# Network Readiness Index 2023

India

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 2023 the NRI Report maps the network-based readiness landscape of 134 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 58 variables.
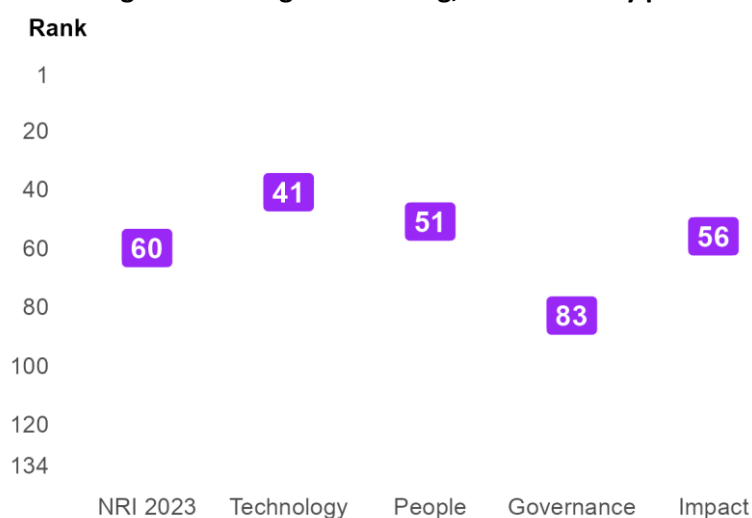
Figure 1: The NRI 2023 model
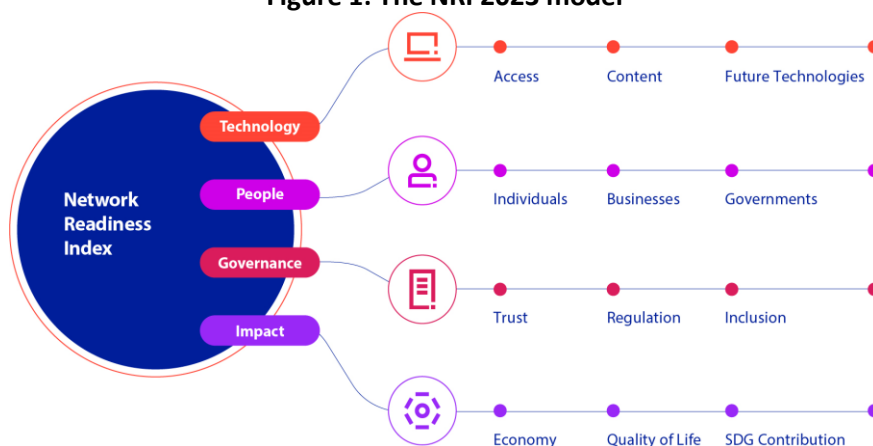
Global NRI position of India

India ranks 60th out of the 134 economies included in the NRI 2023 (Figure 2). Its main strength relates to Technology. The greatest scope for improvement, meanwhile, concerns Governance.

Figure 2: India global ranking, overall and by pillar

Performance at sub-pillar level

When it comes to sub-pillars, the strongest showings of India relate to Economy, Content and Individuals, among others (Table 1). More could be done, though, to improve the economy's performances in the SDG Contribution, Quality of Life and Inclusion sub-pillars.

Table 1: India rankings by sub-pillar

Sub-pillar	Rank	Sub-pillar	Rank
Economy	18	Trust	72
Content	29	Regulation	75
Individuals	37	Businesses	78
Governments	46	SDG Contribution	92
Access	49	Quality of Life	95
Future Technologies	58	Inclusion	103

NRI score and income

Figure 3 shows the position of India 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, India is well above the trend line, which suggests that it has a greater network readiness than would be expected given its income level.

Figure 3: NRI score and GDP per capita PPP (log)
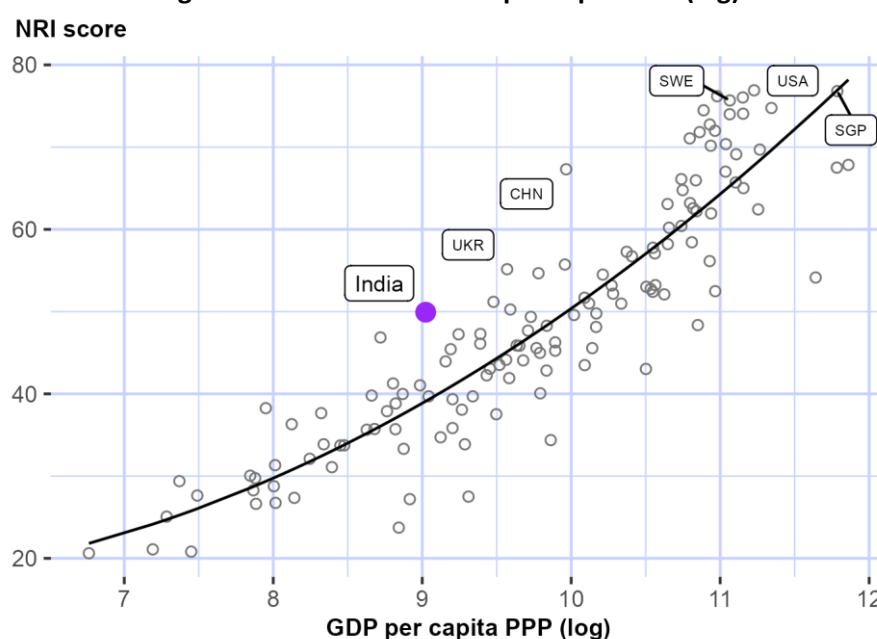
Note: USA = United States (rank: 1), SGP = Singapore (rank: 2), FIN = Finland (3), NLD = Netherlands (4), SWE = Sweden (5), CHN = China (20), IND = India (61). India belongs to the group of lower-middle-income countries, where the best performer is Ukraine (UKR). The top performer of its region-Asia & Pacific-is Singapore (SGP).

Performance against its income group and region

Lower-middle-income countries
India is ranked 3rd in the group of lower-middle-income countries (Figure 4, left panel). In terms of pillar performance, it has a score higher than the income group average in each of the four pillars. At the sub-pillar level, it outperforms lower-middle-income countries in eleven of the twelve sub-pillars: Access, Content, Future Technologies, Individuals, Businesses, Governments, Trust, Regulation, Economy, Quality of Life and SDG Contribution.

Asia & Pacific
India is ranked 12th within Asia & Pacific (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 Asia & Pacific in five of the twelve sub-pillars: Access, Content, Individuals, Regulation and Economy.

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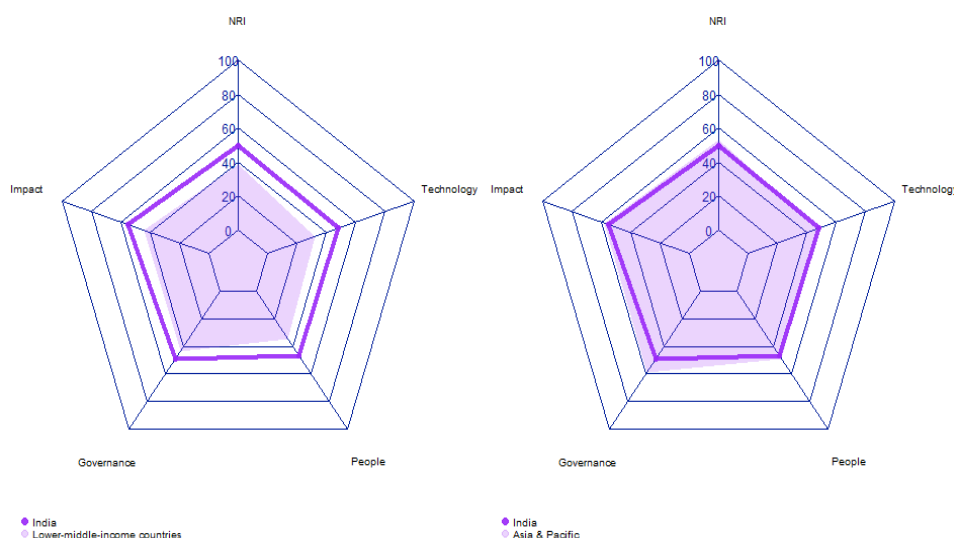

Table 2: India scores vs. averages of its income group and region, overall and by pillar

Dimension	India	Lower-middle-income countries	Asia & Pacific
NRI	49.93	38.41	53.28
Technology	48.44	32.12	47.34
People	46.95	34.38	48.95
Governance	49.41	43.27	59.22
Impact	54.90	43.89	57.62

Network
Readiness
Index 2023

PORTULANS
INSTITUTE

UNIVERSITY OF
OXFORD

Saïd
Business
School

Strongest and weakest indicators

The indicators where India performs particularly well include 2.1.6 AI talent concentration, 4.1.6 ICT services exports, and 1.1.3 FTTH/building Internet subscriptions (Table 3). By contrast, the economy's weakest indicators include 3.1.3 Online access to financial account, 4.2.1 Happiness, and 3.3.4 Gender gap in Internet use.

Table 3: Highlight of Strengths and Opportunities for India

Strongest indicators	Rank	Weakest indicators	Rank
2.1.6 AI talent concentration	1	3.2.4 E-commerce legislation	87
4.1.6 ICT services exports	1	2.1.2 ICT skills in the education system	100
1.1.3 FTTH/building Internet subscriptions	2	3.3.4 Gender gap in Internet use	104
1.1.5 International Internet bandwidth	2	4.2.1 Happiness	117
1.2.4 AI scientific publications	2	3.1.3 Online access to financial account	119
2.1.1 Mobile broadband internet traffic within the country	2		
2.2.4 Annual investment in telecommunication services	3		
4.1.4 Domestic market size	3		
3.1.2 Cybersecurity	15		
1.3.2 Investment in emerging technologies	26		

Note: For the full list of strengths and weaknesses, see At-A-Glance table.

Network Readiness Index 2023

NRI 2023 At-A-Glance: India

Network Readiness Index   Rank: 60 (out of 134)   Score: 49.93

Pillar/sub-pillar	Rank	Score
A. Technology pillar	41	48.44
1st sub-pillar: Access	49	69.85
2nd sub-pillar: Content	29	40.46
3rd sub-pillar: Future Technologies	58	35.02
B. People pillar	51	46.95
1st sub-pillar: Individuals	37	53.26
2nd sub-pillar: Businesses	78	41.84
3rd sub-pillar: Governments	46	45.74

Pillar/sub-pillar	Rank	Score
C. Governance pillar	83	49.41
1st sub-pillar: Trust	72	40.37
2nd sub-pillar: Regulation	75	62.84
3rd sub-pillar: Inclusion	103	45.01
D. Impact pillar	56	54.90
1st sub-pillar: Economy	18	49.56
2nd sub-pillar: Quality of Life	95	59.54
3rd sub-pillar: SDG Contribution	92	55.62

The Network Readiness Index in detail

Indicator	Rank	Score	
A. Technology pillar	41	48.44	
1st sub-pillar: Access	49	69.85	
1.1.1 Mobile tariffs	53	68.66	
1.1.2 Handset prices	51	56.73	
1.1.3 FTTH/building Internet subscriptions	2	76.53	●
1.1.4 Population covered by at least a 3G mobile network	68	99.61	
1.1.5 International Internet bandwidth	2	96.96	●
1.1.6 Internet access in schools	68	20.60	
2nd sub-pillar: Content	29	40.46	
1.2.1 GitHub commits	73	4.48	
1.2.2 Internet domain registrations	100	0.91	
1.2.3 Mobile apps development	34	73.58	
1.2.4 AI scientific publications	2	82.87	●
3rd sub-pillar: Future Technologies	58	35.02	
1.3.1 Adoption of emerging technologies	53	51.54	
1.3.2 Investment in emerging technologies	26	64.25	●

Indicator	Rank	Score	
C. Governance pillar	83	49.41	
1st sub-pillar: Trust	72	40.37	
3.1.1 Secure Internet servers	70	49.16	
3.1.2 Cybersecurity	15	97.46	●
3.1.3 Online access to financial account	119	5.99	○
3.1.4 Internet shopping	97	8.89	
2nd sub-pillar: Regulation	75	62.84	
3.2.1 Regulatory quality	75	47.82	
3.2.2 ICT regulatory environment	70	83.53	
3.2.3 Regulation of emerging technologies	34	64.42	
3.2.4 E-commerce legislation	87	66.67	○
3.2.5 Privacy protection by law content	91	51.79	
3rd sub-pillar: Inclusion	103	45.01	
3.3.1 E-Participation	61	58.14	
3.3.2 Socioeconomic gap in use of digital payments	99	54.30	
3.3.3 Availability of local online content	72	58.17	

Indicator	Rank	Score	
1.3.3 Robot density	49	0.93	
1.3.4 Computer software spending	56	23.35	
B. People pillar	51	46.95	
1st sub-pillar: Individuals	37	53.26	
2.1.1 Mobile broadband internet traffic within the country	2	92.67	●
2.1.2 ICT skills in the education system	100	19.58	○
2.1.3 Use of virtual social networks	102	29.42	
2.1.4 Tertiary enrollment	85	19.81	
2.1.5 Adult literacy rate	93	58.09	
2.1.6 AI talent concentration	1	100.00	●
2nd sub-pillar: Businesses	78	41.84	
2.2.1 Firms with website	72	42.86	
2.2.2 GERD financed by business enterprise	40	50.17	
2.2.3 Knowledge intensive employment	96	16.64	
2.2.4 Annual investment in telecommunication services	3	93.47	●
2.2.5 GERD performed by business enterprise	49	6.04	
3rd sub-pillar: Governments	46	45.74	
2.3.1 Government online services	42	77.17	
2.3.2 Publication and use of open data	22	58.82	
2.3.3 Government promotion of investment in emerging tech	70	35.50	
2.3.4 R&D expenditure by governments and higher education	55	11.49	

Indicator	Rank	Score	
3.3.4 Gender gap in Internet use	104	4.84	○
3.3.5 Rural gap in use of digital payments	92	49.60	
D. Impact pillar	56	54.90	
1st sub-pillar: Economy	18	49.56	
4.1.1 High-tech and medium-high-tech manufacturing	35	42.23	
4.1.2 High-tech exports	47	18.28	
4.1.3 PCT patent applications	43	8.53	
4.1.4 Domestic market size	3	90.81	●
4.1.5 Prevalence of gig economy	71	37.50	
4.1.6 ICT services exports	1	100.00	●
2nd sub-pillar: Quality of Life	95	59.54	
4.2.1 Happiness	117	29.34	○
4.2.2 Freedom to make life choices	29	86.31	
4.2.3 Income inequality	54	68.59	
4.2.4 Healthy life expectancy at birth	101	53.91	
3rd sub-pillar: SDG Contribution	92	55.62	
4.3.1 SDG 3: Good Health and Well-Being	96	53.96	
4.3.2 SDG 4: Quality Education	NA	NA	
4.3.3 SDG 5: Women's economic opportunity	103	63.72	
4.3.4 SDG 7: Affordable and Clean Energy	79	68.35	
4.3.5 SDG 11: Sustainable Cities and Communities	115	36.45	

NOTE: ● a strength and ○ a weakness.

Sources

Dutta, S., & Lanvin, B. (eds.) (2022). The Network Readiness Index 2022: Benchmarking the Future of the Network Economy. Washington DC: Portulans Institute.

Berry, B. (2019). berryFunctions: Function Collection Related to Plotting and Hydrology. R package version 1.18.2. URL: https://CRAN.R-project.org/package=berryFunctions

Dutta, S., & Lanvin, B. (eds.) (2019). The Network Readiness Index 2019: Towards a Future-Ready Society. Washington DC: Portulans Institute.

Dutta, S., & Lanvin, B. (eds.) (2020). The Network Readiness Index 2020: Fostering Digital Transformation in a post-COVID Global Economy. Washington DC: Portulans Institute.

Dutta, S., & Lanvin, B. (eds.) (2021). The Network Readiness Index 2021: Shaping the Global Recovery. How digital technologies can make the post-COVID world more equal. Washington DC: Portulans Institute.

Gohel, D. (2019). officer: Manipulation of Microsoft Word and PowerPoint Documents. R package version 0.3.6. URL: https://CRAN.R-project.org/package=officer

Gohel, D. (2019). flextable: Functions for Tabular Reporting. R package version 0.5.6. URL: https://CRAN.R-project.org/package=flextable

Milton Bache, S. & Wickham, H. (2014). magrittr: A Forward-Pipe Operator for R. R package version 1.5. URL: https://CRAN.R-project.org/package=magrittr

Nakazawa, M. (2019). fmsb: Functions for Medical Statistics Book with some Demographic Data. R package version 0.7.0. URL: https://CRAN.R-project.org/package=fmsb

R Core Team (2018). R: A language and environment for statistical computing. R Foundation for Statistical Computing, Vienna, Austria. URL: https://www.R-project.org/.

Slowikowski, K. (2019). ggrepel: Automatically Position Non-Overlapping Text Labels with 'ggplot2'. R package version 0.8.1. URL: https://CRAN.R-project.org/package=ggrepel

Wickham, H. (2007). Reshaping Data with the reshape Package. Journal of Statistical Software, 21(12), 1-20. URL: http://www.jstatsoft.org/v21/i12/.

Wickham, H. (2016). ggplot2: Elegant Graphics for Data Analysis. Springer-Verlag. New York.

Wickham et al., (2019). Welcome to the tidyverse. Journal of Open Source Software, 4(43), 1686, URL: https://doi.org/10.21105/joss.01686