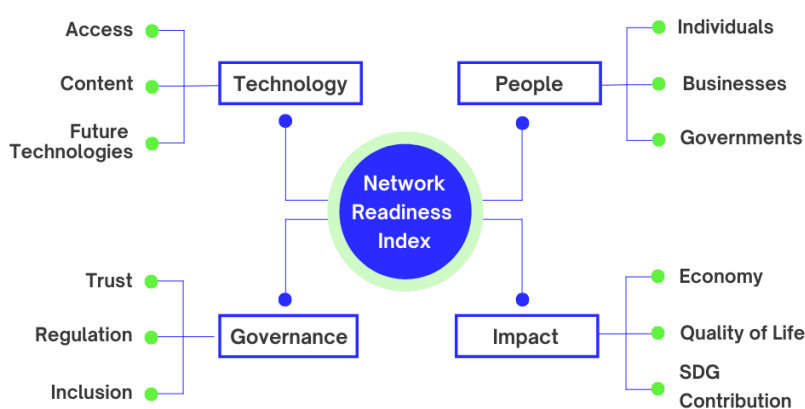


Network Readiness Index 2022 Hong Kong (China)

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 2022 the NRI Report maps the network-based readiness landscape of 131 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.

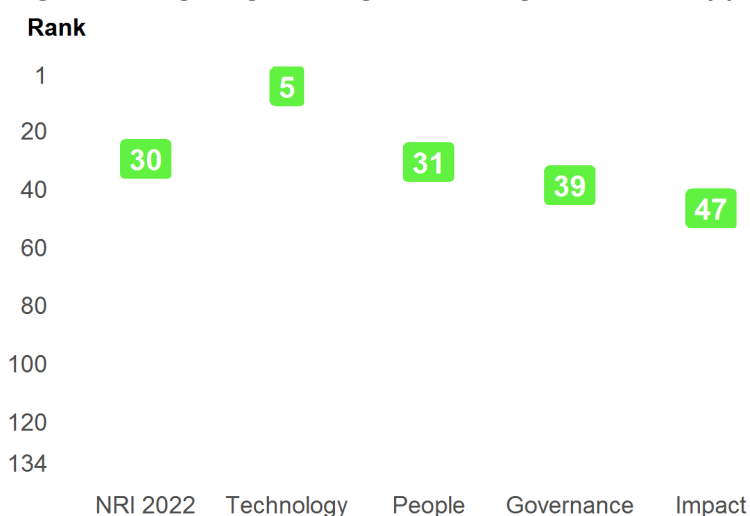
Figure 1: The NRI 2022 model



Global NRI position of Hong Kong (China)

Hong Kong (China) ranks 30th out of the 131 economies included in the NRI 2022 (Figure 2). Its main strength relates to Technology. The greatest scope for improvement, meanwhile, concerns Impact.

Figure 2: Hong Kong (China) global ranking, overall and by pillar



Performance at sub-pillar level

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

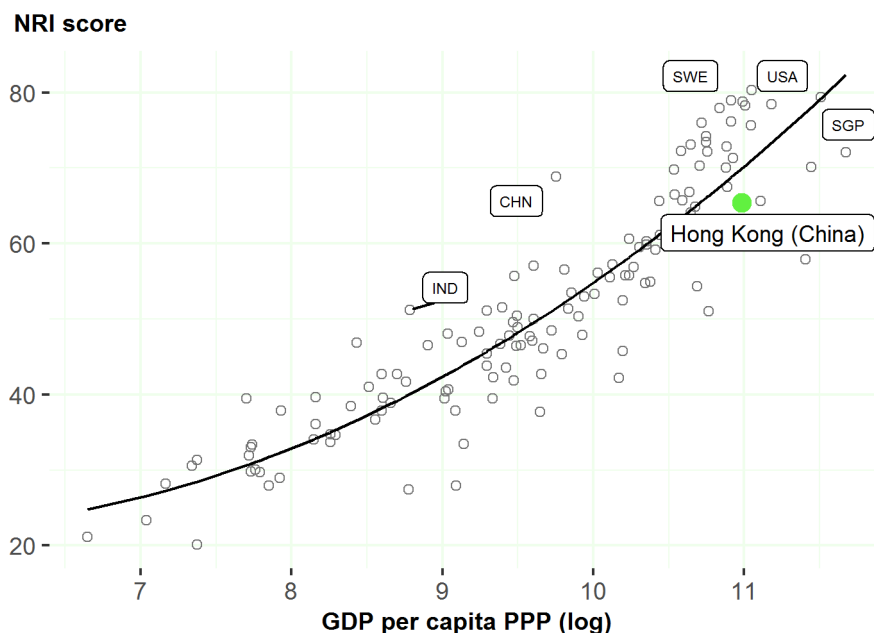
Table 1: Hong Kong (China) rankings by sub-pillar

Sub-pillar	Rank	Sub-pillar	Rank
Content	4	Trust	30
SDG Contribution	5	Individuals	31
Access	7	Businesses	40
Future Technologies	15	Economy	60
Governments	26	Regulation	73
Inclusion	27	Quality of Life	104

NRI score and income

Figure 3 shows the position of Hong Kong (China) 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, Hong Kong (China) 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: USA = United States (rank: 1), SGP = Singapore (rank: 2), SWE = Sweden (3), CHN = China (23), IND = India (61). Netherlands (NLD) is ranked 4th. Hong Kong (China) belongs to the group of high-income countries, where the best performer is United States of America (USA). The top performer of its region-Asia & Pacific-is Singapore (SGP).

Performance against its income group and region

High-income countries

Hong Kong (China) is ranked 29th in the group of high-income countries (Figure 4, left panel). In terms of pillar performance, it has a score higher than the income group average in one of the four pillars: technology. At the sub-pillar level, it outperforms high-income countries in six of the twelve sub-pillars: Access, Content, Future Technologies, Individuals, Inclusion and SDG Contribution.

Asia & Pacific

Hong Kong (China) is ranked 7th within Asia & Pacific (Figure 4, right panel). It has a score above the regional average in three of the four pillars: nri.score, technology, people and governance. With regard to sub-pillars, it outperforms the average in Asia & Pacific in ten of the twelve sub-pillars: Access, Content, Future Technologies, Individuals, Businesses, Governments, Trust, Regulation, Inclusion and SDG Contribution.

Figure 4: Performance of Hong Kong (China) against its income group and region, overall and by pillar

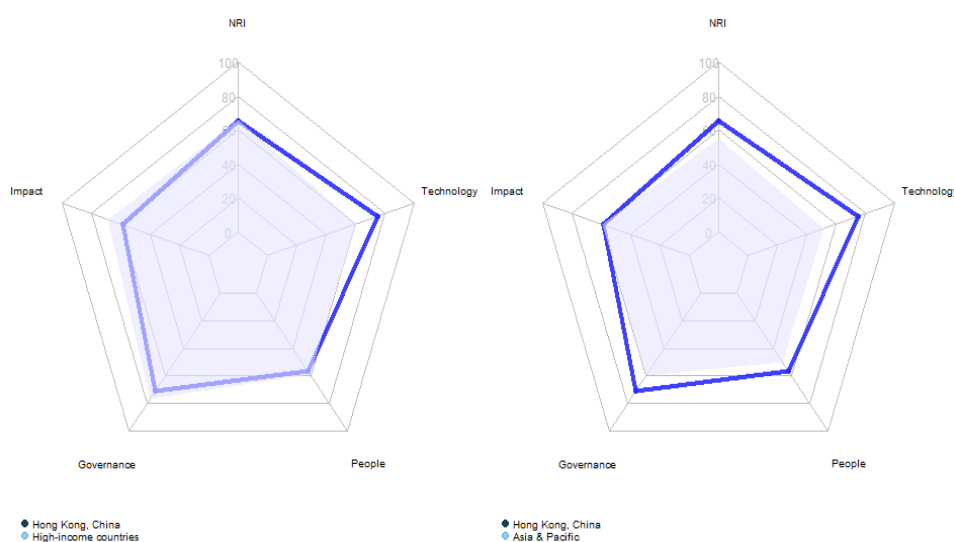


Table 2: Hong Kong (China) scores vs. averages of its income group and region, overall and by pillar

Dimension	Hong Kong (China)	High-income countries	Asia & Pacific
NRI	65.40	66.21	55.18
Technology	75.18	60.28	51.78
People	56.82	58.83	50.21
Governance	70.87	76.89	59.66
Impact	58.73	68.86	59.07

Strongest and weakest indicators

The indicators where Hong Kong (China) performs particularly well include 1.1.5 International Internet bandwidth, 1.2.1 GitHub commits, and 1.2.3 Mobile apps development (Table 3). By contrast, the economy's weakest indicators include 3.2.5 Privacy protection by law content, 4.2.2 Freedom to make life choices, and 4.1.2 High-tech exports.

Table 3: Strongest and weakest indicators of Hong Kong (China)

Strongest indicators	Rank	Weakest indicators	Rank
1.1.5 International Internet bandwidth	1	4.2.1 Happiness	79
1.2.1 GitHub commits	1	4.1.6 ICT services exports	99
1.2.3 Mobile apps development	1	4.1.2 High-tech exports	109
4.3.4 SDG 7: Affordable and Clean Energy	1	4.2.2 Freedom to make life choices	113
4.3.2 SDG 4: Quality Education	3	3.2.5 Privacy protection by law content	130
3.2.1 Regulatory quality	6		
3.3.3 Availability of local online content	8		
2.3.3 Government promotion of investment in emerging technologies	9		
3.1.1 Secure Internet servers	11		
1.1.1 Mobile tariffs	12		

NRI 2022 At-A-Glance: Hong Kong (China)

Network Readiness Index

Rank: 30 (out of 131)

Score: 65.40

Pillar/sub-pillar	Rank	Score	Pillar/sub-pillar	Rank	Score
A. Technology pillar	5	75.18	C. Governance pillar	39	70.87
1st sub-pillar: Access	7	84.49	1st sub-pillar: Trust	30	70.80
2nd sub-pillar: Content	4	83.90	2nd sub-pillar: Regulation	73	62.06
3rd sub-pillar: Future Technologies	15	57.14	3rd sub-pillar: Inclusion	27	79.75
B. People pillar	31	56.82	D. Impact pillar	47	58.73
1st sub-pillar: Individuals	31	55.78	1st sub-pillar: Economy	60	34.60
2nd sub-pillar: Businesses	40	54.08	2nd sub-pillar: Quality of Life	104	52.88
3rd sub-pillar: Governments	26	60.59	3rd sub-pillar: SDG Contribution	5	88.69

The Network Readiness Index in detail

Indicator	Rank	Score	Indicator	Rank	Score
A. Technology pillar	5	75.18	C. Governance pillar	39	70.87
1st sub-pillar: Access	7	84.49	1st sub-pillar: Trust	30	70.80
1.1.1 Mobile tariffs	12	87.90	3.1.1 Secure Internet servers	11	89.09
1.1.2 Handset prices	14	83.55	3.1.2 Cybersecurity	NA	NA
1.1.3 FTTH/building Internet subscriptions	37	36.29	3.1.3 Online access to financial account	29	52.51
1.1.4 Population covered by at least a 3G mobile network	55	99.68	3.1.4 Internet shopping	NA	NA
1.1.5 International Internet bandwidth	1	100.00	2nd sub-pillar: Regulation	73	62.06
1.1.6 Internet access in schools	30	99.54	3.2.1 Regulatory quality	6	88.80
2nd sub-pillar: Content	4	83.90	3.2.2 ICT regulatory environment	72	80.98
1.2.1 GitHub commits	1	100.00	3.2.3 Regulation of emerging technologies	28	67.37
1.2.2 Internet domain registrations	12	54.80	3.2.4 E-commerce legislation	NA	NA
1.2.3 Mobile apps development	1	100.00	3.2.5 Privacy protection by law content	130	11.09
1.2.4 AI scientific publications	12	80.79	3rd sub-pillar: Inclusion	27	79.75
3rd sub-pillar: Future Technologies	15	57.14	3.3.1 E-Participation	NA	NA
1.3.1 Adoption of emerging technologies	19	76.65	3.3.2 Socioeconomic gap in use of digital payments	44	85.93
1.3.2 Investment in emerging technologies	15	74.75	3.3.3 Availability of local online content	8	93.27
1.3.3 Robot density	7	45.26	3.3.4 Gender gap in Internet use	56	69.55
1.3.4 Computer software spending	28	31.92	3.3.5 Rural gap in use of digital payments	47	70.25
B. People pillar	31	56.82	D. Impact pillar	47	58.73

Indicator	Rank	Score	Indicator	Rank	Score
<i>1st sub-pillar: Individuals</i>			<i>1st sub-pillar: Economy</i>		
2.1.1 Mobile broadband internet traffic within the country	48	14.41	4.1.1 High-tech and medium-high-tech manufacturing	51	30.04
2.1.2 ICT skills in the education system	25	69.82	4.1.2 High-tech exports	109	2.53 ○
2.1.3 Use of virtual social networks	15	82.57	4.1.3 PCT patent applications	NA	NA
2.1.4 Tertiary enrollment	16	56.31	4.1.4 Domestic market size	45	60.61
2.1.5 Adult literacy rate	NA	NA	4.1.5 Prevalence of gig economy	18	68.90
2.1.6 AI talent concentration	NA	NA	4.1.6 ICT services exports	99	10.94 ○
<i>2nd sub-pillar: Businesses</i>			<i>2nd sub-pillar: Quality of Life</i>		
2.2.1 Firms with website	NA	NA	4.2.1 Happiness	79	55.96 ○
2.2.2 GERD financed by business enterprise	31	60.89	4.2.2 Freedom to make life choices	113	49.80 ○
2.2.3 Knowledge intensive employment	29	63.80	4.2.3 Income inequality	NA	NA
2.2.4 Annual investment in telecommunication services	38	81.44	4.2.4 Healthy life expectancy at birth	NA	NA
2.2.5 GERD performed by business enterprise	43	10.18	<i>3rd sub-pillar: SDG Contribution</i>		
<i>3rd sub-pillar: Governments</i>			4.3.1 SDG 3: Good Health and Well-Being	NA	NA
2.3.1 Government online services	NA	NA	4.3.2 SDG 4: Quality Education	3	80.99 ●
2.3.2 Publication and use of open data	NA	NA	4.3.3 SDG 5: Women's economic opportunity	37	85.09
2.3.3 Government promotion of investment in emerging tech	9	78.29	4.3.4 SDG 7: Affordable and Clean Energy	1	100.00 ●
2.3.4 R&D expenditure by governments and higher education	46	42.90	4.3.5 SDG 11: Sustainable Cities and Communities	NA	NA

NOTE: ● a strength and ○ a weakness.

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.

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>