# New Zealand

*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.*
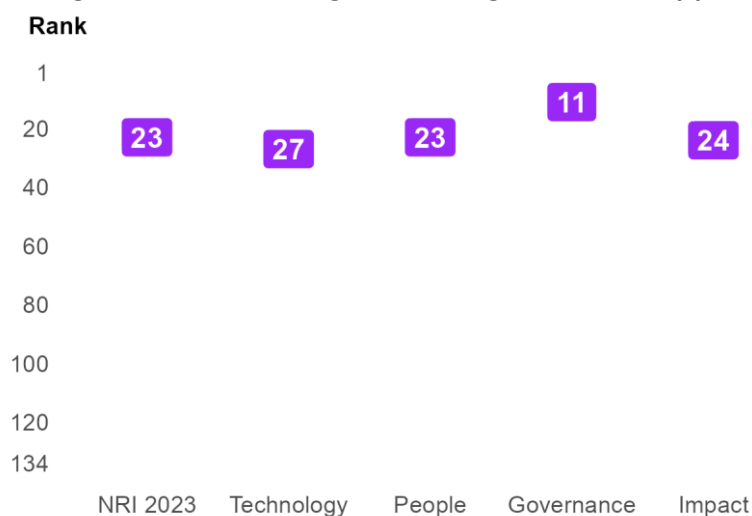
**Figure 1: The NRI 2023 model**



**Global NRI position of New Zealand**

New Zealand ranks 23rd 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.

**Figure 2: New Zealand global ranking, overall and by pillar**

## Performance at sub-pillar level

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

**Table 1: New Zealand rankings by sub-pillar**

| Sub-pillar | Rank | Sub-pillar | Rank |
|---|---|---|---|
| Inclusion | 9 | Content | 22 |
| Trust | 11 | Businesses | 24 |
| Governments | 17 | Economy | 36 |
| Quality of Life | 17 | Future Technologies | 37 |
| SDG Contribution | 18 | Access | 45 |
| Regulation | 19 | Individuals | 77 |

## NRI score and income

Figure 3 shows the position of New Zealand 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, New Zealand 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)**
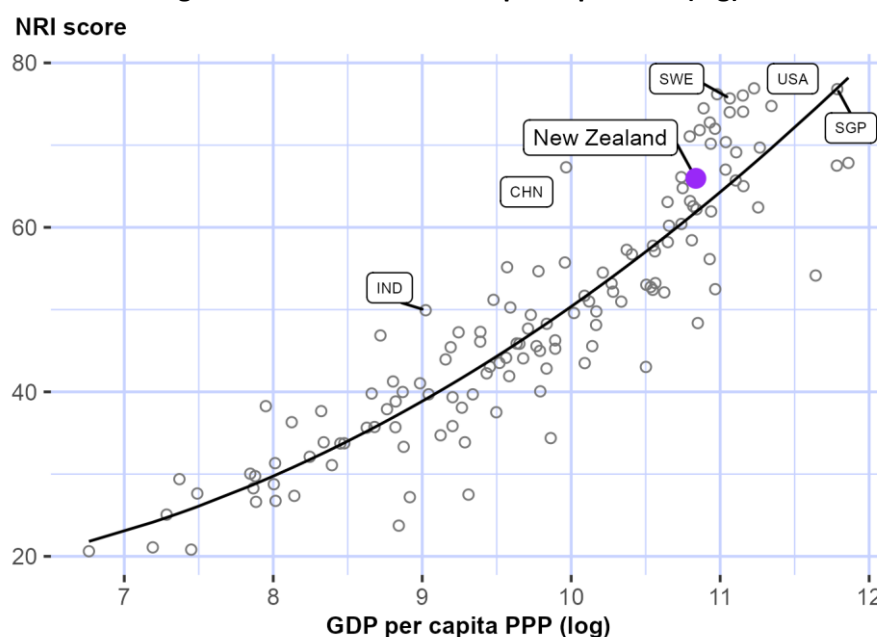


Note: USA = United States (rank: 1), SGP = Singapore (rank: 2), FIN = Finland (3), NLD = Netherlands (4), SWE = Sweden (5), CHN = China (20), IND = India (61). New Zealand belongs to the group of high-income countries, where the best performer is United States of America (USA). The top performer of its region-Asia & Pacific-is Singapore (SGP).

**Performance against its income group and region**

*High-income countries*
New Zealand is ranked 22nd 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 three of the four pillars: NRI, People, Governance and Impact. At the sub-pillar level, it outperforms high-income countries in eight of the twelve sub-pillars: Content, Businesses, Governments, Trust, Regulation, Inclusion, Quality of Life and SDG Contribution.

*Asia & Pacific*
New Zealand is ranked 6th within Asia & Pacific (Figure 4, right panel). It outperforms its region in each of the four pillars. With regard to sub-pillars, it outperforms the average in Asia & Pacific in ten of the twelve sub-pillars: Access, Content, Future Technologies, Businesses, Governments, Trust, Regulation, Inclusion, Quality of Life and SDG Contribution.

**Figure 4: Performance of New Zealand against its income group and region, overall and by pillar**
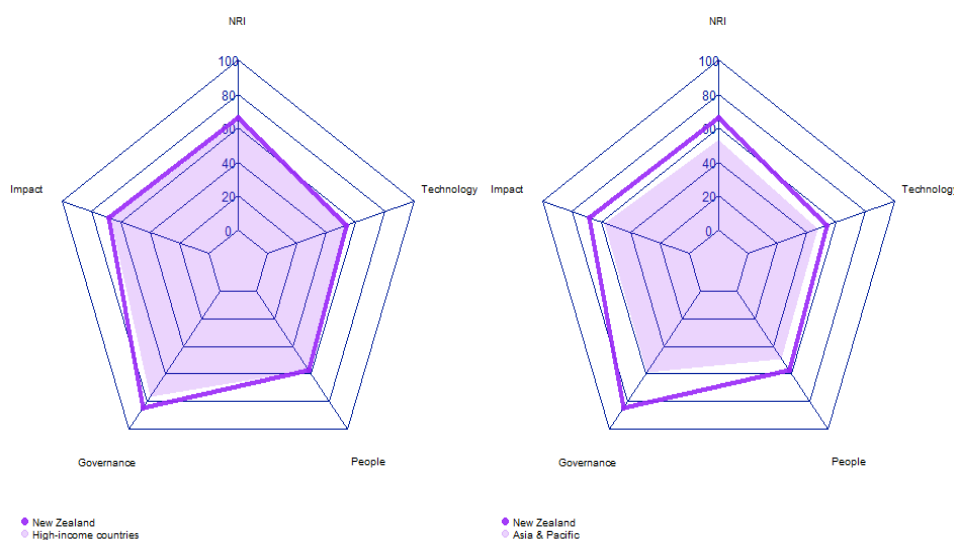


**Table 2: New Zealand scores vs. averages of its income group and region, overall and by pillar**

| Dimension | New Zealand | High-income countries | Asia & Pacific |
|---|---|---|---|
| NRI | 65.96 | 64.07 | 53.28 |
| Technology | 53.79 | 55.76 | 47.34 |
| People | 57.45 | 56.99 | 48.95 |
| Governance | 84.47 | 76.81 | 59.22 |
| Impact | 68.14 | 66.73 | 57.62 |

**Strongest and weakest indicators**

The indicators where New Zealand performs particularly well include 3.2.4 E-commerce legislation, 2.3.1 Government online services, and 3.1.3 Online access to financial account (Table 3). By contrast, the economy's weakest indicators include 2.1.1 Mobile broadband internet traffic within the country, 4.1.1 High-tech and medium-high-tech manufacturing, and 2.1.6 AI talent concentration.

**Table 3: Highlight of Strengths and Opportunities for New Zealand**

| Strongest indicators | Rank | Weakest indicators | Rank |
|---|---|---|---|
| 3.2.4 E-commerce legislation | 1 | 1.3.3 Robot density | 33 |
| 2.3.1 Government online services | 6 | 2.1.6 AI talent concentration | 41 |
| 3.1.3 Online access to financial account | 6 | 4.1.1 High-tech and medium-high-tech manufacturing | 73 |
| 3.2.1 Regulatory quality | 6 | 2.1.1 Mobile broadband internet traffic within the country | 85 |
| 3.3.1 E-Participation | 6 | | |
| 2.3.2 Publication and use of open data | 7 | | |
| 3.1.4 Internet shopping | 7 | | |
| 2.1.2 ICT skills in the education system | 9 | | |
| 4.2.1 Happiness | 14 | | |
| 4.3.1 SDG 3: Good Health and Well-Being | 14 | | |
| 1.2.2 Internet domain registrations | 15 | | |

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

# NRI 2023 At-A-Glance: New Zealand

## Network Readiness Index          Rank: 23 (out of 134)          Score:  65.96

| Pillar/sub-pillar | Rank | Score |
|---|---|---|
| A. Technology pillar | 27 | 53.79 |
| 1st sub-pillar: Access | 45 | 71.38 |
| 2nd sub-pillar: Content | 22 | 45.65 |
| 3rd sub-pillar: Future Technologies | 37 | 44.33 |
| B. People pillar | 23 | 57.45 |
| 1st sub-pillar: Individuals | 77 | 44.35 |
| 2nd sub-pillar: Businesses | 24 | 62.92 |
| 3rd sub-pillar: Governments | 17 | 65.09 |

| Pillar/sub-pillar | Rank | Score |
|---|---|---|
| C. Governance pillar | 11 | 84.47 |
| 1st sub-pillar: Trust | 11 | 84.58 |
| 2nd sub-pillar: Regulation | 19 | 84.02 |
| 3rd sub-pillar: Inclusion | 9 | 84.81 |
| D. Impact pillar | 24 | 68.14 |
| 1st sub-pillar: Economy | 36 | 37.34 |
| 2nd sub-pillar: Quality of Life | 17 | 82.99 |
| 3rd sub-pillar: SDG Contribution | 18 | 84.11 |

### The Network Readiness Index in detail

| Indicator | Rank | Score | |
|---|---|---|---|
| **A. Technology pillar** | 27 | 53.79 | |
| *1st sub-pillar: Access* | 45 | 71.38 | |
| 1.1.1   Mobile tariffs | 37 | 75.86 | |
| 1.1.2   Handset prices | 17 | 78.59 | |
| 1.1.3   FTTH/building Internet subscriptions | 53 | 31.89 | |
| 1.1.4   Population covered by at least a 3G mobile network | 71 | 99.52 | |
| 1.1.5   International Internet bandwidth | 64 | 71.05 | |
| 1.1.6   Internet access in schools | NA | NA | |
| *2nd sub-pillar: Content* | 22 | 45.65 | |
| 1.2.1   GitHub commits | 22 | 53.04 | |
| 1.2.2   Internet domain registrations | 15 | 50.59 | ● |
| 1.2.3   Mobile apps development | 50 | 70.86 | |
| 1.2.4   AI scientific publications | 54 | 8.09 | |
| *3rd sub-pillar: Future Technologies* | 37 | 44.33 | |
| 1.3.1   Adoption of emerging technologies | 18 | 77.97 | |
| 1.3.2   Investment in emerging technologies | 19 | 68.50 | |

| Indicator | Rank | Score | |
|---|---|---|---|
| **C. Governance pillar** | 11 | 84.47 | |
| *1st sub-pillar: Trust* | 11 | 84.58 | |
| 3.1.1   Secure Internet servers | 35 | 79.23 | |
| 3.1.2   Cybersecurity | 56 | 83.76 | |
| 3.1.3   Online access to financial account | 6 | 86.73 | ● |
| 3.1.4   Internet shopping | 7 | 88.60 | ● |
| *2nd sub-pillar: Regulation* | 19 | 84.02 | |
| 3.2.1   Regulatory quality | 6 | 90.45 | ● |
| 3.2.2   ICT regulatory environment | 38 | 88.82 | |
| 3.2.3   Regulation of emerging technologies | 19 | 76.36 | |
| 3.2.4   E-commerce legislation | 1 | 100.00 | ● |
| 3.2.5   Privacy protection by law content | 65 | 64.46 | |
| *3rd sub-pillar: Inclusion* | 9 | 84.81 | |
| 3.3.1   E-Participation | 6 | 95.34 | ● |
| 3.3.2   Socioeconomic gap in use of digital payments | 24 | 94.64 | |
| 3.3.3   Availability of local online content | 17 | 86.54 | |

| Indicator | Rank | Score | |
|---|---|---|---|
| 1.3.3 Robot density | 33 | 7.46 | ○ |
| 1.3.4 Computer software spending | 55 | 23.40 | |
| **B. People pillar** | 23 | 57.45 | |
| *1st sub-pillar: Individuals* | 77 | 44.35 | |
| 2.1.1 Mobile broadband internet traffic within the country | 85 | 4.76 | ○ |
| 2.1.2 ICT skills in the education system | 9 | 82.59 | ● |
| 2.1.3 Use of virtual social networks | 27 | 76.93 | |
| 2.1.4 Tertiary enrollment | 24 | 52.10 | |
| 2.1.5 Adult literacy rate | NA | NA | |
| 2.1.6 AI talent concentration | 41 | 5.36 | ○ |
| *2nd sub-pillar: Businesses* | 24 | 62.92 | |
| 2.2.1 Firms with website | 14 | 84.64 | |
| 2.2.2 GERD financed by business enterprise | 30 | 61.78 | |
| 2.2.3 Knowledge intensive employment | NA | NA | |
| 2.2.4 Annual investment in telecommunication services | 36 | 82.99 | |
| 2.2.5 GERD performed by business enterprise | 27 | 22.25 | |
| *3rd sub-pillar: Governments* | 17 | 65.09 | |
| 2.3.1 Government online services | 6 | 95.35 | ● |
| 2.3.2 Publication and use of open data | 7 | 88.24 | ● |
| 2.3.3 Government promotion of investment in emerging tech | 36 | 51.63 | |
| 2.3.4 R&D expenditure by governments and higher education | 31 | 25.13 | |

| Indicator | Rank | Score | |
|---|---|---|---|
| 3.3.4 Gender gap in Internet use | 19 | 73.57 | |
| 3.3.5 Rural gap in use of digital payments | 33 | 73.94 | |
| **D. Impact pillar** | 24 | 68.14 | |
| *1st sub-pillar: Economy* | 36 | 37.34 | |
| 4.1.1 High-tech and medium-high-tech manufacturing | 73 | 18.56 | ○ |
| 4.1.2 High-tech exports | 30 | 29.24 | |
| 4.1.3 PCT patent applications | 21 | 36.02 | |
| 4.1.4 Domestic market size | 61 | 53.82 | |
| 4.1.5 Prevalence of gig economy | 15 | 70.35 | |
| 4.1.6 ICT services exports | 61 | 16.03 | |
| *2nd sub-pillar: Quality of Life* | 17 | 82.99 | |
| 4.2.1 Happiness | 14 | 85.98 | ● |
| 4.2.2 Freedom to make life choices | 61 | 75.91 | |
| 4.2.3 Income inequality | NA | NA | |
| 4.2.4 Healthy life expectancy at birth | 27 | 87.07 | |
| *3rd sub-pillar: SDG Contribution* | 18 | 84.11 | |
| 4.3.1 SDG 3: Good Health and Well-Being | 14 | 93.74 | ● |
| 4.3.2 SDG 4: Quality Education | 13 | 68.92 | |
| 4.3.3 SDG 5: Women's economic opportunity | 15 | 96.46 | |
| 4.3.4 SDG 7: Affordable and Clean Energy | 73 | 69.94 | |
| 4.3.5 SDG 11: Sustainable Cities and Communities | 20 | 91.47 | |

NOTE: ● a strength and ○ a weakness.

## 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