

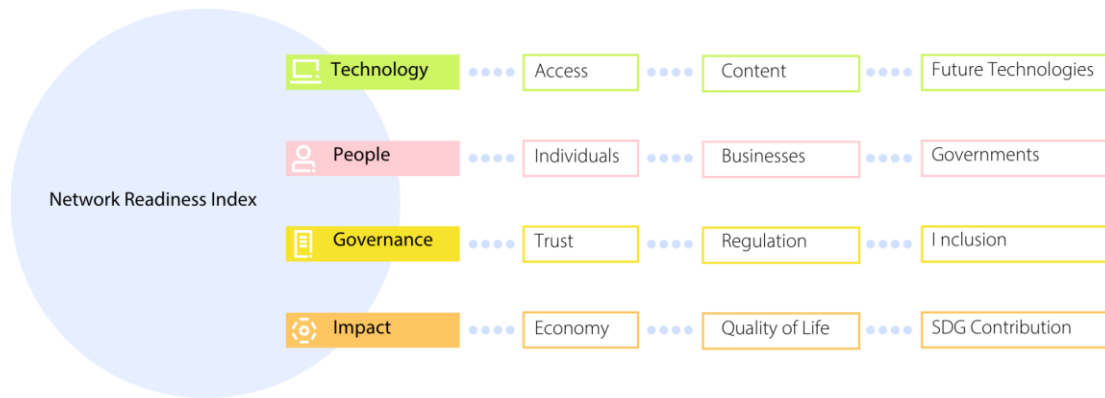
# Network Readiness Index 2024



## Serbia

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 2024 the NRI Report maps the network-based readiness landscape of 133 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 54 variables.

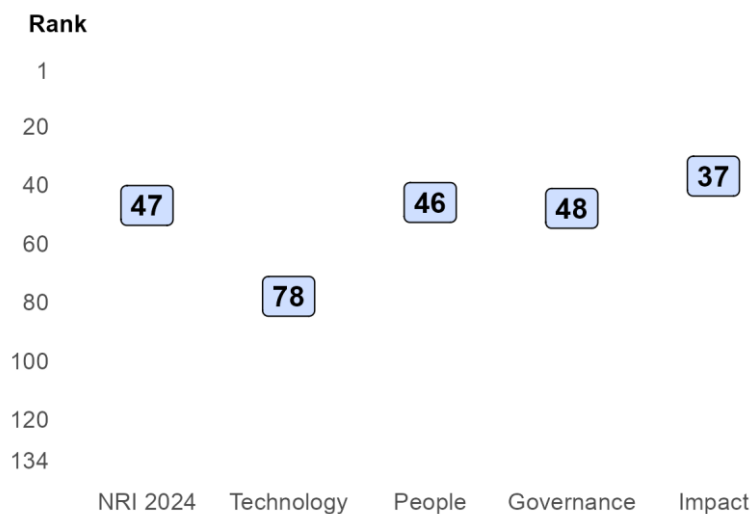
Figure 1: The NRI 2024 model



### Global NRI position of Serbia

Serbia ranks 47th out of the 133 economies included in the NRI 2024 (Figure 2). Its main strength relates to Impact. The greatest scope for improvement, meanwhile, concerns Technology.

Figure 2: Serbia 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 Serbia relate to Economy, Individuals and Inclusion, among others (Table 1). More could be done, though, to improve the economy's performances in the Access, SDG Contribution and Future Technologies sub-pillars.

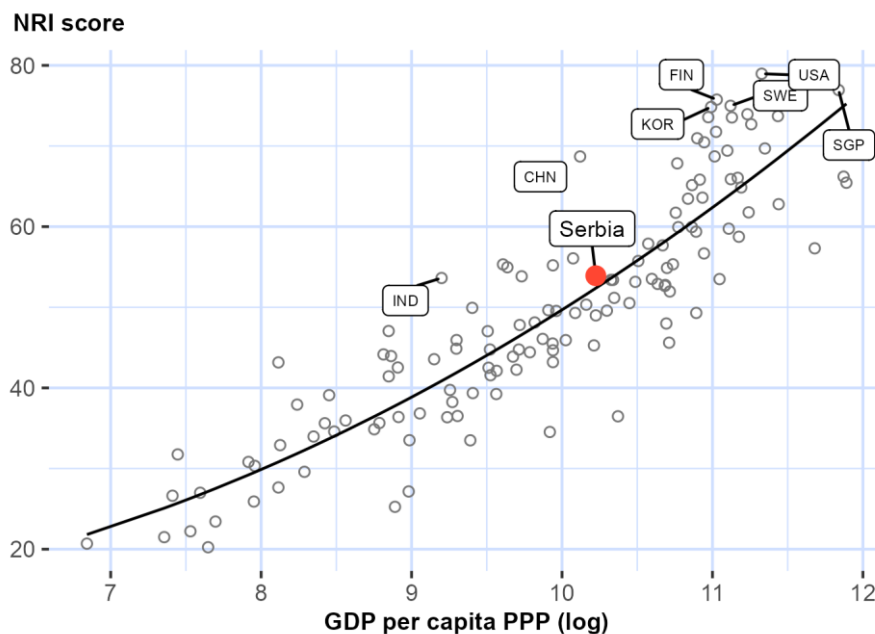
Table 1: Serbia rankings by sub-pillar

Sub-pillar	Rank	Sub-pillar	Rank
Economy	22	Governments	55
Individuals	36	Content	56
Inclusion	42	Trust	56
Regulation	46	Access	61
Quality of Life	48	SDG Contribution	61
Businesses	50	Future Technologies	103

## NRI score and income

Figure 3 shows the position of Serbia 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, Serbia is slightly above the trend line, which suggests that its network readiness is more or less in line with what 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), SWE = Sweden (4), KOR = Republic of Korea (5), CHN = China (17), and IND = India (49). Serbia belongs to the group of upper-middle-income countries, where the best performer is China (CHN). The top performer of its region-Europe-is Finland (FIN).

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## Performance against its income group and region

### Upper-middle-income countries

Serbia is ranked 6th in the group of upper-middle-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 upper-middle-income countries in eleven of the twelve sub-pillars: Access, Content, Individuals, Businesses, Governments, Trust, Regulation, Inclusion, Economy, Quality of Life and SDG Contribution.

### Europe

Serbia is ranked 30th within Europe (Figure 4, right panel). It lags behind its region in each of the four pillars. With regard to sub-pillars, it outperforms the average in Europe in two of the twelve sub-pillars: Individuals and Economy.

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

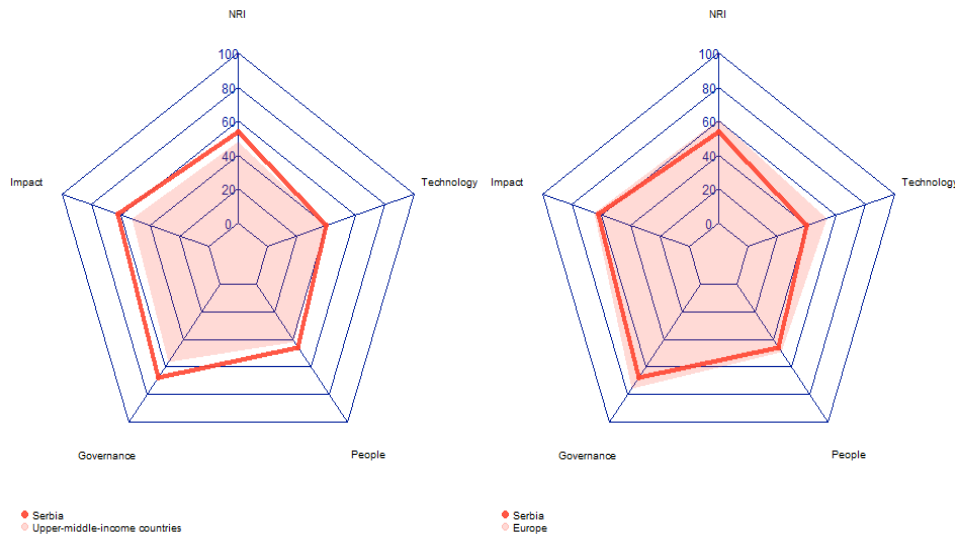


Table 2: Serbia scores vs. averages of its income group and region, overall and by pillar

Dimension	Serbia	Upper-middle-income countries	Europe
NRI	53.91	47.52	60.84
Technology	39.86	39.51	53.51
People	46.00	41.65	49.45
Governance	67.97	56.74	75.76
Impact	61.81	52.19	64.63

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#### Strongest and weakest indicators

The indicators where Serbia performs particularly well include 3.2.4 E-commerce legislation, 3.2.2 ICT regulatory environment, and 4.1.4 ICT services exports (Table 3). By contrast, the economy's weakest indicators include 1.3.4 Computer software spending, 4.3.4 SDG 7: Affordable and Clean Energy, and 1.3.2 Investment in emerging technologies.

**Table 3: Highlight of Strengths and Opportunities for Serbia**

<b>Strongest indicators</b>	<b>Rank</b>	<b>Weakest indicators</b>	<b>Rank</b>
3.2.4 E-commerce legislation	1	1.3.3 Robot density	44
3.2.2 ICT regulatory environment	11	2.2.2 Number of venture capital deals invested in AI	61
4.1.4 ICT services exports	13	2.3.3 Government promotion of emerging technologies	78
2.1.4 Adult literacy rate	14	2.1.2 ICT skills in the education system	79
3.3.1 E-Participation	15	4.1.3 Prevalence of gig economy	79
2.2.1 Firms with website	25	3.2.3 Regulation of emerging technologies	81
2.3.1 Government online services	26	3.1.3 Online access to financial account	85
3.2.5 Privacy protection by law content	26	1.3.2 Investment in emerging technologies	90
4.3.3 SDG 5: Women's economic opportunity	28	4.3.4 SDG 7: Affordable and Clean Energy	94
1.2.3 Mobile apps development	29	1.3.4 Computer software spending	114
4.2.1 Happiness	37		

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

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## NRI 2024 At-A-Glance: Serbia

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Rank: 47 (out of 133)

Score: 53.91

Pillar/sub-pillar	Rank	Score	Pillar/sub-pillar	Rank	Score
A. Technology pillar	78	39.86	C. Governance pillar	48	67.97
1st sub-pillar: Access	61	66.70	1st sub-pillar: Trust	56	57.12
2nd sub-pillar: Content	56	28.45	2nd sub-pillar: Regulation	46	73.98
3rd sub-pillar: Future Technologies	103	24.43	3rd sub-pillar: Inclusion	42	72.81
B. People pillar	46	46.00	D. Impact pillar	37	61.81
1st sub-pillar: Individuals	36	55.60	1st sub-pillar: Economy	22	46.35
2nd sub-pillar: Businesses	50	38.76	2nd sub-pillar: Quality of Life	48	72.02
3rd sub-pillar: Governments	55	43.65	3rd sub-pillar: SDG Contribution	61	67.07

### The Network Readiness Index in detail

Indicator	Rank	Score	Indicator	Rank	Score
<b>A. Technology pillar</b>	78	39.86	<b>C. Governance pillar</b>	48	67.97
<i>1st sub-pillar: Access</i>	61	66.70	<i>1st sub-pillar: Trust</i>	56	57.12
1.1.1 Mobile tariffs	56	66.66	3.1.1 Secure Internet servers	43	72.97
1.1.2 Handset prices	61	67.09	3.1.2 Cybersecurity	47	89.83
1.1.3 FTTH/building Internet subscriptions	66	30.34	3.1.3 Online access to financial account	85	27.53 ○
1.1.4 Population covered by at least a 3G mobile network	51	94.63	3.1.4 Internet shopping	53	38.17
1.1.5 International Internet bandwidth	45	74.76	<i>2nd sub-pillar: Regulation</i>	46	73.98
1.1.6 Internet access in schools	NA	NA	3.2.1 Regulatory quality	66	51.24
<i>2nd sub-pillar: Content</i>	56	28.45	3.2.2 ICT regulatory environment	11	94.64 ●
1.2.1 GitHub commits	38	27.66	3.2.3 Regulation of emerging technologies	81	39.03 ○
1.2.2 Internet domain registrations	55	5.28	3.2.4 E-commerce legislation	1	100.00 ●
1.2.3 Mobile apps development	29	72.77 ●	3.2.5 Privacy protection by law content	26	85.00 ●
1.2.4 AI scientific publications	64	8.10	<i>3rd sub-pillar: Inclusion</i>	42	72.81
<i>3rd sub-pillar: Future Technologies</i>	103	24.43	3.3.1 E-Participation	15	80.23 ●
1.3.1 Adoption of emerging technologies	63	61.18	3.3.2 Socioeconomic gap in use of digital payments	39	88.33
1.3.2 Investment in emerging technologies	90	31.25 ○	3.3.3 Availability of local online content	53	66.59
1.3.3 Robot density	44	2.56 ○	3.3.4 Gender gap in Internet use	60	66.92

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Indicator	Rank	Score		Indicator	Rank	Score	
1.3.4 Computer software spending	114	2.72	○	3.3.5 Rural gap in use of digital payments	69	62.00	
<b>B. People pillar</b>	46	46.00		<b>D. Impact pillar</b>	37	61.81	
<i>1st sub-pillar: Individuals</i>	36	55.60		<i>1st sub-pillar: Economy</i>	22	46.35	
2.1.1 Mobile broadband internet traffic within the country	63	13.07		4.1.1 ICT patent applications	NA	NA	
2.1.2 ICT skills in the education system	79	49.20	○	4.1.2 Domestic market scale	76	49.37	
2.1.3 Use of virtual social networks	50	60.96		4.1.3 Prevalence of gig economy	79	35.17	○
2.1.4 Adult literacy rate	14	99.18	●	4.1.4 ICT services exports	13	54.50	●
2.1.5 AI talent concentration	NA	NA		<i>2nd sub-pillar: Quality of Life</i>	48	72.02	
<i>2nd sub-pillar: Businesses</i>	50	38.76		4.2.1 Happiness	37	72.13	●
2.2.1 Firms with website	25	76.81	●	4.2.2 Freedom to make life choices	73	73.18	
2.2.2 Number of venture capital deals invested in AI	61	4.02	○	4.2.3 Income inequality	42	76.86	
2.2.3 Annual investment in telecommunication services	46	56.99		4.2.4 Healthy life expectancy at birth	70	64.68	
2.2.4 Public cloud computing market scale	61	17.22		<i>3rd sub-pillar: SDG Contribution</i>	61	67.07	
<i>3rd sub-pillar: Governments</i>	55	43.65		4.3.1 SDG 3: Good Health and Well-Being	70	69.35	
2.3.1 Government online services	26	83.58	●	4.3.2 SDG 4: Quality Education	41	43.51	
2.3.2 Data Capabilities	NA	NA		4.3.3 SDG 5: Women's economic opportunity	28	91.45	●
2.3.3 Government promotion of investment in emerging technologies	78	29.70	○	4.3.4 SDG 7: Affordable and Clean Energy	94	71.64	○
2.3.4 R&D expenditure by governments and higher education	40	17.67		4.3.5 SDG 11: Sustainable Cities and Communities	84	54.01	

NOTE: ● a strength and ○ a weakness.

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#### Sources

Dutta, S., & Lanvin, B. (eds.) (2024). *The Network Readiness Index 2024*. Oxford, UK; Washington DC, USA.

Dutta, S., & Lanvin, B. (eds.) (2023). *The Network Readiness Index 2023: Trust in Network Society: A Crisis of the Digital Age*. Oxford, UK; Washington DC, USA.

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>