

This appendix presents the structure of the Networked Readiness Index (NRI). The NRI separates environmental factors from ICT readiness and usage, and is composed of three subindexes. Each subindex is divided into three pillars. The 68 variables (or *indicators*) used in the computation of the NRI are then distributed among the nine pillars.^a The numbering of the variables matches the numbering of the Data Tables found at the end of the *Report*. The number preceding the period indicates to which pillar the variable belongs (e.g., variable 1.01 belongs to the first pillar; variable 9.02 belongs to the ninth pillar). The hard data indicators used in the NRI are normalized on a 1-to-7 scale in order to align them with the Executive Opinion Survey's results.^b The Technical Notes and Sources at the end of this *Report* provide detailed information on all the hard data indicators.

NETWORKED READINESS INDEX

$$\begin{aligned} \text{Networked Readiness} \\ \text{Index} &= 1/3 \text{ Environment subindex} \\ &+ 1/3 \text{ Readiness subindex} \\ &+ 1/3 \text{ Usage subindex} \end{aligned}$$

Environment subindex

$$\begin{aligned} \text{Environment subindex} &= 1/3 \text{ Market environment} \\ &+ 1/3 \text{ Political and regulatory environment} \\ &+ 1/3 \text{ Infrastructure environment} \end{aligned}$$

1st pillar: Market environment

- 1.01 Venture capital availability
- 1.02 Financial market sophistication
- 1.03 Availability of latest technologies
- 1.04 State of cluster development
- 1.05 Burden of government regulation
- 1.06 Extent and effect of taxation^c
- 1.07 Total tax rate (hard data)^c
- 1.08 Time required to start a business (hard data)^d
- 1.09 Number of procedures required to start a business (hard data)^d
- 1.10 Intensity of local competition
- 1.11 Freedom of the press

2nd pillar: Political and regulatory environment

- 2.01 Effectiveness of law-making bodies
- 2.02 Laws relating to ICT
- 2.03 Judicial independence
- 2.04 Intellectual property protection
- 2.05 Efficiency of legal framework in settling disputes^e
- 2.06 Efficiency of legal framework in challenging regulations^e
- 2.07 Property rights
- 2.08 Number of procedures to enforce a contract (hard data)^f
- 2.09 Time to enforce a contract (hard data)^f
- 2.10 Level of competition index (hard data)

3rd pillar: Infrastructure environment

- 3.01 Number of telephone lines (hard data)
- 3.02 Secure Internet servers (hard data)
- 3.03 Electricity production (hard data)
- 3.04 Availability of scientists and engineers
- 3.05 Quality of scientific research institutions
- 3.06 Tertiary enrollment (hard data)
- 3.07 Education expenditure (hard data)
- 3.08 Accessibility of digital content
- 3.09 Internet bandwidth (hard data)

Readiness subindex

$$\begin{aligned} \text{Readiness subindex} &= 1/3 \text{ Individual readiness} \\ &+ 1/3 \text{ Business readiness} \\ &+ 1/3 \text{ Government readiness} \end{aligned}$$

4th pillar: Individual readiness

- 4.01 Quality of math and science education
- 4.02 Quality of the educational system
- 4.03 Buyer sophistication
- 4.04 Residential telephone connection charge (hard data)^g
- 4.05 Residential monthly telephone subscription (hard data)^g
- 4.06 Fixed broadband tariffs (hard data)
- 4.07 Mobile cellular tariffs (hard data)
- 4.08 Fixed telephone lines tariffs (hard data)

5th pillar: Business readiness

- 5.01 Extent of staff training
- 5.02 Local availability of specialized research and training services
- 5.03 Quality of management schools
- 5.04 Company spending on R&D
- 5.05 University-industry collaboration in R&D
- 5.06 Business telephone connection charge (hard data)^h
- 5.07 Business monthly telephone subscription (hard data)^h
- 5.08 Local supplier quality
- 5.09 Computer, communications, and other services imports (hard data)
- 5.10 Availability of new telephone lines

6th pillar: Government readiness

- 6.01 Government prioritization of ICT
- 6.02 Government procurement of advanced technology products
- 6.03 Importance of ICT to government vision of the future

Usage subindex

$$\begin{aligned} \text{Usage subindex} &= 1/3 \text{ individual usage} \\ &+ 1/3 \text{ Business usage} \\ &+ 1/3 \text{ Government usage} \end{aligned}$$

7th pillar: Individual usage

- 7.01 Mobile telephone subscriptions (hard data)
- 7.02 Personal computers (hard data)
- 7.03 Broadband Internet subscribers (hard data)
- 7.04 Internet users (hard data)
- 7.05 Internet access in schools

8th pillar: Business usage

- 8.01 Prevalence of foreign technology licensing
- 8.02 Firm-level technology absorption
- 8.03 Capacity for innovation
- 8.04 Extent of business Internet use
- 8.05 Creative industries exports (hard data)
- 8.06 Utility patents (hard data)
- 8.07 High-tech exports (hard data)

9th pillar: Government usage

- 9.01 Government success in ICT promotion
- 9.02 Government Online Service Index (hard data)
- 9.03 ICT use and government efficiency
- 9.04 Presence of ICT in government agencies
- 9.05 E-Participation Index (hard data)

Notes

- a The computation of the NRI is based on successive aggregations of scores, from the variables level (i.e., the lowest level) to the overall NRI score (i.e., the highest level). For example, the score a country achieves in the 3rd pillar, *Infrastructure environment*, accounts for one-third of the *Environment subindex*. Similarly, the *Usage subindex* accounts for one-third of the overall NRI score.
- b The standard formula for converting hard data is the following:

$$6 \times \left(\frac{\text{country score} - \text{sample minimum}}{\text{sample maximum} - \text{sample minimum}} \right) + 1$$

The *sample minimum* and *sample maximum* are, respectively, the lowest and highest country scores in the sample of economies covered by the NRI. In some instances, adjustments were made to account for extreme outliers. For those hard data variables for which a higher value indicates a worse outcome (e.g., total tax rate, time to enforce a contract), we rely on a normalization formula that, in addition to converting the series to a 1-to-7 scale, reverses it, so that 1 and 7 still correspond to the worst and best possible outcomes, respectively:

$$-6 \times \left(\frac{\text{country score} - \text{sample minimum}}{\text{sample maximum} - \text{sample minimum}} \right) + 1$$

- c Variables 1.06 and 1.07 combine to form one single variable.
- d Variables 1.08 and 1.09 combine to form one single variable.
- e Variables 2.05 and 2.06 combine to form one single variable.
- f Variables 2.08 and 2.09 combine to form one single variable.
- g Variables 4.04 and 4.05 combine to form one single variable.
- h Variables 5.06 and 5.07 combine to form one single variable.