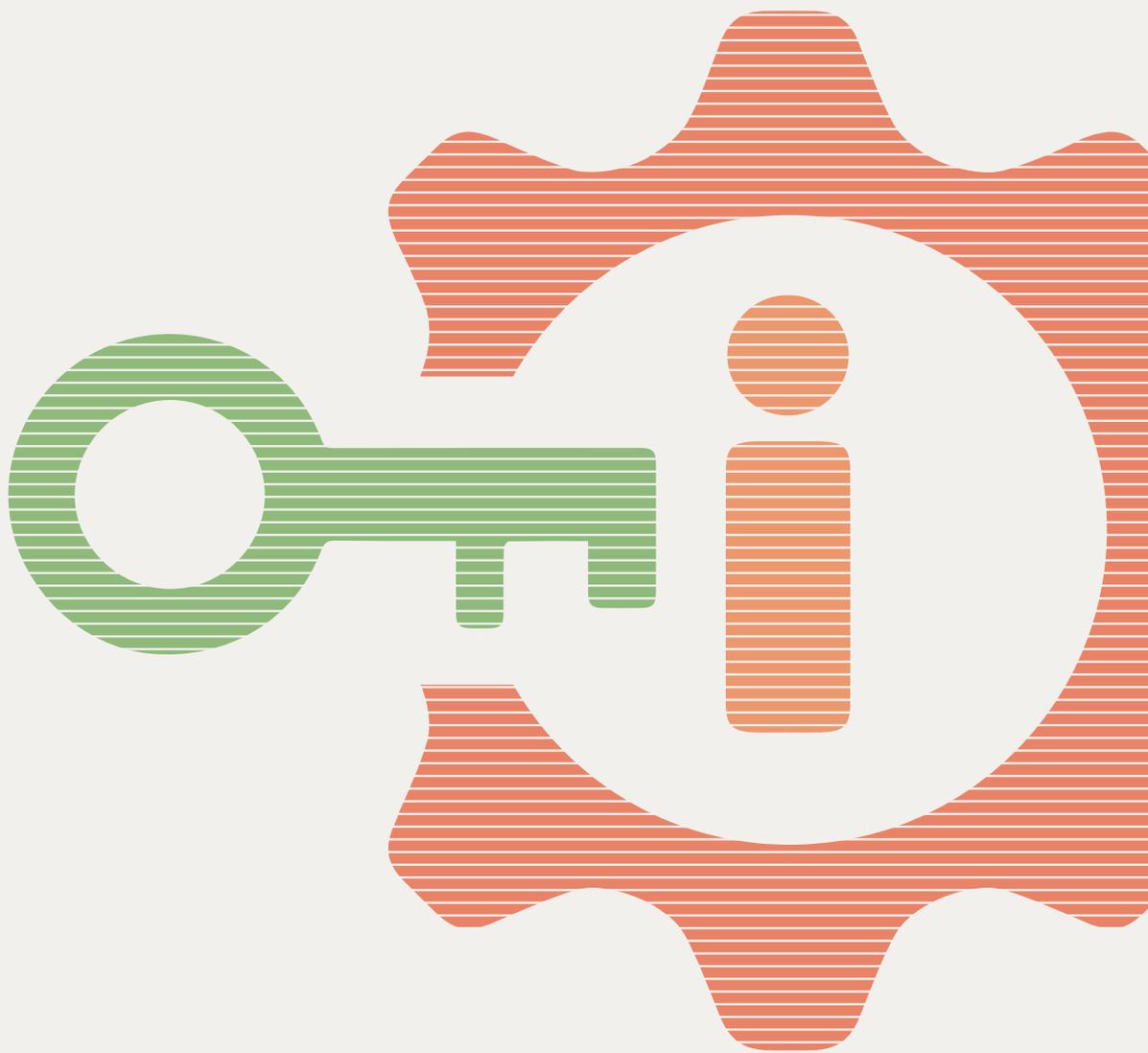




# Development *and* Access to Information

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**W**  
TECHNOLOGY &  
SOCIAL CHANGE GROUP  

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UNIVERSITY of WASHINGTON  
Information School

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**The Technology & Social Change Group (TASCHA)** at the University of Washington Information School explores the design, use, and effects of information and communication technologies in communities facing social and economic challenges. With experience in over 50 countries, TASCHA brings together a multidisciplinary network of researchers, practitioners, and policy experts to advance knowledge, create public resources, and improve policy and program design.

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## Appendix 3: Glossary of DA2I Indicators

Table 4: Indicators per DA2I dimension

| DA2I Dimension               | Indicators  | Source(s)   |
|------------------------------|---|---|
| Infrastructure               | <ol style="list-style-type: none"> <li>1. Population covered by at least a 3G mobile network, by type of network</li> <li>2. Active mobile broadband subscriptions per 100 inhabitants.</li> <li>3. Fixed broadband subscriptions per 100 inhabitants</li> <li>4. Percentage of households with internet access</li> <li>5. Percentage of households with a computer</li> </ol> | ITU   |
| Social context of adoption   | <ol style="list-style-type: none"> <li>1. Percentage of population living below national poverty line</li> <li>2. Gender Inequality Index</li> <li>3. Share of youth not in education, employment or training by gender</li> </ol>  | World Bank<br>UNDP<br>ILO   |
| Capabilities of use          | <ol style="list-style-type: none"> <li>1. Percentage of internet users</li> <li>2. Percentage of females using the internet</li> <li>3. Individuals using the internet, by age and gender</li> <li>4. Individuals with ICT skills, by type of skills by gender</li> <li>5. Individuals using the internet by type of activity</li> </ol>  | ITU   |
| Legal and policy environment | <ol style="list-style-type: none"> <li>1. Civil liberties Index</li> <li>2. Political Rights Index</li> <li>3. Freedom on the Net</li> <li>4. Freedom of Discussion</li> </ol>  | Freedom House<br>Freedom House<br>Freedom House<br>Varieties of Democracy Index (V-Dem) |

### Access to infrastructure

#### Percentage of population covered by at least a 3G mobile network

The percent of total population that are covered by at least 3G mobile communication network. This indicator measures the percentage of inhabitants that are within range of at least 3G mobile cellular signal, irrespective of whether or not they are subscribers. This is calculated by dividing the number of inhabitants that are covered by at least 3G mobile cellular signal by the total population.

#### Active mobile-broadband subscription per 100 inhabitants

Active mobile broadband subscriptions are wireless-broadband Internet subscriptions using terrestrial mobile connections. Prepaid mobile-broadband plans

require use in the last three months if there is no monthly subscription. Satellite and terrestrial fixed wireless broadband subscriptions are not included. The International Telecommunication Union (ITU) defines a bitrate of at least 256 kbit/s as broadband.

#### Fixed broadband subscriptions per 100 inhabitants

Total fixed (wired) broadband Internet subscriptions refers to subscriptions to high-speed access to the public Internet (a TCP/IP connection), at downstream speeds equal to, or greater than, 256 kbit/s. This can include for example cable modem, DSL, fibre-to-the-home/building and other fixed (wired) broadband subscriptions. This total is measured irrespective of the method of payment. It excludes subscriptions that have access to data communications (including the Internet) via mobile cellular networks. If countries use a different

definition of broadband, this should be indicated in a note. It should exclude technologies listed under wireless broadband category.

#### **Percentage of households with Internet access**

The Internet is a worldwide public computer network. It provides access to a number of communication services, including the World Wide Web, and carries e-mail, news, entertainment and data files, irrespective of the device used (not assumed to be only a computer; it may also be a mobile telephone, tablet, PDA, games machine, digital TV, and so on). Access can be via a fixed or mobile network. Household with Internet access means that the Internet is available for use by all members of the household at any time.<sup>4</sup>

Data are obtained by countries through national household surveys and are either provided directly to ITU by national statistical offices (NSOs) or obtained by ITU through its own research, for example from NSO websites. There are certain data limits to this indicator, insofar as estimates have to be calculated for many developing countries which do not yet collect ICT household statistics. Over time, as more data become available, the quality of the indicator will improve

#### **Percentage of households with a computer**

This indicator can include both estimates and survey data corresponding to the proportion of households with computer. A computer includes: a desktop; portable or handheld computer (e.g. a personal digital assistant). It does not include equipment with some embedded computing abilities such as mobile phones or TV sets. The proportion of households with a computer is calculated by dividing the number of in-scope households with a computer by the total number of in-scope households.

#### **Percentage of individuals using the Internet**

Individuals using the Internet refers to people who used the Internet from any location and for any purpose, irrespective of the device and network used in the last three months. It can be via a computer (i.e. desktop computer, laptop computer, tablet or similar handheld computer), mobile phone, games machine, digital TV, etc. Access can be via a fixed or mobile network. Data are obtained by countries through national household surveys and are either provided directly to ITU by national statistical offices (NSOs), or obtained by ITU through its own research, for example from NSO websites. There are certain data limits to this indicator, insofar as estimates have to be calculated for many developing countries which do not yet collect ICT household statistics. Over time, as more data become available, the quality of the indicator will improve.

## **Affordability**

Mobile broadband price (US\$)

Price of the plan, in local currency, for a mobile-broadband handset-based prepaid tariffs with 500MB volume of data. (US\$)

## **Use**

#### **Percentage of individuals using the Internet**

Individuals using the Internet refers to people who used the Internet from any location and for any purpose, irrespective of the device and network used in the last three months. It can be via a computer (i.e. desktop computer, laptop computer, tablet or similar handheld computer), mobile phone, games machine, digital TV, etc. Access can be via a fixed or mobile network. Data are obtained by countries through national household surveys and are either provided directly to ITU by national statistical offices (NSOs), or obtained by ITU through its own research, for example from NSO websites. There are certain data limits to this indicator, insofar as estimates have to be calculated for many developing countries which do not yet collect ICT household statistics. Over time, as more data become available, the quality of the indicator will improve.

#### **Percentage of females using the internet**

Share of female Internet users in the total number of females. This is calculated by dividing the number of female Internet users by the total number of females and multiplied by 100.

#### **Individuals using the internet, by age and gender**

This is the proportion of individuals who used the Internet from any location in the last three months, broken down by age and gender where possible.

#### **Individuals with ICT skills, by type of skills by gender**

This refers to ICT skills, defined for the purpose of this indicator as having undertaken certain computer-related activities in the last three months. Computer-related activities to measure ICT skills are as follows:

- Copying or moving a file or folder
- Using copy and paste tools to duplicate or move information within a document
- Sending e-mails with attached files (e.g. document, picture, video)
- Using basic arithmetic formulae in a spreadsheet
- Connecting and installing new devices (e.g. a modem, camera, printer)
- Finding, downloading, installing and configuring software
- Creating electronic presentations with presentation software (including text, images, sound, video or charts)
- Transferring files between a computer and other devices

- Writing a computer program using a specialized programming language

Source: ITU Manual for Measuring ICT Access and Use by Households and Individuals, 2014

### Individuals using the internet by type of activity

This is the proportion of individuals who undertook one or more activities using the Internet for private (defined as non-work) purposes from any location in the last three months. Internet activities are defined as follows:

- Getting information about goods or services
- Seeking health information (on injury, disease, nutrition etc.).
- Making an appointment with a health practitioner via a website
- Getting information from general government organizations
- Interacting with general government organizations (downloading/requesting forms, completing/ lodging forms online, making online payments and purchasing from government organizations etc.) *General government organizations should be consistent with the SNA93 (2008 revision) concept of general government. According to the SNA "... the principal functions of government are to assume responsibility for the provision of goods and services to the community or to individual households and to finance their provision out of taxation or other incomes; to redistribute income and wealth by means of transfers; and to engage in non-market production."* (General) government organizations include central, state and local government units.
- Sending or receiving e-mail
- Telephoning over the Internet/VoIP (using Skype, iTalk, etc.; includes video calls via webcam)
- Participating in social networks (creating user profile, posting messages or other contributions to Facebook, Twitter etc.)
- Accessing chat sites, blogs, newsgroups or online discussions
- Purchasing or ordering goods or services (purchase orders placed via the Internet whether or not payment was made online; excludes orders that were cancelled or not completed; includes purchasing of products such as music, travel and accommodation via the Internet)
- Selling goods or services (via eBay, Mercado libre, Facebook etc.)
- Using services related to travel or travel-related accommodation
- Internet banking (includes electronic transactions with a bank for payment, transfers, etc. or for looking up account information; excludes electronic transactions via the Internet for other types of financial services such as share purchases, financial services and insurance)
- Doing a formal online course (in any subject)
- Consulting wikis (Wikipedia etc.), online encyclopaedias or other websites for formal learning purposes
- Listening to web radio (either paid or free of charge)
- Watching web television (either paid or free of charge)
- Streaming or downloading images, movies, videos or music; playing or downloading games (either paid or free of charge)
- Downloading software or applications (includes patches and upgrades, either paid or free of charge)
- Reading or downloading online newspapers or magazines, electronic books (includes accessing news websites, either paid or free of charge; includes subscriptions to online news services)
- Looking for a job or sending/submitting a job application (includes searching specific web sites for a job; sending/submitting an application online)
- Participating in professional networks (professional networks are also seen in the broader context of social networking and have the same requirement of profile creation, contributing through messaging or chat, or uploading text or audio-visual content files; examples of professional or business networks are LinkedIn and Xing)
- Managing personal/own homepage
- Uploading self/user-created content to a website to be shared (text, images, photos, videos, music, software, etc.)
- Blogging: maintaining or adding contents to a blog
- Posting opinions on civic or political issues via websites (blogs, social networks, etc.) that may be created by any individual or organization
- Taking part in online consultations or voting to define civic or political issues (urban planning, signing a petition etc.)

- Using storage space on the Internet to save documents, pictures, music, video or other files (e.g. Google Drive, Dropbox, Windows Skydrive, iCloud, Amazon Cloud Drive)
- Using software run over the Internet for editing text documents, spreadsheets or presentations

Source: ITU Manual for Measuring ICT Access and Use by Households and Individuals, 2014

## Social context of ICT adoption and use

### Gross National Income per Capita (Current International Dollars)

GNI is gross national income (GNI) converted to international dollars using purchasing power parity rates. An international dollar has the same purchasing power over GNI as a U.S. dollar has in the United States. GNI is the sum of value added by all resident producers plus any product taxes (less subsidies) not included in the valuation of output plus net receipts of primary income (compensation of employees and property income) from abroad. Data are in current international dollars based on the 2011 ICP round.

### Percentage of the population living below the national poverty line

The proportion of the population below national poverty line measures poverty by the level of income/consumption available to an individual. A person is considered poor if his or her consumption or income level falls below some minimum level necessary to meet basic needs. This minimum level is usually called the "poverty line". What is necessary to satisfy basic needs varies across time and societies. Therefore, poverty lines vary in time and place, and each country uses lines which are appropriate to its level of development, societal norms and values.

### Gender Inequality Index

The GII is an inequality index. It measures gender inequalities in three important aspects of human development: reproductive health, measured by maternal mortality ratio and adolescent birth rates; empowerment, measured by proportion of parliamentary seats occupied by females and proportion of adult females and males aged 25 years and older with at least some secondary education; and economic status, expressed as labour market participation and measured by labour force participation rate of female and male populations aged 15 years and older. The GII is built on the same framework as the HDI to better expose differences in the distribution of achievements between women and men. It measures the human development costs of gender inequality, thus the higher the GII value the more disparities between females and males and the more loss to human development.

### Share of youth not in employment, education or training (NEET) by sex (%), ILO

The share of youth not in education, employment or training (also known as "the NEET rate") conveys the number of young persons not in education, employment or training as a percentage of the total youth population. It provides a measure of youth who are outside the educational system, not in training and not in employment, and thus serves as a broader measure of potential youth labour market entrants than youth unemployment, since it also includes young persons outside the labour force not in education or training. This indicator is also a better measure of the current universe of potential youth labour market entrants compared to the youth inactivity rate, as the latter includes those youth who are not in the labour force and are in education, and thus cannot be considered currently available for work.

## Freedom

### Freedom on the Net (Freedom House)

Freedom on the Net measures the subtle and not-so-subtle ways that governments and non-state actors around the world restrict our intrinsic rights online. Each country assessment includes a detailed narrative report and numerical score, based on methodology developed in consultation with international experts. This methodology includes three categories:

- **Obstacles to Access** details infrastructural and economic barriers to access, legal and ownership control over internet service providers, and independence of regulatory bodies;
- **Limits on Content** analyzes legal regulations on content, technical filtering and blocking of websites, self-censorship, the vibrancy/diversity of online news media, and the use of digital tools for civic mobilization;
- **Violations of User Rights** tackles surveillance, privacy, and repercussions for online speech and activities, such as imprisonment, extralegal harassment, or cyberattacks.

### Freedom in the World (Political Rights Rating and Civil Liberties Rating), Freedom House

*Freedom in the World* is an annual global report on political rights and civil liberties, composed of numerical ratings and descriptive texts for each country and a select group of related and disputed territories. A country or territory is awarded 0 to 4 points for each of 10 political rights indicators and 15 civil liberties indicators, which take the form of questions; a score of 0 represents the smallest degree of freedom and 4 the greatest degree of freedom. The political rights questions are grouped into three subcategories: Electoral Process (3 questions), Political Pluralism and Participation (4), and Functioning of Government (3). The civil liberties

questions are grouped into four subcategories: Freedom of Expression and Belief (4 questions), Associational and Organizational Rights (3), Rule of Law (4), and Personal Autonomy and Individual Rights (4). The political rights section also contains two additional discretionary questions. (From <https://freedomhouse.org/report/methodology-freedom-world-2017>)

**Freedom of Discussion, Varieties of Democracy**

This indicator specifies the extent to which citizens are able to engage in private discussions, particularly on political issues, in private homes and public spaces (restaurants, public transportation, sports events, work etc.) without fear of harassment by other members of the polity or the public authorities. We are interested in restrictions by the government and its agents but also cultural restrictions or customary laws that are enforced by other members of the polity, sometimes in informal ways. (From V-Dem dataset codebook)