# Network Readiness Index 2020 Kenya

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 2020 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 60 variables.

Figure 1: The NRI 2020 model
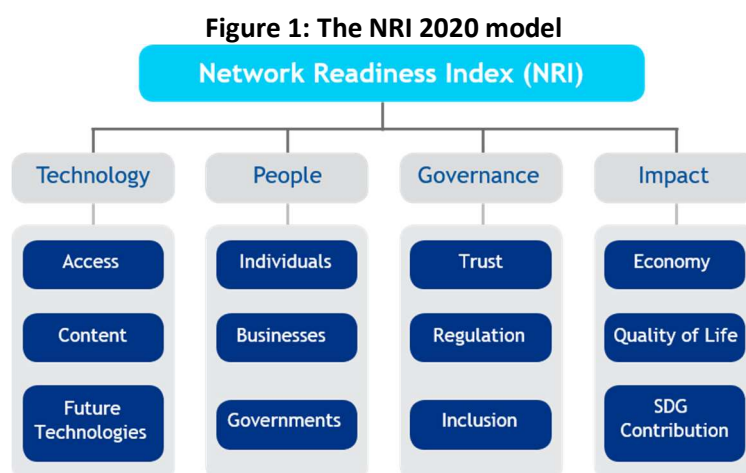
Global NRI position of Kenya

Kenya ranks 82nd out of the 134 economies included in the NRI 2020 (Figure 2). Its main strength relates to Governance. The greatest scope for improvement, meanwhile, concerns Impact.

Figure 2: Kenya global ranking, overall and by pillar
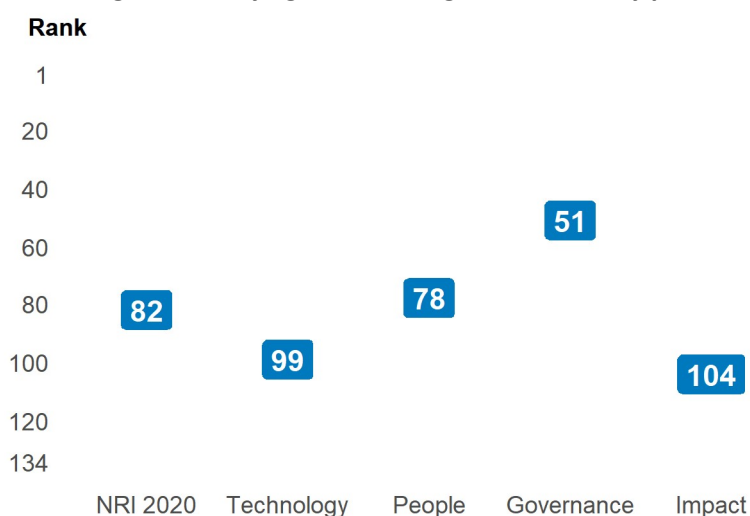
Performance at sub-pillar level

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

Table 1: Kenya rankings by sub-pillar

Sub-pillar	Rank	Sub-pillar	Rank
Governments	41	Economy	94
Future Technologies	49	Quality of Life	100
Trust	50	Access	101
Businesses	51	Individuals	106
Regulation	58	SDG Contribution	108
Inclusion	65	Content	115

NRI score and income

Figure 3 shows the position of Kenya 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, Kenya 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)
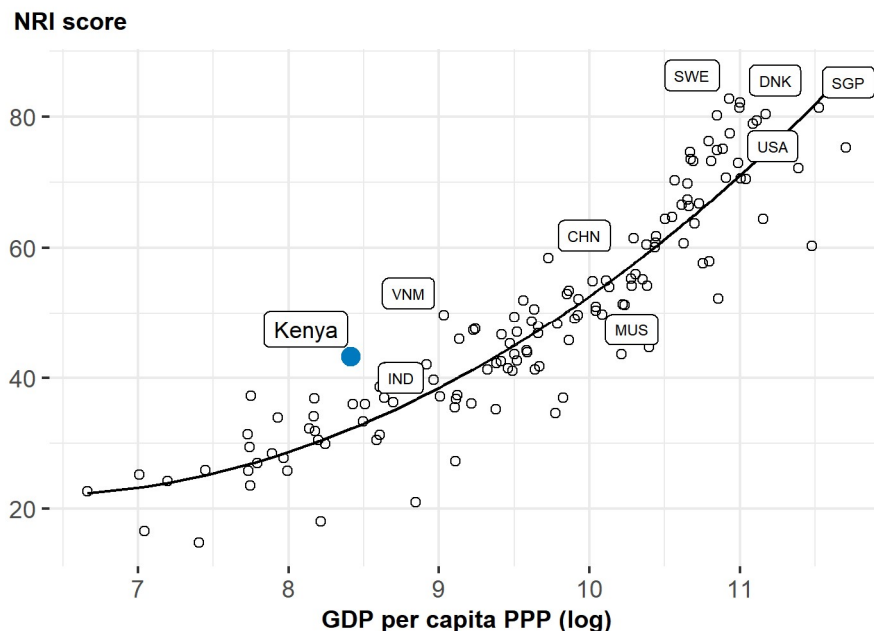
Note: SWE = Sweden (rank: 1), DNK = Denmark (2), SGP = Singapore (3), CHN = China (40), IND = India (88). USA is ranked 8th. Kenya belongs to the group of lower-middle-income countries, where the best performer is Vietnam (VNM). The top performer of its region-Africa-is Mauritius (MUS).

Performance against its income group and region

Lower-middle-income countries
Kenya is ranked 5th 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 two of the four pillars: nri.score, people and governance. At the sub-pillar level, it outperforms lower-middle-income countries in six of the twelve sub-pillars: Future Technologies, Businesses, Governments, Trust, Regulation and Inclusion.

Africa
Kenya is ranked 3rd within Africa (Figure 4, right panel). It outperforms its region in each of the four pillars. With regard to sub-pillars, it has a higher score than the regional average in each of the twelve sub-pillars.

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

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

Dimension	Kenya	Lower-middle-income countries	Africa
NRI	43.22	36.72	30.62
Technology	27.26	27.72	21.47
People	44.01	33.88	26.75
Governance	60.99	43.15	39.31
Impact	40.62	42.15	34.94

Strongest and weakest indicators

The indicators where Kenya performs particularly well include e-commerce legislation, International Internet bandwidth, and Online access to financial account (Table 3). By contrast, the economy's weakest indicators include Fixed-broadband subscriptions, Internet users, and Wikipedia edits.

Table 3: Top-ranked and bottom-ranked indicators of Kenya

Strongest indicators	Rank	Weakest indicators	Rank
e-commerce legislation	1	Tertiary enrollment	105
International Internet bandwidth	7	Labor productivity per employee	105
Online access to financial account	18	Active mobile-broadband subscriptions	107
R&D expenditure by governments and higher education	23	Happiness	110
Rural gap in use of digital payments	27	4G mobile network coverage	111
Investment in emerging technologies	32	Use of virtual social networks	111
Publication and use of open data	35	SDG 7: Affordable and Clean Energy	114
Business use of digital tools	38	Wikipedia edits	120
Prevalence of gig economy	40	Fixed-broadband subscriptions	122
ICT regulatory environment	44	Internet users	122

NRI 2020 At-A-Glance: Kenya

Network Readiness Index   Rank: 82 (out of 134)   Score: 43.22

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

The Network Readiness Index in detail

Indicator	Rank	Score	Indicator	Rank	Score
A. Technology pillar	99	27.26	**C. Governance pillar**	51	60.99
1st sub-pillar: Access	101	38.61	*1st sub-pillar: Trust*	50	50.59
1.1.1 Mobile tariffs	95	49.30	3.1.1 Secure Internet servers	86	44.01
1.1.2 Handset prices	94	33.14	3.1.2 Cybersecurity	45	80.17
1.1.3 Internet access	91	33.47	3.1.3 Online access to financial account	18	66.35
1.1.4 4G mobile network coverage	111	35.00	3.1.4 Internet shopping	70	11.83
1.1.5 Fixed-broadband subscriptions	122	0.00	*2nd sub-pillar: Regulation*	58	68.20
1.1.6 International Internet bandwidth	7	80.73	3.2.1 Regulatory quality	88	46.42
1.1.7 Internet access in schools	NA	NA	3.2.2 ICT regulatory environment	44	88.61
2nd sub-pillar: Content	115	11.97	3.2.3 Legal framework's adaptability to emerging technologies	74	37.75
1.2.1 GitHub commits	76	2.57	3.2.4 e-commerce legislation	1	100.00
1.2.2 Wikipedia edits	120	0.12	3.2.5 Privacy protection by law content	NA	NA
1.2.3 Internet domain registrations	*	*	*3rd sub-pillar: Inclusion*	65	64.17
1.2.4 Mobile apps development	102	44.28	3.3.1 E-Participation	86	58.02
3rd sub-pillar: Future Technologies	49	31.19	3.3.2 Socioeconomic gap in use of digital payments	57	71.74
1.3.1 Adoption of emerging technologies	55	50.77	3.3.3 Availability of local online content	86	51.38
1.3.2 Investment in emerging technologies	32	60.12	3.3.4 Gender gap in Internet use	NA	NA
1.3.3 ICT PCT patent applications	72	1.00	3.3.5 Rural gap in use of digital payments	27	75.56
1.3.4 Computer software spending	78	12.89	**D. Impact pillar**	104	40.62
1.3.5 Robot density	NA	NA	*1st sub-pillar: Economy*	94	18.12
B. People pillar	78	44.01	4.1.1 Medium and high-tech industry	89	18.97
1st sub-pillar: Individuals	106	32.11	4.1.2 High-tech exports	92	6.86
2.1.1 Internet users	122	15.64	4.1.3 PCT patent applications	82	0.04
2.1.2 Active mobile-broadband subscriptions	107	15.43	4.1.4 Labor productivity per employee	105	5.63
2.1.3 Use of virtual social networks	111	15.46	4.1.5 Prevalence of gig economy	40	59.10
2.1.4 Tertiary enrollment	105	7.84	*2nd sub-pillar: Quality of Life*	100	53.01
2.1.5 Adult literacy rate	76	76.26	4.2.1 Happiness	110	37.85
2.1.6 ICT skills	46	62.03	4.2.2 Freedom to make life choices	67	75.28
2nd sub-pillar: Businesses	51	48.63	4.2.3 Income inequality	81	57.22
2.2.1 Firms with website	74	43.88	4.2.4 Healthy life expectancy at birth	103	41.68
2.2.2 Ease of doing business	55	76.03	*3rd sub-pillar: SDG Contribution*	108	50.74
2.2.3 Professionals	NA	NA	4.3.1 SDG 3: Good Health and Well-Being	103	44.26
2.2.4 Technicians and associate professionals	NA	NA	4.3.2 SDG 4: Quality Education	NA	NA
2.2.5 Business use of digital tools	38	72.88	4.3.3 SDG 5: Gender Equality	98	62.89
2.2.6 R&D expenditure by businesses	68	1.73	4.3.4 SDG 7: Affordable and Clean Energy	114	55.56
3rd sub-pillar: Governments	41	51.30	.	.	.
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 tech	56	40.90			
2.3.4 R&D expenditure by governments and higher education	23	57.21			

* Confidential data

Sources

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.

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