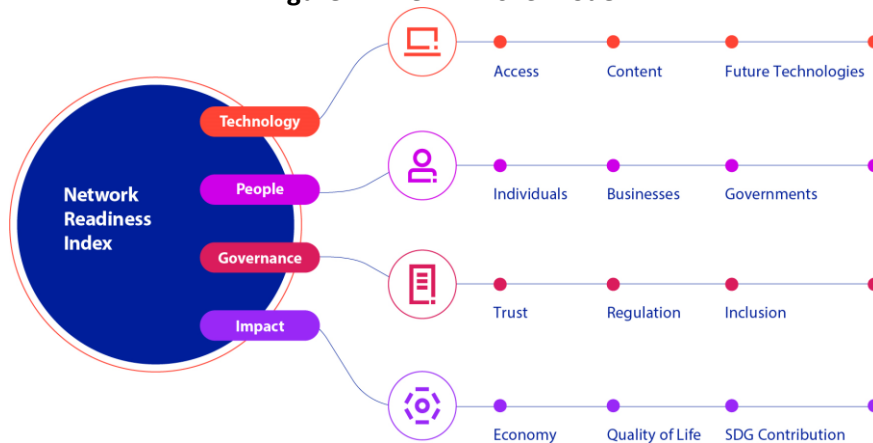




Denmark

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.

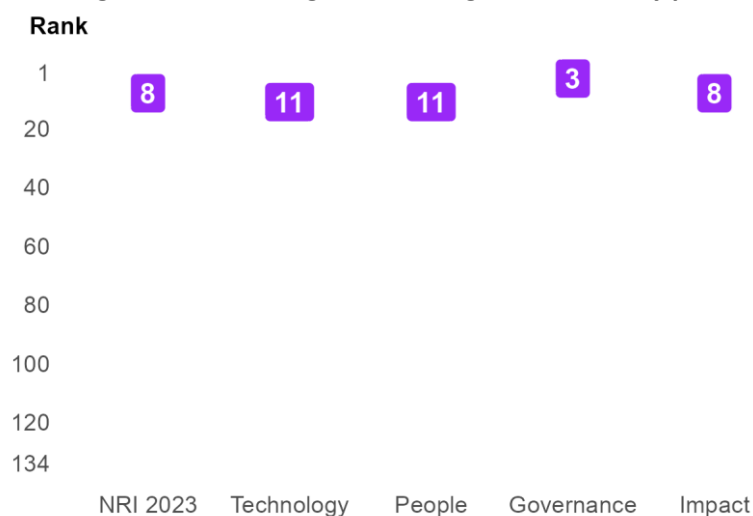
Figure 1: The NRI 2023 model



Global NRI position of Denmark

Denmark ranks 8th out of the 134 economies included in the NRI 2023 (Figure 2). Its main strength relates to Governance. The greatest scope for improvement, meanwhile, concerns Technology and People.

Figure 2: Denmark global ranking, overall and by pillar



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Performance at sub-pillar level

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

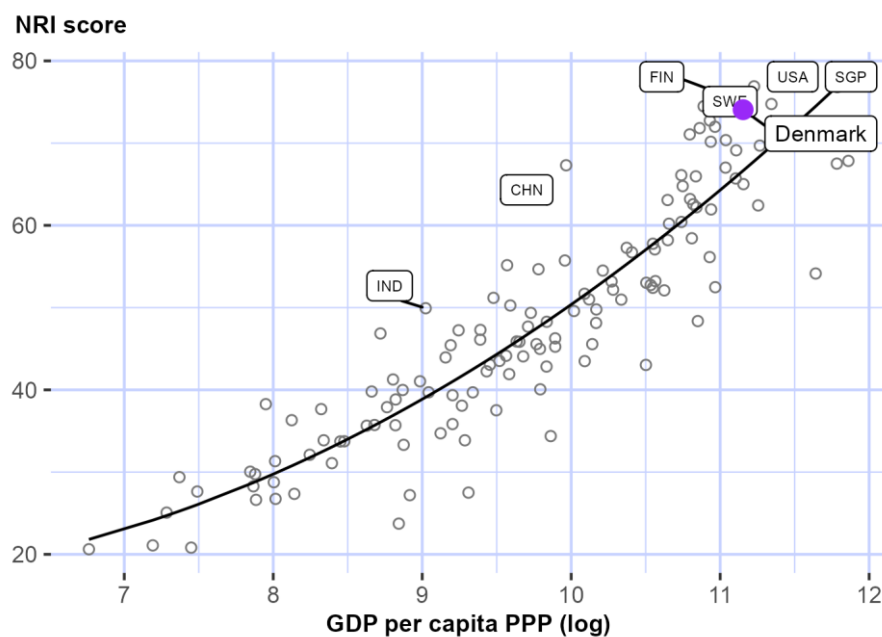
Table 1: Denmark rankings by sub-pillar

Sub-pillar	Rank	Sub-pillar	Rank
Trust	1	Businesses	9
Quality of Life	3	Future Technologies	10
SDG Contribution	3	Inclusion	12
Governments	8	Access	17
Regulation	8	Economy	19
Content	9	Individuals	64

NRI score and income

Figure 3 shows the position of Denmark 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, Denmark 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). Denmark belongs to the group of high-income countries, where the best performer is United States of America (USA). The top performer of its region-Europe-is Finland (FIN).

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Performance against its income group and region

High-income countries

Denmark is ranked 8th 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 each of the four pillars. At the sub-pillar level, it outperforms high-income countries in eleven of the twelve sub-pillars: Access, Content, Future Technologies, Businesses, Governments, Trust, Regulation, Inclusion, Economy, Quality of Life and SDG Contribution.

Europe

Denmark is ranked 5th within Europe (Figure 4, right panel). It outperforms its region in each of the four pillars. With regard to sub-pillars, it outperforms the average in Europe in eleven of the twelve sub-pillars: Access, Content, Future Technologies, Businesses, Governments, Trust, Regulation, Inclusion, Economy, Quality of Life and SDG Contribution.

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

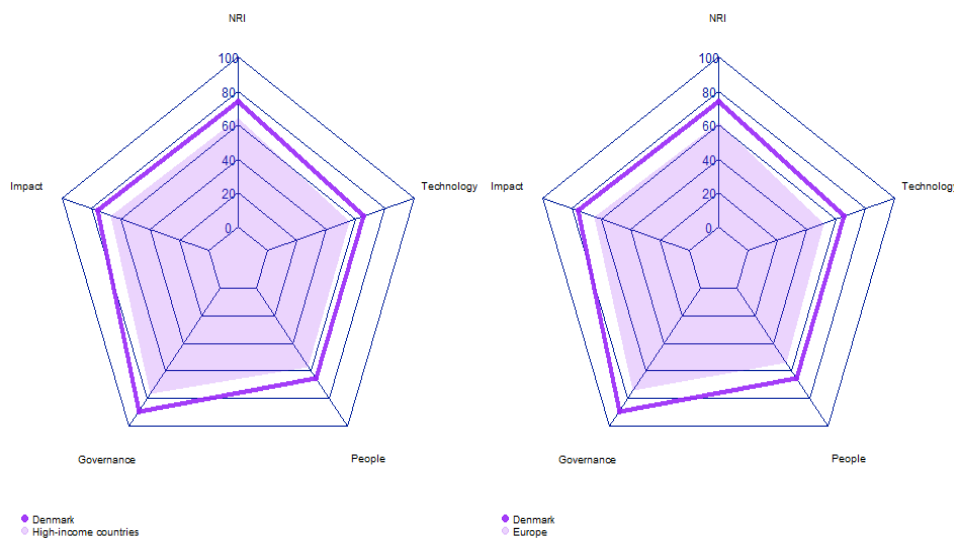


Table 2: Denmark scores vs. averages of its income group and region, overall and by pillar

Dimension	Denmark	High-income countries	Europe
NRI	74.06	64.07	61.25
Technology	65.42	55.76	51.90
People	65.26	56.99	54.16
Governance	89.53	76.81	74.33
Impact	76.04	66.73	64.61

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Strongest and weakest indicators

The indicators where Denmark performs particularly well include 1.1.4 Population covered by at least a 3G mobile network, 1.1.6 Internet access in schools, and 3.1.1 Secure Internet servers (Table 3). By contrast, the economy's weakest indicators include 1.1.5 International Internet bandwidth, 1.1.3 FTTH/building Internet subscriptions, and 4.1.4 Domestic market size.

Table 3: Highlight of Strengths and Opportunities for Denmark

Strongest indicators	Rank	Weakest indicators	Rank
1.1.4 Population covered by at least a 3G mobile network	1	2.1.6 AI talent concentration	29
1.1.6 Internet access in schools	1	4.1.4 Domestic market size	51
3.1.1 Secure Internet servers	1	1.1.3 FTTH/building Internet subscriptions	66
3.2.4 E-commerce legislation	1	1.1.5 International Internet bandwidth	80
4.3.3 SDG 5: Women's economic opportunity	1		
2.2.1 Firms with website	2		
3.1.3 Online access to financial account	2		
3.1.4 Internet shopping	2		
4.2.1 Happiness	3		
2.3.1 Government online services	4		
3.2.1 Regulatory quality	5		
1.2.2 Internet domain registrations	6		
3.3.2 Socioeconomic gap in use of digital payments	7		
4.1.3 PCT patent applications	7		

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

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NRI 2023 At-A-Glance: Denmark

Network Readiness Index

Rank: 8 (out of 134)

Score: 74.06

Pillar/sub-pillar	Rank	Score	Pillar/sub-pillar	Rank	Score
A. Technology pillar	11	65.42	C. Governance pillar	3	89.53
1st sub-pillar: Access	17	76.71	1st sub-pillar: Trust	1	97.41
2nd sub-pillar: Content	9	57.26	2nd sub-pillar: Regulation	8	88.14
3rd sub-pillar: Future Technologies	10	62.30	3rd sub-pillar: Inclusion	12	83.05
B. People pillar	11	65.26	D. Impact pillar	8	76.04
1st sub-pillar: Individuals	64	47.92	1st sub-pillar: Economy	19	48.59
2nd sub-pillar: Businesses	9	74.89	2nd sub-pillar: Quality of Life	3	91.97
3rd sub-pillar: Governments	8	72.96	3rd sub-pillar: SDG Contribution	3	87.56

The Network Readiness Index in detail

Indicator	Rank	Score	Indicator	Rank	Score
A. Technology pillar	11	65.42	C. Governance pillar	3	89.53
1st sub-pillar: Access	17	76.71	1st sub-pillar: Trust	1	97.41
1.1.1 Mobile tariffs	8	91.37	3.1.1 Secure Internet servers	1	100.00 ●
1.1.2 Handset prices	28	70.91	3.1.2 Cybersecurity	39	92.47
1.1.3 FTTH/building Internet subscriptions	66	28.94 ○	3.1.3 Online access to financial account	2	97.24 ●
1.1.4 Population covered by at least a 3G mobile network	1	100.00 ●	3.1.4 Internet shopping	2	99.93 ●
1.1.5 International Internet bandwidth	80	69.03 ○	2nd sub-pillar: Regulation	8	88.14
1.1.6 Internet access in schools	1	100.00 ●	3.2.1 Regulatory quality	5	90.46 ●
2nd sub-pillar: Content	9	57.26	3.2.2 ICT regulatory environment	9	95.29
1.2.1 GitHub commits	14	60.87	3.2.3 Regulation of emerging technologies	17	77.92
1.2.2 Internet domain registrations	6	82.93 ●	3.2.4 E-commerce legislation	1	100.00 ●
1.2.3 Mobile apps development	16	76.44	3.2.5 Privacy protection by law content	37	77.02
1.2.4 AI scientific publications	50	8.79	3rd sub-pillar: Inclusion	12	83.05
3rd sub-pillar: Future Technologies	10	62.30	3.3.1 E-Participation	12	88.38
1.3.1 Adoption of emerging technologies	13	84.22	3.3.2 Socioeconomic gap in use of digital payments	7	99.19 ●
1.3.2 Investment in emerging technologies	14	76.75	3.3.3 Availability of local online content	34	79.09
1.3.3 Robot density	11	37.40	3.3.4 Gender gap in Internet use	24	72.05

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Indicator	Rank	Score	Indicator	Rank	Score
1.3.4 Computer software spending	22	50.82	3.3.5 Rural gap in use of digital payments	15	76.53
B. People pillar	11	65.26	D. Impact pillar	8	76.04
<i>1st sub-pillar: Individuals</i>	64	47.92	<i>1st sub-pillar: Economy</i>	19	48.59
2.1.1 Mobile broadband internet traffic within the country	46	17.33	4.1.1 High-tech and medium-high-tech manufacturing	10	63.46
2.1.2 ICT skills in the education system	20	74.12	4.1.2 High-tech exports	39	24.55
2.1.3 Use of virtual social networks	18	79.28	4.1.3 PCT patent applications	7	68.05 ●
2.1.4 Tertiary enrollment	20	54.08	4.1.4 Domestic market size	51	58.28 ○
2.1.5 Adult literacy rate	NA	NA	4.1.5 Prevalence of gig economy	NA	NA
2.1.6 AI talent concentration	29	14.81 ○	4.1.6 ICT services exports	33	28.60
<i>2nd sub-pillar: Businesses</i>	9	74.89	<i>2nd sub-pillar: Quality of Life</i>	3	91.97
2.2.1 Firms with website	2	96.20 ●	4.2.1 Happiness	3	96.58 ●
2.2.2 GERD financed by business enterprise	15	73.73	4.2.2 Freedom to make life choices	12	92.37
2.2.3 Knowledge intensive employment	13	75.17	4.2.3 Income inequality	11	89.20
2.2.4 Annual investment in telecommunication services	32	84.59	4.2.4 Healthy life expectancy at birth	18	89.75
2.2.5 GERD performed by business enterprise	14	44.80	<i>3rd sub-pillar: SDG Contribution</i>	3	87.56
<i>3rd sub-pillar: Governments</i>	8	72.96	4.3.1 SDG 3: Good Health and Well-Being	17	92.69
2.3.1 Government online services	4	97.76 ●	4.3.2 SDG 4: Quality Education	17	68.16
2.3.2 Publication and use of open data	14	70.59	4.3.3 SDG 5: Women's economic opportunity	1	100.00 ●
2.3.3 Government promotion of investment in emerging tech	NA	NA	4.3.4 SDG 7: Affordable and Clean Energy	11	84.18
2.3.4 R&D expenditure by governments and higher education	12	50.53	4.3.5 SDG 11: Sustainable Cities and Communities	15	92.79

NOTE: ● a strength and ○ a weakness.

Network Readiness Index 2023



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>