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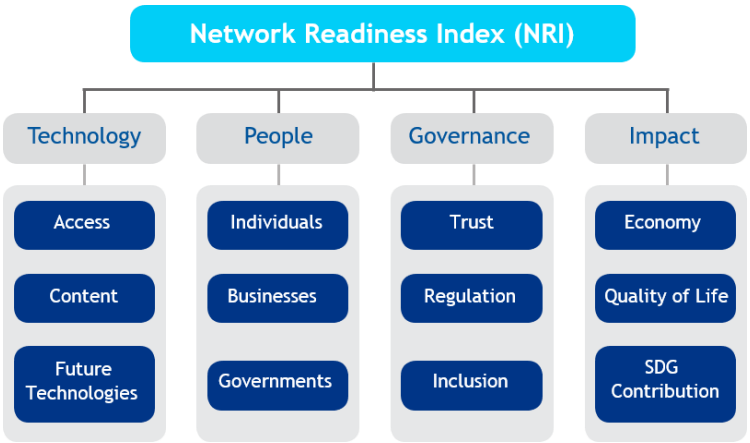
Network Readiness Index 2019 Germany

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 2019 the NRI Report maps the network-based readiness landscape of 121 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 62 variables.

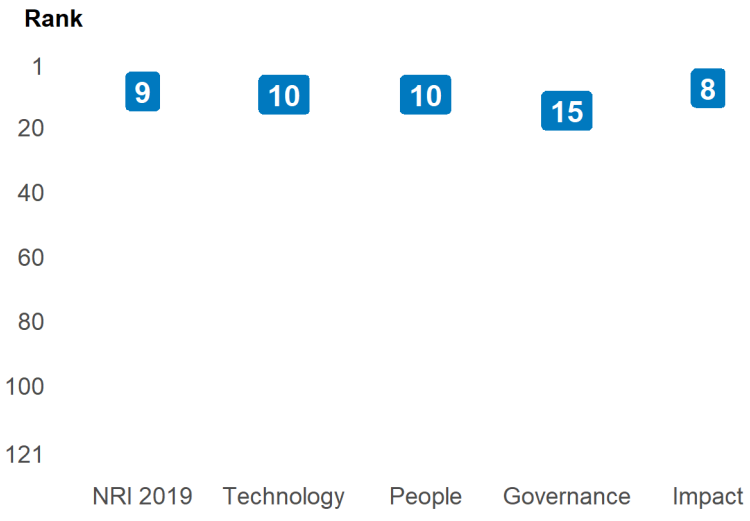
Figure 1: The NRI 2019 model



Global NRI position of Germany

Germany ranks 9th out of the 121 economies included in the NRI 2019 (Figure 2). Its main strength relates to Impact. The greatest scope for improvement, meanwhile, concerns Governance.

Figure 2: Germany global ranking, overall and by pillar



Performance at sub-pillar level

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

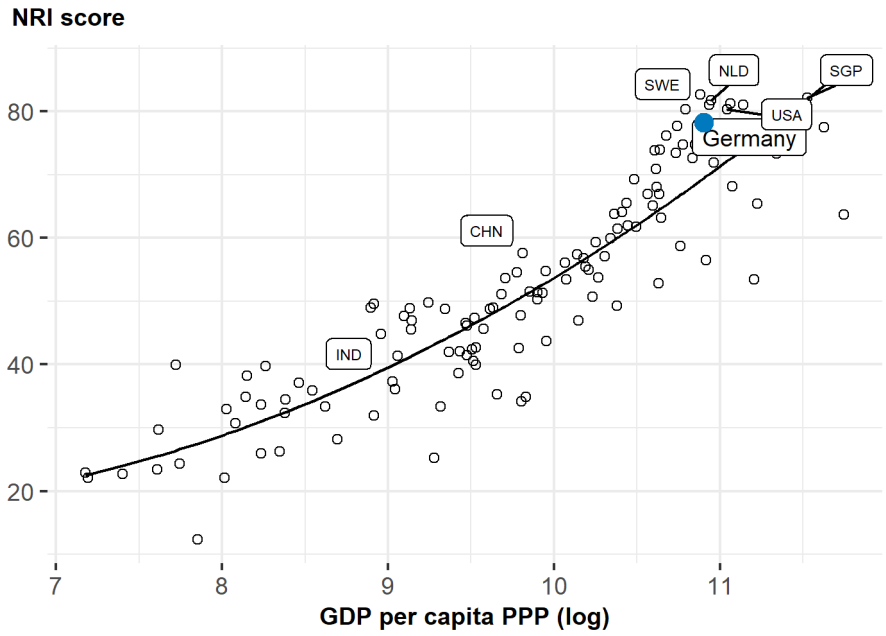
Table 1: Germany rankings by sub-pillar

Sub-pillar	Rank	Sub-pillar	Rank
Future Technologies	2	Quality of Life	16
Businesses	6	Content	17
Governments	6	Inclusion	17
SDG Contribution	6	Trust	19
Economy	7	Access	27
Regulation	13	Individuals	41

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: SWE = Sweden (rank: 1), SGP = Singapore (2), NLD = Netherlands (3), CHN = China (41), IND = India (79). USA is ranked 8th. Germany belongs to the group of high-income countries, where the best performer is Sweden (SWE). The top performer of its region—Europe—is also Sweden (SWE).

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 outperforms high-income countries in ten of the twelve sub-pillars: Content, Future Technology, Businesses, Governments, Trust, Regulation, Inclusion, Economy, Quality of Life and SDG Contribution.

Europe

Germany is ranked 7th 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 Technology, Businesses, Governments, Trust, Regulation, Inclusion, Economy, Quality of Life and SDG Contribution.

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

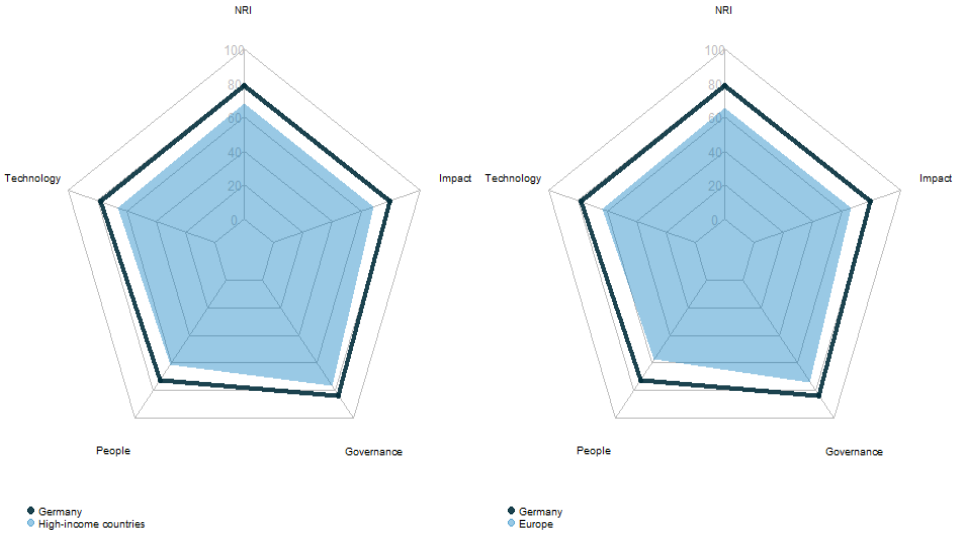


Table 2: Germany scores vs. averages of its income group and region, overall and by pillar

Dimension	Germany	High-income countries	Europe
NRI	78.23	68.12	65.20
Technology	77.51	66.07	63.08
People	72.60	61.07	57.50
Governance	83.94	77.07	73.99
Impact	78.87	68.29	66.24

Strongest and weakest indicators

The indicators where Germany performs particularly well include Robot density, E-commerce legislation, and Use of clean fuels and technology (Table 3). By contrast, the economy's weakest indicators include Use of virtual social networks, Online trust and safety, and Gender gap in internet use.

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

Strongest indicators	Rank	Weakest indicators	Rank
Robot density	1	Rural gap in use of digital payments	31
E-commerce legislation	1	Fixed-broadband subscriptions	34
Use of clean fuels and technology	1	Freedom to make life choices	38
Technicians and associate professionals	2	Handset prices	41
Medium and high-tech industry	4	4G mobile network coverage	44
R&D expenditure by governments and higher education	5	Active mobile-broadband subscriptions	57
Government procurement of advanced technology products	6	International Internet bandwidth	63
ICT skills	6	Gender gap in internet use	64
Company investment in emerging technology	7	Online trust and safety	76
R&D expenditure by businesses	7	Use of virtual social networks	82

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NRI 2019 At-A-Glance: Germany

Network Readiness Index Rank: 9 (out of 121) Score: 78.23

Pillar/sub-pillar	Rank	Score
A. Technology pillar	10	77.51
1st sub-pillar: Access	27	81.89
2nd sub-pillar: Content	17	71.43
3rd sub-pillar: Future Technologies	2	79.21
B. People pillar	10	72.60
1st sub-pillar: Individuals	41	61.08
2nd sub-pillar: Businesses	6	75.46
3rd sub-pillar: Governments	6	81.27

Pillar/sub-pillar	Rank	Score
C. Governance pillar	15	83.94
1st sub-pillar: Trust	19	81.78
2nd sub-pillar: Regulation	13	88.60
3rd sub-pillar: Inclusion	17	81.43
D. Impact pillar	8	78.87
1st sub-pillar: Economy	7	56.82
2nd sub-pillar: Quality of Life	16	82.69
3rd sub-pillar: SDG Contribution	6	97.09

The Network Readiness Index in detail

Indicator	Rank	Score
A. Technology pillar		
1st sub-pillar: Access		
1.1.1 Mobile tariffs	11	90.26
1.1.2 Handset prices	41	58.03
1.1.3 Internet access	18	89.22
1.1.4 4G mobile network coverage	44	97.50
1.1.5 Fixed-broadband subscriptions	34	88.06
1.1.6 International Internet bandwidth	63	68.24
1.1.7 Internet access in schools	NA	NA
2nd sub-pillar: Content		
1.2.1 Digital participation and content creation	*	*
1.2.2 Mobile apps development	21	84.14
1.2.3 Intellectual property receipts	17	7.40
3rd sub-pillar: Future Technologies		
1.3.1 Availability of latest technologies	16	85.98
1.3.2 Company investment in emerging technology	7	85.74
1.3.3 Government procurement of advanced technology products	6	84.20
1.3.4 ICT PCT patent applications	13	64.79
1.3.5 Computer software spending	8	54.55
1.3.6 Robot density	1	100.00
B. People pillar		
1st sub-pillar: Individuals		
2.1.1 Internet users	16	88.97
2.1.2 Active mobile-broadband subscriptions	57	30.97
2.1.3 Use of virtual social networks	82	44.91
2.1.4 Tertiary enrolment	28	51.13
2.1.5 Adult literacy rate	NA	NA
2.1.6 ICT skills	6	89.44
2nd sub-pillar: Businesses		
2.2.1 Firms with website	8	89.30
2.2.2 Internet shopping	11	85.73
2.2.3 Professionals	31	46.06
2.2.4 Technicians and associate professionals	2	98.91
2.2.5 Extent of staff training	10	79.37
2.2.6 R&D expenditure by businesses	7	53.39
3rd sub-pillar: Governments		
2.3.1 Government online services	17	92.31
2.3.2 Publication and use of open data	16	69.52
2.3.3 ICT use and government efficiency	14	78.12
2.3.4 R&D expenditure by governments and higher education	5	85.11

Indicator	Rank	Score
C. Governance pillar		
1st sub-pillar: Trust		
3.1.1 Rule of law	16	90.52
3.1.2 Software piracy rate	8	93.24
3.1.3 Secure Internet servers	8	93.34
3.1.4 Cybersecurity	24	91.01
3.1.5 Online trust and safety	76	40.79
2nd sub-pillar: Regulation		
3.2.1 Regulatory quality	12	89.94
3.2.2 Ease of doing business	21	87.52
3.2.3 Legal framework's adaptability to digital business models	13	81.62
3.2.4 E-commerce legislation	1	100.00
3.2.5 Social safety net protection	19	76.98
3.2.6 ICT regulatory environment	15	95.56
3rd sub-pillar: Inclusion		
3.3.1 E-Participation	23	91.08
3.3.2 Socioeconomic gap in use of digital payments	13	96.12
3.3.3 Availability of local online content	9	89.25
3.3.4 Gender gap in internet use	64	55.49
3.3.5 Rural gap in use of digital payments	31	75.20
D. Impact pillar		
1st sub-pillar: Economy		
4.1.1 Medium and high-tech industry	4	78.58
4.1.2 High-tech exports	28	29.87
4.1.3 PCT patent applications	8	62.95
4.1.4 Labour productivity per employee	21	55.89
2nd sub-pillar: Quality of Life		
4.2.1 Happiness	15	84.59
4.2.2 Freedom to make life choices	38	80.65
4.2.3 Income inequality	23	82.37
4.2.4 Healthy life expectancy at birth	26	83.15
3rd sub-pillar: SDG Contribution		
4.3.1 Access to basic services	21	99.49
4.3.2 Pollution	25	93.25
4.3.3 Road safety	8	95.62
4.3.4 Reading proficiency in schools	NA	NA
4.3.5 Maths proficiency in schools	NA	NA
4.3.6 Use of clean fuels and technology	1	100.00

* Confidential data

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