



Germany

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.

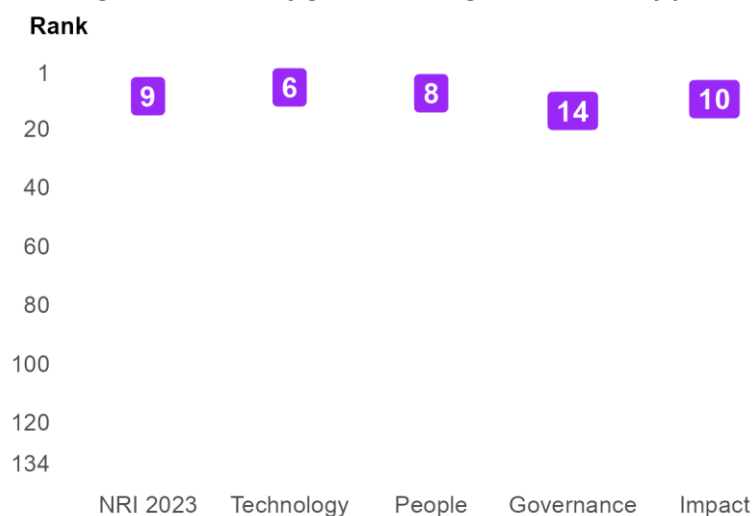
Figure 1: The NRI 2023 model



Global NRI position of Germany

Germany ranks 9th 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: Germany 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 Germany relate to Future Technologies, Businesses and Content, among others (Table 1). More could be done, though, to improve the economy's performances in the Inclusion, Access and Individuals sub-pillars.

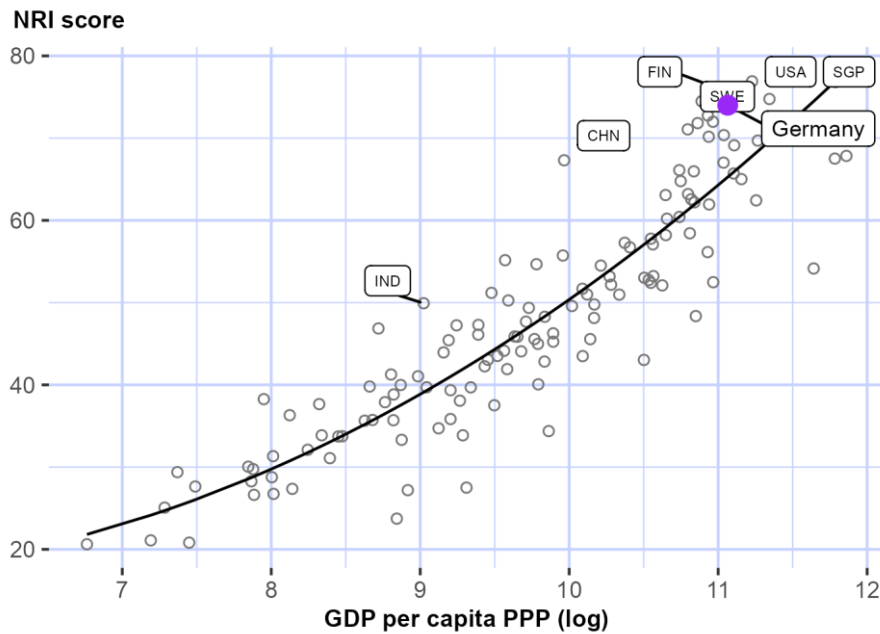
Table 1: Germany rankings by sub-pillar

Sub-pillar	Rank	Sub-pillar	Rank
Future Technologies	4	Trust	13
Businesses	5	Economy	13
Content	7	Quality of Life	15
SDG Contribution	11	Inclusion	20
Governments	12	Access	22
Regulation	12	Individuals	22

NRI score and income

Figure 3 shows the position of Germany 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, Germany 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). Germany 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

Germany is ranked 9th 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 has a higher score than the average of high-income countries in all of them.

Europe

Germany is ranked 6th within Europe (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 Germany against its income group and region, overall and by pillar

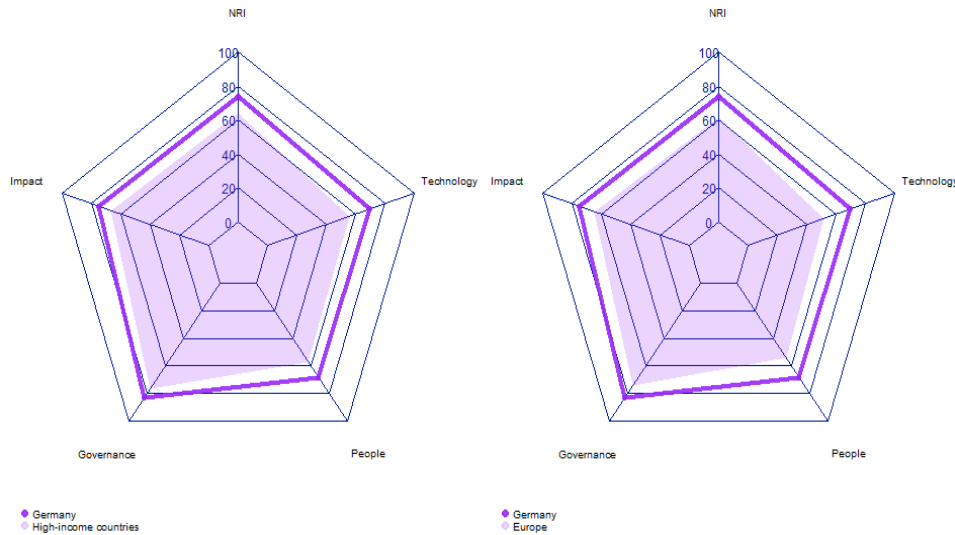


Table 2: Germany scores vs. averages of its income group and region, overall and by pillar

Dimension	Germany	High-income countries	Europe
NRI	74.00	64.07	61.25
Technology	69.45	55.76	51.90
People	68.25	56.99	54.16
Governance	83.16	76.81	74.33
Impact	75.13	66.73	64.61

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Strongest and weakest indicators

The indicators where Germany performs particularly well include 3.2.4 E-commerce legislation, 4.3.3 SDG 5: Women's economic opportunity, and 3.3.2 Socioeconomic gap in use of digital payments (Table 3). By contrast, the economy's weakest indicators include 3.3.4 Gender gap in Internet use, 4.1.6 ICT services exports, and 1.2.3 Mobile apps development.

Table 3: Highlight of Strengths and Opportunities for Germany

Strongest indicators	Rank	Weakest indicators	Rank
3.2.4 E-commerce legislation	1	2.1.2 ICT skills in the education system	38
4.3.3 SDG 5: Women's economic opportunity	1	1.2.3 Mobile apps development	49
3.3.2 Socioeconomic gap in use of digital payments	2	4.1.6 ICT services exports	56
1.3.3 Robot density	3	3.3.4 Gender gap in Internet use	63
2.2.4 Annual investment in telecommunication services	5		
4.1.4 Domestic market size	5		
2.2.1 Firms with website	6		
1.2.2 Internet domain registrations	7		
1.3.2 Investment in emerging technologies	7		
3.1.1 Secure Internet servers	7		
1.2.4 AI scientific publications	9		
1.3.1 Adoption of emerging technologies	9		

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

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NRI 2023 At-A-Glance: Germany

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Rank: 9 (out of 134)

Score: 74.00

Pillar/sub-pillar	Rank	Score	Pillar/sub-pillar	Rank	Score
A. Technology pillar	6	69.45	C. Governance pillar	14	83.16
1st sub-pillar: Access	22	75.84	1st sub-pillar: Trust	13	82.21
2nd sub-pillar: Content	7	60.88	2nd sub-pillar: Regulation	12	87.46
3rd sub-pillar: Future Technologies	4	71.65	3rd sub-pillar: Inclusion	20	79.80
B. People pillar	8	68.25	D. Impact pillar	10	75.13
1st sub-pillar: Individuals	22	57.41	1st sub-pillar: Economy	13	56.21
2nd sub-pillar: Businesses	5	77.31	2nd sub-pillar: Quality of Life	15	83.43
3rd sub-pillar: Governments	12	70.03	3rd sub-pillar: SDG Contribution	11	85.75

The Network Readiness Index in detail

Indicator	Rank	Score	Indicator	Rank	Score
A. Technology pillar	6	69.45	C. Governance pillar	14	83.16
1st sub-pillar: Access	22	75.84	1st sub-pillar: Trust	13	82.21
1.1.1 Mobile tariffs	18	84.73	3.1.1 Secure Internet servers	7	91.67
1.1.2 Handset prices	20	77.10	3.1.2 Cybersecurity	18	97.36
1.1.3 FTTH/building Internet subscriptions	41	37.54	3.1.3 Online access to financial account	14	71.20
1.1.4 Population covered by at least a 3G mobile network	28	99.97	3.1.4 Internet shopping	24	68.62
1.1.5 International Internet bandwidth	26	79.84	2nd sub-pillar: Regulation	12	87.46
1.1.6 Internet access in schools	NA	NA	3.2.1 Regulatory quality	11	86.46
2nd sub-pillar: Content	7	60.88	3.2.2 ICT regulatory environment	21	93.53
1.2.1 GitHub commits	18	56.48	3.2.3 Regulation of emerging technologies	21	74.55
1.2.2 Internet domain registrations	7	78.18	3.2.4 E-commerce legislation	1	100.00
1.2.3 Mobile apps development	49	70.88	3.2.5 Privacy protection by law content	26	82.77
1.2.4 AI scientific publications	9	37.96	3rd sub-pillar: Inclusion	20	79.80
3rd sub-pillar: Future Technologies	4	71.65	3.3.1 E-Participation	32	72.10
1.3.1 Adoption of emerging technologies	9	85.48	3.3.2 Socioeconomic gap in use of digital payments	2	99.90
1.3.2 Investment in emerging technologies	7	86.75	3.3.3 Availability of local online content	26	84.38
1.3.3 Robot density	3	56.82	3.3.4 Gender gap in Internet use	63	67.46

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Indicator	Rank	Score	Indicator	Rank	Score
1.3.4 Computer software spending	15	57.56	3.3.5 Rural gap in use of digital payments	27	75.20
B. People pillar	8	68.25	D. Impact pillar	10	75.13
<i>1st sub-pillar: Individuals</i>	22	57.41	<i>1st sub-pillar: Economy</i>	13	56.21
2.1.1 Mobile broadband internet traffic within the country	20	37.09	4.1.1 High-tech and medium-high-tech manufacturing	9	66.52
2.1.2 ICT skills in the education system	38	60.61	4.1.2 High-tech exports	34	27.37
2.1.3 Use of virtual social networks	12	80.55	4.1.3 PCT patent applications	10	64.49
2.1.4 Tertiary enrollment	28	47.43	4.1.4 Domestic market size	5	83.19
2.1.5 Adult literacy rate	NA	NA	4.1.5 Prevalence of gig economy	12	78.20
2.1.6 AI talent concentration	5	61.37	4.1.6 ICT services exports	56	17.51
<i>2nd sub-pillar: Businesses</i>	5	77.31	<i>2nd sub-pillar: Quality of Life</i>	15	83.43
2.2.1 Firms with website	6	92.28	4.2.1 Happiness	27	79.15
2.2.2 GERD financed by business enterprise	11	77.45	4.2.2 Freedom to make life choices	27	86.66
2.2.3 Knowledge intensive employment	20	70.67	4.2.3 Income inequality	29	78.64
2.2.4 Annual investment in telecommunication services	5	92.66	4.2.4 Healthy life expectancy at birth	23	89.27
2.2.5 GERD performed by business enterprise	9	53.51	<i>3rd sub-pillar: SDG Contribution</i>	11	85.75
<i>3rd sub-pillar: Governments</i>	12	70.03	4.3.1 SDG 3: Good Health and Well-Being	11	94.24
2.3.1 Government online services	44	76.85	4.3.2 SDG 4: Quality Education	18	67.91
2.3.2 Publication and use of open data	11	73.53	4.3.3 SDG 5: Women's economic opportunity	1	100.00
2.3.3 Government promotion of investment in emerging tech	14	73.42	4.3.4 SDG 7: Affordable and Clean Energy	29	79.48
2.3.4 R&D expenditure by governments and higher education	9	56.31	4.3.5 SDG 11: Sustainable Cities and Communities	26	87.12

NOTE: ● a strength and ○ a weakness.

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