WSIS+10: Overall Review of the Implementation of the WSIS Outcomes

Action Line: C6. Enabling Environment

Lead Facilitator: ITU

The views expressed may not necessarily reflect the opinions of ITU or its Members.

Draft Version 2

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1 Introduction

This document provides a review of the progress made in the implementation of Action Line C6 since the first World Summit on the Information Society (WSIS) in 2003. It is based on the 10-Years Review Report Template in the *WSIS Forum 2012: Outcome Document*.[1]

Since May 2008, ITU has been acting as the lead facilitator for Action Line C6 (Enabling Environment), building upon its regular work carried out within the framework of the Telecommunication Development Bureau (BDT) Programme 3: Enabling environment, in close collaboration with BDT Programme 2: Cybersecurity, ICT Applications and IP-based network-related issues. ITU has undertaken a number of activities to facilitate development of an enabling environment worldwide including information sharing; the creation of tools for effective regulation; national and regional assistance; and the creation of training materials. Examples include the annual Global Symposium for Regulators and the joint ITU-infoDev ICT Regulation Toolkit.

A meeting on WSIS Action Line C6 was organized by the ITU each year during the WSIS Facilitation Meetings in May. The meetings were structured as an interactive panel discussion involving multiple stake-holders including national governments, regulators, industry, civil society and international organizations. The themes for each year's discussion were selected based on proposals received during the WSIS multi-stakeholder consultation process. For more detail see the WSIS C6 portal[2] and the meeting reports.[3]

Main developments relating to Action Line C6 are reviewed in the next chapter. Chapter 3 outlines recent developments and emerging trends, challenges and possible new priorities. Chapter 4 recommends possible revisions and new topics including post-2015 goals. Chapter 5 concludes. The Annex reviews developments for each bullet point listed under Action Line C6.

Box 1-1: WSIS Action Line C6 Lead facilitator implementation activities

As the lead facilitator of WSIS Action Line C6, ITU has undertaken numerous activities that foster the development of an enabling environment worldwide including information sharing, creation of tools for effective regulation and economic and financial issues, national and regional assistance, and development of training materials. ITU assists Member States and Sector Members in developing a pro-competitive policy and regulatory framework for ICT. This includes BDT Programme 3 Enabling Environment. The annual Global Symposium for Regulators (GSR) provides a unique opportunity for regulators and policy-makers to meet and exchange views and experiences.[4] Regulatory publications include the annual

[1] p. 54. Available at: http://groups.itu.int/wsis-forum2012/Highlights/OutcomeDocument.aspx
[2] http://www.itu.int/ITU-D/treg/wsis/c6/
[3] http://www.itu.int/ITU-D/treg/wsis/c6/doc/WSIS-ALC6-09_summary-report.pdf
[4] http://www.itu.int/en/ITU-D/Conferences/GSR/Pages/GSR2013/default.aspx

Trends in Telecommunication Reform as well as a series of thematic reports and country case studies on broadband developed jointly with the Broadband Commission Secretariat.

Regional forums have been organized together with ITU-T Study Group 3 Regional Groups (SG3RG-AFR, SG3RG-AO, SG3RG-ARB and SG3RG-LAC). A platform to exchange information and knowledge on economic, finance, costing and tariff policies has been developed.[5] The ITU ICT Eye portal is a one-stop shop for ICT data collection and dissemination, giving access to the latest trends in regulation and tariff policies as well as in the development of the ICT sector.[6] Data is based on responses to the ITU annual regulatory, policy and indicators surveys.

Several training sessions were also carried out in coordination with ITU's Centre of Excellence Network and the ITU Regional Offices, focusing on specific areas of ICT policy and regulation, as well as costing and pricing issues. Results and presentations from these seminars are available on a website.[7]

2 Review

There are 18 bullet points (a-r) under Action Line C6 in the WSIS Geneva Plan of Action. They are organized into three topics for review in this chapter: 1) Internet governance (process, standards, privacy, etc.); 2) legal and regulatory environment and 3) e-government (including support to SMEs) (Table 5-1). Each bullet is covered in more detail in the annex.

One of the most noteworthy trends since the first WSIS is the global focus on *Internet governance* through multi-stakeholder forums. This includes emphasis on greater internationalization of Internet resources and attention to security, privacy, standards and development issues. Creating an effective *legal and regulatory framework* for the ICT sector is an important aspect for fostering an enabling environment and attracting investment. Electronic communications offers countries opportunities to increase transparency and deliver services more efficiently to citizens and businesses through *e-government*. Nations continue to evolve in providing online public services while the emergence of Web 2.0 and open data could further enhance transparency and democracy.

2.1 Internet governance

Following the first phase of WSIS, the Secretary General of the United Nations (UN) established the Working Group on Internet Governance (WGIG). WGIG produced a

[5] http://www.itu.int/en/ITU-D/Regulatory-Market/Pages/Studies.aspx
[6] http://www.itu.int/net4/itu-d/icteye
[7] http://www.itu.int/en/ITU-D/Regulatory-Market/Pages/default.aspx

final report in 2005 that was submitted by UN to the WSIS Preparatory Committee.[8] The WGIG developed the following definition of Internet governance:

> "Internet governance is the development and application by Governments, the private sector and civil society, in their respective roles, of shared principles, norms, rules, decision-making procedures, and programmes that shape the evolution and use of the Internet."[9]

WGIG also identified the following four key public policy areas relevant to Internet governance:

> (a) Issues relating to infrastructure and the management of critical Internet resources. These issues are matters of direct relevance to Internet governance and fall within the ambit of existing organizations with responsibility for these matters;
>
> (b) Issues relating to the use of the Internet, including spam, network security and cybercrime. While these issues are directly related to Internet governance, the nature of global cooperation required is not well defined;
>
> (c) Issues that are relevant to the Internet but have an impact much wider than the Internet and for which existing organizations are responsible, such as intellectual property rights (IPRs) or international trade. The WGIG started examining the extent to which these matters are being handled consistent with the Declaration of Principles;
>
> (d) Issues relating to the developmental aspects of Internet governance, in particular capacity-building in developing countries.[10]

Following the second phase of WSIS, UN created the Internet Governance Forum (IGF) in 2006. The multi-stakeholder community meets once a year to dialogue on issues relating to that subject.

Though the specific activities called for in the WSIS Plan of Action covering the work of a group on Internet governance have been accomplished, many of the priority public policy issues remain unresolved. While the establishment of the IGF is one distinct process, the international community has also called for enhanced cooperation on Internet governance. The multi-stakeholder dialogue on those issues continues through various national, regional and international fora, including the United Nations, UNCTAD's CSTD,[11] ITU and IGF.

Consumer rights, spam, network security, cybercrime and privacy have been identified as priority public policy areas relating to use of the Internet.[12] OECD

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[8] Working Group on Internet Governance. 2005. "Report of the Working Group on Internet Governance." http://www.wgig.org/WGIG-Report.html.
[9] WGIG 2005, p. 4.
[10] WGIG 2005, p. 5.
[11] Commission on Science and Technology for Development.
[12] Note that these issues are also highlighted in Action Lines C5 (f. Further strengthen the trust and security framework with complementary and mutually reinforcing initiatives in the fields of security in the use of ICTs, with initiatives or guidelines with respect to rights to privacy, data and consumer protection) and C10 (c. All actors in the Information Society should promote the common good,

adopted consumer protection guidelines relating to electronic commerce as far back as 1999 which a number of its members have adapted to their own situation. [13] The guidelines aim to ensure that consumers are just as protected making purchases online as they would be using traditional methods. The guidelines encourage private sector initiatives reflecting the input of consumers and the need for cooperation among governments, businesses and consumers.

Computer threats have been varying over time with some types declining while new ones emerge. According to a computer security firm, there were around 30 billion spam emails a day in 2012 accounting for 69% of global email traffic; one in 413 emails was blocked as a phishing attack and some 250,000 web sites were crippled each day.[14] These threats not only damage computer systems but can also steal personal information. Some countries have outlawed these practices through computer crime legislation but enforcement remains difficult due to the cross-border aspect of many of these threats.

Many nations guarantee the right to privacy in their fundamental laws and some nations have extended this protection to cyberspace. The Council of Europe has several conventions protecting privacy online.[15] Similarly the European Data Protection Directive regulates the collection and use of personal information.[16] At the same time, governments are increasing their use of online surveillance of users in the cyber world (UNCTAD 2013) (Figure 2-1).

protect privacy and personal data and take appropriate actions and preventive measures, as determined by law, against abusive uses of ICTs such as illegal and other acts motivated by racism, racial discrimination, xenophobia, and related intolerance, hatred, violence, all forms of child abuse, including pedophilia and child pornography, and trafficking in, and exploitation of, human beings).

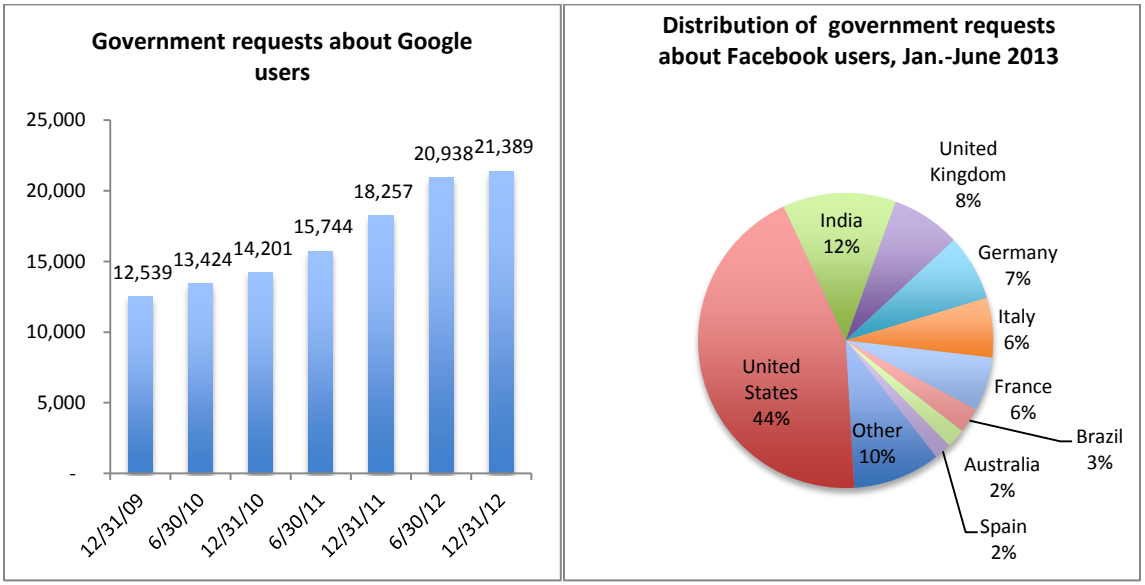
[13] OECD. 1999. *OECD Guidelines for Consumer Protection in the Context of Electronic Commerce*. Paris, France: OECD. http://www.oecd.org/sti/consumer/oecdguidelinesforconsumerprotectioninthecontextofelectroniccommerce1999.htm.

[14] Symantec. 2013. "Internet Security Threat Report." http://www.symantec.com/security_response/publications/threatreport.jsp

[15] http://www.coe.int/t/dc/files/events/internet/2010_fiche_privacy.pdf

[16] http://ec.europa.eu/justice/data-protection/

Figure 2-1: Government requests for Internet user data



Source: Adapted from Google and Facebook.

Consumer protection in the Internet age has largely been met through the application of existing laws, voluntary industry self-regulation practices and user purchases of security software. It is not clear whether these practices are sufficient to deal with the growing number and variety of computer threats. As the ITU notes in a recent report: "One of the key challenges for regulators is to establish a culture of security that promotes trust in ICT applications, one in which there is effective enforcement of privacy and consumer protection. Given that converged services are global, the need to strengthen cross border cooperation is ever greater."[17] Equally there is need for more transparency about electronic surveillance by governments with respect to cloud computing. The United Nations has proposed that Member States "...review their procedures, practices and legislation on the surveillance of communications, their interception and collection of personal data, including mass surveillance..."[18]

2.2 Legal and regulatory environment

Effective legal and regulatory frameworks create a predictable environment that foster investment.[19] By the November 2013, independent regulators had been established in 161 countries throughout the world.

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[17] ITU. *Regulation and consumer protection in a converging environment*, 2013. http://www.itu.int/en/ITU-D/Regulatory-Market/Documents/Regulation%20and%20consumer%20protection.pdf.

[18] UN. "Third Committee Approves Text Titled 'Right to Privacy in the Digital Age', as It Takes Action on 18 Draft Resolutions." News Release, November 26, 2013. https://www.un.org/News/Press/docs/2013/gashc4094.doc.htm.

[19] Research into the link between effective regulation and investment concludes: " ... there continues to be a strong and positive relationship between regulation of electronic communications market and investment." See: Strategy & Policy Consultants Network Ltd. 2009. "Regulation and Investment: A

ITU has been supporting countries in facing the challenges to regulation in an ever convergent environment through a comprehensive set of programs and activities. For example, the annual Global Symposium for Regulators (GSR) provides a venue for policy making officials to discuss topical issues affecting the ICT regulatory environment. In the lead to the event, a set of Best Practice Guidelines are developed through an open consultation with regulators and policy makers on a range of topical issues such as broadband, net neutrality, spectrum, infrastructure sharing and universal service. The Best Practice Guidelines are adopted by the global community of regulators at GSR and serve as an important tool for furthering sector reform and fostering access to digital opportunities. Another example is the ITU's work on the issue of Alternative Dispute Resolution (ADR),[20] a critical area given that disputes can take a long time to resolve using formal regulatory processes.

There is a continuing need to enhance capacity among ICT sector policy makers and regulators, particularly in developing nations. This is essential due to the continual technical and legal evolution of the sector. The sharing of experiences across a range of regulatory issues such as competition, universal access and service policies and consumer protection as well as new and emerging issues is also critical in order to learn from best practice and improve regulatory regimes.

2.3 E-government

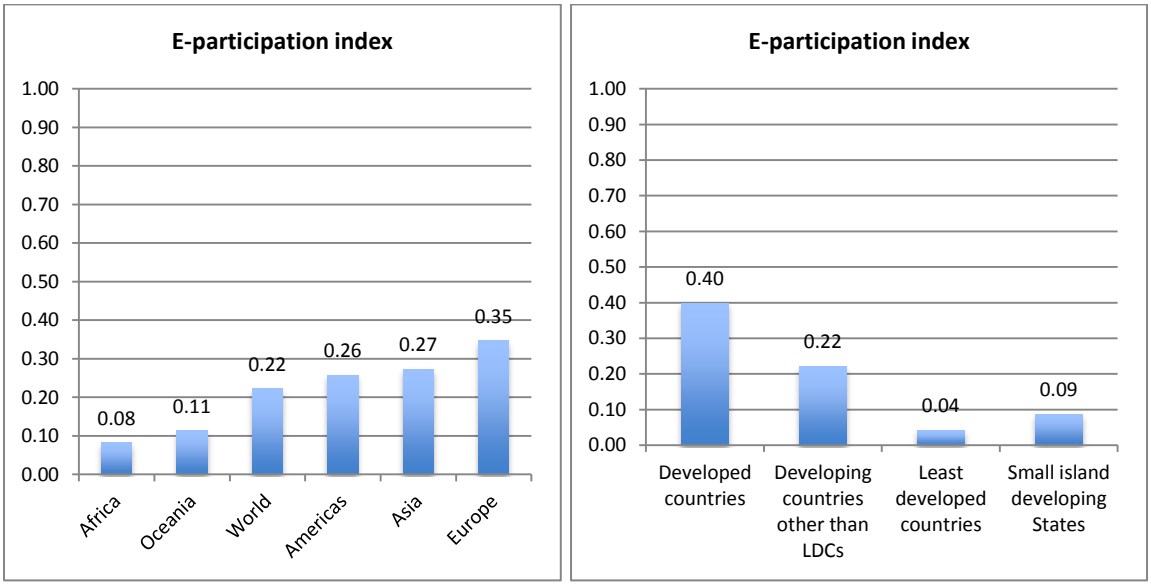
Most countries have implemented some degree of e-government. According to the United Nations, 190 of its 193 members have an online presence though the level of functionality varies tremendously across countries and regions.[21] Similarly, there is a big gap in implementation of *e-participation* which measures the use of the Internet by government to facilitate provision of information, interact with stakeholders and allow citizens to participate in decision making (Figure 2-2).

Brief Note on the ECTA Scorecard and Investment 2007." http://spcnetwork.eu/news/item/regulation-and-investment-a-brief-note-on-the-ecta-scorecard-and-investment.

[20] Bruce, Robert R., Rory Macmillan, Timothy St. J. Ellam, Hank Intven, and Theresa Miedema. 2004. "Dispute Resolution in the Telecommunications Sector: Current Practices and Future Directions". Geneva, Switzerland: International Telecommunication Union and The World Bank. http://www.itu.int/ITU-D/treg/publications/ITU_WB_Dispute_Res-E.pdf.

[21] United Nations, and Department of Economic and Social Affairs. 2012. *United Nations e-government survey, 2012: e-government for the people.* New York: United Nations. http://unpan1.un.org/intradoc/groups/public/documents/un/unpan048065.pdf.

Figure 2-2: E-participation by region and group



Source: Adapted from UN E-Government Survey 2012.

"Open data" has recently emerged as a way to enhance government transparency, participation and efficiency. Publishing government data "...in a reusable format can strengthen citizen engagement and yield new innovative businesses."[22] Several initiatives have emerged to encourage open data:

- In September 2013 the Open Data Institute, Open Knowledge Foundation and World Bank announced a program to assist developing countries with deploying open data programs: "Making government, scientific and other data accessible and usable drives positive change across the spectrum: from health to transport, education to entrepreneurship, culture to community. This project will give citizens in developing countries the knowledge they need to campaign for change, and empower them to their hold their governments to account."[23]
- The Open Government Partnership is a multi-stakeholder organization consisting of governments and civil society formed to enhance government efficiency and transparency. It was founded in September 2011 by eight governments (Brazil, Indonesia, Mexico, Norway, Philippines, South Africa, United Kingdom, United States) and has since grown to an additional 47 governments that have endorsed the Open Government Declaration and published country action plans. A main goal is to increase the availability of information about government activities. Its Open Government Declaration commits governments "...to systematically collect and publish data on government spending and performance for essential public services and

[22] Huijboom, Noor, and Tijs van den Broek. 2011. "Open data: an international comparison of strategies." *European Journal of ePractice*, April. http://www.epractice.eu/en/document/5290090.
[23] Open Knowledge Foundation. 2013. "New partnership seeks to bring benefits of open data to developing countries." *Press Release*, September 18. http://okfn.org/press-releases/new-partnership-seeks-to-bring-benefits-of-open-data-to-developing-countries/.

> activities ... to pro-actively provide high-value information, including raw data, in a timely manner, in formats that the public can easily locate, understand and use, and in formats that facilitate reuse."[24]

Countries can facilitate the operations and efficiency of SMEs and women entrepreneurs by supporting electronic interaction with the government in areas such as business registration, tax payment and filing of other government forms. The process of developing online government to business procedures typically involves a process reorganization, resulting in savings in the number of steps and time to carry out the procedure. According to the World Bank, the availability of online government procedures that would ease interaction with enterprises varies.[25] Over 80% of governments support online submission of trade documents but only 10% allow enterprises to file complaints on line in the case of contract disputes (Table 2-2).

Table 2-1: Online business facilitation practices, 2012

Topic	Practice	Number of Economies [a]	Share of economies
Making it easy to start a business	Putting procedures online	106	57%
Making it easy to register property	Using an electronic database for encumbrances	108	58%
	Offering cadastre information online	50	27%
Making it easy to pay taxes	Allowing electronic filing and payment	74	40%
Making it easy to trade across borders [b]	Allowing electronic submission and processing	149[c]	82%
Making it easy to enforce contracts	Allowing electronic filing of complaints	19	10%

Note: a=Among 185 economies surveyed unless noted otherwise. b=Among 181 economies surveyed. c=31 have a full electronic data interchange system and 118 a partial one.
Source: Adapted from World Bank, Doing Business database.

SMEs often report that one of the biggest barriers they face is obtaining credit. There are a number of steps governments can pursue to facilitate access to finance. This includes making loan guarantees, developing portals with financial information and advising SMEs on how to develop business plans and navigate financial options. Another step is to encourage the development of venture capital which has been particularly relevant in some countries for financing innovative, ICT-oriented SMEs.

[24] http://www.opengovpartnership.org
[25] World Bank Group. 2012. "Doing Business 2013 - Smarter Regulations for Small and Medium-Size Enterprises." http://www.doingbusiness.org/reports/global-reports/doing-business-2013.

Attracting venture capital requires an enabling macro-economic environment including liberal foreign investment regulations and a stable exchange rate.

Governments can support SME involvement in ICT projects through open procurement policies, facilitation of innovation centers such as incubators and enhancing ICT skills and connectivity. Open and transparent government procurement policies make it easier for SMEs to participate in providing goods and services to public administrations. Some countries are moving to electronic procurement to increase transparency and enhance access to tender opportunities for SMEs by lowering costs.

Another way that governments have been assisting SMEs to participate in ICT projects is to provide them with early stage support through incubation. Governments are also assisting SMEs through facilitating ICT connectivity and enhancing skills. Policies and regulations to support competitive ICT markets will lower the cost of products and services and help get more SMEs online. Lowering or even eliminating import duties on ICT equipment would also make it easier for SMEs to purchase computers and other ICT products.

3 Developments and challenges

There has been much progress in improving the enabling environment for the information society over the last ten years. However challenges remain in respect to enhancing awareness, confidence and security to stimulate use of ICTs. These include resolving outstanding issues relating to Internet governance; determining the right balance between online security and privacy; ongoing reform of the ICT legal and regulatory frameworks in light of rapid industry evolution; and, enhancing delivery of government services and transparency of public administration processes.

Ongoing technological challenges and growing emphasis on broadband infrastructure requires adaptation of policy, legal and regulatory environments. This includes suitable spectrum management to encourage investment in wireless broadband networks. Further policies and regulations need to be adjusted to benefit from the significant socio-economic potential of broadband. For example the existence of a broadband plan has been linked to higher broadband penetration.[26] At the same time although there has been a transition to IP-based networks, telephone and broadcasting networks exist side-by-side. This poses legal and standards inconsistencies that are sometimes conflicting and incompatible with technology neutrality and consumer choice.

Multi-stakeholder forums exist for sharing experiences about Internet governance, most governments are in control of their country code top level domains (ccTLDs) and international domain names have been introduced. However, there is still work

[26] Broadband Commission. *Planning for Progress: Why National Broadband Plans Matter*, 2013. http://www.broadbandcommission.org/documents/reportNBP2013.pdf.

to be done to reach consensus on priority areas and to strengthen the coordination and participation of all countries in forums on Internet governance.[27] Further there is concern about government use of online surveillance (UNCTAD 2013). Convergence and the transition to IP networks have impacted the development of open and interoperable standards.

Most governments now have a web presence. However there are huge differences between countries in terms of the availability and functionality of online public services for citizens and businesses. Open data, Web 2.0 and smart mobile devices have emerged as promising ways to enhance government transparency, efficiency and democracy. Many governments lack the expertise to integrate these platforms into improved governance and citizen participation.

4 Recommendations

In order to leverage the transformational power of ICTs and broadband in particular to maximize the social, economic and environmental benefits of the Information Society, governments need to create a trustworthy, transparent and non-discriminatory policy, legal and regulatory environment. Such an environment enables innovation, investment and growth while providing balance between regulatory certainty and flexibility, and liberalization on a global scale. Governments also need to set an example by delivering innovative online public services for citizens and businesses and make themselves more transparent and democratic through the adoption of open data and social networking tools for citizen participation.

To overcome the current challenges in a highly dynamic and rapidly changing digital economy, governments and other stakeholders need to develop a multi-pronged approach and take action on the topics below:

a) Design and enforce open, effective and forward looking policy, legal and regulatory frameworks based on inclusive and wide-ranging public consultation.
b) Reexamine and redefine regulatory frameworks to promote digital inclusion ensuring that all communities as well as targeted population groups such as youth, women, persons with disabilities and indigenous peoples can access and use ICTs for their social and economic empowerment.
c) Adopt a holistic approach to governing the ICT sector and move towards cross-sector regulation in view of fueling synergies among government agencies, private sector and the society as a whole.

[27] Fourth Ministerial Conference on the Information Society in Latin America and the Caribbean. "Montevideo Declaration," April 5, 2013. http://www.itu.int/wsis/implementation/2013/forum/inc/doc/outcome/Montevideo_Declaration.pdf.

d) Enact a consistent and overarching ICT and/or broadband policy to foster broadband development across all sectors and drive digital inclusion of all.
e) Lift all barriers to entry in broadband markets, enable open access to essential facilities and increase competition at all network layers, moving towards lighter and simplified regulation while promoting innovation and entrepreneurship.
f) Recognizing the economic potential of ICTs for Small and Medium-Sized Enterprises (SMEs), contribute to increasing their competitiveness by streamlining administrative procedures, facilitating their access to capital, reducing the cost of doing business and enhancing their capacity to participate in ICT-related projects.
g) Develop and adopt widely appropriate national, regional and international technical and organizational standards that are required to address the concerns of various ICT providers and users.
h) Adapt, adopt and enforce legal and regulatory frameworks for ensuring confidence and security in the use of ICT for better governance (such as in the area of data protection, privacy, etc.) and enhance national capacities with this regard.
i) Encourage the emergence of a flexible intellectual property framework that balances the interests of creators and users and generates the necessary regulatory conditions to support long-term access to, sharing, and preservation of cultural heritage in digital form.
j) Embrace tools such as social networking and open data to make public administration more transparent and accountable.

Possible post-2015 targets include:

a) ***Target 1: Empower government agencies to mitigate the challenges of the Information Society.*** All countries should empower the government agency(ies) in charge of ICT regulation to adopt and effectively enforce relevant regulations.
b) ***Target 2: Make broadband policy universal.*** All countries should have a national broadband plan or strategy or include broadband in their Universal Access/Service Definitions.
c) ***Target 3:*** **Boost the competitiveness of broadband markets.** All countries should have effective competition in the main broadband market segments and services (mobile, DSL, cable modem, fixed wireless, leased lines, Internet access, international gateways and Voice over IP (VoIP)).
d) ***Target 4*****: Adopt forward thinking legal and regulatory environments that are suited to the demands of convergence, encourage investment and promote open access**. All countries should have a competitive ICT market regime and a forward thinking copyright regime balancing the interests of suppliers and users recognizing the different ways users want to access, share and remix content.

e) ***Target 5*: Update consumer protection and privacy frameworks.** All countries should have consumer protection and privacy frameworks that reflect the requirements of the information age. Agreement should be reached about clear and meaningful indicators to use for measuring this.

f) ***Target 6*: Enhance government to citizen interaction through the use of platforms such as open data and social networking.** All countries should have open data platforms, incorporate social networking tools into citizen participation and offer a defined list of public services for mobile devices.

g) ***Target 7*: Use ICTs to streamline administrative procedures for SMEs**. All countries should implement online public services that facilitate administrative processes for SMEs.

h) ***Target 8*: Strive for greater standards collaboration**. There should be a mechanism for coordinating and sharing information among the main standards bodies dealing with ICT technical specifications.

5 Conclusions

The enabling environment has witnessed the following trends since the first WSIS in 2003:

- Sector reform including creation of regulatory agencies and more open and competitive markets to attract investment. Given the dynamic evolution of the ICT sector there is an ongoing challenge to refine and revise legal and regulatory frameworks.
- Progression of e-government though levels of online presence vary tremendously. Open data has emerged as promising tool for greater transparency. Developing countries face implementation challenges which require commitment and capacity.
- Internet governance issues debated through multiple forums at the national, regional and international level. However key issues still remain unresolved.
- Consumer protection and privacy in cyberspace continue to face challenges from computer threats and government surveillance.

Key future challenges for the enabling environment include resolving outstanding issues relating to Internet governance; ongoing reform of the ICT legal and regulatory frameworks in light of rapid industry evolution; determining the right balance between security and privacy; and, enhancing delivery of government services and transparency of public administration processes.

Table 5-1: Action Line C6 matrix of themes, cross linkages and status

Bullet	Theme	Cross reference to other WSIS Action Lines	Status
a) Governments should foster a supportive, transparent, pro-competitive and predictable policy, legal and regulatory framework, which provides the appropriate incentives to investment and community development in the Information Society	Legal and regulatory environment	C1 C2: a	By the end of 2012, 128 countries worldwide have a privately-owned or partially-privatized national fixed-line incumbent. The development of competition is progressing healthily in all market segments Percentage of countries with legal provision for competition by the end of 2012[28]: • Mobile broadband: 92%; • wireless local loop 82%; • International gateway 79%; • Leased lines 76%; • Basic services 69%.
b) We ask the Secretary General of the United Nations to set up a working group on Internet governance, in an open and inclusive process that ensures a mechanism for the full and active participation of governments, the private sector and civil society from both developing and developed countries, involving relevant intergovernmental and international organizations and forums, to investigate and make proposals for action, as appropriate, on the governance of Internet by 2005...	Internet governance	C1: e	Working group established leading to IGF.[29] Several of priority public policy issues identified by working group remain unresolved or lack an international framework (e.g., root zones, interconnection costs, security, spam, etc.)
c) Governments are invited to:	Internet governance		
i) facilitate the establishment of national and regional Internet Exchange Centres;		C2:j	102 economies have established Internet Exchange Points (IXPs)[30]

[28] Source : ITU World Telecommunications / ICT Indicators database
[29] http://www.wgig.org/WGIG-Report.html
[30] https://prefix.pch.net/applications/ixpdir/summary/

Bullet	Theme	Cross reference to other WSIS Action Lines	Status
			98 economies do not have
ii) manage or supervise, as appropriate, their respective country code top-level domain name (ccTLD);			In principle, ICANN accepts that governments are responsible for their ccTLD. See list of sponsoring organizations for ccTLDs at: http://www.iana.org/domains/root/db
iii) promote awareness of the Internet.			No framework for international measurement.
d) In cooperation with the relevant stakeholders, promote regional root servers and the use of internationalized domain names in order to overcome barriers to access	Internet governance	C8: o	• Root server locations remain unchanged • IDNs available since May 2010[31]
e) Governments should continue to update their domestic consumer protection laws to respond to the new requirements of the Information Society	Legal and regulatory environment & Internet governance	C5: a C10: c	According to a 2012 ITU survey 52% of the respondents reported updates made to consumer legislation in their country. The updates covered a number of different areas including: new user rights; increased information/transparency; data security/privacy; price regulation; and accessibility.[32]
f) Promote effective participation by developing countries and countries with economies in transition in international ICT forums and create opportunities for exchange of experience	Internet governance		175 out of 196 countries participated in first phase of WSIS and 168 in second phase although size of delegations and gender balance varied significantly among countries.[33] The

[31] http://www.icann.org/en/resources/idn
[32] http://www.itu.int/en/ITU-D/Regulatory-Market/Documents/Regulation%20and%20consumer%20protection.pdf
[33] http://www.apc.org/en/system/files/whose_summit_EN.pdf

Bullet	Theme	Cross reference to other WSIS Action Lines	Status
			effective participation of developing countries, particularly least developed countries, in international ICT forums, remains a challenge.
g) Governments need to formulate national strategies, which include e-government strategies, to make public administration more transparent, efficient and democratic	E-government	C3: b, f C7: 15	Although most national governments now have a web presence, functionality varies.[34] Open data and Web 2.0 have emerged with potential for more transparency and democracy.
h) Develop a framework for the secure storage and archival of documents and other electronic records of information	Internet governance		Has mainly been treated as national matter. No international framework.
i) Governments and stakeholders should actively promote user education and awareness about online privacy and the means of protecting privacy	Internet governance	C5: a, c, f, j C10: c	• No international framework for measurement • Government online surveillance has emerged as issue • As of 2013, there were 99 countries with data-privacy laws[35]
j) Invite stakeholders to ensure that practices designed to facilitate electronic commerce also permit consumers to have a choice as to whether or not to use electronic communication	Internet governance		• No international framework for measurement • Not clear about relevance for pure online retailers
k) Encourage the ongoing work in the area of effective dispute settlement systems, notably alternative dispute resolution (ADR), which can promote settlement of disputes	Legal and regulatory environment		According to the ITU Telecommunication/ICT Regulatory Survey, by end of 2012 : • Appeals to regulatory decisions is allowed in 97% of the countries • There are dispute resolution mechanism(s) to resolve disputes

[34] http://www.un.org/en/development/desa/publications/connecting-governments-to-citizens.html
[35] http://unctad.org/en/pages/PublicationWebflyer.aspx?publicationid=710

Bullet	Theme	Cross reference to other WSIS Action Lines	Status
			in 92% of the countries • ADRs are used in 30% of the cases
l) Governments, in collaboration with stakeholders, are encouraged to formulate conducive ICT policies that foster entrepreneurship, innovation and investment, and with particular reference to the promotion of participation by women	E-government	C1: i C7: 16, 19	No international framework for measurement
m) Recognising the economic potential of ICTs for Small and Medium-Sized Enterprises (SMEs), they should be assisted in increasing their competitiveness by streamlining administrative procedures, facilitating their access to capital and enhancing their capacity to participate in ICT-related projects	E-government	C1: i C7: 16	• Some online administrative procedures are measured: • No international framework for measuring access to capita and SME participation in ICT-related projects
n) Governments should act as model users and early adopters of e-commerce in accordance with their level of socio-economic development	E-government		Global data showing governments with e-transaction, e-procurement services not available
o) Governments, in cooperation with other stakeholders, should raise awareness of the importance of international interoperability standards for global e-commerce	Internet governance		Clear taxonomy of international e-commerce standards lacking
p) Governments, in cooperation with other stakeholders, should promote the development and use of open, interoperable, non-discriminatory and demand-driven standards	Internet governance		Convergence and shift to IP networks resulting in various standards
q) ITU, pursuant to its treaty capacity, coordinates and allocates frequencies with the goal of facilitating ubiquitous and affordable access	Internet governance		Remains valid
r) Additional steps should be taken in ITU and other regional organisations to ensure rational, efficient and economical use of, and equitable access to, the radio-frequency spectrum by all countries, based on relevant international agreements	Internet governance		ITU sets aside spectrum for use by all countries through predetermined orbital positions and frequency spectrum

6 Annex

13. Confidence and security are among the main pillars of the Information Society.

6.1 a. Governments should foster a supportive, transparent, pro-competitive and predictable policy, legal and regulatory framework, which provides the appropriate incentives to investment and community development in the Information Society

The European Competitive Telecommunications Association (ECTA) has compiled several "Scorecards" that illustrate the link between effective regulation and investment in Europe.[36] A consultancy has used the ECTA data in an econometric model finding that a 1% increase in the Scorecard result in the previous year would lead to a 0.58% increase in investment per capita. It concludes " ... there continues to be a strong and positive relationship between regulation of electronic communications market and investment."[37]

Some of the indicators used by ECTA are available for the world as a whole in the table below (Table 6-1). They show that levels of retail competition for services such as Internet provision and third and forth generation mobile are relatively high. However there is scope for improvement in enhancing competition in the provision of wired telephone services and developing remedies for significant market power.

[36] ECTA. 2009. "Regulatory Scorecard 2009: Report on the Relative Effectiveness of the Regulatory Frameworks for Electronic Communications." http://www.ectaportal.com/en/REPORTS/Regulatory-Scorecards/Regulatory-Scorecard-2009/.

[37] Strategy & Policy Consultants Network Ltd. 2009. "Regulation and Investment: A Brief Note on the ECTA Scorecard and Investment 2007." http://spcnetwork.eu/news/item/regulation-and-investment-a-brief-note-on-the-ecta-scorecard-and-investment.

Table 6-1: Levels of competition and significant market power remedies, world

Local Fixed Line Services - Competition, 2012	68%	0% 100%
International Fixed Long Distance - Competition, 2012	70%	0% 100%
International Gateways - Competition, 2012	85%	0% 100%
IMT (3G, 4G, etc.) - Competition, 2012	89%	0% 100%
Internet Services - Competition, 2012	93%	0% 100%
Concept of dominance or Significant Market Power recognized in law - Yes, 2012	79%	0% 100%
Accounting separation required, 2012	68%	0% 100%
Functional separation of SMP/dominant network operator(s) required by law, 2012	28%	0% 100%

ITU ICT-Eye: http://www.itu.int/icteye

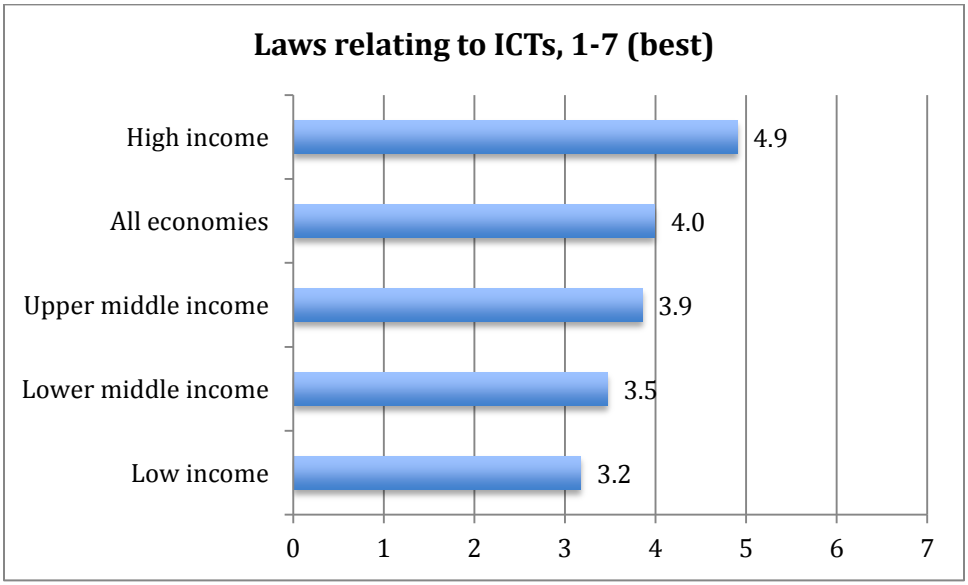
Of note is the impact that a broadband plan has on investment and take-up. According to research by the Broadband Commission, the countries with a national broadband plan have an average fixed broadband penetration 8.7% higher than countries without a plan. For mobile broadband, countries with a broadband plan had an average penetration 18.6% higher than countries without a plan.[38]

A somewhat broader view of the legal framework encompassing ICT shows considerable variation among income groups. Overall laws are perceived to be some distance from being from well developed (Figure 6-1). This stems from a World Economic Forum opinion survey where respondents were asked to assess their country's laws relating to the use of ICT.[39]

[38] http://www.broadbandcommission.org/documents/reportNBP2013.pdf

[39] Bilbao-Osorio, Beñat, Soumitra Dutta, and Bruno Lanvin,, ed. 2013. The Global Information Technology Report 2013: Growth and Jobs in a Hyperconnected World. Geneva: The World Economic Forum. http://reports.weforum.org/global-information-technology-report-2013/.

Figure 6-1: Laws relating to ICTs



Note: How would you assess your country's laws relating to the use of ICT (e.g., electronic commerce, digital signatures, consumer protection)? [1= highly undeveloped; 7 = well-developed].
Source: World Economic Forum, Executive Opinion Survey, 2011 and 2012 editions.

There remains scope for improvement in creating investment-friendly ICT regulatory regimes. A benchmarking exercise might be considered to define and identify indicators for measuring policy, legal and regulatory frameworks that are supportive, transparent, pro-competitive and predictable.

6.2 b. We ask the Secretary General of the United Nations to set up a working group on Internet governance, in an open and inclusive process that ensures a mechanism for the full and active participation of governments, the private sector and civil society from both developing and developed countries, involving relevant intergovernmental and international organizations and forums, to investigate and make proposals for action, as appropriate, on the governance of Internet by 2005. The group should, inter alia:

i. develop a working definition of Internet governance; Internet governance is a broad term used in many different contexts. It applies to activities as diverse as the coordination of technical standards, the operation of critical infrastructure, development, regulation, legislation, and more.
ii. identify the public policy issues that are relevant to Internet governance;
iii. develop a common understanding of the respective roles and responsibilities of governments, existing intergovernmental and international organisations and other forums as well as the private sector and civil society from both developing and developed countries;

iv. prepare a report on the results of this activity to be presented for consideration and appropriate action for the second phase of WSIS in Tunis in 2005.

Following the first phase of WSIS, the Secretary General of the United Nations established the Working Group on Internet Governance (WGIG). The WGIG, composed of forty members, held four meetings between November 2004 and June 2005. It produced a final report in 2005 that was submitted by the United Nations to the WSIS Preparatory Committee. [40]

In respect to Internet governance, the WGIG developed the following definition based on five criteria (adequate, generalizable, descriptive, concise and process-oriented):

> "Internet governance is the development and application by Governments, the private sector and civil society, in their respective roles, of shared principles, norms, rules, decision-making procedures, and programmes that shape the evolution and use of the Internet."[41]

In terms of public policy relevant to Internet governance, the WGIG identified the following four key areas: a) Issues relating to infrastructure and the management of critical Internet resources; (b) Issues relating to the use of the Internet, including spam, network security and cybercrime; c) Issues that are relevant to the Internet but have an impact much wider than the Internet and for which existing organizations are responsible, such as intellectual property rights (IPRs) or international trade; and(d) Issues relating to the developmental aspects of Internet governance, in particular capacity-building in developing countries. [42]

Within the four public policy areas WGIG identified 13 priority issues:

1. Administration of the root zone files and system
2. Interconnection costs
3. Internet stability, security and cybercrime
4. Spam
5. Meaningful participation in global policy development
6. Capacity-building
7. Allocation of domain names
8. IP addressing
9. Intellectual property rights (IPR)
10. Freedom of expression
11. Data protection and privacy rights
12. Consumer rights
13. Multilingualism

[40] Working Group on Internet Governance. 2005. "Report of the Working Group on Internet Governance." http://www.wgig.org/WGIG-Report.html.
[41] WGIG 2005, p. 4.
[42] WGIG 2005, p. 5.

The WGIG also identified various stakeholders involved with Internet governance and their roles and responsibilities including governments, the private sector, civil society and others (e.g., academic and technical community).

Following the second WSIS phase, the United Nations created the Internet Governance Forum (IGF) in 2006. The multi-stakeholder community meets once a year to dialogue on issues relating to privacy, digital content, human rights, and interconnection.[43]

Though the bullets above covering the work of a group on Internet governance have been accomplished, many of the priority public policy issues remain unresolved and typically lack consensus on a global framework. This includes areas mentioned under Action Line C6 such as security, spam, participation of developing countries in global policy, data protection and privacy.

6.3 c. Governments are invited to: i) facilitate the establishment of national and regional Internet Exchange Centres; ii) manage or supervise, as appropriate, their respective country code top-level domain name (ccTLD);iii) promote awareness of the Internet.

6.3.1 Internet Exchange Centres

This topic in discussed in Action Line C2 j).

6.3.2 Country code top-level domain name (ccTLD)

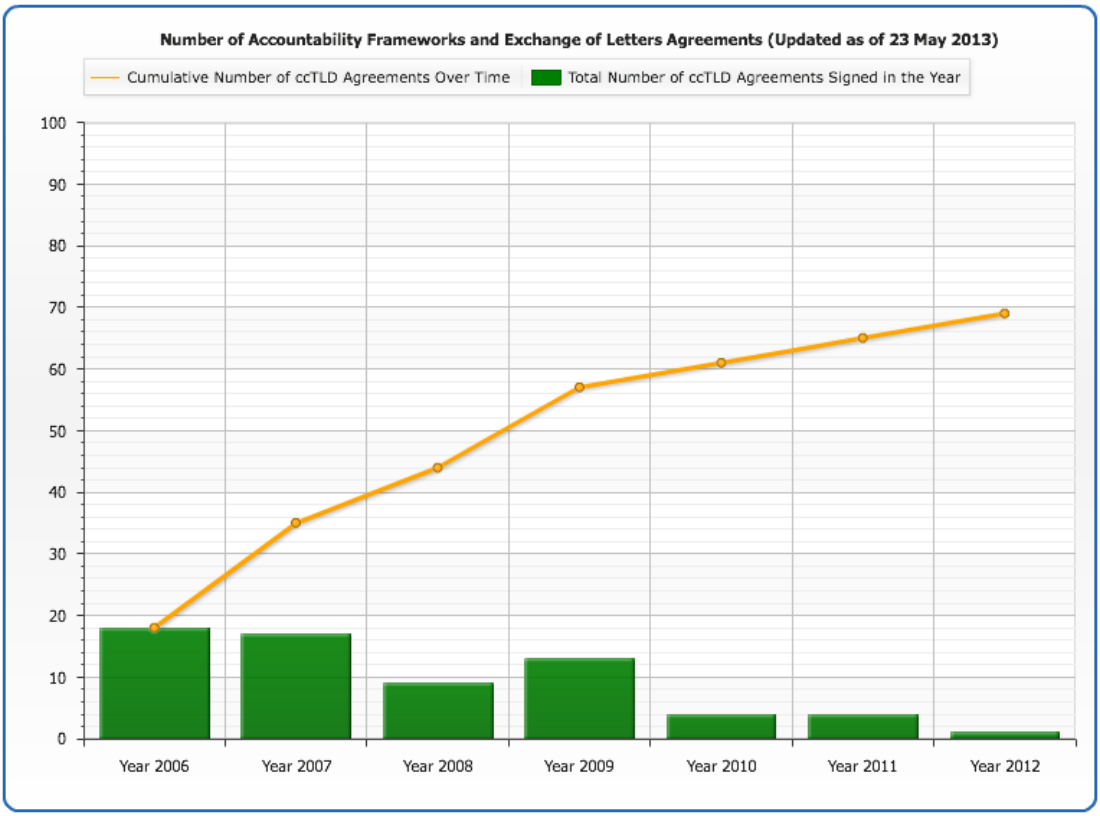
The two letter country code top level domain name (ccTLD) is assigned by the Internet Corporation for Assigned Names and Numbers (ICANN).[44] The right of governments to manage their ccTLD is acknowledged by ICANN in reference to a 1998 United States government document stating: "... national governments now have, and will continue to have, authority to manage or establish policy for their own ccTLDs."[45] ICANN's Governmental Advisory Committee stresses that "...such involvement should be based on appropriate national laws and policies..." and that "....governments should work with their local Internet community in deciding on how to work with the ccTLD Registry". [46]

For roughly the last decade, the approval process for managing the ccTLD is typically formalized through a written agreement with ICANN. By the end of 2012, there have been 69 agreements (Figure 6-2); other ccTLD designations precede these formal written agreements. Thought there have been disputes over governments attempting to regain control of their ccTLD most have been resolved

[43] "Chair's Summary." 2012. In Seventh Meeting of the Internet Governance Forum (IGF). Baku, Azerbaijan,. http://www.intgovforum.org/cms/2012/Book/Chairs.Summary.IGF.2012.pdf.
[44] The two letter codes are based on the ISO 3166 standard. See: http://www.iso.org/iso/country_codes
[45] http://www.icann.org/en/about/agreements/white-paper
[46] ICANN GAC. 2005. Principles and Guidelines for the Delegation and Administration of Country Code Top Level Domains. https://gacweb.icann.org/display/GACADV/ccTLDs

and many ccTLDs are managed by government agencies or other entities with government approval (See the list of sponsoring organizations for ccTLDs at http://www.iana.org/domains/root/db).

Figure 6-2: Exchange of letter agreements for ccTLDs



Source: https://charts.icann.org/public/index-gp-cumulative-cctld.html

The World Intellectual Property Organization (WIPO) Uniform Domain Name Dispute Resolution Policy (UDRP), launched in 1999, covers trademark and other intellectual property complaints relating to Internet domain names. Some 65 ccTLD registries have designated WIPO as the resolution service for disputes. In 2011 16% of cases involved ccTLDs (up from 1% in 2000). [47]

Though it is accepted that governments have the right to supervise their ccTLD, "The delegation or redelegation of a ccTLD, while conceptually simple, can become complex because many different organizations and individuals play a part in the process."[48]

6.3.3 Promote awareness

Though the number of people using the Internet increases each year, there remain millions around the world who do not use the network. In many instances people

[47] http://www.wipo.int/pressroom/en/articles/2012/article_0002.html#annex1
[48] ICANN-CCNSO-DRDWG. Report on the Delegation of ccTLDs. March 7, 2011.

are not interested or are unaware of the Internet's advantages. Therefore it is important to raise educate citizens about the benefits of the Internet in order to stimulate higher use.

Governments have pursued various strategies to raise awareness such as supporting development of attractive content including e-government and e-commerce; providing digital literacy training in schools and other venues such as libraries and community centers for those not in school; and encouraging the online availability of audio and video which can help overcome literacy and language barriers. However there is no measurable indicator of government promotion activities that could gauge progress on a global level.

6.4 d. In cooperation with the relevant stakeholders, promote regional root servers and the use of internationalized domain names in order to overcome barriers to access

6.4.1 Root servers

The Internet uses the Domain Name System (DNS) for traffic routing by mapping textual host names to Internet Protocol (IP) addresses. The core of the DNS's routing system is formed by 13 DNS root servers. Ten are located in the United States, two in Europe and one in Japan (Figure 6-3).

Figure 6-3: Map of the Root Servers

Source: "Testimony of Michael M. Roberts Before U.S. Senate Committee on Commerce, Science, and Transportation." 2001. http://www.icann.org/en/news/correspondence/roberts-testimony-14feb01-en.htm.

Given that the number of root servers is fixed and cannot be added to, their location and performance is of critical importance. An analysis by the Cooperative Association for Internet Data Analysis (CAIDA) asserts that the locations of the root servers may not be optimal in terms of performance, particularly the speed of the

connection between users and the server.[49] It found that North American users are over provisioned while those in Europe are under provisioned. M-root, the only root server in Asia, could create latency problems for users in that region if it became unavailable. CAIDA has proposed that the root servers be combined into four groups relating to their geographical locations to enhance performance and redundancy and that one of the servers in the United States be relocated to a different region.

Another perspective is that while there are 13 "named authorities" for the root servers, there are spread across three hundred servers in a number of countries (Figure 6-4).[50] Consensus is lacking about the location of current root servers for optimization of performance and redundancy for all the world's Internet users.

Figure 6-4: DNS Root Server locations

Source: http://www.root-servers.org

6.4.2 Internationalized domain names

The Internet has historically been limited to expressing domain names in Latin characters. Internationalized Domain Names (IDNs) refers to the use of non-Latin characters including alphabets such as Arabic, Chinese and Cyrillic as well as Latin characters with accents. This allows users to type domain names using their own native language character set. IDNs for country code top level domain names was approved by ICANN in October 2009 and in May 2010 the first IDN ccTLDs were installed in the DNS root zone. IDN is also supported for the new generic top level domains (gTLD) introduced in June 2011. Countries apply to ICANN for IDNs using

[49] http://www.caida.org/publications/papers/2003/dnsplacement/
[50] Davies, Kim. 2007. "There are not 13 root servers." ICANN Blog. November 15. http://blog.icann.org/2007/11/there-are-not-13-root-servers/.

its so-called Fast Track Process. At November 2013, 31 countries had implemented IDNs (Table 6-2).

Table 6-2: Countries with IDNs, 2013

	ccTLD	Country / Territory	Language	Script
1	DZ	Algeria	Arabic	Arabic
2	BD	Bangladesh	Bangla	Bangla
3	CN	China	Chinese	Simplified Chinese, Traditional Chinese
4	EG	Egypt	Arabic	Arabic
5	GE	Georgia	Georgian	Georgian (Mkhedruli)
6	HK	Hong Kong	Chinese	Han (Simplified, Traditional)
7	IN	India	Hindi, Urdu, Telugu, Gujarati, Punjabi, Bengali, Tamil	Devanagari, Arabic, Telugu, Gujarati, Gurmukhi, Bengali, Tamil
8	IR	Iran, Islamic Republic of	Persian	Arabic
9	JO	Jordan	Arabic	Arabic
10	KZ	Kazakhstan	Kazakh	Cyrillic
11	KR	Korea, Republic of	Korean	Hangul
12	MY	Malaysia	Malay	Arabic
13	MN	Mongolia	Mongolian	Cyrillic
14	MA	Morocco	Arabic	Arabic
15	OM	Oman	Arabic	Arabic
16	PK	Pakistan	Urdu	Arabic
17	PS	Palestinian Territory, Occupied	Arabic	Arabic
18	QA	Qatar	Arabic	Arabic
19	RU	Russian Federation	Russian	Cyrillic
20	SA	Saudi Arabia	Arabic	Arabic
21	RS	Serbia	Serbian	Cyrillic
22	SG	Singapore	Chinese Tamil	Han Tamil
23	LK	Sri Lanka	Sinhalese Tamil	Sinhala Tamil
24	SD	Sudan	Arabic	Arabic
25	SY	Syrian Arab Republic	Arabic	Arabic
26	TW	Taiwan	Chinese	Simplified Chinese,
27	TH	Thailand	Thai	Thai
28	TN	Tunisia	Arabic	Arabic
29	UA	Ukraine	Ukrainian	Cyrillic
30	AE	United Arab Emirates	Arabic	Arabic
31	YE	Yemen	Arabic	Arabic

Source: http://www.icann.org/en/resources/idn/fast-track/string-evaluation-completion.

A report produced by EURid and UNESCO found several barriers to IDNs being more

widely adopted.[51] These include limited support by ISPs and domain name registrars; inconsistent user experience from browsers; lack of email functionality; and lack of support in popular applications.

6.5 e. Governments should continue to update their domestic consumer protection laws to respond to the new requirements of the Information Society

Although many of the types of activities (e.g., deceptive advertising, privacy, terms and conditions of purchases, etc.) necessitating consumer protection in the virtual world are similar to the real world, their recognition, detection and enforcement differs. Further, the virtual world allows considerable information to be collected about users digital behavior. This should require users to be informed about such practices including what type of information is collected, how it is used and allow users to opt out.

The OECD adopted consumer protection guidelines relating to electronic commerce use as far back as 1999 which a number of its members have adapted to their consumer protection frameworks. The guidelines aim to ensure that consumers are just as protected making purchases online as they would be using traditional methods. The guidelines encourage private sector initiatives reflecting the input of consumers and the need for cooperation among government, business and consumer. Their aim is to encourage: "fair business, advertising and marketing practices; clear information about an online business's identity, the goods or services it offers and the terms and conditions of any transaction; a transparent process for the confirmation of transactions; secure payment mechanisms; fair, timely and affordable dispute resolution and redress; privacy protection; and consumer and business education."[52]

The rapid expansion of digital technologies and the Internet has dramatically changed the way in which electronic communication services are delivered to, and accessed by consumers. Regulators need to ensure consumers are at the heart of regulatory decision-making, whilst also maintaining a focus on competition to help deliver consumer benefits.

Consumer protection is a key focus area of the ITU:

- In concluding the four year cycle of ITU-D Study Group 1, a report will be published by the end of 2013 based on contributions received for Question 18-2/1 Question 18 2/1: Enforcing national policies and regulations on

[51] EURid, and UNESCO. 2012. "World report on Internationalised Domain Names deployment 2012." http://www.eurid.eu/files/publ/insights_2012_idnreport.pdf.
[52] OECD. 1999. *OECD Guidelines for Consumer Protection in the Context of Electronic Commerce*. Paris, France: OECD.
http://www.oecd.org/sti/consumer/oecdguidelinesforconsumerprotectioninthecontextofelectroniccommerce1999.htm.

consumer protection notably in a converging environment.[53] The report presents guidelines to assist Member States in their efforts to address a number of issues that represent common challenges for national regulatory authorities including best practice guidelines for enforcing national laws, rules, and regulations relating to consumer protection notably in a converging environment.

- In 2012 the ITU conducted a survey on consumer protection policies amongst its 193 member states, focusing on convergence. The survey revealed a lack of resources, strategies and tools available to regulators to protect consumers in a rapidly converging environment.
- In the framework of Resolution 64 of the WTDC-10 (Hyderabad, 2010) on "Protecting and supporting users/consumers of telecommunication services/ ICT" and ITU-D Study Group 1 activities, ITU published a report on consumer protection in a converging environment. The report describes and analyses various resources, strategies and tools regulators need to improve the enforcement of national laws, rules and regulations governing consumer protection.[54]

The online world poses unique challenges to consumers in the form of computerized threats such as spam, unsolicited email which is particularly nefarious since it can be used to deliver other threats such as viruses and phishing attacks. Some countries have outlawed these practices through special computer crime legislation but enforcement remains difficult due to the cross-border aspect of many of these threats. Greater international collaboration can help to share experiences and develop global conventions and enforcement frameworks. In October 2004, governments from 27 countries met in London to discuss spam enforcement cooperation. The meeting adopted the London Action Plan[55] to promote global cooperation to fight spam as well as other threats including online fraud and deception, phishing and viruses. Although the initiative does not create any legally binding obligations, it provides a cooperative forum to share experiences and battle against computer crime. The initiative currently comprises over 70 members with the EU, OECD, ITU, ICPEN, and APEC as observers. The International Consumer Protection and Enforcement Network (ICPEN) has 48 member countries and provides guidance for consumers about shopping online as well as links to national and regional consumer protection agencies.[56]

The incidence of computer threats varies. Some are declining over time while new ones emerge. According to a computer security firm, there were around 30 billion spam emails

[53] http://www.itu.int/ITU-D/CDS/sg/index.asp?lg=1&sp=2010
[54] ITU. *Regulation and consumer protection in a converging environment*, 2013. http://www.itu.int/en/ITU-D/Regulatory-Market/Documents/Regulation%20and%20consumer%20protection.pdf.
[55] "The London Action Plan." 2004. http://londonactionplan.org/the-london-action-plan/.
[56] https://icpen.org

a day in 2012 accounting for 69% of global email traffic; one in 413 emails were blocked as a phishing attack and some 250,000 web sites were crippled each day.[57] These threats not only wreck havoc on computer operating systems and applications but can also steal personal information. Most consumers aware of the problems have invested in computer protection software.

ITU has been involved in consumer protection through studies on frameworks[58] as well as standards. It has issued over seventy ITU-T Recommendations covering security. ITU-T Study Group 17 (SG17) coordinates security-related work, cooperating with other standards organizations and ICT industry consortia. Areas covered by SG17 include cybersecurity; security management; security architectures and frameworks; countering spam; identity management; the protection of personally identifiable information; and the security of applications and services for the Internet of Things (IoT), smart grid, smartphones, web services, social networks, cloud computing, mobile financial systems, IPTV and telebiometrics. An important standard is Recommendation ITU-T X.509 for electronic authentication over public networks. The Recommendation is used for a range of applications relating to public key infrastructure (PKI) such as securing the connection between a browser and a server on the web to providing digital signatures that enable e-commerce transactions to be conducted.

The issue of consumer protection in the Internet age has largely been met through the application of existing laws, voluntary industry self-regulation practices and user purchase of security software. It is not clear whether these practices are sufficient to deal with the growing number and variety of threats to safe consumer use of the Internet. There is a need to identify consumer protection laws at a global level, their suitability for the information society and the design of a global framework for how online consumer protection might be improved. This was confirmed by the Working Group on Internet Governance which found that the nature of global cooperation for issues such spam, network security and cybercrime is not well defined.

6.6 f. Promote effective participation by developing countries and countries with economies in transition in international ICT forums and create opportunities for exchange of experience

The Digital Opportunity Task Force submitted a report to the July 2001 G8 summit where it noted that decisions made at ICT forums impact developing countries although the special circumstances of developing countries are not always taken

[57] Symantec. 2013. "Internet Security Threat Report." http://www.symantec.com/security_response/publications/threatreport.jsp
[58] http://www.itu.int/ITU-D/treg/Events/Seminars/GSR/GSR09/doc/GSR09_Consumer-protection_Stevens.pdf

into account.[59] This is because developing countries are not represented at the meetings or if they are, they lack the capability to understand the issues and repercussions and how to promote their interests. It recommended that efforts be made to support more effective developing country participation at ICT forums.

A study, commissioned by the United Kingdom Department for International Development (DFID) identified key organizations where ICT decisions are made, categorizing them into UN agencies, financial organizations and private sector entities (Table 6-3).[60] The study found a number of shortcomings in developing country participation including a "missing link" between ICT forums and international development goals; exclusion from technical decisions; limited technical and policy capacity; and limitations linking global ICT decisions to their own development objectives.

Table 6-3: International ICT decision-making institutions

Members of the UN Family	Finance	Private
ITU WIPO UNESCO UNDP UNCTAD	World Bank WTO	ICANN

Source: Adapted from Commonwealth Telecommunications Organisation, and Panos. 2002. *Louder Voices: Strengthening Developing Country Participation in International ICT Decision-Making*. http://panos.org.uk/wp-content/files/2011/03/louder_voicesGjJeXx.pdf.

Another study, commissioned by the Association for Progressive Communications (APC), examined the specific case of developing country participation at the World Summit on the Information Society (WSIS).[61] It found that participation was higher than at other ICT forums partly because of the more political nature of WSIS. The participation of developing nations, particularly least developed countries (LDCs) in permanent institutions could be stronger. More effective involvement will require changes in the way permanent organizations operate as well greater capacity and resources for effective participation by developing countries. The study also noted that developing country delegations were often led by the "telecommunications establishment" (i.e., ministries of communications, telecommunications regulators and fixed network operators) with other groups only playing a small role, if any (e.g., mobile operators, Internet community, broadcasters, development ministries and civil society). Further there were differences in influence between larger and economically stronger developing countries and the LDCs.

[59] Digital Opportunity Task Force (DOT Force). 2001. "Digital Opportunities for All: Meeting the Challenge-Report of the Digital Opportunity Task Force (DOT Force) including a proposal for a Genoa Plan of Action." http://www.g8.utoronto.ca/summit/2001genoa/dotforce1.html.
[60] Commonwealth Telecommunications Organisation, and Panos. 2002. *Louder Voices: Strengthening Developing Country Participation in International ICT Decision-Making*. http://panos.org.uk/wp-content/files/2011/03/louder_voicesGjJeXx.pdf
[61] Souter, David, and Abiodun Jagun. 2006. *Whose Summit? Whose Information Society? Developing countries and civil society at the World Summit on the Information Society*. Association for Progressive Communications (APC). http://www.apc.org/en/system/files/whose_summit_EN.pdf.

The available analysis suggests that the effective participation of developing countries, particularly least developed countries, in international ICT forums, remains a challenge.

6.7 g. Governments need to formulate national strategies, which include e-government strategies, to make public administration more transparent, efficient and democratic

By the end of 2012, 146 governments have adopted or are planning to adopt a national policy, strategy or plan to promote broadband[62]. Many of these broadband policies and plans focus on building nationwide broadband infrastructure, stimulating demand through the adoption of online services and applications such as e-education, e-health/telemedicine, e-government, e-business, and extending connectivity to provide universal access.

Most governments have implemented some degree of e-government. According to the United Nations, 190 of its 193 members have an online presence though the degree of functionality varies tremendously across countries and regions.[63] The online e-government service index value (best = 1) was 0.62 for Europe and only 0.26 in Africa according the United Nation's 2012 e-government report (Table 6-4).

Table 6-4: Online e-government service index

	Online Service	Stage I	Stage II	Stage III	Stage IV	Total
	Index Value	%	%	%	%	%
Relative Weight of Stages		7%	24%	30%	39%	100%
Africa	0.2567	66%	31%	7%	21%	22%
Americas	0.4648	86%	53%	27%	36%	41%
Asia	0.4880	85%	51%	32%	38%	43%
Europe	0.6189	96%	66%	45%	46%	54%
Oceania	0.2754	61%	34%	14%	20%	24%
World	0.4328	81%	48%	26%	33%	38%

Source: United Nations E-Government Survey 2012.

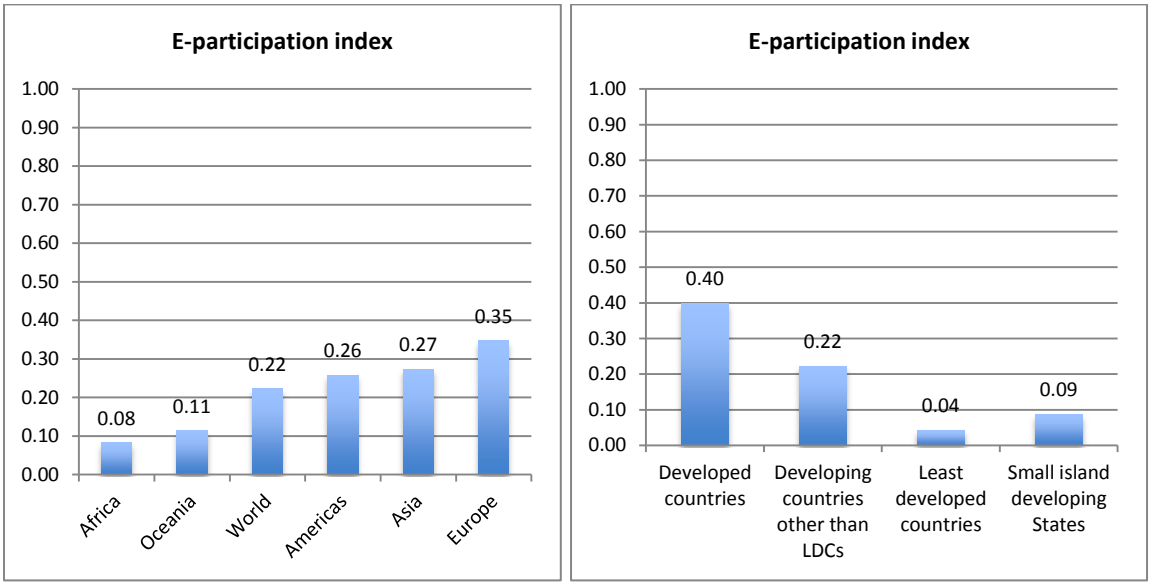
Similarly, there is a big gap in government implementation of e-participation which measures the use of the Internet by government to facilitate provision of information, interact with stakeholders and allow citizens to participate in decision making (Figure 6-5). This has become particularly relevant with the rise of social networking applications. Similarly citizen participation can be enhanced through

[62] Source : ITU Telecommunication/ICT Regulatory Survey

[63] United Nations, and Department of Economic and Social Affairs. 2012. *United Nations e-government survey, 2012: e-government for the people.* New York: United Nations. http://unpan1.un.org/intradoc/groups/public/documents/un/unpan048065.pdf.

smartphone applications for traffic, safety and public services that allow users to post images and geo-coded information.

Figure 6-5: E-participation by region and group



Source: Adapted from UN E-Government Survey 2012

"Open data" has recently emerged as a way to enhance government transparency, participation and efficiency. Publishing government data "...in a reusable format can strengthen citizen engagement and yield new innovative businesses."[64] The example of Kenya is illustrative of a developing country implementing an open data system. The country had a history of limited dissemination of government information. In 2011, the Ministry of Information and Communications secured top level support to develop a website serving as a one-stop shop for a variety of government information. The site (opendata.go.ke) was launched in July 2011, the first in sub-Saharan Africa. The number of data sets has grown from 200 to 434 by June 2012 with over 50,000 hits.[65] The site also features four applications for mobile users.

In September 2013 the World Bank along with the Open Data Institute and Open Knowledge Foundation announced an initiative to assist developing countries with deploying open data programs: "Making government, scientific and other data accessible and usable drives positive change across the spectrum: from health to transport, education to entrepreneurship, culture to community. This project will

[64] Huijboom, Noor, and Tijs van den Broek. 2011. "Open data: an international comparison of strategies." *European Journal of ePractice*, April. http://www.epractice.eu/en/document/5290090.
[65] Majeed, Rushda. 2012. "Disseminating the Power of Information: Kenya Open Data Initiative, 2011-2012." Innovations for Successful Societies. Princeton University. http://www.princeton.edu/successfulsocieties/content/superfocusareas/traps/ME/policynotes/view.xml?id=206.

give citizens in developing countries the knowledge they need to campaign for change, and empower them to their hold their governments to account."[66]

The Open Government Partnership is a multi-stakeholder organization consisting of governments and civil society formed to enhance government efficiency and transparency. It was founded in September 2011 by eight governments (Brazil, Indonesia, Mexico, Norway, Philippines, South Africa, United Kingdom, United States) and has since grown to an additional 47 governments that have endorsed the Open Government Declaration and published country action plans. A main goal is to increase the availability of information about government activities. Its Open Government Declaration commits governments "...to systematically collect and publish data on government spending and performance for essential public services and activities ... to pro-actively provide high-value information, including raw data, in a timely manner, in formats that the public can easily locate, understand and use, and in formats that facilitate reuse."[67]

Though most governments around the world now have an online presence, the degree of interactivity and depth of online public services varies tremendously. The rise of social networking applications and spread of mobile phones have created new opportunities for governments to interact with citizens but the degree to which this is happening is not measured on a global basis. The emergence of open data could have a significant impact on government transparency but like other recent developments, quantifiable information about its adoption is lacking.

6.8 h. Develop a framework for the secure storage and archival of documents and other electronic records of information

As more and more processes move online, electronic transactions are assuming greater importance. The delivery of electronic services to citizens and firms by governments and businesses generates electronic records, some of which need to be preserved for legal reasons (e.g., evidence of transactions, freedom/right to information laws, etc.). This requires policies about what information needs to be preserved, for how long, the technical methods of doing so and reasonable guarantees about the security, retrievability and reliability of the storage method.

Several organizations are involved in this area. For example International Research on Permanent Authentic Records in Electronic Systems (InterPARES) develops frameworks for standards, policies and strategies for preserving digital records.[68] In Europe, the Model Requirements for the Management of Electronic Records (MOREQ) project developed specifications for the administration of digital information including retention and preservation issues.[69]

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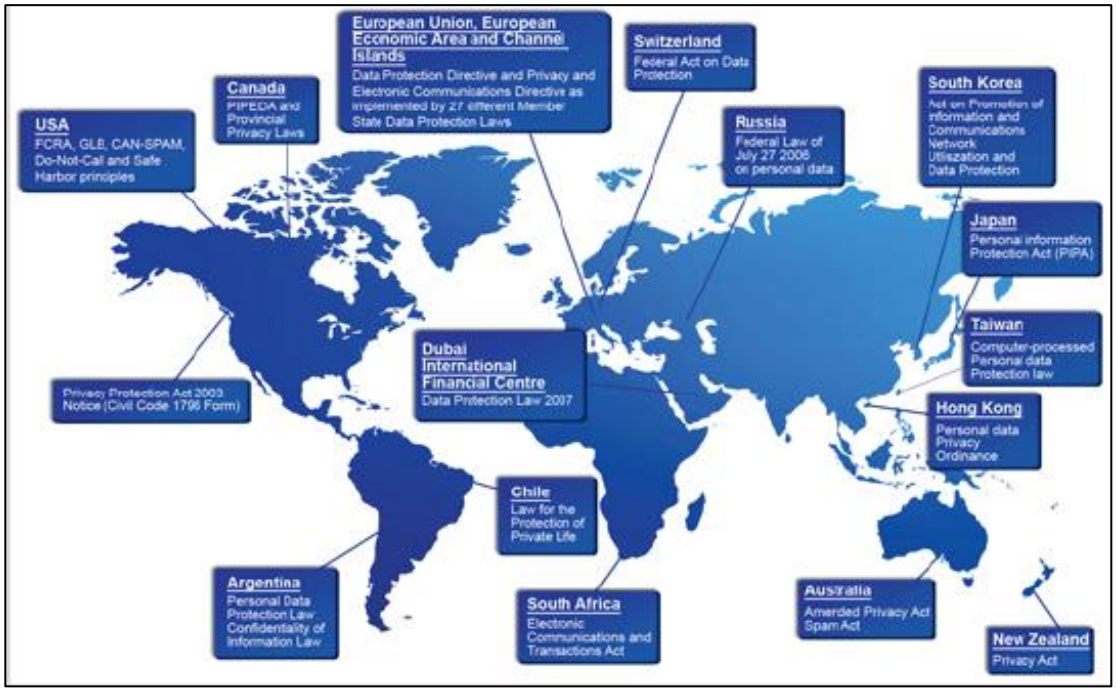
[66] Open Knowledge Foundation. 2013. "New partnership seeks to bring benefits of open data to developing countries." *Press Release*, September 18. http://okfn.org/press-releases/new-partnership-seeks-to-bring-benefits-of-open-data-to-developing-countries/.
[67] http://www.opengovpartnership.org
[68] http://www.interpares.org
[69] http://ec.europa.eu/idabc/en/document/2303/5927.html

For the most part the secure storage and archival of electronic records is mainly carried out through national and sometimes regional initiatives. There is no internationally agreed framework.

6.9 i. Governments and stakeholders should actively promote user education and awareness about online privacy and the means of protecting privacy

Many countries guarantee the right to privacy in their foundational laws and some nations have extended this protection to cyberspace (Figure 6-6). As of 2013, 99 countries had enacted data privacy laws (UNCTAD 2013). The Council of Europe has several conventions protecting privacy online.[70] Similarly the European Data Protection Directive regulates the collection and use of personal information.[71]

Figure 6-6: Selected Privacy and Data Protection laws around the World



Source: ITU. Trends in Telecommunication Reform 2013.

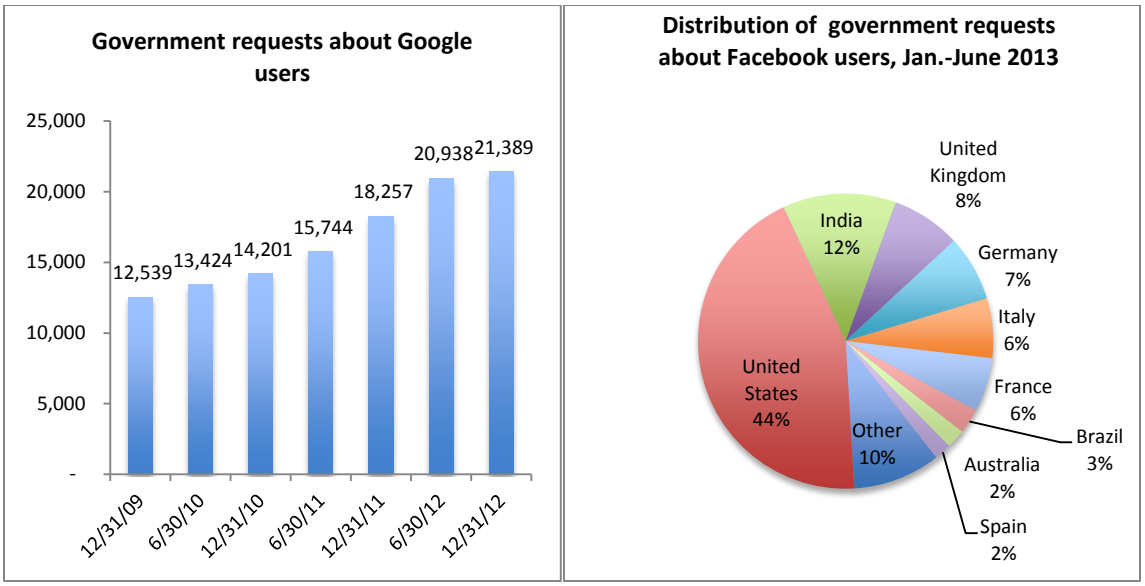
At the same time, governments have been increasing online surveillance (UNCTAD 2013). There is a growing recognition that governments need to strike a balance between security and privacy[72] and recognize that overzealous surveillance undermines use and also has serious economic implications.[73] In 2013, the United Nations prepared a draft, resolution calling upon Member States "...to review procedures, practices and legislation on the surveillance of communications, their

[70] http://www.coe.int/t/dc/files/events/internet/2010_fiche_privacy.pdf
[71] http://ec.europa.eu/justice/data-protection/
[72] Acohido, Byron. 2013. "Data Mining Pits National Security Vs. Personal Privacy." *USA Today*, June 9. http://www.usatoday.com/story/cybertruth/2013/06/07/prism-data-mining-cybersecurity-privacy/2401685/.
[73] Castro, Daniel. 2013. "How Much Will PRISM Cost the U.S. Cloud Computing Industry?" ITIF. http://www2.itif.org/2013-cloud-computing-costs.pdf.

interception and collection of personal data, including mass surveillance, with a view to upholding the right to privacy by ensuring the full and effective implementation of all relevant obligations under international human rights law."[74]

Some Internet companies have begun publishing data on the number of government requests for private data that they receive in an effort to promote transparency. Google notes that the number of requests have risen 71% since 2009 to 21,389 in the six month period ending December 2012 (Figure 6-7, left).[75] Social network giant Facebook reported 26,107 requests from 72 governments affecting 38,454 accounts in the first half of 2013 (Figure 6-7, right).[76]

Figure 6-7: Government requests for Internet user data



Source: Adapted from Google and Facebook.

6.10 j. Invite stakeholders to ensure that practices designed to facilitate electronic commerce also permit consumers to have a choice as to whether or not to use electronic communication

Many people remain reluctant to use the Internet for various reasons (e.g., lack of access, no interest, etc.). In an increasingly online world they may be disadvantaged if there is no alternative to the use of electronic communications. In the case of electronic shopping it may not be possible to provide consumers with the option of not using the Internet since some shops may only exist online. However in the case of dealing with the government, alternatives are needed for those who do not use

[74] UN. "Third Committee Approves Text Titled 'Right to Privacy in the Digital Age', as It Takes Action on 18 Draft Resolutions." News Release, November 26, 2013. https://www.un.org/News/Press/docs/2013/gashc4094.doc.htm.
[75] "User Data Requests – Google Transparency Report." 2013. Accessed September 25. http://www.google.com/transparencyreport/userdatarequests/.
[76] Facebook. 2013. "Global Government Requests Report." https://www.facebook.com/about/government_requests.

the Internet. Most governments that have shifted services from face to face dealings to the Internet provide other options such as the ability to use postal correspondence or interact through intermediaries who then process the transaction online. In any case, it is rare for electronic transaction laws to stipulate that there must also be an "offline" option.

6.11 k. Encourage the ongoing work in the area of effective dispute settlement systems, notably alternative dispute resolution (ADR), which can promote settlement of disputes

The telecommunications sector is often subject to complaints by operators and consumers over areas such as pricing, advertising and anti-competitive behavior. These disputes can take a long time to resolve using formal regulatory processes. Other methods of dealing with disputes can speed up their resolution and overcome capacity limitations within traditional legal and regulatory environments. There is some pressure to consider alternatives particularly in the European Union where legislation dictates that disputes in the sector must be settled within four months.[77]

Alternative dispute resolution (ADR) instruments include mediation, negotiation and arbitration, used voluntarily or through contractual agreement.[78] One example is New Zealand where a Telecommunication Dispute Resolution (TDR) has been established to assist consumers resolve disagreements with telecommunications operators involving areas such as data usage, billing, quality of service and changing telecommunication providers.[79] A company has to be a member of TDR service. comply with the Customer Complaints Code and agree to be bound by the TDR decisions.

Though ADR has promise as a more rapid solution than traditional methods, only the EU region has established a length of time to resolve telecommunications sector disputes. Further there are not comprehensive statistics on the status of ADR implementation in the ICT sector worldwide.

[77] See 22) in Directive 2009/140/EC of the European Parliament and of the Council of 25 November 2009 amending Directives 2002/21/EC on a common regulatory framework for electronic communications networks and services, 2002/19/EC on access to, and interconnection of, electronic communications networks and associated facilities, and 2002/20/EC on the authorisation of electronic communications networks and services. http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:32009L0140:EN:NOT

[78] http://www.itu.int/ITU-D/treg/publications/ITU_WB_Dispute_Res-E.pdf

[79] http://www.tdr.org.nz/what-we-do/types-disputes-covered-0

6.12 l. Governments, in collaboration with stakeholders, are encouraged to formulate conducive ICT policies that foster entrepreneurship, innovation and investment, and with particular reference to the promotion of participation by women

ICTs provide women several opportunities for entrepreneurship:[80]

1. offer a new field which is more open for female access than other fields;
2. require less resources in cash and physical terms than traditional alternatives for women;
3. empower home-based operation, leading to cost savings and to better family-work life balance since work can be done around family life, both where and when it fits best;
4. enable "invisibility" despite the business itself having a high profile;
5. provide a route to further personal development and growth via e-learning and via participation in eBusiness; and
6. provide a route to develop more than one business, to participate in the development of different types of business – virtual or otherwise – and to find suppliers for key services for the right price and at the right quality more easily than traditional means.

ILO and UNCTAD have partnered to integrate ICTs into ILO frameworks for assessing women development. The aim is to inform governments and assistance partners about how women entrepreneurship can be fostered through ICTs.[81]

There is no information measuring the level of accomplishment worldwide regarding conducive ICT policies promoting entrepreneurship with reference to the promotion of women.

6.13 m. Recognising the economic potential of ICTs for Small and Medium-Sized Enterprises (SMEs), they should be assisted in increasing their competitiveness by streamlining administrative procedures, facilitating their access to capital and enhancing their capacity to participate in ICT-related projects

6.13.1 Streamlining administrative procedures

Countries can facilitate the operations and efficiency of SMEs by supporting electronic interaction with the government in areas such as business registration, tax payment and filing of other government forms. Developing online government-to-business services typically involves a process reorganization, resulting in savings in the number of steps and time to carry out the procedure. According to the World

[80] Martin, Lynn M., and Len Tiu Wright. 2005. "No gender in cyberspace?: Empowering entrepreneurship and innovation in female-run ICT small firms." *International Journal of Entrepreneurial Behaviour & Research* 11 (2) (April 1): 162–178. doi:10.1108/13552550510590563.
[81] http://unctad.org/en/pages/MeetingDetails.aspx?meetingid=283

Bank, the availability of online government procedures that would ease interaction with enterprises varies.[82] Over 80% of governments support online submission of trade documents but only 10% allow enterprises to file complaints on line in the case of contract disputes (Table 6-5).

Table 6-5: Online business facilitation practices, 2012

Topic	Practice	Number of Economies[a]	Share of economies
Making it easy to start a business	Putting procedures online	106	57%
Making it easy to register property	Using an electronic database for encumbrances	108	58%
	Offering cadastre information online	50	27%
Making it easy to pay taxes	Allowing electronic filing and payment	74	40%
Making it easy to trade across borders[b]	Allowing electronic submission and processing	149[c]	82%
Making it easy to enforce contracts	Allowing electronic filing of complaints	19	10%

Note: a=Among 185 economies surveyed unless noted otherwise. b=Among 181 economies surveyed. c=31 have a full electronic data interchange system and 118 a partial one.
Source: Adapted from World Bank, Doing Business database.

6.13.2 Facilitating access to capital

SMEs often report that one of the biggest barriers they face is obtaining credit.[83] There are a number of steps governments can pursue to facilitate access to finance. This includes making loan guarantees, developing portals with financial information and advising SMEs on how to develop business plans and navigate financial options. Another step is to encourage the development of venture capital which has been particularly relevant for innovative, ICT-oriented SMEs in some countries. Attracting venture capital requires an enabling macro-economic environment including liberal foreign investment regulations and a stable exchange rate. There are no global statistics measuring the ease of access to capital by SMEs.

6.13.3 Enhancing capacity to participate in ICT-related projects

Three ways that governments can support SMEs in ICT projects is through open procurement policies, facilitation of innovation centers such as incubators and enhancing ICT skills and connectivity.

Open and transparent government procurement policies make it easier for SMEs to participate in providing goods and services to public administrations. Moving to

[82] World Bank Group. 2012. "Doing Business 2013 - Smarter Regulations for Small and Medium-Size Enterprises." http://www.doingbusiness.org/reports/global-reports/doing-business-2013.
[83] http://www.enterprisesurveys.org

electronic procurement increases transparency and enhances access to tender opportunities for SMEs by lowering costs. According to the EU the use of e-procurement increases the participation of SMEs.[84] Adding the requirement of open source software for government ICT systems tenders also eases participation by SMEs since they are more likely able to participate when expensive proprietary solutions are not required.

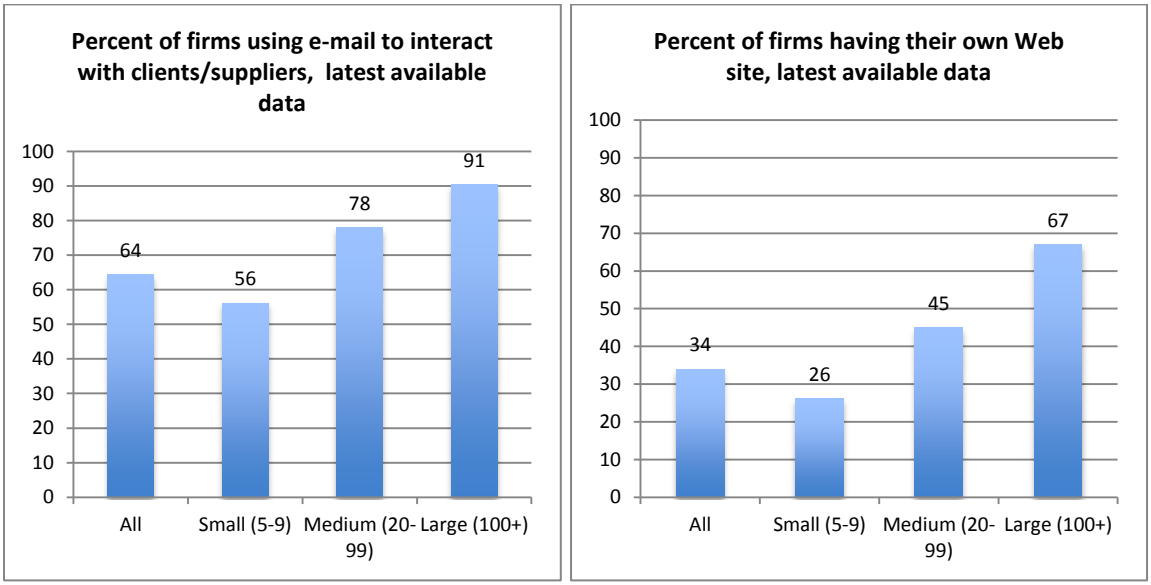
Another way that governments have been assisting SMEs to participate in ICT projects is to provide them with early stage support through incubation. Examples include:[85]

- In **Rwanda**, *kLab* (knowledge lab) promotes, facilitates and supports the development of innovative ICT solutions by nurturing a community of entrepreneurs and mentors. To this end, kLab brings together like-minded innovators and gives them the resources they need to explore their ideas, learn from one another and develop innovative solutions. The knowledge lab is a technology space in which ambitious entrepreneurs can confer and develop their trailblazing ideas into successful businesses. It acts as a focal point for the development of ICT solutions in Rwanda, bringing together experienced mentors and young innovators. It also acts as a host for competitions, seminars and other community-led events.
- In the **United Arab Emirates**, *Silicon Oasis Founders* (SOF), a technology incubation centre wholly owned by the Dubai Silicon Oasis Authority (DSOA), has been established in Dubai Silicon Oasis (DSO), an integrated free zone technology park. SOF was set up with a strategic commercial ambition and long-term vision to position itself as a leading incubator supporting high-potential technology ventures in the seed phase. It focuses on fostering local entrepreneurial talent in information technology, Internet, e-commerce technology and mobile. The centre's expertise will help emerging entrepreneurs refine their business proposals, execute plans and accelerate growth. New businesses will receive guidance and assistance in the form of services such as business set-up support, workspace facilities, networking opportunities with other IT professionals, videoconferences and business consultancy, as well as financial, technical and marketing mentorship.

The level of Internet use remains relatively low among SMEs. According to the World Bank, only 56% of SMEs use email to communicate with clients or suppliers compared to 91% for large firms (Figure 6-8, left). Only a little over a quarter of SMEs have a web site compared to 67% of large firms (Figure 6-8, right).

[84] European Commission. 2012. "Delivering savings for Europe: moving to full e-procurement for all public purchases by 2016." *Press Release*, April 20. http://europa.eu/rapid/press-release_IP-12-389_en.htm?locale=eners.
[85] ITU. 2013. "Report on the WSIS Stocktaking 2013." http://www.itu.int/wsis/stocktaking/docs/reports/stocktaking_report_2013.pdf.

Figure 6-8: Enterprises using email and with web sites, latest available data (2005-2013)



Note: Figure in parenthesis refers to the number of employees. Based on 130,000 firms in 135 countries.
Source: Adapted from Enterprise Surveys (http://www.enterprisesurveys.org), The World Bank.

Governments can assist SMEs through facilitating ICT connectivity and enhancing skills. Policies and regulations to support competitive ICT markets will lower the cost of products and services and help get more SMEs online. Lowering or even eliminating import duties on ICT equipment would also make it easier for SMEs to purchase computers and other ICT products. Boosting ICT literacy is another way that governments can help facilitate SME ICT use. In Mexico, the Secretariat of Communications and Transportation (SCT) has formed Club Digital, providing mass open online ICT courses. Through an innovative web-based learning model, the Club Digital initiative aims to promote entrepreneurship among young people in order to foster technological project development. The platform contributes to the creation of an enabling environment for the use and appropriation of ICTs. Its contents, provided by SCT and its technological partners and entrepreneurship specialists, can be accessed at no cost. The participation of ICT partners promotes the appropriation of cutting-edge tools that facilitate Club Digital users' SME entrepreneurial skills.

6.14 n. Governments should act as model users and early adopters of e-commerce in accordance with their level of socio-economic development

There are several ways in which governments adopt the specific instance of e-commerce in their activities. On the one hand, electronic commerce in the government context would refer to the on line sale of products and services. For example this would allow consumers and business to pay for government services such as license fees online as well as make online payments for taxes. It would also allow for the purchase of products ranging from stamps to government publications over the Internet.

A second way governments use electronic commerce is through their own purchases of goods and services which can help lower costs. This can also extend to online procurement practices to enhance transparency. Given the size of the government, its involvement in e-commerce activities can serve as spur to encourage other sectors to adopt electronic commerce.

Another aspect of government e-commerce is electronic procurement (e-procurement). This makes government purchases more transparent and saves taxpayer money. European governments report savings of 5-20% using e-procurement.[86] The European Commission plans to implement full e-procurement by mid-2015, a year earlier than the deadline for European Union member countries.

One difficulty with measuring the extent of government e-commerce activities is a lack of data. Though there are some reports benchmarking e-government, they do not identify comparable indicators on the number of governments offering or using e-commerce services. There are data on some aspects of government e-commerce from other sources. For example some 74 out of 185 economies surveyed (40%) allow electronic filing and payment of taxes.[87]

6.15 o. Governments, in cooperation with other stakeholders, should raise awareness of the importance of international interoperability standards for global e-commerce

Interoperable standards can reduce the costs of deploying e-commerce solutions, facilitate usage by consumers and encourage the development of competitive online marketplaces. This includes standards in areas such as invoicing, payments, security and intellectual property protection for business to consumer, business to business and consumer to consumer.

Often working in cooperation with other standards development organizations (SDOs) and various ICT industry consortia, ITU-T deals with a broad range of standardization issues. Recommendation ITU-T X.509 is relevant in this area for electronic authentication over public networks. ITU-T X.509, a cornerstone in designing applications relating to public key infrastructure (PKI), is used in a wide range of applications; from securing the connection between a browser and a server on the web, to providing digital signatures that enable e-commerce transactions to be conducted with the same confidence as in a traditional system. Without wide acceptance of the standard, the rise of e-business would have been impossible.[88]

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[86] European Commission. 2012. "Delivering savings for Europe: moving to full e-procurement for all public purchases by 2016." *Press Release*, April 20. http://europa.eu/rapid/press-release_IP-12-389_en.htm?locale=eners.
[87] World Bank Group. 2012. "Doing Business 2013 - Smarter Regulations for Small and Medium-Size Enterprises." http://www.doingbusiness.org/reports/global-reports/doing-business-2013.
[88] http://www.itu.int/en/ITU-T/about/groups/Pages/sg17.aspx

6.16 p. Governments, in cooperation with other stakeholders, should promote the development and use of open, interoperable, non-discriminatory and demand-driven standards

Standards lower the cost of hardware and software development and enhance international trade by lowering market entry costs. By abiding by principles of standards, governments can help derive important economic and social benefits for their citizens. These principles include:

- Open whereby the process to derive the standard is open to all and the resulting specifications are freely available;
- Interoperable whereby different systems, services and devices can exchange information seamlessly;
- Non-discriminatory whereby all producers of products and services can compete equally through internationally developed standards; and
- Demand driven whereby users participate in the standards development process so that standards are not solely technology-driven.

6.17 q. ITU, pursuant to its treaty capacity, coordinates and allocates frequencies with the goal of facilitating ubiquitous and affordable access

The ITU's Radiocommunication Sector (ITU-R) is responsible for the global coordination frequencies.[89] A key objective is to ensure interference free operations of radiocommunication systems. This is ensured through implementation of the Radio Regulations and Regional Agreements, and the update of these instruments through the processes of the World and Regional Radiocommununication Conferences. Furthermore, radio standardization establishes ´Recommendations´ intended to assure the necessary performance and quality in operating radiocommunication systems. It also seeks ways and means to conserve spectrum and ensure flexibility for future expansion and new technological developments.

ITU-R manages the detailed coordination and recording procedures for space systems and earth stations. Its main role is to process and publish data and to carry out the examination of frequency assignment notices submitted by administrations for inclusion in the formal coordination procedures or recording in the Master International Frequency Register.

ITU-R also develops and manages space-related assignment or allotment plans and provides mechanisms for the development of new satellite services by locating suitable orbital slots.

ITU-R accommodates the launch of new satellites as quickly and efficiently as possible. It facilitates any new developments and the continuation of satellite services in a safe way. It also squeezes more into the frequency bandwidth, which is a limited, finite resource.

[89] http://www.itu.int/ITU-R/index.asp?category=information&rlink=itur-welcome&lang=en

6.18 r. Additional steps should be taken in ITU and other regional organisations to ensure rational, efficient and economical use of, and equitable access to, the radio-frequency spectrum by all countries, based on relevant international agreements

In order to assure equitable access to radio-frequency spectrum the ITU, through the Radiocommunications Bureau, sets aside spectrum for use by all countries through predetermined orbital positions and frequency spectrum. This is based on No. 196 of the ITU Constitution (Article 44) which states:

> "In using frequency bands for radio services, Members States shall bear in mind that radio frequencies and any associated orbits, including the geostationary-satellite orbit, are limited natural resources and that they must be used rationally, efficiently and economically, in conformity with the provisions of the Radio Regulations, so that countries or groups of countries may have equitable access to those orbits and frequencies, taking into account the special needs of the developing countries and the geographical situation of particular countries."[90]

As a result, equitable access to scarce frequency spectrum and satellite orbit is achieved by setting a certain amount aside for future use by all countries. Thus each country has a predetermined orbital position assigned for it. This is done to safeguard use for countries who may not be prepared at the present time to make use of the resources.

[90] http://www.itu.int/dms_pub/itu-s/oth/02/09/s02090000115201pdfe.pdf

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