Methodological Note 2

In this note, we provide further information about the data used to design the index and scales used to aggregate the scores.

Connectivity and infrastructure

1. ICT Development Index (ITU)

The ICT Development Index (IDI) is compiled by the International Telecommunication Union (ITU), the specialised UN agency for information and communication technologies. It measures the level of ICT access, use, and skills in countries, combining 11 indicators, including mobile subscriptions, internet users, and education levels. The IDI is presented on a scale of 0 to 100, with higher values representing more advanced ICT development. The data in the compass is from the 2025 edition.

- *Scale: The values in the compass are precisely as reflected in the Index.*
- Source: https://www.itu.int/itu-d/reports/statistics/idi2025/

2. Global Cybersecurity Index (ITU)

The Global Cybersecurity Index (GCI), also produced by the ITU, assesses countries' commitment to cybersecurity through legal, technical, organisational, capacity building, and cooperation measures. Countries are ranked on a scale 1-5, with higher scores indicating more comprehensive national cybersecurity strategies and protections. The data in the compass is from the 2024 edition (latest).

- *Scale: The GCI is based on a 'tier' scale of 1-5, with lower scores representing more advanced levels of implementation. The data has been normalised in the compass to achieve of a scale of 0-100.*
- Source: https://www.itu.int/en/ITU-D/Cybersecurity/Documents/GCIv5/2401416_1b_Global-Cybersecurity-Index-E.pdf

3. Network Readiness Index (Portulans / Oxford)

The Network Readiness Index (NRI) is developed by the Portulans Institute in collaboration with Oxford University, evaluating how prepared countries are to benefit from digital transformation. It incorporates factors such as technology infrastructure, governance, people, and impact. Scored from 0 to 100, higher scores represent more digitally ready societies. The data in the compass is from the version published in November 2024 (latest).

- *Scale: The values in the compass are precisely as reflected in the Index.*
- Source: https://networkreadinessindex.org/

Rights and freedoms

4. Freedom on the Net (Freedom House)

Freedom on the Net is an annual assessment by Freedom House, evaluating internet freedom globally. It covers barriers to access, content restrictions, and violations of user rights, using a scale of 0 to 100, where higher scores indicate greater Internet freedom. The data in the compass is from the 2024 version. (latest).

- *Scale: The values in the compass are precisely as reflected in the Freedom House Freedom on the Net data.*
- Source: https://freedomhouse.org/report/freedom-net

5. Freedom in the World Index (Freedom House)

The Freedom in the World Index, also by Freedom House, assesses the overall state of political rights and civil liberties in countries. It scores countries from 0 to 100, with higher scores denoting greater freedoms. While broader than just internet rights, this index reflects the close relationship between offline freedoms and rights and their online counterparts. The data in the compass is from the 2025 version. (latest).

- *Scale: The values in the compass are precisely as reflected in the Index.*
- Source: *https://freedomhouse.org/report/freedom-world*

6. Accountability Index (V-Dem)

The Accountability Index is provided by the Varieties of Democracy (V-Dem) Institute and measures the extent to which citizens are able to hold their government accountable. It assesses factors like free and fair elections, transparency, and freedom of expression on a scale normalised to 0 to 100. The data in the compass is from the 2024 version.

- *Scale: Index scores are on a scale of -2.0 to 2.0, with higher values indicating higher levels of accountability. This data has been converted (by adding 2 and multiplying by 25) to achieve a scale of 0-100.*
- Source: https://v-dem.net/data_analysis/MapGraph/

Responsibility and sustainability

7. Global E-Waste Monitor (ITU)

The Global E-Waste Monitor is published by the ITU in partnership with other UN agencies and reports on e-waste generation per capita globally. The indicator measures kilograms of electronic waste generated per person annually. Higher values indicate higher consumption and potential environmental burden. The data in the compass is from the 2024 version.

- *Scale: The Global E-Waste Monitor estimates 'E-waste kg/per capita' for countries worldwide. Individual country data ranges from nearly 0 Kg per capita to approximately 30 Kg per capita, where higher values lower the level of commitment to a given norm. This data has been normalised to a 0-100 scale reflected in the compass.*
- Source: https://www.itu.int/hub/publication/d-gen-e_waste-01-2024/

8. Global index on Responsible AI (GCG)

The Global Index on Responsible AI is produced by an international coalition led by the Global Index on Responsible AI initiative. It evaluates countries' commitment to responsible AI development and deployment practices across governance, data practices, accountability, and inclusiveness. Scores are on a 0 to 100 scale, with higher scores indicating stronger adherence to responsible AI principles. The data in the compass is from the 2024 version (latest).

- *Scale: The values in the compass are precisely as reflected in the Global Index on Responsible AI.*
- Source: https://www.global-index.ai/

9. Digital Trade Policies and Practices (DTI)

The Digital Trade Integration Index (DTI) is a database measuring the openness and restrictiveness of digital trade policies. The database was launched by the The Digital Trade Integration project, a consortium of research institutions led by the European University Institute. It accounts for thousands of measures that either restrict or enable digital trade across countries.

- *Scale: The Digital Trade Integration tracks the Digital trade policies and practices across the globe. It covers 5000 unique measures expected to restrict digital trade integration and 1600 measures expected to enable integration, which are categorised into 12 pillars and 65 indicators. The number of enabling measures and the number of restrictions have been normalised on a 0-100 scale.1*
- Source: https://dti.eui.eu/digital-trade-world-map/

Trust and resilience

10. Global Internet Shutdowns (ISOC Pulse)

This indicator is provided by the Internet Society's Pulse platform, which has continuously monitored Internet shutdown events globally since 2019. The data was logged on 1 April 2025, and included the number of shutdowns per country and the total duration of shutdowns (in days) per country. We do not distinguish between regional and national shutdowns. The data collected from Internet Society Pulse indicates between 0 to 395 shutdown events (past or present), in any given country, with a total duration (in days) of between 0 and 2326.2

- *Scale:* To account for the skewness and large range of shutdown counts and durations, we apply a log transformation using the natural logarithm with a +1 adjustment:

  $Log\ Shutdowns=log(1+Number\ of\ Shutdowns)\text{Log Shutdowns} = \log(1 + \text{Number of Shutdowns})Log\ Shutdowns=log(1+Number\ of\ Shutdowns)$

  $Log\ Shutdown\ Days=log(1+Total\ Shutdown\ Duration)\text{Log Shutdown Days} = \log(1 + \text{Total Shutdown Duration})Log\ Shutdown\ Days=log(1+Total\ Shutdown\ Duration)$

  This approach reduces the disproportionate influence of extreme values while preserving relative differences between countries.

  Step 2: Normalisation

  Next, both log-transformed values are normalized to a range of 0 to 1 using min-max normalization:

  $Normalized\ Shutdowns=Log\ Shutdowns-min(Log\ Shutdowns)max(Log\ Shutdowns)-min(Log\ Shutdowns)\text{Normalized Shutdowns} = \frac{\text{Log Shutdowns} - \min(\text{Log Shutdowns})}{\max(\text{Log Shutdowns}) - \min(\text{Log Shutdowns})}Normalized\ Shutdowns=max(Log\ Shutdowns)-min(Log\ Shutdowns)Log\ Shutdowns-min(Log\ Shutdowns)$

  $Normalized\ Shutdown\ Days=Log\ Shutdown\ Days-min(Log\ Shutdown\ Days)max(Log\ Shutdown\ Days)-min(Log\ Shutdown\ Days)\text{Normalized Shutdown Days} = \frac{\text{Log Shutdown Days} - \min(\text{Log Shutdown Days})}{\max(\text{Log Shutdown Days}) - \min(\text{Log Shutdown Days})}Normalized\ Shutdown\ Days=max(Log\ Shutdown\ Days)-min(Log\ Shutdown\ Days)Log\ Shutdown\ Days-min(Log\ Shutdown\ Days).$

  Step 3: Impact Score Calculation

  An intermediate **Impact Score** is computed as the average of the two normalised indicators (equal weighting of shutdown frequency and duration):

  $Impact\ Score=0.5\times Normalized\ Shutdowns+0.5\times Normalized\ Shutdown\ Days\text{Impact Score} = 0.5 \times \text{Normalized Shutdowns} + 0.5 \times \text{Normalized Shutdown Days}Impact\ Score=0.5\times Normalized\ Shutdowns+0.5\times Normalized\ Shutdown\ Days$

Step 4: Final Shutdown Score Scaling

To ensure countries with no shutdowns are distinctly recognized, we implement a tiered scoring approach:

Countries with **zero shutdowns** receive the **maximum score of 100**.

Countries with **one or more shutdowns** receive a **base score of 60**, which is adjusted downward proportionally to their Impact Score:

Shutdown Score=60−(60×Impact Score)\text{Shutdown Score} = 60 - (60 \times \text{Impact Score})Shutdown Score=60−(60×Impact Score)

This ensures that any country with shutdown activity scores lower than 60, with the exact reduction reflecting the intensity and duration of shutdowns.

The final Shutdown Score ranges from 0 to 100, where:

100. = no shutdown history,

60-0 = varying degrees of shutdown severity (lower scores = more frequent and/or longer shutdowns.)

- Source: https://pulse.internetsociety.org/shutdowns

11. Overall Resilience (Internet Society Pulse)

Also from the Internet Society Pulse platform, the Resilience Index assesses the robustness of a country's internet infrastructure based on infrastructure quality, performance, security, and market readiness. Scored on a 0 to 100 scale, it provides a composite view of how resilient a country's internet ecosystem is against disruptions. The index is based on data from October 2023.

- *Scale: The scores in the Compass are exactly as reflected in the ISOC Resilience Index.*
- Source: https://pulse.internetsociety.org/resilience

12. Rule of Law Index (World Justice Project)

The Rule of Law Index, compiled by the World Justice Project, measures how the rule of law is experienced in practice across eight factors, including constraints on government powers, absence of corruption, and protection of fundamental rights. The index scores countries from 0 to 1.00, with higher scores representing stronger rule of law. The data on the compass is from the version published in October 2024.

- *Scale: Index scores are on a scale of 0.00-1.00, which have been normalised in the compass to 0-100.*
- Source: https://worldjusticeproject.org/rule-of-law-index/