

Figure 3: NRI score and GDP per capita PPP (log)



Note: NLD = Netherlands (rank: 1), SWE = Sweden (2), DNK = Denmark (3), CHN = China (29), IND = India (67). USA is ranked 4th. Panama belongs to the group of high-income countries, where the best performer is Netherlands (NLD). The top performer of its region-The Americas- is United States (USA).

Performance against its income group and region

High-income countries

Panama is ranked 49th in the group of high-income countries (Figure 4, left panel). In terms of pillar performance, it has a score below the income group average in each of the four pillars. At the sub-pillar level, it trails high-income countries in all of them.

The Americas

Panama is ranked 12th within The Americas (Figure 4, right panel). It has a score above the regional average in one of the four pillars: technology. With regard to sub-pillars, it outperforms the average in The Americas in three of the twelve sub-pillars: Access, Future Technologies and Regulation.

Figure 4: Performance of Panama against its income group and region, overall and by pillar



Table 2: Panama scores vs. averages of its income group and region, overall and by pillar

Dimension	Panama	High-income countries	The Americas
NRI	47.76	67.45	50.62
Technology	47.61	62.99	44.08
People	42.51	62.65	49.00
Governance	48.37	75.52	54.95
Impact	52.56	68.63	54.45

Strongest and weakest indicators

The indicators where Panama performs particularly well include 3.2.4 E-commerce legislation, 4.3.4 SDG 7: Affordable and Clean Energy, and 3.3.4 Gender gap in Internet use (Table 3). By contrast, the economy's weakest indicators include 3.3.5 Rural gap in use of digital payments, 4.2.3 Income inequality, and 2.3.4 R&D expenditure by governments and higher education.

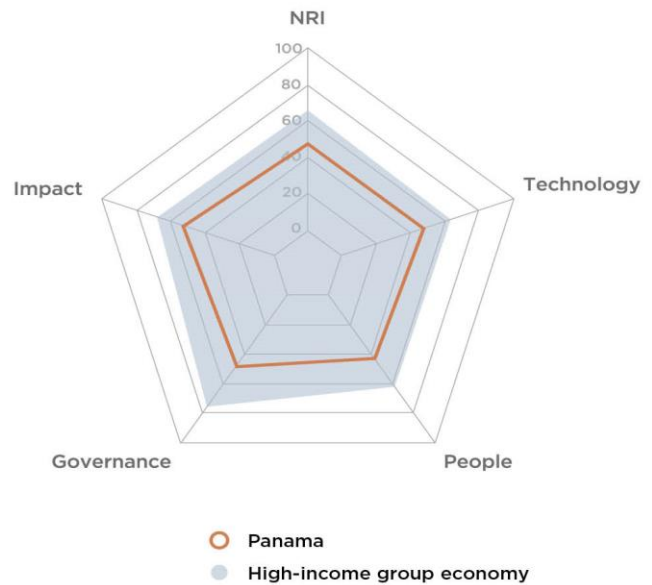
Table 3: Strongest and weakest indicators of Panama

Strongest indicators	Rank	Weakest indicators	Rank
3.2.4 E-commerce legislation	1	4.3.2 SDG 4: Quality Education	74
4.3.4 SDG 7: Affordable and Clean Energy	6	2.2.2 GERD financed by business enterprise	91
3.3.4 Gender gap in Internet use	20	2.3.4 R&D expenditure by governments and higher education	105
4.3.1 SDG 3: Good Health and Well-Being	25	4.2.3 Income inequality	107
1.2.3 Internet domain registrations	26	3.3.5 Rural gap in use of digital payments	110
1.1.2 Handset prices	35		
4.1.2 High-tech exports	35		
4.2.4 Healthy life expectancy at birth	37		
4.2.2 Freedom to make life choices	38		
2.1.5 Adult literacy rate	43		
4.2.1 Happiness	50		

Panama

Network Readiness Index Rank (out of 130) **75** Score **47.76**

Pillar/sub-pillar	Rank	Score
A. Technology pillar	57	47.61
1st sub-pillar: Access	43	73.69
2nd sub-pillar: Content	72	33.85
3rd sub-pillar: Future Technologies	54	35.30
B. People pillar	86	42.51
1st sub-pillar: Individuals	54	65.53
2nd sub-pillar: Businesses	80	34.24
3rd sub-pillar: Governments	100	27.75
C. Governance pillar	85	48.37
1st sub-pillar: Trust	101	28.04
2nd sub-pillar: Regulation	53	67.47
3rd sub-pillar: Inclusion	95	49.59
D. Impact pillar	75	52.56
1st sub-pillar: Economy	90	30.41
2nd sub-pillar: Quality of Life	66	66.07
3rd sub-pillar: SDG Contribution	70	61.20



Network Readiness Index in detail

Indicator	Rank	Score
A. Technology pillar	57	47.61
1st sub-pillar: Access	43	73.69
1.1.1 Mobile tariffs	71	56.53
1.1.2 Handset prices	35	70.71 ●
1.1.3 Households with internet access	74	70.78
1.1.4 SMS sent by population 15-69	95	71.82
1.1.5 Population covered by at least a 3G mobile network	82	98.64
1.1.6 International Internet bandwidth	NA	NA
1.1.7 Internet access in schools	NA	NA
2nd sub-pillar: Content	72	33.85
1.2.1 GitHub commits	62	3.76
1.2.2 Wikipedia edits	69	48.38
1.2.3 Internet domain registrations	*	* ●
1.2.4 Mobile apps development	60	78.50
1.2.5 AI scientific publications	110	11.50
3rd sub-pillar: Future Technologies	54	35.30
1.3.1 Adoption of emerging technologies	66	47.02
1.3.2 Investment in emerging technologies	64	40.39
1.3.3 Robot density	NA	NA
1.3.4 Computer software spending	67	18.49
B. People pillar	86	42.51
1st sub-pillar: Individuals	54	65.53
2.1.1 Active mobile broadband subscriptions	95	70.88
2.1.2 ICT skills	NA	NA
2.1.3 Use of virtual social networks	70	64.03
2.1.4 Tertiary enrollment	64	33.07
2.1.5 Adult literacy rate	43	94.13 ●
2nd sub-pillar: Businesses	80	34.24
2.2.1 Firms with website	84	35.87
2.2.2 GERD financed by business enterprise	91	1.85 ○
2.2.3 Professionals	64	25.61
2.2.4 Technicians and associate professionals	68	30.79
2.2.5 Annual investment in telecommunication services	68	77.07
2.2.6 GERD performed by business enterprise	NA	NA
3rd sub-pillar: Governments	100	27.75
2.3.1 Government online services	80	61.21
2.3.2 Publication and use of open data	77	17.67
2.3.3 Government promotion of investment in emerging tech	91	28.93
2.3.4 R&D expenditure by governments and higher education	105	3.21 ○

Indicator	Rank	Score
C. Governance pillar	85	48.37
1st sub-pillar: Trust	101	28.04
3.1.1 Secure Internet servers	60	58.23
3.1.2 Cybersecurity	102	32.95
3.1.3 Online access to financial account	95	13.18
3.1.4 Internet shopping	79	7.81
2nd sub-pillar: Regulation	53	67.47
3.2.1 Regulatory quality	55	50.98
3.2.2 ICT regulatory environment	75	77.06
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	62	68.80
3rd sub-pillar: Inclusion	95	49.59
3.3.1 E-Participation	87	56.79
3.3.2 Socioeconomic gap in use of digital payments	103	28.58
3.3.3 Availability of local online content	74	56.08
3.3.4 Gender gap in Internet use	20	69.08 ●
3.3.5 Rural gap in use of digital payments	110	37.42 ○
D. Impact pillar	75	52.56
1st sub-pillar: Economy	90	30.41
4.1.1 High-tech and medium-high-tech manufacturing	92	6.65
4.1.2 High-tech exports	35	48.70 ●
4.1.3 PCT patent applications	55	41.50
4.1.4 Growth rate of GDP per person engaged	NA	NA
4.1.5 Prevalence of gig economy	87	33.59
4.1.6 ICT services exports	80	21.60
2nd sub-pillar: Quality of Life	66	66.07
4.2.1 Happiness	50	61.87 ●
4.2.2 Freedom to make life choices	38	86.17 ●
4.2.3 Income inequality	107	34.38 ○
4.2.4 Healthy life expectancy at birth	37	81.88 ●
3rd sub-pillar: SDG Contribution	70	61.20
4.3.1 SDG 3: Good Health and Well-Being	25	83.61 ●
4.3.2 SDG 4: Quality Education	74	12.53 ○
4.3.3 Females employed with advanced degrees	65	34.46
4.3.4 SDG 7: Affordable and Clean Energy	6	94.41 ●
4.3.5 SDG 11: Sustainable Cities and Communities	65	81.02

NOTE: * Indicates confidential data; ● a strength and ○ a weakness.

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