June 2015

The Internet and Sustainable Development

An Internet Society contribution to the United Nations discussion on the Sustainable Development Goals and on the 10-year Review of the World Summit on the Information Society.

Internet Society

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Overview

The past thirty years have seen tremendous growth in the capabilities and reach of information and communication technologies (ICTs). The Internet, especially, has become a critical enabler of social and economic change, transforming how government, business and citizens interact and offering new ways of addressing development challenges. A new approach to development will be agreed this year, when the United Nations adopts a Post-2015 Development Agenda based around Sustainable Development Goals (SDGs). The Internet Society is convinced that the Internet is a unique platform for innovation, creativity, economic opportunity and social inclusion, which can make a major contribution to achieving these. This briefing describes the Internet's potential and identifies priorities for action.

Since it became widely available in the 1990s, the Internet has enabled new products and services, improved economic efficiency, transformed access to information, and facilitated greater collaboration between governments, businesses and citizens. Its growing impact has been central to the emerging Information Society and digital economy, affecting both developed and developing countries. As many as 40% of the world's people now use the Internet at least occasionally, a proportion that is growing every year.[i] Its development potential was emphasized in the World Summit on the Information Society (WSIS, 2003/2005) and will be further demonstrated when the UN reviews WSIS outcomes in December 2015.[ii]

Sustainable development has been a focus of international public policy since the Earth Summit in 1992. It identifies three core objectives for human development – economic growth, social inclusion and environmental sustainability. Only by pursuing these together can the world achieve 'development that meets the needs of the present without compromising the ability of future generations to meet their own needs.'[iii] In September 2015, a UN summit will place Sustainable Development Goals (SDGs) at the heart of its Post-2015 Development Agenda, which will guide development until 2030.

The Internet Society has worked steadfastly to promote ICTs in development since it was formed in 1992. It believes the Internet will be a critical enabler for sustainable development which will unlock human capabilities,[iv] and is committed to working with multistakeholder partners to integrate the Information Society with sustainable development and fulfill the Internet's development potential. This briefing sets out a framework for multistakeholder partnership towards that end.

The context for sustainable development

The adoption of Sustainable Development Goals in September 2015 will mark the start of a new era in international development.

In 2000, the United Nations adopted eight Millennium Development Goals (MDGs), which set targets to reduce poverty and secure basic needs such as food, water, health and education. They also called for public-private cooperation to 'make available the benefits of new technologies, especially ICTs.'[v] The contribution of ICTs towards the MDGs has grown over the years as they have become more widespread in developing countries. They have made important contributions in enabling access to information and educational resources, improving food production and distribution, facilitating participation in decision-making, and ensuring early warning of threats to vulnerable communities.

The target date for achieving the MDGs, 2015, has become the start date for a new phase of international action for sustainable development. This recognizes the importance of integrating economic, social and environmental goals within a comprehensive global approach over the fifteen years to 2030.

Seventeen proposed Sustainable Development Goals, and 169 targets, have been developed through an intergovernmental Open Working Group (OWG) of the United Nations.[vi] Final agreement on these will be reached at a UN Summit in September 2015.[vii] While each Goal is important individually, the success of the overall Agenda will depend on the extent to which they are achieved together. The Goals provide an opportunity for enhancing the role of ICTs as cross-cutting enablers of development across the whole Post-2015 Agenda.

ICTs, the Internet and SDGs

Assessments of WSIS outcomes have demonstrated the value of ICTs and the Internet to development, in underpinning infrastructure for economic and social progress and providing tools for programmes in sectors such as health, finance and education. That value has grown with time because of rapid improvements in technology, increased bandwidth, and new services like social media and cloud computing. It will continue to grow dynamically as ICTs' capabilities and reach extend further during the implementation period for the SDGs.

The Internet provides the underpinning platform for the growth of ICTs and for an emerging digital economy, in which production, distribution and consumption depend on broadband networks and services. It will, therefore, be a critical enabler of sustainable development.

The Internet Society is concerned, however, that the Internet's importance has not been sufficiently recognized, and that more must be done to integrate the Information Society and sustainable development agendas. Without recognition of ICTs and the Internet, crucial opportunities to achieve developmental goals may be missed.

ISOC is concerned in particular that there is no specific Goal concerned with ICTs or the Internet among the current proposed SDGs. However, one of the proposed targets in Goal 9 (which concerns infrastructure, industrialization and innovation) calls for significantly increased access to information and communications technology and universal and affordable access to the Internet in least developed countries by 2020.[viii] Fulfilling this target will be instrumental in addressing many other Goals and targets.

ICTs are specifically mentioned in three further proposed targets, those concerned with ICT enrolment in higher education (target 4.b), women's empowerment (target 5.b) and science, technology and innovation (target 17.8). A number of references to improving information, in other targets, will increasingly depend on ICTs and Internet. The potential of big data is often mentioned in this context.

While these references are important, ISOC believes that more attention should be paid to the Internet's catalytic role in meeting information needs and facilitating development, particularly in sectors such as agriculture, health, education and enterprise. Urgent attention will be required to incorporating ICTs more thoroughly in implementing and monitoring the Goals once these have been finalized.

How ICTs can facilitate the implementation of the SDGs

ICTs and the Internet have already had a major impact on economic and social development.[ix]

- Governments, business, civil society and individuals have adopted them extensively. Mobile telephony, Internet access and social media have transformed communications opportunities for individuals, while governments and businesses increasingly rely on the Internet for communications and administration, delivering services and disseminating information.

- Many governments and development agencies have adopted **strategies to leverage ICTs for development (ICT4D)** and introduced programmes that take advantage of the Internet – stimulating access to information through telecentres and mobile applications; promoting business sectors such as outsourcing and software development; disseminating e-agriculture and e-health information, distance learning and mobile money; and establishing mechanisms to provide early warning of natural and man-made disasters.

These impacts have grown as technology has become more sophisticated, user numbers have risen, more bandwidth has become available, and new services been introduced. Further developments now underway – such as cloud computing and the Internet of Things – mean that ICTs will have even greater impact on development implementation and outcomes over the next fifteen years. The Internet Society believes this will be especially important in five areas:

- **Sustainable development policy.** Greater integration is needed between the Information Society and sustainable development. Internet and development stakeholders need to build a stronger, and more realistic, understanding of ICTs' potential and the challenges constraining it in difficult development contexts.

- **Implementing sustainable development.** ICTs can support the delivery of every SDG. UN agencies have begun to identify synergies between the SDGs and WSIS Action Lines. Once the Goals are formally agreed, these can be translated into practical measures to support their implementation.

- **Monitoring sustainable development.** ICTs should play a crucial role in monitoring and measuring progress towards sustainable development, by facilitating data-gathering and analysis of indicators adopted for every Goal and target. UN agencies have begun work to identify these indicators. Indicators for ICTs and Internet themselves will be required, building on experience with targets for connectivity agreed at WSIS.

- **Leveraging big data for development.** High hopes have been expressed about big data's potential to improve understanding of development environments, facilitate evidence-based policy-making, and monitor development outcomes.[x] Big data analysis also raises challenges concerning data privacy and security, while governments and other stakeholders will need to build capacity and resources to maximise its value.

- **Sustainable multistakeholder approaches to developments.** ICTs and Internet enable more effective collaboration between development stakeholders and new ways to manage programmes. Cooperation between government, business and other stakeholders is especially important because of the private sector's predominant role in networks and services.

To fulfill these opportunities, the Internet Society believes **it is crucial to build mutual understanding and stronger cooperation between the information society and sustainable development agendas.** This will be even more important after the Summit, as indicators are agreed and implementation strategies devised.

Internet stakeholders should engage actively in discussions around the SDGs and their subsequent implementation. They should work with development stakeholders to:

- *build a common understanding of the potential of ICTs to support the overall sustainable development agenda;*

- *develop challenging, realistic assessments of how the Internet can support implementation of each SDG at global, national and local levels - and the constraints that must be overcome to achieve this;*

- *identify appropriate indicators for each SDG, which can be measured effectively with ICT support;*

- *develop techniques that take full advantage of the Internet for monitoring the SDGs, address challenges of data privacy and security, and take advantage of the potential of big data analysis; and*

- *identify ways of improving development administration, including public-private and multistakeholder partnerships.*

Priorities for Internet stakeholders

ISOC's priorities for multistakeholder cooperation in Internet development are set out in its 2014 Global Internet Report.[xi] The sustainable development agenda raises a number of particular challenges and opportunities for Internet governance and multistakeholder cooperation.

- **Connectivity and access for all** are crucial to the Internet's contribution to sustainable development. Although there have been great improvements over the last decade, Internet access is still much poorer in many developing countries than developed countries. Recent estimates suggest that less than 10% of people in Least Developed Countries (LDCs) access the Internet, compared with more than 80% in developed countries. Broadband access is particularly poor in rural areas. This reduces the extent to which people can use the Internet to achieve the SDGs.[xii]

Connectivity alone is insufficient to enable effective use of Internet for sustainable development. Other things are also crucial:

- **Affordability** is essential if development stakeholders and citizens are to use Internet effectively to achieve the SDGs. Internet and broadband access are much more expensive, in relation to average income, in developing countries, particularly LDCs.[xiii] This makes it especially difficult for poorer individuals and communities to take advantage of Internet-enabled services.

- **Reliability and resilience** are crucial if governments and businesses are to use the Internet to deliver services and grow prosperity. Participation in the digital economy, including cloud computing, requires uninterrupted access to broadband networks. Where this is unavailable, developing countries will miss out on economic opportunities available to their competitors. Reliable power supply, spectrum availability, redundancy in network capacity, secure networking, low levels of

transmission latency and Internet Exchange Points are all important to Internet affordability, reliability and local access.[xiv]

- **The legal and regulatory environment** for e-government, e-business and individual citizens is also important. The Internet and Internet-enabled services thrive in business environments that encourage innovation and enterprise. The importance of frameworks for infrastructure and cross-border connectivity was emphasised in ISOC's 2013 report on *Lifting Barriers to Internet Development in Africa*.[xv] Legal and regulatory frameworks for e-commerce, digital signatures and data protection are prerequisites for Internet-enabled business. Businesses and individuals will only use the Internet fully if they have confidence their interactions and transactions are secure.

- **Content and applications** are also vital, building on the free flow of information and exchange of knowledge facilitated by the Internet. Users, particularly the poor and marginalised, need content that is relevant to their developmental needs, in languages they understand, accessible through devices and applications that are affordable and easy to use. ISOC has published a report with OECD and UNESCO demonstrating that local content, Internet development and lower access prices reinforce one another and achieve development gains.[xvi]

- **Capabilities** are as necessary as content. Users require skills to make full use of Internet-enabled services, including basic and ICT literacy, and skills in using devices and applications. ICT-specific skills in areas such as local infrastructure and traffic management, computer networking, web design, applications development and Internet security are needed in all societies. Policymakers need to understand technical aspects of the Internet, the pace of change in Internet-enabled services, and the interaction between these and public policy domains.

- **Environmental impacts of the Internet** are crucial to sustainability. The Internet enables environmentally-positive energy savings through improved efficiency, virtualisation of goods and services and smart systems to manage productive processes. However, ICTs are also the fastest growing source of physical waste and greenhouse gas (GHG) emissions. Their impact will increase as cloud computing and the Internet of Things become more widespread.[xvii]

- **More reliable data** are required concerning the relationship between the Internet and sustainable development. Assessments of the WSIS targets show that data concerning Internet usage and developmental impact are poor. Better data-gathering and analysis are essential for evidence-based policymaking across all SDGs.[xviii]

In response to these challenges, Internet stakeholders should work together, and with other stakeholders, to:

- *improve the quality of infrastructure and connectivity;*

- *reduce the cost of connectivity, handsets and access to services;*

- *overcome network constraints and improve network reliability and resilience;*

- *ensure an enabling legal and regulatory environment for Internet access and applications, and facilitate cybersecurity;*

- *stimulate the development of content, services and applications that are accessible to all social groups, including women and girls, rural and urban dwellers, low-income users and those who speak minority languages;*

- *build skills and capabilities that will enable people to take advantage of the Internet to achieve the SDGs, through education and capacity-building initiatives;*

- *mitigate the negative impacts of ICTs on waste and GHG emissions, and maximise the extent to which ICTs help to mitigate GHG emissions and natural resource depletion in other sectors; and*

- *build a more substantial evidence base concerning the relationship between the Internet and sustainable development.*

Implications for Internet governance

The Internet has developed rapidly over thirty years with core principles that foster innovation and collaboration between stakeholders, built on a unique model of shared global ownership, open standards development and freely accessible processes for technology and policy development. This has enabled it to make substantial contributions to the MDGs. A sustainable Internet, based on an open and collaborative approach to policy, standards and technology development will be crucial in maximizing its contribution to the challenges and opportunities of sustainable development. Three things in particular will be crucial to this:

- **Multistakeholder participation** has been crucial to the Internet's success. The Internet ecosystem draws on the experience, expertise and collaboration of diverse stakeholders, including the technical community, private sector, governments and civil society. Multistakeholder cooperation and dialogue were core values of the WSIS and have enabled the Internet Governance Forum (IGF) to address the relationship between the Internet and development. The value of multistakeholder engagement is recognised in sustainable development fora, and various forms of multistakeholder participation have been introduced in UN processes.

- **Open, universal, interoperable standards** have made the Internet a resilient platform which can be used by all stakeholders to experiment, develop and offer new services, customise applications to their own requirements, and innovate in ways that challenge as well as building on established technology and services. Maintaining open standards has been a priority for ISOC since its inception. They have enabled rapid deployment of innovations such as social media and cloud computing, and will be crucial to leveraging developmental value from big data and the Internet of Things.[xix]

- A **collaborative security** approach building trust in online services is essential to the Internet's continued growth. People need confidence that their data are secure, and the networks and services they use reliable, if they are to take full advantage of the Internet. Businesses and development stakeholders need data security and network reliability, particularly when delivering important services such as those concerned with health or financial transfers. ISOC has called for a Collaborative Security approach to Internet security, built on fundamental human rights and Internet properties, collective responsibility, agile responses based on expertise and consensus, and local action to address global challenges.[xx]

The role of the Internet Society

The Internet Society's core values seek to improve the quality of life for people in all parts of the world by enhancing their ability to enjoy the benefits of an open, global Internet.[xxi] The Internet's power to enhance information and knowledge sharing, foster freedom of expression, improve collaboration and empower participation in economic and social life makes it a powerful, cross-cutting resource to support implementation of the SDGs and achieve positive outcomes through the Post-2015 Development Agenda.

The Internet Society has worked with other stakeholders since its formation to enhance the Internet's contribution to development and build the capacity of Internet professionals and users. It played a prominent part in WSIS, and has been a leading participant in the IGF, the WSIS Forum, the CSTD and other international discussions concerned with ICTs and sustainable development. Regional ISOC teams play an important role in developing regional and local technical capacity. ISOC's Community Grants Programme supports projects in developing countries, and has worked with other stakeholders to counter spam, deploy Internet Exchange Points and strengthen technical ecosystems, expedite the deployment of IPv6, encourage multistakeholder dialogue through national and regional IGFs, and support participation by developing country representatives in international Internet events.

ISOC is committed to working collaboratively, in multistakeholder frameworks, to promote the open development, evolution, and use of the Internet for the benefit of all. It believes this vision of an open Internet will be a critical component in achieving sustainable development. If that goal is to be realized, Internet stakeholders must work closely with others in international agencies, governments, the private sector and civil society who are engaged in initiatives to achieve the SDGs. The limited coverage of ICTs and Internet in current SDG proposals illustrates the need for more extensive partnership in integrating the two agendas and exploring synergies.

The Internet and sustainable development communities should build stronger collaborative frameworks that draw on one another's experience and expertise to identify effective interventions.

Progress towards the SDGs has global, regional and national dimensions. Efforts to implement them at national level must respond to the diverse national contexts of different countries. The best ways to integrate and leverage ICTs will also vary between different national contexts. ISOC's national chapters bring together technical and professional experts concerned with these.

ISOC will support the work of Internet professionals in developing countries to build stronger understanding and partnerships with other stakeholders to advance the SDGs.

The SDGs will be finalized at a UN Summit in September 2015. Indicators will then be adopted for individual SDGs, followed by implementation and monitoring. The value of ICTs and Internet in supporting and delivering the SDGs will quickly become apparent and will grow as time proceeds. Their significance should be emphasized by Internet and development stakeholders when the General Assembly reviews WSIS outcomes in December.

ISOC will work with the Internet community and ICT4D stakeholders to develop a stronger common understanding of how the Internet can contribute to SDG implementation at global and national levels, monitor the use of ICTs in support of SDGs, and build a stronger body of experience to inform future decision-making at the interface between the Information Society and sustainable development.

A call to action

The Internet will be a powerful enabler for the Sustainable Development Goals which will be adopted in September 2015. Its impact will be felt in all development sectors, from health and education, through agriculture and innovation, to security and the environment. It will increase as the capabilities and reach of Internet networks and services continue to grow rapidly while the Post-2015 Development Agenda is implemented between 2015 and 2030.

More attention must be paid to the relationship between the Internet and sustainable development to ensure that potential gains are maximized. All stakeholders share responsibility to work together to develop policies, services, tools and applications that will bring the benefits of Internet access and use to everyone, improving access to health and education, spreading information and knowledge, enabling innovation and enterprise, and thereby promoting economic growth, social inclusion and environmental sustainability. The Internet Society is ready to play its full part in fulfilling that sustainable development agenda.

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     Science and Technology for Development can be found in UN CSTD, 2015.

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     Environment and Development (the Brundtland Commission), Our Common Future, 1987,
     http://www.un-documents.net/ocf-02.htm.

iv   See ISOC's Values and Principles at http://www.internetsociety.org/who-we-
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v   The MDGs are available at http://www.un.org/millenniumgoals

vi   United Nations, 2014.

vii The UN Secretary-General's synthesis report on the Post-2015 Agenda can be found in
     United Nations Secretary-General, 2014.

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ix   For a detailed assessment, see UN CSTD, 2015.

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xi   Internet Society, 2014.

xii Latest estimates in ITU, Facts and Figures 2015, at http://www.itu.int/en/ITU-
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