



United Nations  
Educational, Scientific and  
Cultural Organization

# DEFINING INTERNET UNIVERSALITY INDICATORS

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Phase 2 consultation report  
Deadline: 15 March 2018

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This project is sponsored by the Swedish International Development Agency (Sida) and the Internet Society (ISOC). It is implemented under the International Programme for the Development of Communication (IPDC). UNESCO has contracted a Consortium led by the Association for Progressive Communications (APC) to help develop the indicators.

# DEVELOPING UNESCO'S INTERNET UNIVERSALITY INDICATORS: HELP UNESCO TO ASSESS AND IMPROVE THE INTERNET

## INTRODUCTION

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This consultation document invites stakeholders to contribute to UNESCO's project to develop indicators to assess the Internet in any country, and highlight areas where improvements can be made. More information about the project can be found online.<sup>1</sup>

## BACKGROUND

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UNESCO launched its concept of Internet Universality in 2013. This concept, which was endorsed by UNESCO's General Conference in 2015, embraces four principles which have been and should continue to be fundamental to the development of the Internet and its role in advancing the world's Sustainable Development Goals (SDGs):

- R** – that the Internet is based on human **Rights**
- O** – that it is **Open**
- A** – that it should be **Accessible to all**
- M** – that it is nurtured by **Multistakeholder participation**.

Together these are known as the ROAM Principles.

UNESCO intends to adopt a framework of Internet Universality indicators to assist governments and other stakeholders to assess their national Internet environments and develop policies to advance these Principles. These indicators will be comparable to the *Media Development Indicators* adopted by UNESCO in 2008.<sup>2</sup> They are intended for use by stakeholders in interested countries where resources can be mobilised for the necessary research. The aim of applying the indicators is to identify gaps within a country in relation to Internet Universality, and to make appropriate recommendations concerning policy and practice. They are not intended to rank countries in comparison with one another.

This document follows the first phase of consultation, which lasted from 29 March to 31 October 2017 and was concerned with general principles. It included 24 face-to-face consultation meetings in 21 countries and attracted 165 online contributions.

The second phase of consultation, which will last from 1 December 2017 to 15 March 2018, provides an opportunity to comment on the proposed indicator framework and indicators set out in this document. A final report, building on this second phase and pre-testing of proposals, will be submitted to UNESCO at the end of April 2018 and considered in September 2018 by the International Council of its International Programme for the Development of Communication (IPDC).<sup>3</sup>

**Stakeholders are invited, in this second consultation, to respond to the following three questions by 15 March 2018. It will not be possible to consider contributions received after this date.**

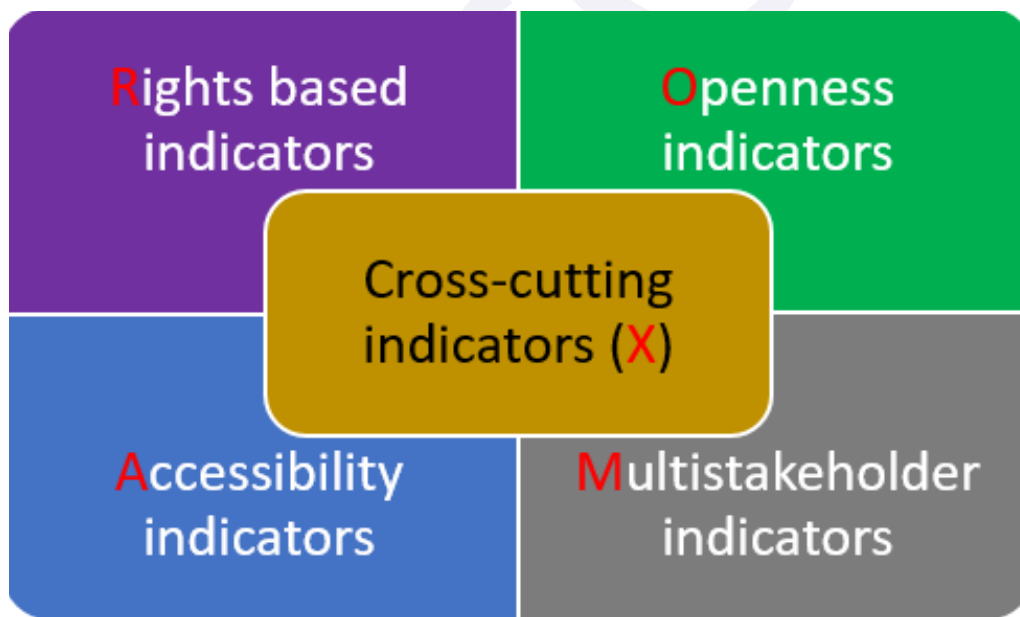
1. Are there any **additional themes, questions or indicators** which you believe should be included in the framework?
2. Are there any suggestions that you wish to make in respect of the **proposed themes, questions and indicators** which are included in the framework as it stands?
3. What **sources and means of verification** would you recommend, from your experience, in relation to any of the questions and indicators that have been proposed?

## THE INDICATOR FRAMEWORK

The indicator framework which is proposed in this document is structured around the four ROAM Principles, alongside Cross-Cutting Indicators concerned with gender and the needs of children and young people, sustainable development, trust and security, and legal and ethical aspects of the Internet. Together, these form the ROAMX indicator framework which is illustrated in Figure 1 below.

In addition, the framework includes a number of contextual indicators concerned with the demographic, social and economic characteristics of a country, which are intended to help users to understand their findings and frame their recommendations in the most appropriate way for different countries.

**Figure 1 - The indicator structure**



The indicators which are proposed within this framework provide a toolkit which can be used by diverse stakeholders, including governments, international organisations, civil society organisations and multi-stakeholder groups drawn from the various communities that are concerned with Internet development, access and rights. It can be used either holistically or through its component parts.

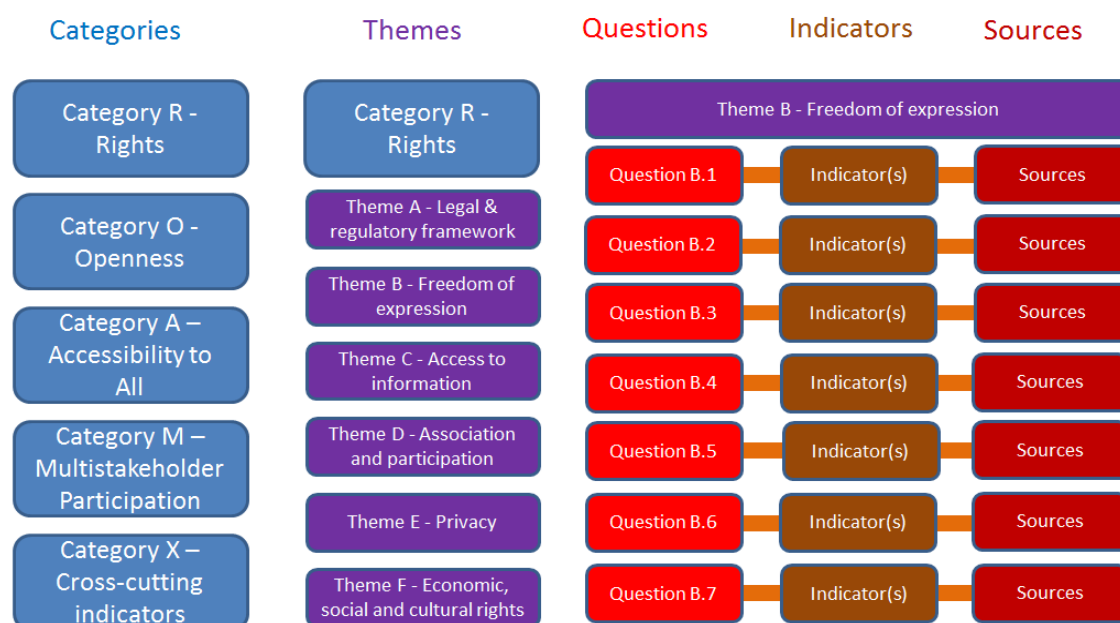
**Categories.** The framework as a whole is structured around five categories which focus on the four ROAM principles, together with a category of Cross-Cutting Indicators (X) (Figure 2).

**Themes.** Each of the ROAMX indicators is divided into a number of themes. There are six themes in the R and A categories, five themes in the O and X categories, and three themes in the M category.

**Questions.** A number of questions are set out within each theme. These address the specific points on which national performance is to be assessed and on which evidence is to be sought through specific quantitative, qualitative or institutional indicators.

**Indicators.** One or more indicators is/are identified which will provide the evidence base for assessment of each question. These include quantitative, qualitative and institutional indicators. The range and quality of information available on these will vary between countries.

**Sources.** The final report, in April 2018, will include a substantive note on means of verification for each indicator or group of indicators. This will offer guidance to those making use of the indicators, recognising that available data and information sources vary significantly between countries.

**Figure 2 - The indicator structure**

Six criteria have been used for the selection of the questions and indicators that are proposed in this report. These are consistent with those adopted in the MDIs. They are:

- that each question/indicator should address a single issue;
- that indicators should be chosen where measurement data are sufficiently reliable in quality to permit confident decision-making;
- that the selected indicators should be quantitative where possible and qualitative where appropriate;
- that they should be independently verifiable where possible;
- that they should, where possible and relevant, permit disaggregation by gender, age group and other population characteristics;
- and that it should be possible for the necessary data or information to be gathered, at reasonable cost in time and money, in the majority of countries.

The indicators which are proposed below are wide-ranging. Data availability will vary between countries and available resources will vary between assessments. The number of questions/indicators included in the final framework, which will be prepared following the second consultation, may be more or less than that included in this document. It is hoped that users of the framework will draw on those indicators to make as thorough an assessment as available data and resources allow.

## THE INTERNET UNIVERSALITY INDICATORS – CONTEXTUAL INDICATORS

### 1. Economic indicators

#### A. Gross National Income (GNI) (purchasing power parity) per capita

The principal source proposed for this indicator is the data set on GNI p.c. maintained by the World Bank.<sup>4</sup>

#### A. GNI growth rate over the past ten years

The principal source proposed for this indicator is the data set on GNI p.c. maintained by the World Bank.

#### C. Proportion of GDP attributable to services

The principal source proposed for this indicator is the data set on sectoral distribution of GDP which is maintained by the World Bank.<sup>5</sup>

### 2. Demographic indicators

#### A. Overall population size and growth trend

The principal source proposed for this indicator is the data set on population size maintained by the Population Division of the UN Department of Economic and Social Affairs.<sup>6</sup>

#### B. Average life expectancy, disaggregated by gender

The principal source proposed for this indicator is the data set concerning life expectancy maintained by the World Health Organisation (WHO).<sup>7</sup>

#### C. Proportions of young people, people of working age and elderly people

The principal source proposed for this indicator is the data set on population by age group maintained by the Population Division of the UN Department of Economic and Social Affairs.<sup>8</sup>

#### D. Linguistic diversity

The principal source proposed for this indicator is the index of linguistic diversity (with country summaries) maintained by Ethnologue.<sup>9</sup>

#### E. Degree of urbanisation

The principal source proposed for this indicator is the data set on urban and rural population size maintained by the Population Division of the UN Department of Economic and Social Affairs.<sup>10</sup>

### 3. Development indicators

#### A. UNDP Human Development Index (HDI)

The principal source proposed for this indicator is the HDI prepared by UNDP and reported in its annual *Human Development Report*.<sup>11</sup>

#### B. Mean years of schooling and proportions of appropriate age groups in primary, secondary and tertiary education, disaggregated by gender

The principal source proposed for this indicator consists of data sets which are gathered by the UNESCO Institute for Statistics.<sup>12</sup>

#### C. Adult literacy rate, disaggregated by gender (and language where appropriate)

The principal source proposed for this indicator consists of data gathered by the World Bank.<sup>13</sup>

#### D. Proportion of population covered by electricity supply

The principal sources proposed for this indicator is the World Bank's Sustainable Energy for All

database.<sup>14</sup>

#### **4. Equality indicators**

##### **A. GINI coefficient**

The principal source proposed for this indicator is the GINI index produced by the World Bank.<sup>15</sup>

##### **B. Gender Inequality Index**

The principal source proposed for this indicator is the Gender Inequality Index generated by the UN Development Programme.<sup>16</sup>

#### **5. Governance indicators**

##### **A. World Governance Indicators**

The principal source proposed for this indicator are the six aggregate World Governance Indicators developed by the World Bank.<sup>17</sup>

##### **B. Doing Business Index**

The principal source proposed for this indicator is the Doing Business Index prepared by the World Bank.<sup>18</sup>

#### **6. ICT development indicators**

##### **A. ICT Development Index**

The principal source proposed for this indicator is the ICT Development Index prepared by the International Telecommunication Union (ITU).<sup>19</sup>

##### **B. World Economic Forum Networked Readiness Index**

The principal source proposed for this indicator is the Networked Readiness Index prepared by the World Economic Forum.<sup>20</sup>

## THE INTERNET UNIVERSALITY INDICATORS – CATEGORY R – RIGHTS

The United Nations' *2030 Agenda for Sustainable Development* envisages 'a world of universal respect for human rights and human dignity, the rule of law, justice, equality and non-discrimination; of respect for race, ethnicity and cultural diversity; and of equal opportunity permitting the full realization of human potential and contributing to shared prosperity.'<sup>21</sup> An Internet that failed to uphold this principle would be incompatible with the *Agenda*.

This category of the indicator framework is divided into six themes:

- Theme A is concerned with the overall policy, legal and regulatory framework for human rights and their relation to the Internet.
- Theme B is concerned with freedom of expression.
- Theme C is concerned with the right to access information.
- Theme D is concerned with freedom of association and with rights to participate in public life.
- Theme E is concerned with issues relating to privacy.
- Theme F is concerned with economic, social and cultural rights.

### THEME A – POLICY, LEGAL AND REGULATORY FRAMEWORK

The fundamental principles of human rights have been agreed by the international community in the *Universal Declaration of Human Rights* (UDHR)<sup>22</sup> and international rights agreements including the International Covenants on Civil and Political Rights (ICCPR)<sup>23</sup> and on Economic Social and Cultural Rights (ICESCR),<sup>24</sup> the Conventions on the Elimination of All Forms of Racial Discrimination (ICERD)<sup>25</sup> and of Discrimination against Women (CEDAW),<sup>26</sup> and the Convention on the Rights of the Child (CRC).<sup>27</sup> A number of regional rights agreements have also been agreed.

The UN Human Rights Committee<sup>28</sup> and the General Assembly<sup>29</sup> have affirmed that 'the same rights that people have offline must also be protected online.' The UN Human Rights Council has adopted several resolutions on 'the promotion, protection and enjoyment of human rights on the Internet,' which address aspects of these and subsequent questions and indicators, most recently in 2016.<sup>30</sup>

#### A.1 Is there a legal framework for the enjoyment and enforcement of human rights which is consistent with international rights agreements and with the rule of law?

Indicator:

- Existence of an established legal framework which is consistent with international (including regional) rights agreements, and evidence that it is respected and enforced by government

#### A.2 Does the law recognise that rights and laws apply equally online and offline?

Indicator:

- Evidence that the principle of online/offline equivalence is accepted in principle and implemented in practice

#### A.3 Do citizens have access to due process to address violations of rights, online and offline, by state or non-state actors?

Indicator:

- Legal framework for due process
- Availability of arrangements for redress in terms of service of online service providers



#### **A.4 Are law officers, judges and legal professionals trained in issues relating to the Internet and human rights?**

Indicator:

- Availability of relevant courses and proportions of relevant personnel who have undertaken or completed training

### **THEME B – FREEDOM OF EXPRESSION**

Article 19 of the UDHR and Article 19 of the ICCPR both deal with freedom of expression. This is defined in article 19(2) of the ICCPR as including an individual's 'freedom to seek, receive and impart information and ideas of all kinds, regardless of frontiers, either orally, in writing or in print, in the form of art, or through any other media of his choice.'<sup>31</sup> Article 19(3) of the ICCPR states that the exercise of these rights 'may be subject to certain restrictions, but these shall only be such as are provided by law and are necessary ... for respect of the rights or reputations of others; [or] ... for the protection of national security or of public order ..., or of public health or morals.'<sup>32</sup> Regional rights agreements also include relevant provisions. The UN Human Rights Committee emphasised in its General Comment No. 34 (2011) that any such restrictions must be provided by law, necessary for the explicit purposes set out in the Article, and proportionate.<sup>33</sup>

#### **B.1 Is freedom of expression guaranteed in law, respected in practice, and widely exercised?**

Indicators:

- Constitutional or legal guarantee of freedom of expression consistent with ICCPR Article 19, and evidence that it is respected and enforced by government<sup>34</sup>
- Constitutional or legal guarantee of press/media freedom
- Assessment by credible agencies of extent and diversity of expression online and offline

#### **B.2 Are any restrictions on freedom of expression in policy and practice narrowly defined, transparent and implemented in accordance with international rights agreements and HRC resolutions?**

Indicator:

- Legal restrictions on freedom of expression are consistent with international rights agreements (including regional agreements) and respected by government

#### **B.3 Is there significant ex ante or ex post censorship of specific content posted on online services, applications or websites, and on what grounds is this exercised?**

Indicator:

- Quantitative and qualitative evidence of ex ante and ex post censorship

#### **B.4 Under what conditions does the law hold platforms and other online service providers liable for content published by them?**

Indicator:

- Legal framework for intermediary liability and content regulation is consistent with international rights agreements (including regional agreements) and proportionally implemented

#### **B.5 What proportion of the population generates online content, including social media?**

Indicator:

- Numbers of bloggers, microbloggers and users of social media services per hundred popula-

tion and per hundred Internet users

**B.6 Are low-cost online services available which enable citizens and civil society organisations to make use of the Internet to express their views?**

Indicators:

- Availability of low-cost blogging and webhosting services
- Legal restrictions, if any, on access to such services
- Incidence of use of social media and blogging services

**B.7 Are citizens, journalists or bloggers subject to arbitrary detention, prosecution or intimidation for disseminating information online on political and social issues?**

Indicators:

- Nature of legal provisions and practice
- Numbers of detentions and prosecutions for online expression

**B.8 Do journalists or citizens practice self-censorship in order to avoid harassment by government or online abuse?**

Indicators:

- Evidence of self-censorship by journalists/bloggers
- Evidence of self-censorship as a result of online abuse, particularly by women and children/young people

**THEME C – RIGHT TO INFORMATION**

Article 19(2) of the ICCPR asserts the freedom 'to seek ... information and ideas of all kinds, regardless of frontiers, ... through any ... media of ... choice.'<sup>35</sup> Article 19(3) of the ICCPR (see Theme B above) and related provisions in other international and regional rights agreements also address access to information. As with freedom of expression, the Human Rights Committee has asserted the importance of legal frameworks, requirement for necessity and proportionality in any restrictions permitted to these rights.<sup>36</sup>

**C.1 Is the right to information guaranteed in law and respected in practice?**

Indicators:

- Constitutional or legal guarantee of access to information consistent with international rights agreements (including regional agreements) and evidence that it is respected and enforced by government

**C.2 Does the government block or filter access to the Internet or to specific online services, applications or websites, and on what grounds is this exercised?**

Indicators:

- Evidence concerning formal and informal restrictions on Internet access and use
- Numbers and trend of content access restrictions, takedowns of domain names and other interventions during the past twelve months

### **C.3 Are citizens, journalists or bloggers subject to detention, prosecution or intimidation for accessing information online, particularly on political and social issues?**

Indicators:

- Nature of legal provisions and practice
- Numbers of detentions and prosecutions for access to content which is not prohibited by international agreement

### **C.4 Is a wide variety of news sources and viewpoints on issues of national importance available online, without discrimination?**

Indicators:

- Evidence concerning diversity and plurality of local content, including disaggregation by gender and socio-economic factors
- Diversity of newspapers and news operations concerned with local news, online and offline
- *Consideration should be given and cross-reference made to data/evidence for Category X Question D.7 which is concerned with the manipulation of information.*

## **THEME D – FREEDOM OF ASSOCIATION AND THE RIGHT TO PARTICIPATE IN PUBLIC LIFE**

Article 21 of the ICCPR establishes the right of peaceful assembly, and Article 22 the right to freedom of association with others. Both state that no restrictions may be placed on these other than 'those which are prescribed by law and which are necessary in a democratic society in the interests of national security, public order ..., the protection of public health or morals or the protection of the rights and freedoms of others.'

Article 25 of the ICCPR states that 'Every citizen shall have the right and the opportunity ... to take part in the conduct of public affairs, directly or through freely chosen representatives,' and 'to have access, on general terms of equality, to public service in his country.'

### **D.1 Is freedom of association guaranteed in law and respected in practice?**

Indicator:

- Existence of an established legal framework that is consistent with international rights agreements, and evidence that it is respected and enforced by government

### **D.2 Can civil society organisations organise effectively online?**

Indicator:

- Evidence of online organisation by civil society, and absence of interference with such organisation

### **D.3 Is there a government policy for e-government and e-participation which encourages citizen participation in government?**

Indicators:

- Existence of government policies for e-government and e-participation, including use of the Internet for public consultation
- Values/rankings in UNDESA's e-government and e-participation indices

#### **D.4 Are government websites available which enable citizens to undertake a wide range of e-government activities securely online as well as offline?**

Indicators:

- Number of e-government services and users (disaggregated by gender)
- Extent to which data on e-government sites are protected by encryption and cybersecurity
- Credible reports concerning cybersecurity of government websites and services (e.g. use of https)

### **THEME E – PRIVACY**

Article 12 of the UDHR and Article 17 of the ICCPR are concerned with privacy. Article 17 of the ICCPR provides that 'No one shall be subjected to arbitrary or unlawful interference with his privacy, family, home or correspondence.' Regional rights agreements also address issues of privacy in their regions. The UN General Assembly has adopted a number of resolutions concerning 'the right to privacy in the digital age,' which, in addition to general principles, have addressed issues including surveillance, encryption and anonymity.<sup>37</sup>

#### **E.1 Is the right to privacy guaranteed in law and respected in practice?**

Indicator:

- Constitutional or legal definition of privacy and right to privacy

#### **E.2 Is the protection of personal data guaranteed in law and enforced in practice, with respect to governments, businesses and other organisations, including rights of access to information held and to redress?**

Indicators:

- Existence of a legal framework for data protection, including monitoring mechanisms and means of recourse and redress, and evidence that it is respected and enforced by government
- Existence of legal framework governing commercial use of personal data and international data transfer, including monitoring mechanisms and means of recourse and redress
- Existence of an independent data protection authority

#### **E.3 Are the powers of law enforcement and other agencies for the surveillance of Internet users necessary, proportionate and limited to circumstances which are consistent with international rights agreements?<sup>38</sup>**

Indicator:

- Legal framework for surveillance, and evidence concerning implementation

#### **E.4 Are any requirements for identification and registration, including communications registration, necessary, proportionate and consistent with international rights agreements?**

Indicator:

- Existence and nature of identity and registration requirements, including verification processes

**E.5 Are data encryption and online anonymity protected in law and practice in a way that is consistent with international rights agreements?<sup>39</sup>**

Indicator:

- Existence of a legal framework consistent with international rights agreements and evidence that it is respected by government.

**E.6 Do citizens have legal rights to protect their online identity and to manage or correct information concerning them online, in ways that protect both privacy and freedom of expression?**

Indicator:

- Legal frameworks and jurisprudence concerning privacy and freedom of expression

**E.7 Are government requirements for Internet businesses to provide information to government agencies concerning Internet users necessary, proportionate, transparent and consistent with international rights agreements?**

Indicator:

- Existence and nature of legal framework and evidence that it is respected by government

**THEME F – SOCIAL, ECONOMIC AND CULTURAL RIGHTS**

Economic, social and cultural rights are identified and elaborated in the International Covenant on Economic, Social and Cultural Rights (ICESCR).<sup>40</sup> Articles 3 to 14 are concerned with the progressive realisation of rights concerned with employment, social security, family life, freedom from hunger, health and education. Article 15 recognises the right of everyone to take part in cultural life. This theme should be considered in conjunction with Category X Theme C, which is concerned with sustainable development.

**F.1 Do government policies incorporate the Internet in strategies concerned with employment, health and education, with particular reference to ICESCR rights?**

Indicators:

- Evidence of inclusion of the Internet, and of ICESCR rights, in sector strategies for employment, health and education
- Evidence of analysis by government of the impact of Internet on employment, health and education

**F.2 Are all citizens equally able to take advantage of the Internet to participate in cultural activity?**

Indicators:

- Extent and nature of differences in Internet access and use between different communities/ethnicities
- Existence or otherwise of government policy concerning cultural heritage online
- Constitutional or legal guarantee of freedom of artistic expression

## THE INTERNET UNIVERSALITY INDICATORS – CATEGORY O – OPENNESS

Internet Universality's second principle is that the Internet should be open for all to develop or take advantage of its resources and opportunities in whatever ways seem most appropriate or valuable to them. The category of openness is concerned alike, therefore, with technical issues, markets, content and trust in the Internet and Internet-enabled services, including issues such as open source software and development, open government, open data and open educational resources. Through openness, Internet Universality acknowledges the integrity of the Internet as enabling a common global exchange, rather than being confined to 'walled gardens' based on incompatible technologies.

This category is divided into five themes:

- Theme A is concerned with the overall policy, legal and regulatory framework.
- Theme B is concerned with open standards.
- Theme C is concerned with open markets.
- Theme D is concerned with open content.
- Theme E is concerned with open data.

### THEME A – POLICY, LEGAL AND REGULATORY FRAMEWORK

An appropriate policy, legal and regulatory framework – including research support, standardisation and multistakeholder governance structures – is necessary to support an evidence-based, transparent and forward-looking policymaking process that will preserve the Internet as an open and universal resource.

#### **A.1 Is there an overall policy, legal and regulatory framework for Internet development and policymaking which is consistent with international norms concerning openness and transparency?**

Indicators:

- Existence of an overall framework consistent with relevant international norms<sup>41</sup>
- Existence of legal and regulatory frameworks to enable e-commerce, digital signatures, cyber-security, data protection and consumer protection

#### **A.2 Does the legal and regulatory framework for business, academia and civil society facilitate innovation on the Internet?**

Indicators:

- Conduciveness of the legal and regulatory framework towards the establishment of new business ventures and innovation by academia and civil society
- Perceptions of experience of business and ICT regulatory environment by businesses, including Internet-enabled business

#### **A.3 Are there restrictions on which organisations or individuals can establish Internet, or Internet-enabled, services?**

Indicator:

- Legal framework for Internet and Internet-enabled services, including development and use of interoperable technologies from diverse sources

## THEME B – OPEN STANDARDS

Open standards play a crucial role in promoting interoperability, and thereby innovation and the diversity of service provision on the Internet.

### B.1 Does the legal and regulatory framework encourage or constrain investment and innovation using all available technologies?

Indicators:

- Evidence concerning government policy and practice towards online innovation, including procurement
- Number and survival rate of Internet-related start-ups

### B.2 Do national standards setting processes conform to international standards including due process, transparency, balance and openness to participation by all interested parties?

Indicators:

- Legal and regulatory arrangements for standards processes
- Perceptions of standards processes amongst relevant stakeholders

### B.3 Does the government facilitate free and open-source software (FOSS)?

Indicators:

- Government policy towards FOSS
- Extent to which FOSS is used in government departments

### B.4 How extensively are developments in Internet protocols and standards implemented within the country?

Indicators:

- Data concerning the extent of IPv4 and IPv6 deployment
- Data concerning the extent of DNSSEC deployment

## THEME C – OPEN MARKETS

Open markets for networks and communications services facilitate consumer choice, stimulate innovation and generally lead to lower prices and improve quality of service for end-users.

### C.1 Is there independent regulation of communications markets, undertaken in accordance with international norms and standards?

Indicator:

- Existence of an independent regulatory authority/ies and evidence concerning regulatory performance

### C.2 Are licensing and allocation of critical resources (including spectrum, domain names and IP addresses) flexible, technology- and service-neutral, non-restrictive and non-discriminatory?

Indicators:

- Legal and regulatory arrangements for spectrum, domain names and IP addresses
- Rate of return on licenses and spectrum

**C.3 Is there independent management of the domain name system?**

Indicators:

- Independence of the domain name registrar
- Proportion of domain registrations from the country which are registered as ccTLDs

**C.4 Is there sufficiently effective competition in access networks to protect consumer interests?**

Indicators:

- Number of fixed and mobile broadband providers
- Market shares of fixed and mobile broadband providers (Herfindahl Index)

**C.5 Can Internet users choose between diverse Internet service providers, including domain name registrars, ISPs and online services?**

Indicators:

- Number of and distribution of market shares between domain name registrars
- Number of and distribution of market shares between ISPs
- Presence or absence of restrictions on access to international online service providers (including, for example, search, social media, microblogging, news access and e-commerce platforms)
- Extent and diversity of use of national and international online service providers in core areas of Internet use (including, for example, search, social media, microblogging, news access and e-commerce platforms)

**C.6 Are there Internet Exchange Points and effective peering arrangements for exchange of Internet traffic?**

Indicators:

- Existence and effective management of IXP(s)
- Proportion of national traffic using IXPs, including trend
- Latency levels to access national, regional and international servers

**THEME D – OPEN CONTENT**

The theme of open content is concerned with providing for the availability of content of all kinds, including public information and information from other sources within and beyond the country, which can be made available online. Open content approaches seek to maximise the availability of content to end-users, through open licensing arrangements, without infringing international intellectual property agreements.

**D.1 Does the government actively promote access to knowledge through its policies for education, culture and science?**

Indicator:

- Existence and nature of government policy and practice on access to knowledge

**D.2 Do arrangements for intellectual property protection balance the interests of copyright holders and information users in ways that promote innovation and creativity?**

Indicators:



- Nature of the legal arrangements for copyright enforcement
- Government adoption of creative commons and other open access forms of intellectual property

### **D.3 Does the government provide or encourage access to and facilitate sharing of public information?**

Indicators:

- Existence and nature of government policies on access to and sharing of public information, including availability of creative commons or comparable licences
- Consideration should be given and cross-reference made to data/evidence for indicators concerning government policies on e-government and e-participation (Category R: Questions D.3, D.4) and public access facilities which can be used to access public information (Category A: Question A.5)

### **D.4 Does the government encourage the use of open educational resources (OER) and facilitate open access to academic resources?**

Indicators:

- Educational policy framework concerning OER
- Arrangements for access to academic and scientific resources by higher education institutions and students

### **D.5 Does the government require ISPs to manage network traffic in a way that is transparent, evenly applied and does not discriminate against particular types of content or content from particular sources?**

Indicator:

- Regulatory arrangements concerning net neutrality

### **D.6 Does the government allow citizens to publish and access content through protocols and tools of their own choice, including virtual private networks (VPNs)?**

Indicator:

- Legal framework and practice concerning the rights of end-users to access content through all available tools, including VPNs

## **THEME E – OPEN DATA**

Open data policies are concerned with making publicly available data that are gathered by governments (and, sometimes, other stakeholders) so that they can be used by any stakeholder. Data protection arrangements are important in ensuring that open data sets do not undermine individual privacy rights.

### **E.1 Has legislation been enacted which requires open access to public data, and is that legislation implemented?**

Indicators:

- Existence of a legal framework for access to open data which is consistent with international norms<sup>42</sup> and privacy requirements
- Evidence concerning the extent to which open data resources are available and used online<sup>43</sup>

**E.2 Do government departments and local government agencies have websites which are available in all official languages?**

Indicators:

- Government policy to ensure provision of websites with appropriate language access
- Proportion of government departments with websites (value/ranking in UNDESA online services index)
- Quality of government websites (extent of language availability, quantity of content, availability of mobile version)
- Proportion of adult citizens who have used e-government services within twelve months

**E.3 Do government and other public stakeholders provide easy online access to publicly-held data sets, including machine-readable access to original data?**

Indicators:

- Legal framework concerning freedom of information
- Number and quantity of open data sets made available by government and available through public access facilities
- Availability of public access facilities that can be used for open data access in e.g. educational institutions and libraries
- Data on the extent of use of open data, in total and within country

**E.4 Are provisions concerning the location and duration of data retention consistent with international standards of data protection and supportive of effective access?**

Indicator:

- Legal and regulatory provisions concerning data retention and cross-border data flows

**E.5 Can individuals and organisations use and share public data without restriction?**

Indicators:

- Legal framework concerning freedom of information
- Presence or absence of restrictions in government policy and practice on the use and sharing of public data

**E.6 Are open data used by stakeholders in ways which have a positive impact on sustainable development?**

Indicators:

- Number of access requests for open data from government
- Evidence of developmental use of open data in selected sectors (e.g. environment, health, agriculture, enterprise)

## **THE INTERNET UNIVERSALITY INDICATORS – CATEGORY A – ACCESSIBILITY TO ALL**

The ability of all to access the Internet lies at the heart of Internet Universality. The reach of the Internet and Internet-enabled services has grown rapidly, but access to the Internet remains highly unequal.

The principle of accessibility to all reaches far beyond mere connectivity, for example, to include issues of affordability, content and capability. This category is divided into six themes:

- Theme A is concerned with the legal and regulatory framework for universal access and related issues.
- Theme B is concerned with technical and geographic connectivity.
- Theme C is concerned with the affordability of networks and services.
- Theme D addresses issues of equitable access.
- Theme E is concerned with content and language.
- Theme F is concerned with capabilities and competencies.

Data concerning access need to be disaggregated if they are to be fully understood and addressed in policy and practice. Assessments should pay particular attention to the accessibility of the Internet for women, children and young people, relating findings concerning these to Themes A and B in Category X.

### **THEME A – POLICY, LEGAL AND REGULATORY FRAMEWORK**

The first theme within this category is concerned with the evidence base and the legal, regulatory and infrastructural framework for communications access.

#### **A.1 Are effective arrangements in place to monitor access and use of Internet?**

Indicator:

- Arrangements for statistical monitoring access to and use of the Internet, including regular household surveys

#### **A.2 Is there a legal right to access the Internet and online services?**

Indicator:

- Existence or otherwise of a legal or regulatory entitlement to Internet access

#### **A.3 Is there an independent legal or regulatory authority which seeks to implement universal access to communications and the Internet?**

Indicators:

- Existence of a legal or regulatory authority with appropriate powers, and evidence of effective regulation
- Perceptions of regulatory performance

#### **A.4 Does the government have a policy and programme to implement universal access to reliable, affordable broadband, and is this effectively implemented?**

Indicators:

- Adoption of a universal access strategy and evidence of effective deployment of UA resources
- Statistical evidence of progress towards universal access, aggregate and disaggregated

- Consideration should be given and cross-reference made to data/evidence for contextual indicator 3.D, which is concerned with the availability of electricity.

**A.5 Are public access facilities available that provide access to the Internet for those who cannot afford or obtain personal access to the Internet?**

Indicators:

- Inclusion of public access in universal access strategy
- Numbers of telecentres, libraries and other public facilities offering Internet access, compared with proportion of the population without personal access

**THEME B – CONNECTIVITY AND USAGE**

The availability of networks of sufficient capacity and reliability to enable people to access and use the Internet is fundamental to Accessibility for All.

**B.1 Are broadband networks geographically available throughout the country?**

Indicators:

- Percentage of population covered by fixed broadband networks, including bandwidth tiers
- Percentage of population covered by mobile broadband signal, bandwidth tiers (and compared with proportion covered by mobile cellular signal)
- International Internet bandwidth per Internet user

**B.2 What proportion of the population subscribes to communications/broadband services, and is this growing?**

Indicators:

- Number of fixed broadband subscriptions per hundred population, aggregate and disaggregated
- Number of unique active mobile broadband subscribers per hundred population, by bandwidth, aggregate and disaggregated
- Number of IP addresses within the country, per hundred population

**B.3 What proportion of the population uses the Internet, with what frequency, and is this proportion growing?**

Indicators:

- Proportion of individuals who have ever accessed the Internet, aggregate and disaggregated
- Proportion of households with Internet access at home, aggregate and disaggregated
- Number of Internet users per hundred population, aggregate and disaggregated, by frequency of use
- Number of social media (social networks, microblogs, user-generated video streaming) users per hundred population, aggregate and disaggregated, and by frequency of use
- Number of visits to social media websites (defined as above) per hundred population

**B.4 What barriers to access are identified by users and non-users of the Internet?**

Indicator:

- Perceptions of barriers to Internet access and use

**B.5 Is the volume of Internet traffic within the country growing significantly compared with other countries?**

Indicator:

- Volume of mobile broadband Internet traffic in exabytes (including and excluding video streaming), per citizen, per Internet user, and trend

**THEME C – AFFORDABILITY**

Connectivity is insufficient to enable people to access and use the Internet. The extent to which they can do so also depends on its affordability. Targets for affordability have been adopted by the International Telecommunication Union (ITU),<sup>44</sup> the Broadband Commission for Digital Development<sup>45</sup> and the Alliance for Affordable Internet.<sup>46</sup>

**C.1 Are mobile handsets capable of Internet connectivity affordable to all sections of the population?**

Indicators:

- Cost of basic mobile handset as a percentage of monthly GNI p.c.
- Perceptions of affordability in household surveys, disaggregated by gender

**C.2 Is the cost of broadband access and use affordable to all sections of the population?**

Indicators:

- Cost of basic fixed broadband connection and use as a percentage of monthly GNI p.c.
- Cost of basic mobile broadband connection and use as a percentage of monthly GNI p.c.

**C.3 Are universal access/service arrangements in place which seek to reduce the cost of access for poor and marginalised groups within the population?**

Indicator:

- Evidence that universality policies and arrangements address affordability in law and practice<sup>47</sup>

**THEME D – EQUITABLE ACCESS**

There are significant digital divides within many national populations, associated with factors such as geography, gender, age, ethnicity and disability.

The questions and indicators in this category should be assessed alongside those concerned with overall connectivity and usage in Theme B, and alongside those concerned with Gender and with Children and Young People in Category X.

**D.1 Are there significant differences in broadband access between urban and rural areas?**

Indicators:

- Geographical coverage in urban and rural areas, by level of bandwidth

- Numbers of mobile broadband subscribers and of Internet users, in urban and rural areas, indicated in household surveys

**D.2 Is there a gender digital divide in Internet access and use and, if so, is this gender divide growing, stable or diminishing?** (This question and indicators are also included in Category X Theme A.)

Indicators:

- Proportions of adult women and men using the Internet, compared with other countries and with gender differences in income and educational attainment
- Proportions of adult women and men with mobile broadband subscriptions
- Survey data on patterns of Internet use, disaggregated by gender
- Perceptions of barriers to Internet access and use, and of stated values of Internet access and use, disaggregated by gender

**D.3 Do people in all age groups make use of the Internet to the same extent?**

Indicator:

- Proportion of those aged 55 and over who are using the Internet, and frequency of use, compared with those aged 15-24 and 25-54

**D.4 Are people with disabilities able to make effective use of the Internet?**

Indicators:

- Existence of legal and regulatory provisions to promote access and use of Internet by people with disabilities
- Extent of accessibility facilitation on government websites and e-government services
- Proportion of those with and without disabilities who are using the Internet, adjusted to compensate for age differences

## THEME E – LOCAL CONTENT AND LANGUAGE

Relevant content, including content which is generated locally and concerned with local issues, is necessary if people are to use the Internet in order to improve their quality of life or livelihoods, and to contribute to national development. The availability of content in languages which are used by local populations is also critical to the value of Internet access, particularly for minority language speakers.

**E.1 How many Internet domains are registered within the country and is this number growing?**

Indicator:

- Registered domains (including both ccTLDs and gTLDs) per thousand population

**E.2 Is a substantial and growing volume of content about the country available online, including locally-generated content?**

Indicator:

- Number of Wikipedia articles/words concerning the country, compared with other countries, including source (proportion generated in-country)

**E.3 Are services available which enable citizens to access and use local scripts and languages online?**

Indicators:

- Availability of Internet domains and websites in local scripts
- Availability of local languages on major online platforms

**E.4 Is there a substantial and growing volume of Internet content in diverse local languages, including locally-generated content?**

Indicators:

- Proportion of population whose principal language and script are available on leading online services
- Availability of content on government websites in all languages with significant user groups within the population
- Proportion of content generated in and read by citizens/residents on leading online services, by language, compared with proportion of total population using each language as their principal language

**THEME F – CAPABILITIES / COMPETENCIES**

Effective use of the Internet and Internet-enabled services requires certain capabilities and competencies on the part of users. UNESCO has an established group of media and information literacy indicators,<sup>48</sup> which are partly incorporated in this theme and provide a valuable resource for in-depth investigation.

**F.1 Do school and higher educational curricula include training in ICTs and Internet, focused on effective and safe use, and are these curricula implemented in practice?**

Indicators:

- Policy concerning school curricula
- Evidence of appropriate educational curricula at primary, secondary and tertiary levels
- Proportion of teachers in primary and secondary schools with training in ICTs or ICT-facilitated education
- Proportion of schools with computer-assisted instruction
- Proportion of learners who have access to the Internet at school

**F.2 Are media and information literacy programmes (including digital aspects) provided for adults by government or other stakeholders, and used by citizens?**

Indicators:

- Existence of media and information literacy programmes, and usage statistics, disaggregated by gender
- Perceptions of media and information literacy among users

**F.3 What proportion of the population and the workforce is skilled in the use of ICTs?**

Indicators:

- Proportion of Internet users with particular skills, by skill type, aggregate and disaggregated

- Proportion of the workforce using ICTs in the workplace, by skill type, aggregate and disaggregated
- Proportion of higher education students undertaking STEM and ICT courses, compared with global averages
- *Consideration should be given and cross-reference made to data/evidence for Category X Question C.7 which is concerned with the prevalence of the Internet in business.*

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## **UNESCO INTERNET UNIVERSALITY INDICATORS – CATEGORY M – MULTISTAKEHOLDER PARTICIPATION**

The development of the Internet has been characterised by multistakeholder participation, which has drawn together governments, intergovernmental and international organisations, the private sector, civil society and the Internet technical and professional community and academia. The goal of multistakeholder participation is to improve the inclusiveness and quality of decision-making by including in discussion and policymaking processes all those who have an interest in the development of the Internet and its impact on wider social, economic and cultural development.

This category is divided into three themes:

- Theme A is concerned with the overall legal and regulatory framework for participation in governance.
- Theme B is concerned with national Internet governance.
- Theme C is concerned with international Internet governance.

### **THEME A – LEGAL AND REGULATORY FRAMEWORK**

The overall framework for governance within the country provides the overall context within which policies and decisions concerning the Internet are made.

#### **A.1 Does the government encourage participation by other stakeholders in national governance through the Internet?** (This concerns processes which are not themselves about the Internet.)

Indicators:

- Value and ranking in UN DESA E-Participation Index
- Legal arrangements requiring public consultation and legal and practical arrangements for online consultation processes
- Number and range of government consultation processes and opportunities available online
- Evidence of participation by diverse stakeholder groups in online consultation processes

#### **A.2 Is government accountable to citizens and stakeholder communities?**

Indicator:

- Constitutional and institutional arrangements for government accountability, and evidence from credible sources that these are implemented in practice

### **THEME B – NATIONAL INTERNET GOVERNANCE**

This theme is concerned with the extent to which diverse stakeholder groups are involved in national-level policymaking concerned with the Internet.

#### **B.1 Are there active associations of Internet professionals, consumers and other stakeholder communities?**

Indicator:

- Existence, membership data (aggregate and disaggregated) and level of activity of relevant associations

#### **B.2 Does the government actively involve other stakeholder groups in developing national Internet policies and legislation?**

Indicators:

- Existence of arrangements for multistakeholder consultation and involvement in national policymaking institutions and processes concerned with the evolution and use of the Internet
- Numbers of non-governmental stakeholders actively participating, by stakeholder group, disaggregated by gender

**B.3 Is there a national Internet Governance Forum which is open to all stakeholders, with active participation from diverse stakeholder groups?**

Indicators:

- Existence of national IGF
- Participation data, aggregate and disaggregated, with particular attention to participation by selected groups (e.g. education ministries, SMEs, NGOs concerned with children, trades unions); and including arrangements for remote participation
- Assessment of national IGF reports filed with global IGF Secretariat

**B.4 Does the national domain name registry involve all stakeholders in its decision-making processes?**

Indicator:

- Constitution and practice of domain name registry

**THEME C – INTERNATIONAL INTERNET GOVERNANCE**

This theme is concerned with the extent to which diverse stakeholder groups within the country participate in international fora concerned with Internet governance.

**C.1 Does the government actively involve other stakeholder groups in developing policy towards international Internet governance?**

Indicator:

- Evidence that government encourages and facilitates multistakeholder preparation for international meetings

**C.2 Do government and other stakeholders from the country actively participate in major international fora concerned with ICTs and the Internet?**

Indicators:

- Number of participants from different stakeholder groups participating in global and regional IGFs, per million population, aggregated and disaggregated by stakeholder group and gender
- Participation or otherwise of non-government stakeholders in official delegations to ITU, aggregated and disaggregated by stakeholder group and gender

**C.3 Does the government and do other stakeholders participate actively in ICANN?**

Indicators:

- Membership of and active participation in ICANN's Governmental Advisory Committee (GAC)
- Membership of and active participation in ICANN constituencies, working groups and other fora.

## UNESCO INTERNET UNIVERSALITY INDICATORS – CROSS-CUTTING INDICATORS

The final category included in the Internet Universality framework draws together five groups of cross-cutting indicators:

- Group A is concerned with gender equality.
- Group B is concerned with children and young people.
- Group C is concerned with sustainable development.
- Group D is concerned with trust and security.
- Group E is concerned with legal and ethical aspects of the Internet.

### GROUP A – GENDER

Women in many countries face a number of barriers in gaining access to or using the Internet. UNESCO believes that a distinct analysis on gender should form part of any assessment that is made using the indicators in this framework. Assessments concerned with gender and the Internet should draw fully on questions and indicators throughout the ROAM categories in addition to these questions/indicators. The Gender Inequality Index (contextual indicator 4.B) should also be considered.

#### A.1 Are the interests and needs of girls and women explicitly included in national strategies for Internet development, and effectively monitored?

Indicator:

- National strategies include explicit consideration of a) women's needs relating to the Internet and b) the potential of the Internet to support women's rights and equality
- Numbers of women and men in senior policymaking positions in government concerned with ICTs/Internet
- Extent of disaggregation of available data on ICT access and use by gender
- Existence of national mechanisms to monitor women's inclusion in strategies for Internet access and use

#### A.2 Is there a gender digital divide in Internet access and use and, if so, is this gender divide growing, stable or diminishing? (This question and some of its indicators are also included in Category X Theme A.)

Indicators:

- Proportions of adult women and men using the Internet, by frequency, compared with other countries and with gender differences in income and educational attainment
- Proportions of adult women and men with mobile broadband subscriptions, compared as above
- Survey data on patterns of Internet use, disaggregated by gender
- Perceptions of barriers to Internet access and use, disaggregated by gender
- Perceptions of value of Internet access and use, disaggregated by gender
- Proportions of women and men involved in internet governance issues

**A.3 Do women and men participate to the same degree in use of online services?**

Indicators:

- Proportion of Internet users using social media networks, disaggregated by gender
- Proportion of adult citizens using mobile financial services, disaggregated by gender

**A.4 Do the law, law enforcement and judicial processes protect women against online gender-based a) harassment and b) violence, without unduly impacting other human rights?**

Indicators:

- Incidence of gender-based a) harassment and b) violence experienced by women and girls
- Evidence of government, law enforcement and judicial action to provide protection to women against online gender-based a) harassment and b) violence

**A.5 Is the proportion of women in STEM training, employment and Internet leadership significant and growing?**

Indicators:

- Proportion of women in STEM employment, by level of skill
- Proportion of women in STEM courses in higher education
- Proportion of women in senior management positions in national Internet-related government departments/roles and Internet/communications businesses

**A.6 Is accurate information about reproductive and sexual health freely available online?**

Indicator:

- Presence and/or absence of restrictions on online information about reproductive and sexual health, ease of access and extent of use

**GROUP B – CHILDREN AND YOUNG PEOPLE**

The Internet has great potential to enable children to access information that they need and cannot readily obtain by other means, to participate in social groups, and to express their wishes, hopes and needs. At the same time, there is widespread concern at threats to children's wellbeing which may be facilitated by the Internet. Initiatives such as Global Kids Online and agencies including UNICEF are working to establish ways of promoting the opportunities which Internet access and use open up for children while protecting them from harm.

Young people, aged between 18 and 24, are among the most enthusiastic and intensive users of the Internet worldwide. The ITU estimates that 71% of those in this age group were online in 2017, compared with 48% of the global population.<sup>49</sup>

An additional question concerning differences in Internet access and use by age group is included in Theme D (Equitable Access) of Category A.

**B.1 Does the government survey children and young people and/or consult them (and organisations concerned with children) about their use of the Internet?**

Indicator:

- Existence of surveys and consultation arrangements explicitly addressed to children, young people and relevant organisations

**B.2 What proportion of children (5-15 or 5-18) and young people (15-25 or 18-25) make use of the Internet?**

Indicator:

- Proportions of children and young people making use of the Internet, compared with other countries and with other age groups, disaggregated by gender and other social groups, and by frequency of use

**B.3 How do children and young people perceive and use the Internet?**

Indicators:

- Perceptions of the Internet among children and young people, including barriers to use, value of use and fears concerning use
- Data on use of the Internet by children and young people, compared with other age groups (e.g. data on location of use, main type of use, frequency of use)

**B.4 Is there a legal and policy framework to promote and protect the interests of children online, and is this effectively implemented?**

Indicator:

- Existence of a policy framework and legal protections consistent with the Convention on the Rights of the Child (CRC), and evidence of effective implementation

**B.5 Do primary and secondary schools have Internet and broadband access?**

Indicators:

- Proportions of schools with broadband and Internet access, disaggregated by tier (private/public; primary/secondary) and location (rural/urban)
- Learner to computer ratio in schools, disaggregated as above

**B.6 Do educational curricula and online services support children's effective and safe use of the Internet?**

Indicator:

- Evidence of educational curricula focused on effective and safe use of Internet
- Availability of online services to support children's use of the Internet, including child protection services accessible by children
- Usage data of online services to support children's use of the Internet, including child protection services accessible by children

**GROUP C – SUSTAINABLE DEVELOPMENT**

The United Nations' *2030 Agenda for Sustainable Development* sets out the global framework for international action on development until 2030. It notes that 'The spread of information and communications technology and global interconnectedness has great potential to accelerate human progress, to bridge the digital divide and to develop knowledge societies,' and calls for the international community to 'significantly increase access to information and communications technology and strive to provide universal and affordable access to the Internet in least developed countries by 2020.'<sup>50</sup>

**C.1 Do national and sectoral development policies and strategies for sustainable development effectively incorporate ICTs, broadband and the Internet?**

Indicators:

- Existence of an up-to-date, comprehensive and forward-looking policy for the development of ICTs, broadband and the Internet
- Inclusion of up-to-date policies and strategies for broadband and the Internet in national strategies to monitor and achieve the UN's *2030 Agenda for Sustainable Development and Sustainable Development Goals* (SDGs)
- Inclusion of up-to-date policies and strategies for broadband and the Internet in selected economic and social sectors (such as enterprise, agriculture, education, health)

**C.2 Does the government have an agreed policy on the management of e-waste and is this implemented effectively?**

Indicators:

- Existence of a national policy on e-waste, and evidence concerning implementation
- E-waste collection rate

**C.3 Are there adequate arrangements in place for monitoring the development of the Internet and its impact on society?**

Indicators:

- Existence of national statistical office
- Arrangements for statistical monitoring of Internet access and use, including household surveys
- Arrangements for regular review and revision of policies relating to the Internet and its impact on sustainable development

**C.4 Does the government have a long-term strategy to address new developments in information technology and incorporate these in development, with multistakeholder participation?**

Indicator:

- Existence and composition of a strategic forum or equivalent addressing issues such as artificial intelligence, algorithmic decision-making etc.

**C.5 What proportion of adult citizens make use of major online services?**

Indicator:

- Proportion of adult citizens using e-government services in specific categories, aggregate and disaggregated
- Proportion of adult citizens using mobile and online financial services, aggregate and disaggregated
- Proportion of adult citizens using online learning services
- Proportion of adult citizens using online health services

**C.6 What proportion of public service facilities have Internet access?**

Indicators:

- Proportion of primary schools with Internet access
- Proportion of clinics with Internet access

**C.7 What proportion of businesses, including small and medium sized businesses make use of the Internet and e-commerce?**

Indicators:

- Proportion of business-to-business activity undertaken through e-commerce
- Proportion of SMEs using the Internet, by type of access
- Proportion of SMEs trading (and exporting) online
- Volume of business-to-business and business-to-consumer activity as a proportion of total relevant activity
- Perceptions of value of Internet use by SMEs

**GROUP D – TRUST AND SECURITY**

Issues of trust and security are increasingly important to the future of the Internet. As well as the threats to businesses and individuals posed by cybercrime, this theme addresses threats to critical infrastructure and databases which may come from diverse sources, including governments, non-state actors, criminal organisations and individuals.

**D.1 Is there a national cybersecurity strategy, with multistakeholder engagement, including a national computer emergency response team (CERT) or equivalent?**

Indicators:

- Existence of cybersecurity strategy, with multistakeholder involvement, which is consistent with international standards
- Establishment of national CERT or equivalent, and evidence concerning its effectiveness

**D.2 Is there a legal and regulatory framework for consumer rights online?**

Indicator:

- Existence of an established legal framework and implementation in practice

**D.3 Have there been significant breaches of cybersecurity in the country within the last three years?**

Indicator:

- Number and extent of breaches, and numbers of citizens and businesses affected
- Perceptions of Internet security
- Arrangements for and data concerning phishing, spam and bots in national level domains

**D.4 Are citizens and businesses taking action to reduce risks to their security and privacy?**

Indicators:

- Proportions of Internet users with up-to-date malware protection
- Evidence of business awareness of and contingency plans to counteract cybersecurity attacks
- Extent to which encryption services are used by citizens and businesses
- *Consideration should be given and cross-reference made to data/evidence for Category R Question E.5, which is concerned with law and practice concerning encryption and anonymity*

**D.5 Do citizens and businesses show a high level of awareness of cybersecurity risks and a high level of trust in the security of the Internet?**

Indicator:

- Perceptions of trust in the Internet and online services and awareness of cybersecurity risks among citizens and businesses

**GROUP E - LEGAL AND ETHICAL ASPECTS OF THE INTERNET**

There has been increasing concern about the use of the Internet in ways that adversely affect individual users or potentially undermine trust and confidence in the Internet. Many issues in this context have both legal and ethical implications.

**E.1 Is there a national policy framework concerned with legal and ethical challenges raised by usage of the Internet which is consistent with international rights agreements?**

Indicator:

- Existence and assessment of national legal frameworks concerned with hate speech, harassment and discrimination online and offline, which are consistent with international rights agreements

**E.2 Are there any multistakeholder or private sector self-regulatory bodies concerned with ethical aspects of the Internet?**

Indicators:

- Existence or otherwise of relevant multistakeholder or self-regulatory bodies

**E.3 How do citizens perceive the benefits, risks and impact of the Internet within the country?**

Indicator:

- Perceptions of the benefits, risks and impact of the Internet, disaggregated by gender

**E.4 Do Internet users in the country report experiencing significant harassment or abuse at the hands of other Internet users which deters them from making full use of the Internet?**

Indicator:

- Data on the extent to which Internet users report harassment or abuse, with particular attention to specific social groups (including women, ethnic and other minorities, and political activists)



**E.5 Do Internet users in the country report experiencing significant levels of cybercrime?**

Indicators:

- Number of reports of Internet-enabled crime by category per thousand people, compared with other countries
- Number and trend of prosecutions for cybercrime
- Perceptions of the Internet and Internet content (in household surveys and opinion polling)
- Evidence from credible sources concerning the prevalence of online disinformation

**E.6 Is there adequate protection for e-commerce consumers?**

Indicators:

- Legal framework for online consumer protection
- Number (and trend) of complaints and prosecutions related to online consumer protection
- Perceptions of the adequacy of protection against online fraud and criminality

**E.7 Do citizens believe that the content of online sources of information is determined or manipulated by the government, foreign governments, commercial or partisan interests?**

Indicators:

- Evidence from credible sources of government or other stakeholders seeking to disseminate disinformation
- Perceptions of the Internet and Internet content (in household surveys and opinion polling)

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39. Issues concerning encryption and anonymity are addressed in the 2015 report of the UN Special Rapporteur on the Rights of Freedom of Opinion and Expression, [www.ohchr.org/EN/HRBodies/HRC/RegularSessions/.../A.HRC.29.32\\_AEV.doc](http://www.ohchr.org/EN/HRBodies/HRC/RegularSessions/.../A.HRC.29.32_AEV.doc)
40. <http://www.ohchr.org/EN/ProfessionalInterest/Pages/CESCR.aspx>
41. e.g. the OECD Internet Policy Making Principles for OECD countries
42. e.g. the Open Data Charter, <https://opendatacharter.net/#>
43. e.g. value and ranking in the World Wide Web Foundation's Open Data Barometer
44. <http://www.itu.int/en/connect2020/Pages/default.aspx>
45. <http://broadbandcommission.org/Documents/Targets-Separated/Target-2.pdf>
46. <http://a4ai.org/1for2-affordability-target/>
47. e.g. the Affordability Drivers Index of the Alliance for Affordable Internet, [http://a4ai.org/affordability-report/data/?\\_year=2017&indicator=INDEX](http://a4ai.org/affordability-report/data/?_year=2017&indicator=INDEX)
48. <http://unesdoc.unesco.org/images/0015/001587/158723e.pdf>
49. <https://www.itu.int/en/ITU-D/Statistics/Documents/facts/ICTFactsFigures2017.pdf>
50. <https://sustainabledevelopment.un.org/post2015/transformingourworld>



