

Innovation in the Governance of Technology and Society:

Progress on Internet Governance

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July 2009

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Abstract

The upcoming 2009 meeting of the Internet Governance Forum (IGF) in Sharm el-Sheikh, Egypt, November 2009 marks a crossroads for the Forum and for the future of Internet governance. The UN General Assembly will pay close attention to this year's IGF as it prepares to decide whether the Forum's mandate should be renewed past 2010. This report argues that the IGF should continue for two main reasons: it has been recognized by a wide range of stakeholders as a pioneering initiative in the global governance of the Internet, and its format is reasonably open to meaningful participation by developing countries. Both points are examined in detail:

- 1. The report acknowledges the important function the IGF has played in defusing tensions over one element of the management of critical Internet resources, namely the U.S. oversight of the Internet Corporation for Assigned Names and numbers (ICANN). However, it goes further to consider that the IGF, together with the complementary institutions, ICANN and the Internet Society (ISOC), marks a significant point of innovation in the broader sphere of technology governance in the way it integrates priorities, guiding policies and implementation principles of a diverse set of developers and users of technology.
- 2. A key test for the Forum's success will be its ability to better integrate developing countries' concerns into its work. Some signs of progress in this area already exist. If its mandate is renewed for an additional five years, the Forum's success should be measured by its ability to demonstrate how Internet technology contributes to broader sustainability goals of developed and developing countries alike. This can only be achieved if the IGF retains principles based on shared ownership and continues to grow as a collaborative, multistakeholder, open and accessible process. In this way, it has the opportunity to demonstrate not only the importance of this governance approach for a stable, secure Internet that is accessible to all, but it can also provide valuable lessons for other processes for the governance of technology and society.

Key Messages

- 1. The Internet now underpins most aspects of our economies and societies in the global North, and increasingly also does so in the South. Technologies supporting the Internet are also being applied to the development of innovative ecosystem management systems, including energy and climate change solutions. Therefore, good governance of the Internet and its related technologies is necessary for progress on economic, social and environmental challenges.
- 2. The IGF, together with other key institutions, is a useful space for ensuring that Internet governance matures as a shared responsibility across public, private and civil society sectors, its technical developers and its users.
- 3. Developing country issues are central to the challenge of Internet governance, not marginal, and a forum like the IGF is needed to ensure issues such as access, technological innovation, open standards, security and diversity remain squarely on the agenda. To date, the IGF has successfully prevented these issues from being lost in debates over the management of the domain name system, but this is hardly sufficient insurance going forward. In addition to the analyses done by select IGF participants, development assistance agencies should pay careful attention to Internet governance and provide assistance in policy analysis to countries with limited capacity to influence the management of the Internet as a shared global infrastructure and knowledge base.
- 4. Unlike traditional UN bodies, the IGF relies on a multi-stakeholder, bottom-up model. It has received considerable recognition for its success as a constructive policy dialogue from governments, businesses, technical experts, civil society leaders and academics. As such, the IGF experiment has the potential to inform the broader domain of the governance of technology. Other global governance processes, in particular those addressing sustainable development, could also benefit from its lessons.

Table of Contents

Abstract	ii
Key Messages	
1. Introduction	1
2. ISOC, ICANN and Internet Governance	3
2.1 ISOC: Demonstrating the relationship between standard setting and governance	3
2.2 ICANN: The global implications of the seemingly narrow function of addressing	4
2.3 The sustainable development implications of changes in ICANN	5
3. IGF	8
4. Review of the IGF	10
5. Value of the IGF "Experiment"	11
6. Improving the IGF in a Second Mandate	14
7. Relevance of Internet governance for Developing Countries	16
8. Lessons for the Governance of Technology	19
9. Lessons for other Global Governance Forums	21
10. Conclusion	22
Appendix A: What to expect at IGF 09, Sharm el-Sheikh, Egypt	23
Annex B: Brief History of the IGF	24
The mandate of the IGF	25
The IGF lifecycle	25

1. Introduction

The Internet—its infrastructure, its related technologies, its content and its communities—is now widely recognized as an important factor for economic growth in developing countries.¹ Connections with other aspects of sustainable development, including its significant potential as a platform for social interaction, and its technologies as tools for climate change management, are increasingly gaining in prominence. Internet technology is unique in terms of the global institutions and governance structures that play a significant role in its evolution. Each of three key structures— ISOC (including the Internet governance bodies it provides an administrative home to), ICANN, and the IGF are based on bottom-up decision making and rely on participation by government, business, technical, academic and civil society stakeholders.² As the global Internet governance system has evolved, many developing countries have lacked the capacity to participate or have been marginalized in the engagement processes, leaving a number of critical developing country local issues unaddressed at the international level. In the case of the IGF there has also been a notable absence of "user" engagement, both in terms of business users as well the general public. Over the last six years, the International Institute for Sustainable Development (IISD) has been working to clarify Internet policy and governance choices and articulate clear policy recommendations to guide the future of this critical technical and social infrastructure.

The fourth annual meeting of the IGF, which will be held November 15-18, 2009 in Sharm el-Sheikh, Egypt, is widely viewed as a crossroads for this policy dialogue (See Appendix A, What to expect at IGF 09). The meeting marks the start of a review process of the five year mandate of the Forum, which began in 2006 and ends in 2010. The outcome of the review will directly impact the future of the IGF process and presents an opportunity for improvement. While recognizing the IGF as a space that needs to evolve further to demonstrate its relevance to the broader global community, IISD is nonetheless firmly supportive of this pioneering initiative and believes it should continue. At its core, the IGF has succeeded in creating a beneficial "ceasefire" in discussions over U.S. oversight of ICANN. These debates took centre stage at the World Summit on the Information Society (WSIS), stalling dialogue around other policy questions that profoundly affect developing countries and global sustainability (See Appendix B, a Brief history of the IGF). Over the past four years, the IGF has provided a space for expanded dialogue about the broader implications of the governance of Internet technology, particularly for developing countries. For example, topics highly relevant to development such as infrastructure, security, content and local knowledge, and open access, have been a mainstay of IGF agendas to date. Effective exploitation of the potential of this

¹ A recent World Bank cross-country growth analysis looking at the impact of broadband and other ICTs on growth in 120 countries between 1980 and 2006 showed that an extra ten percentage points of broadband penetration by 2006 accounted for a 1.38 percentage increase in per capita GDP growth in developing economies (see http://go.worldbank.org/M84QRX7P80).

² It is important to note that there are also regional and national level institutions outside the intended scope of this paper, such as regional Internet registries (RIRs) and National Internet Registries (NIRs), that are also critical to the governance of the Internet.

Forum to facilitate the sharing of policies and best practices to promote locally appropriate Internet innovation and access is still in its early stages. If the capacity of developing countries and "users" in general to participate in the IGF process can be enhanced in a second mandate, its relevance to the governance of Internet technology (that will meet both the local and global needs of developing countries) could be significant.

But there are broader implications for the IGF experiment. Explorations of the governance of technology for sustainable development are still in the early stages: Calestous Juma, former Executive Secretary of the United Nations Convention on Biological Diversity and his Harvard colleague, Jayashree Watal, have advised the United Nations Development Programme (UNDP) that "failure to outfit technology to the needs of the poor countries is largely a result of the current inadequacies in the global governance system to guide the process of technological change." It should be noted that Juma and Watal look through the lens of the traditional, negotiated, intergovernmental processes and bilateral/multilateral assistance programs to find solutions, reserving judgment even on the experience of public/private sector partnerships in the development and deployment of technology. Studies of technical assistance projects have led to calls for standard operating procedures for transparency and public consultation, but these studies do not suggest that the process of technological innovation and implementation in and of itself requires greater multistakeholder understanding and collaboration. Others, however, recognize that "technology governance is an approach and a set of policies undertaken by the public and private sectors and society actors... to develop a knowledge base, social cohesion and competitiveness" [emphasis added].⁵ It is in this domain of the governance of technology that the IGF may have much to contribute, beyond supporting the governance of the Internet itself. Indeed, as a governance model, the IGF is also "an important innovation that may prove applicable in other areas of global governance, possibly including [the governance of] sustainable development." With this broader context in mind, a closer look at the current mechanisms for decision making around the development and deployment of Internet technology follows.

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³ Juma, C. and Watal, J. Global Governance and Technology. Centre for International Development at Harvard University, for UNDP: 2000. http://hdr.undp.org/en/reports/global/hdr2001/papers/juma-1.pdf

⁴ See, for example, Andrew Barry, Social Human Rights Impacts and the Governance of Technology [on the Baku-Tbilisi-Ceyhan (BTC) pipeline and the Ilusu dam projects]: http://www.sci-soc.net/NR/rdonlyres/B1BF26E4-F685-

⁴⁵⁶E-914C-642FAA83B56F/775/SocialandHumanRightsImpacts.pdf

⁵Tallinn University of Technology http://tg.deca.ee/

⁶ Kurbalija, Jovan and Don MacLean. Internet Governance. Discussion Paper. IISD, 2007. http://www.iisd.org/pdf/2007/igsd_internet_gov.pdf

2. ISOC, ICANN and Internet Governance

Besides the IGF, two other major institutions—ISOC and ICANN—are integral to Internet governance.⁷ In considering the importance of the IGF, its relationship to the roles of these other key bodies is warranted.

2.1 ISOC: Demonstrating the relationship between standard setting and governance

The ISOC was founded in 1992 as an international, non-profit organization to provide leadership in Internet related standards, education and policy. With more than 28,000 individual members in over 80 chapters around the world, it is considered the predominant global voice of the Internet technical community. ISOC provides an administrative home to several important Internet standards settings bodies—the Internet Engineering Task Force (IETF), the Internet Engineering Steering Group (IESG), the Internet Architecture Board (IAB), the Internet Research Task Force (IRTF) and the Internet Research Steering Group (IRSG). The IETF develops and promotes Internet standards, in cooperation with other standards bodies such as the World Wide Web Consortium (W3C) and International Organization for Standardization (ISO/ International Electrotechnical Commission (IEC). The other ISOC bodies mentioned perform oversight and research promotion functions.

The standard setting processes followed by these bodies make critical contributions to Internet technology governance because they operate in a manner that directly reflects the Internet model—open, transparent processes and consensus-based decision making.¹⁰ The approach taken by the IETF has been characterized as a third political system:¹¹

The essence of the third political system: Anyone—no matter their social or cultural background—can take a leadership position within and make a contribution to the IETF system.¹²

⁷ The International Telecommunications Union may also have a growing role to play, with particular regard to the convergence of issues around wireless telecommunications and mobile Internet access. The authors have reserved an exploration of the ITU's role as an issue requiring further research and consultation.

⁸ W3C and ISO/ IEC Joint Technical Committee.

⁹ The IETF functions as a large number of working and discussion groups with subject areas overseen by one or two area directors (AD). These ADs along with the IETF Chair form the overarching Internet Engineering Steering Group (IESG). The IETF is overseen by the IAB, a committee charged by ISOC with oversight of the technical and engineering development of the Internet. The IRTF is a sister group to the IETF and it promotes forward-looking research important to the evolution of the Internet. The IRTF is managed by the IRSG in a similar manner similar to IESG management of the IETF.

¹⁰ ISOC – ISOC's Standards Activities, http://www.isoc.org/standards/.

¹¹ Carlsson, Tomas. The Unique Political Soul of the IETF, http://www.isoc.org/tools/blogs/ietfjournal/?p=173. 12 *ibid*.

The success of this approach of treating stakeholder status as irrelevant to participants' engagement for promoting innovation is evidenced by the undeniable role the open standards established by the IETF have played in the rapid growth of the Internet. The implications of this success have potential ramifications beyond the governance of Internet technology.

"If one considers the bigger picture, one may find that openness in governance, collaboration across interest groups and responsible stewardship of the Internet will play a greater role in achieving global sustainable development than anyone could have predicted mere decades ago." ¹³

As a policy forum, the IGF has played an important mediation and translation role between the Internet technical community (IETF/ISOC) and those concerned with the implications of their standards and management decisions for broader public policy, in particular for developing countries.

2.2 ICANN: The global implications of the seemingly narrow function of addressing

Created in 1998, ICANN is responsible for two main functions:

- 1. It is entrusted with managing the assignment of domain names and IP addresses. This technical work is the only point of centralization of the global "network of networks."
- 2. The organization's purpose is also to:
 - a) preserve the operational stability and security of the Internet;
 - b) promote competition;
 - c) achieve broad representation of global Internet communities in its decisions; and
 - d) develop policies appropriate to its mission through bottom-up, consensus-based processes.

ICANN's connection to the U.S. government has always been a prominent topic in Internet governance discussions. Prior to the creation of ICANN, centralized coordination of the Internet's domain name and address assignments had been performed by two U.S. government contractors. During public proceedings in 1997 – 1998 that led to the creation of ICANN, the U.S. Department of Commerce invited international participation. However, when ICANN was created these contractual relations were retained such that the U.S. government maintained unilateral oversight of ICANN.14 Some countries, especially China and Brazil, have called for immediate internationalization of ICANN, citing cultural dominance and security concerns, implying that

¹³ Andjelkovic, Maja *et al* (2008), Critical Internet Uncertainties: How will governance, evolution and growth of the Internet affect sustainable development? Retrieved July 2009 from: http://www.iisd.org/pdf/2008/critical_internet.pdf. 14 Mueller, et al (2007), The Internet and global governance: principles and norms for a new regime, Global Governance. http://goliath.ecnext.com/coms2/gi_0199-7024241/The-Internet-and-global-governance.html

control of ICANN should be delinked from the U.S. They believe the institution should be reformed as an international organization accountable to the entire international community. Such calls are viewed by many developing countries as being important for the implementation of globally-applicable principles on public policy issues associated with the coordination and management of critical Internet resources that would correct many developed/developing country imbalances of the past. Many others, however, recognize the historic nature of the U.S. link (the Internet was conceived as a project of the U.S. government), perceive a record of competence in ICANN's operations to date, the relatively benign oversight by the U.S. government to date, and understand the importance of organizational consistency for the stability and security of the Internet. Yet others fear that some calls for the "internationalization" of ICANN are disingenuous, aiming not necessarily to increase ICANN's accountability and legitimacy, but to allow for greater influence by other economically powerful states or even monopolistic telecommunications companies.

In general, the Canadian government, as well as IISD, has taken the view that ICANN has functioned relatively well over the past decade, successfully preserving the operational stability and security of the Internet, promoting competition and developing in the process a multi-stakeholder model that involves representation of global Internet communities in its decisions. At the same time, with the Internet rapidly expanding, ICANN must continue to evolve. To this end, the European Union and other governments, members of civil society groups and the "technical community" have made several constructive proposals15. While a temporary compromise seems to have been reached, many tensions remain in the international community about the future of ICANN and Internet management more generally. Recently, debate has erupted once again regarding the internationalization of ICANN with the current three years Joint Project Agreement (JPA) between the U.S. Dept. of Commerce (DoC) and ICANN set to expire at the end of September 2009. Congress has proposed to fill this void with a permanent instrument of ICANN oversight with the DoC as a co-signatory.16 The understandable international response to such news significantly challenges the "ceasefire" the IGF has created.

2.3 The sustainable development implications of changes in ICANN

With cyber warfare on the rise, important climate change negotiations on the horizon, and the world economy in a startling downturn, consideration of the future of the Internet—an infrastructure inseparable from these challenges—is more important than ever. There are some signs that ICANN has recognized the need to approach the wider impacts of its decision-making more carefully than in the past. One such sign is the recent choice of Rod Beckstrom (former Director of the U.S. Department of Homeland Security's National Cyber Security Center, promoter of Open Source,

¹⁵ Among them is the successful process for creating the new Non-Commercial Users Group, which provides a platform for civil society interests in ICANN decision-making.

¹⁶ It's Congress vs_ ICANN in the battle for Internet authority Tech Policy & Law News – Betanews, http://www.betanews.com/article/Its-Congress-vs-ICANN-in-the-battle-for-Internet-authority/1249592399

entrepreneur and author) as ICANN's new President and Chief Executive Officer (CEO). Beckstrom's appointment has been praised by private sector executives (including the CEOs of Google and Motorola), "Fathers" of the Internet (for example. Vint Cerf) and civil society groups like the Electronic Privacy Information Center. With experience as a trustee of the Environmental Defense Fund, Beckstrom also brings deep understanding of environmental issues and an ability to connect sustainability to Internet governance.

In its February 2008 statement, the Government of Canada noted that ICANN has also:

"...made good progress in improving transparency. Minutes of board meetings are now published; the web site has improved; and issue papers are being developed and issued to enable more informed public discussion. ...Global, multi-stakeholder participation in ICANN policy development has been a feature of the organization from the start. ICANN has made good progress in dealing with the many challenges inherent in such broad-based, global participation." ¹⁷

However, as Canada and IISD have recognized in the past, accountability to the various constituencies and stakeholder groups that make up ICANN remains a challenge.

Internationalization of its functions has been slow, resulting in China creating its own Chinese sub-internet in 2006, adjacent to the global one run by ICANN.¹⁸ As this new Chinese domain system has become populated and full of content, the job of filtering the international Internet has likely become easier for the Chinese government. Because the vast majority of Internet service providers (ISPs) outside of China use the ICANN-controlled network of root servers, these new Chinese domains are not accessible

[The new Chinese domain system] has not resulted in a complete bifurcation of the Internet, but it is a first—and troubling— indication of that potential. At the very least, it is an affront to the objective of seamless international Internet connectivity.

without end user or ISP configuration changes. This has not resulted in a complete bifurcation of the Internet, but it is a first—and troubling—indication of that potential. At the very least, it is an affront to the objective of seamless international Internet connectivity.

Most IGF participants, including ICANN management, tend to agree that an independent, internationalized ICANN is a desirable outcome of its evolution. However, as the Canadian government writes, what is necessary is "...a clearer vision of what ICANN will look like, how it will work, how it will be accountable and how it will continue to pursue its governance objectives in the absence of the current form of U.S. government oversight. A plan must be developed on how to get

¹⁷ http://www.ic.gc.ca/eic/site/smt-gst.nsf/eng/sf08984.html.

¹⁸ http://www.circleid.com/posts/chinas_new_domain_names_lost_in_translation/.

there from here, with appropriate targets and benchmarks." ¹⁹ IISD's view is that an internationalized ICANN must be inclusive of the South, given not only the economic growth potential for developing countries in becoming connected, but also the hemisphere's challenges for social cohesion, promotion of local knowledge and culture, and the convergence of Internet technologies with energy and environmental management systems.

"Business sees no benefit to the stalemates of entrenched positions and wordsmithing on very narrow issues that would occur if the IGF were focused on time-consuming negotiations of a text. All stakeholders must continue to work together to ensure that not only the connected, but those not connected, benefit from the information society." -Reilly, Senior Director at Cisco Systems, representing the International Chamber of Commerce/BASIS

[http://www.intgovforum.org/c ms/2008/press/IGF3Highlights6 Dec.pdf]

¹⁹ http://www.ntia.doc.gov/frnotices/2008/ICANN_transcripts_080228.pdf.

3. IGF

When discussions over ICANN's future threatened to break down negotiations in the final days of the World Summit on the Information Society in 2005, the IGF was created with a compromise mandate intended to act as a safety valve.²⁰ In the Tunis Agenda, the IGF was defined as a discussion space with no decision making authority and an explicit commitment to include all stakeholder views.²¹ The secretariat operates with minimal funding and personnel capacity, relying on a group of volunteer experts to assist with organization of annual meetings, which anyone with an interest can attend. Since its first meeting in 2006, the IGF has grown beyond "insider" debates over the governance of technical functions entrusted to ICANN into an innovative international mechanism and an unusually flexible space for also considering equally vital questions surrounding open standards, universal access, security, diversity and, most recently, the explicit linkages with sustainable development.

However, while the IGF is evolving, the original issues around the management of critical Internet resources (addressing) remain an issue for a few key governments. At the most recent May 2009 IGF consultation, China stated unequivocally that it does not agree with extending the mission of the IGF beyond its current five-year mandate²². China acknowledged the IGF's contribution so far to establishing dialogue and exchanging points of view, but stated that this is not enough to solve the problem of the Internet: monopoly control by the U.S. over critical Internet resources. China also argued that many developing countries did not have the resources or capacity to participate effectively in the IGF dialogue and that, as a result, their points of view were not sufficiently reflected in IGF discussions. China's proposal is to wind down the IGF and launch into an intergovernmental discussion.²³ This does not mean that China does not believe that governance of the Internet is unwarranted or impossible. In fact, China's position suggests that governance is critically important, but requires a different process that the IGF (as currently constituted) does not deliver.

China has stated unequivocally that it does not agree with extending the mission of the IGF beyond its current five-year mandate. While China has raised some valid concerns regarding challenges developing countries have in participating in the IGF, abandoning the process in favour of intergovernmental discussions is a step away from the solution for

several reasons. First, the challenge for the South exists whether the process is an open multistakeholder process or a tightly controlled intergovernmental process. Effective participation

²⁰ For a more detailed account, see Annex B: Brief History of The Internet Governance Forum..

²¹ See Tunis Agenda, paragraph 72: http://www.intgovforum.org/cms/index.php/aboutigf.

²² Saudi Arabia, at the time of writing also supports this position..

²³ http://www.intgovforum.org/cms/index.php/component/content/article/71-transcripts-/410-transcript-of-the-13-may-open-consultations-.

depends on technical and policy capacity to understand and inform the debate, an understanding of the mechanics of the process, familiarity and trust with others engaged in the process, as well as financial resources to travel to key meetings. Lack of capacity on these points will not be resolved simply by setting up an intergovernmental negotiation in place of the IGF. It might be suggested that the open dialogue nature of the IGF is much better ground for developing country governments to build their capacity on critical issues without having to enter a formal negotiating arena with a position already formulated. Further, the ability of non-governmental experts from the South to contribute to relevant policy dialogues at the IGF gives an additional opportunity for developing countries to question, debate and influence specific decisions.

Second, across ICANN, ISOC and the IGF, there is growing understanding that management of the Internet must be a shared responsibility involving: the private sector, which has invested in much of the infrastructure; the technical community, which has provided both innovation and stability; civil society and the users at large who depend on it for many aspects of their daily work and lives; and governments that determine policies and incentives for improving access, security and content based on the needs and interests of their citizens. Moving to an intergovernmental process in effect disenfranchises the vast majority of stakeholders directly involved in developing and deploying the Internet, especially those who are based in the South.

4. Review of the IGF

The Secretary-General must make a recommendation to member states on the continuation of the forum before the General Assembly meeting in December 2010. ²⁴, ²⁵ The WSIS Tunis Agenda requested that the UN Secretary-General make this recommendation in formal consultation with IGF participants. This has been interpreted by the IGF Secretariat to mean that this requirement can only be fulfilled at the 2009 IGF meeting in Sharm el-Sheikh, Egypt. Drawing on dialogue with IGF participants at the February and May 2009 IGF consultations, as well as with the IGF Multistakeholder Advisory Group (MAG)²⁶, the IGF Secretariat has decided to assist the Secretary-General with his decision by inviting IGF participants to complete an online questionnaire "...on the desirability of the continuation of the Forum." Comments submitted are to be reflected in a synthesis paper as an input document for the Sharm el-Sheikh meeting. The morning of the last day of the IGF 09 Sharm el-Sheikh meeting has been reserved for the Secretary-General's "formal consultations with Forum participants."

Throughout the consultation period, there has been debate regarding whether such an internally driven review, versus an external evaluation, would be appropriately objective. The Chair of the IGF Advisory Group summarized the apparent consensus view saying that "...self stepping outside the self, if you like, is the best evaluator that you can get because ...only the participants really know what the issues and the problems are."²⁸

²⁴ http://www.intgovforum.org/cms/hyderabad_prog/TSAWF.html.

²⁵ This recommendation needs to pass first to the UN Commission on Science and Technology for Development sometime May 2010, and then the Economic and Social Council of the United Nations (UN) sometime in July 2010, in order to prepare the General Assembly to take a decision.

²⁶ http://en.wikipedia.org/wiki/Internet_Governance_Forum#Multistakeholder_Advisory_Group_-_MAG.

²⁷ http://www.intgovforum.org/cms/index.php/review-process.

²⁸ http://www.intgovforum.org/cms/index.php/component/content/article/80-23-24-feb-2009-open-consultations/384-open-consultations-24-feb-transcript.

5. Value of the IGF "Experiment"

The IGF has grown into an innovative international mechanism and an unusually flexible space for considering crucial policy questions surrounding open standards, universal access, security, diversity and, most recently, the explicit linkages with sustainable development. IISD believes that dissolving the IGF, or reducing its operational capacity in any way, could exacerbate existing tensions and weaken the ability of southern stakeholders to help guide the future of the Internet. The IGF has an important role to play in identifying and translating policy concerns, in particular those that affect developing countries, for the more technical communities of ICANN and ISOC. Without a strong multi-stakeholder forum to develop common understanding and policy coherence across sectors and countries, there will be significant challenges to the development and deployment of the Internet in the future, threatening the support that the infrastructure, its content and communities can bring to solving global challenges.

The IGF has created a unique space for governments, interest groups and individuals to work together in a much more bottom-up and collaborative way than ever before. At the opening of the IGF Rio in 2007, UN Undersecretary-General Sha Zhukang characterized the IGF as a new model of international cooperation.

"The Internet Governance Forum is not a traditional United Nations meeting. It is a new model of international cooperation," he said. "You meet here as equals, not to make decisions or to negotiate, but to discuss, exchange information, and share good practices and lessons." ²⁹

Many IGF participants have noted that the different stakeholders represented at the IGF have been slowly lowering their guard with each successive meeting, contributing to increasingly constructive dialogue.³⁰ In explaining its success, IGF participants frequently point to the "Internet model" and its pillars:

- shared ownership of the infrastructure;
- collaborative engagement;
- development based on open standards and knowledge, rather than formal membership;
- key principles that entrust most of the power and risks to individual users; and

"The IGF, irrespective of its direct impact on the policy making process, is changing the way governments perceive civil society involvement." – Sivasubramanian Muthusamy, CEO, Turiya and President, ISOC India – Chennai

²⁹ http://www.intgovforum.org/cms/Rio_Meeting/IGF2-opening-12NOV07.txt.

³⁰ Mr. da Rocha Vianna noted, "The message from Rio was that the world was very much interested in continuing to discuss the issue, and the Forum meeting had been 'a very important step' in an ongoing process. The range of issues had expanded since the first meeting, and discussion had taken place 'in a very good atmosphere,' without moments of confrontation." http://www.intgovforum.org/mediaup/15%20Nov%20Higlights.doc.

• freely accessible, public, multi-stakeholder processes for policy development³¹.

Together, these "pillars" result in collaboration and processes that are local, bottom-up, and accessible to individuals around the world, whether they are from research, business, civil society, academia or governments.³²

It is notable that the IGF has received surprisingly high marks, not solely from Internet enthusiasts and technical experts, but from a diverse set of participants. Over the past three years, the IGF has helped initiate, advance and export into the mainstream discussions around (among others):

- linkages between the Internet and climate change;
- the safety of children online;
- trade offs in privacy and security;
- economic value of broadband;
- private-sector leadership and role in the expansion of the Internet;
- impact of Internet access on communities;
- policy questions surrounding media convergence;
- capacity of developing countries to participate in Internet governance; and
- technical sustainability of the network.

The IGF has also influenced other policy spaces based on relationships built through the Forum. The OECD Committee on Information, Computer and Communications Policy has included organizations and individuals from civil society in its work, marking unprecedented progress in broadening representation in committee procedure. Finally, the IGF has made strides in allowing like-minded parties to work together to create "soft" norms or agreements between each other to take action. The work of the Dynamic Coalition on Privacy is one example of such work.³³

If the recent report, "Internet Governance Forum – The First Two Years," produced by the International Telecommunication Union (ITU) and the United Nations Department of Economic and Social Affairs is any indication, the review of the IGF can be expected to uncover practical suggestions for improving a constructive experiment in global, multi-stakeholder governance of an important set of issues. The contributions (submitted by individuals from business, government, civil society and technical communities) describe the Forum as "tangible," having created "shared trust and confidence," containing "less posturing and position-taking than ...other international

³¹ Preserving the Internet Model: Multi-Stakeholder Processes in Practice - Lynn St. Amour, http://www.intgovforum.org/cms/hydera/IGFBook_the_first_two_years.pdf.

³² *Ibid*.

³³ http://www.intgovforum.org/dynamic_coalitions.php?listy=2.

³⁴ http://www.intgovforum.org/cms/hydera/IGFBook_the_first_two_years.pdf.

forums" and "the most significant and innovative public policy space to emerge in the new millennium."

These positive sentiments are a result of two factors. The first is the IGF Secretariat's invariably meticulous, sensitive and tactful approach to all aspects of the Forum, from summarizing written contributions to resolving last-minute workshop scheduling conflicts. The second factor is the growing realization on the part of Forum participants that stakes are indeed very high and that the IGF plays an important part in ensuring the development of a stable, open and secure Internet, critical for the world's sustainable future.

Enhancing the participation of developing countries will be critical to the future success of the IGF's capacity to play this role. To date, the Canadian government has demonstrated a strong commitment to the IGF, recognizing its importance to the stability of the Internet, and in particular the importance of developing country participation to fulfilling its mandate. Through Industry Canada's contributions to the development sector of the ITU (ITU-D), Canada has been sponsoring the participation of developing country delegates at the IGF, placing Canada among the most important financial contributors to the Forum. ³⁵

^{35 &}quot;Capacity Development: How the IGF empowered people from developing countries," DIPLO Foundation, http://issuu.com/minam/docs/capacity_development.

6. Improving the IGF in a Second Mandate

As mentioned in the introduction, IISD is broadly supportive of the IGF and has submitted comments to the secretariat arguing that the IGF should renew its mandate for a second five-year term.³⁶ However, these comments also expressed reservations over the decision of the MAG and the Secretariat to approach review of the IGF as an internal, self assessment by stakeholders. IISD notes that while it may make theoretical sense, in practice, such an approach is not sufficiently inclusive. IISD believes that the IGF will only have serious credibility outside its core community if it reaches beyond it to engage with other public policy forums and actors. Against the backdrop of increased participation and openness over its short history, IGF's choice for a self-referential review process is an unfortunate step backward.

IISD remains hopeful that this chosen review method will accurately present the need for the UN General Assembly to renew the IGF's mandate, along with articulating reforms that should accompany such a renewal. There are several the IGF could improve its working methods, functioning and processes. Specifically, IISD has noted, inter alia, that:³⁷

"We acknowledge the financial contribution of

the Government of Canada, which enabled these

Fellows from developing countries to participate

in the Internet Governance Forum (IGF) in

Hyderabad, India. Canada's contribution also

supported the Fellows in their capacity-building

work, assisting them to overcome the challenges

facing developing countries as they engage in Internet governance issues." - Diplo Foundation

Report on Internet Governance Capacity Building

- The IGF should evolve beyond foundations set in the context of the WSIS – it should take an adaptive approach to its work
- based on its own experience of what is relevant to all those directly involved with, and affected by, Internet policy, technology and deployment.
- The IGF structure needs more analytic capacity to maintain and strengthen its credibility and relevance on the global stage.
- The Secretariat needs to be better resourced if it is to properly serve its function.
- The transparency and accountability of MAG need to be increased, while allowing continued respect of the confidentiality of MAG discussions.
- expertise and designed to develop common understanding in areas of importance.

The IGF should place greater focus on exploring emerging issues, debating contentious matters and catalyzing action in areas where consensus exists. The IGF should establish working groups on key issues, made up of people with different experiences and genuine

³⁶ Please see "Review of the mandate of the Internet Governance Forum: A response from the International Institute for Sustainable Development," available at: http://www.iisd.org/infosoc/. 37 Ibid.

- The IGF should extend its reach into the public policy domains with which Internet policy issues intersect. IGF will only become useful and relevant to the wider policy communities (for example, the development community, the rights community and the environment community) if its debates are rooted in dialogue between the Internet and other communities, and if the Internet community recognizes its lack of knowledge and expertise in these wider areas.
- It should also extend its reach to other international policy forums. The IGF currently operates somewhat in isolation from other global issues, including:
 - o the Millennium Development Goals, which are at the heart of the UN system;
 - o climate change as the most significant environmental challenge; and
 - o the breakdown of financial institutions, triggering the current economic crisis.

While these issues may be touched on within the IGF, the perspectives and knowledge gained are not proactively communicated with other forums.

• The IGF should mainstream sustainable development and capacity-building in its work.

7. Relevance of Internet governance for Developing Countries

Making Internet technology work for developing countries requires attention to both local and global needs. Locally, measures can be adopted by developing countries themselves to promote Internet innovation as a key element in economic development policy. The connection between the Internet and innovation in developing countries warrants ongoing attention. Information and Communication Technologies for Development (or ICT4D) and economic development research point to the role of Internet connectivity in providing access to knowledge and markets, and is an invaluable tool for supporting innovation and growth in many sectors in the South. But Internet technologies and applications themselves can also be subject to innovation. It is in the domain of new Internet technology that developing countries will benefit from local policies and mechanisms (market liberalization, research and development investments and training), allowing their locally based "internet sector" to contribute as full partners in the development and deployment of the Internet.

So far the IGF has brought significant focus to how policies such as liberalization in critical segments of the telecommunication market, promotion of open technology, freedom of speech, and multilingualism can drive more widespread local use and development of the Internet. Through participation in IGF sessions on such topics, stakeholders from developing countries have the opportunity to take lessons learned and apply them to addressing their local needs. Several national and regional versions of the Forum have emerged,³⁸ based on the success of the IGF model and hold potential for developing countries to further focus on local concerns.

At the global level, there are significant opportunities to examine whether and how current practices for Internet management contribute to imbalances between developed and developing countries. The openness of the IGF process provides an unprecedented vehicle for bringing these issues to the table. Within its sessions, participants openly discuss measures that could be adopted by industrialized countries to help remove barriers impeding developing countries from tapping into the social and economic development and environmental management potential of the Internet. Such issues are numerous and include the following:

• Internet Exchange Points (IXPs): The limited number of IXPs in developing countries needs to be resolved. "Poor connectivity between ISPs in developing countries often results in the routing of local traffic over expensive international links simply to reach destinations within the country of origin." The ISOC is working in part through the IGF to explore how Internet traffic exchange is affected in less developed Internet markets. Lack of in-country

³⁸ The East Africa IGF, the Latin America IGF preparatory meetings, the Caribbean IGF, the Spanish IGF, the Italian IGF, the UK IGF and the European Dialogue on Internet Governance.

http://www.intgovforum.org/cms/index.php/igf-regional

³⁹ http://www.ministerialconference.is/media/images/igen.pdf.

IXPs has particular implications for the sharing of local knowledge: without an IXP the cost of accessing local content from users across a given country becomes prohibitively expensive, especially for small, micro and medium-sized enterprises, communities and civil society. Encouraging the growth and use of local content becomes more difficult. IXPs can contribute to local environment and development outcomes by making local resources and local communications faster and cheaper for local users, and by encouraging continued diversity and competition in the access market.

- The impact of transitioning from Internet Protocol version 4 (IPv4) to IPv6⁴⁰: Costs of migration to IPv6, in particular for developing countries, are difficult to estimate, but would include capacity building, new equipment (routers, among others) and new protocol configurations. If a pre-existing IPv4 ISP in a developing country is unwilling or lacks the financial capacity to invest in IPv6 then marginalization will increase over time as IPv6 use spreads, leaving many developing country ISPs on an IPv4 side road. For those countries that do make the investment, the risk is that IPv6 may turn out to be a temporary solution itself requiring additional financial investments in the future. At the international level, "...governments could choose to subsidize the cost of inter-exchange points that would encourage interconnection using IPv6 address space so as to reach as quickly as possible a fully connected IPv6 system in parallel with the IPv4 system."
- Connectivity costs (see text box "The Cost of Connections between Developing and Developed Countries"): Connectivity costs of ISPs are allocated according to bilateral contracts, which can be classified as either peering or transit agreements. Countries which use the Internet less have to sign transit agreements because there is no incentive for the international providers to enter a shared cost peering agreement with that country. The result is that developing countries have much higher costs because they must pay the main part of both outbound and inbound traffic. With respect to the inbound traffic, this means that developing countries must pay for spam, which can be as much as 90 per cent of the traffic entering the country. Working at the international level to address spam will help, but favourable peering agreements warrant much greater attention.
- Internationalized Domain Names (IDNs⁴²): Multilingualism is a key concept to ensure cultural diversity and participation for all linguistic groups in cyberspace. The expression of developing country needs, in part through the IGF process, led to United Nations

⁴⁰ When a user types a domain name into the address bar of a browser, it is translated into a numeric address (for example, 192.0.2.235). Currently, most address translations follow IPv4. The number of available IPv4 addresses is being exhausted due to the enormous demand created by the growing number of people and devices connecting to the Internet. In response, IETF has designated IPv6 as the successor to version 4 for general use. The new version has a much larger address space and aims to improve flexibility in routing traffic. At this stage of development, however, sometimes IPv6 connectivity is a good deal slower than IPv4 or it doesn't work at all. Retrieved from: http://www.iisd.org/pdf/2008/critical_internet.pdf.

⁴¹ Vint Cerf, http://www.elon.edu/e-web/predictions/igf_rio_11_15_j3.xhtml.

⁴² Domain names with non-ASCII (American Standard Code for Information Interchange) characters (supporting Arabic, Chinese and other scripts).

Educational, Scientific and Cultural Organization , ITU and ICANN to commit themselves to co-operate in developing international standards for building a multilingual Internet, including IDNs in a joint workshop on "Multilingualism in Cyberspace" at the second IGF in Rio de Janeiro.⁴³

• Intellectual property rights: Institutional responses such as relaxation of intellectual property rights on key aspects of software technology could also result in major expansion in the acquisition of skills in the developing world

These are important issues, but there are many others. Developing countries would benefit greatly from having their interests respected when considering the mission and operations of Internet governance institutions, particularly in establishment of mechanisms for the participation of stakeholders and processes for formulating policy around the evolution of the Internet. Specifically, issues such as the support of multilingual domain names, the allocation of address resources, the global transition to new address standards such as IPv6, and many others, have significant access implications for new users developing countries. Without governance processes that place a priority on evolving the Internet infrastructure to serve a rapidly expanding global user community, it will be increasingly difficult to fulfill the aspirations of the

The Cost of Connections between **Developed and Developing Countries:** "When an end user in Kenya sends email to a correspondent in the USA, it is the Kenyan Internet service provider (ISP) who is bearing the cost of international connectivity from Kenya to the USA. Conversely, when an American end user sends e-mail to Kenya, it is still the Kenyan ISP who is bearing the cost of International connectivity, and ultimately Kenyan end user who bears the brunt by paying higher subscriptions." - The **Proposition:** Halfway **Background** paper on the reverse subsidy of G8 countries by African ISPs

billions yet to connect to the Internet and access locally relevant content, promote the visibility of their online businesses in the global electronic marketplace, monitor and manage their local environments and exchange information and knowledge with the rest of the world.

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⁴³ http://www.ministerialconference.is/media/images/igen.pdf.

8. Lessons for the Governance of Technology

Our growing dependence on a particular technology as the backbone of a global society seems unprecedented. The choices we make regarding how we govern Internet technology could have far reaching implications for economic, social and environmental sustainability. Almost all aspects of international trade and finance are dependent on the integrity and global connectedness of the Internet. Failure to address how technology choices could be limiting the access and use by emerging stakeholders could result in an eventual slowing of Internet adoption, and the final few billion users never joining the Internet community. Further, failure to resolve disputes over perceived inequities could lead some decision makers to choose the path of fragmenting the Internet as a last resort for addressing their local needs.

Does the past hold any lessons for the challenges we currently face? One could possibly look to technology governance issues that arose at the time that railways began to connect over national borders and the ensuing disputes over incompatible gauge standards and the implications for trade, or even the early days of the development of different standards for electrical grids. While useful in many aspects, such reflection inevitably highlights the unique success story of the global governance of Internet technology to date using the "Internet model," compared to most technology governance approaches of the past that were anchored in national interests.

A lesson of such a comparison is that benefits come when technology is governed by principles such as shared ownership and stake-in-technology infrastructure; collaborative engagement of stakeholders (those with a vested interest); and development based on open standards, principles and accessibility to processes. Continuing with this model in addressing the Internet governance challenges we currently face will likely be the key to successfully including the final billions of users in the global Internet. Applying this model to related domains, including, for example, biotechnology, nanotechnology, agriculture, health and energy may lead to advances in those domains that are appropriate to global needs and goals.

The emerging governance regime for climate change is one such domain. Geo-engineering⁴⁴ in particular is coming under scrutiny as an issue that requires a governance approach that goes beyond the traditional state centric negotiating models:

Flexibility... is of the essence in the construction of global geo-engineering governance. As one of the few people who have started looking at geo-engineering governance, [David Victor] recommends that norm-building is the best option for the near term, and that the process

⁴⁴ Geo-engineering is the concept of controlling the planet's climate, either by reflecting some of the sunlight away from the planet, or developing methods for removal and storage of CO2 (Egede-Nissen, B., Venema, H. Desperate Times, Desperate Measures (IISD, 2009 in press); and Burns, J. Artificial trees to cut climate. BBC News, August 27, 2009 http://news.bbc.co.uk/2/hi/science/nature/8223528.stm.

should be bottom-up rather than top-down... Soft methods and intelligent use of discursive power would therefore be more useful to the political and social constitution of geo-engineering.⁴⁵

Also within the domain of climate change are governance issues surrounding the transfer of technology from the north to developing countries. The concept of technology transfer as currently being negotiated by states needs to be reframed as "technology cooperation," to include the broader set of processes covering the multidirectional flows of know-how, experience and equipment among and within countries.⁴⁶

There is a significant opportunity here to apply lessons learned in the global governance of technology at the IGF to the challenge of climate change: specifically as a model for global multistakeholder dialogue on top-down and bottom-up approaches to decision making and norm setting surrounding the development and deployment of technologies; as well as for facilitating the global exchange of best practices, drawing on the knowledge and experiences and concerns of all stakeholders. In other words, the lessons of the "Internet model" may provide valuable ideas for governance of other technologies in support of sustainable development.

⁴⁵ Egede-Nissen, B., Venema, H. Desperate Times, Desperate Measures. IISD, 2009 (In press) p12. 46 ibid.

The IGF, though modest in its means, may be able to contribute to the search for new governance models. – Markus Kummer, http://www.intgovforum.org/cms/hydera/IGFBook_the_first_two_years.pdf

9. Lessons for other Global Governance Forums

Beyond the sphere of technology regulation, many other global forums, decisions and agendas are tightly controlled and progress on specific proposals is procedurally difficult; it often requires a significant majority or a consensus of governments. In the same way that the "Internet model" may provide lessons for governance of technology more generally, the IGF

experiment could also yield valuable insights for other global governance forums. Governments are increasingly recognizing that informed decision-making depends on the participation of non-governmental stakeholders, such as the private sector and civil society. However, attempts to involve non-governmental stakeholders in decision-making processes have revealed numerous challenges. The IGF experiment has made some significant progress demonstrating how multi-stakeholderism can work. For example, we have seen how discussion without diplomatic or legal consequences can promote respectful, direct and in-depth debate, and how voices of dissent can be heard without negative consequences, which disarms inflammatory reactions. Despite heated debates, particularly over critical internet resources, the IGF has seen sober second thoughts prevail as stakeholders collectively considered possible outcomes of different approaches. The open dialogue has allowed decision-makers the opportunity to instantly consult a diverse set of stakeholders on the implications of the decisions they are facing. A similar approach to the governance of other complex, multidimensional issues, such as mitigation of, and adaptation to, the effects of climate change could prove equally productive.

10. Conclusion

In general, the IGF experience has been a reflection of the multi-stakeholder, bottom-up model for dialogue and influence on decision-making. Three key institutions—IGF, ISOC and ICANN, with all their stakeholders—together present a pioneering approach to global governance of technology. This demonstrates significant innovation in the means by which both developers and users of technology make decisions collectively about priorities, guiding policies and implementation. One might go so far as to suggest that without the IGF, ISOC and ICANN would not have sufficient capacity to identify and respond to the impact of technical choices on broader social, economic and environmental objectives, in particular those of developing countries. The IGF provides the space to debate, enlighten and bridge technology and broader public policy issues.

Going forward, the Forum's success should be measured in three key areas:

- Better integration of developing country concerns into the Forum's work.
- Extension of its reach to intersect with other public policy domains, including the rights, development and environment communities; and into international policy forums, to contribute its knowledge toward global challenges such as the achievement of the Millennium Development Goals, responses to climate change and recovery from the current economic situation.
- Consideration of how Internet technology contributes to broader sustainability goals of developed and developing countries alike.

The IGF can only succeed if it retains its principles based on shared ownership, and if it continues to grow as a collaborative, multi-stakeholder, open and accessible process. In this way, it has the opportunity to demonstrate not only the importance of this governance approach for a stable Internet accessible to all, but also to provide valuable lessons for other processes for the governance of technology and society.

Appendix A: What to expect at IGF 09, Sharm el-Sheikh, Egypt

The title chosen for the fourth annual IGF meeting in Sharm el-Sheikh, Egypt is "Internet governance creating opportunities for all." The agenda proposed for the meeting is as follows:

- Managing critical Internet resources;
- Security, openness and privacy;
- Access and diversity;
- Internet governance in the light of WSIS principles;
- Emerging issues: Social Networks; and
- Taking stock and the way forward : on the desirability of the continuation of the Forum.

Many members of civil society, who are part of the MAG to the Internet Governance Secretariat, proposed the inclusion of human rights and principles in the information society as an overall theme. However, this proposal did not reach consensus. One significant change to the main sessions is the coverage for the first time of the topic "Security, Openness and Privacy." Some of the clusters identified for this session include:⁴⁷

- securing the network (for example, to fight spam):
 - o respect for privacy as a business advantage;
 - o identity theft, identity fraud, and information leakage;
- Web 2.0, social networks, cloud computing and privacy (for example, control of one's own personal data and data retention); and
- openness, including ensuring the open architecture of the Internet and net neutrality.

The last cluster of this session will be devoted to emerging issues, specifically exploring the theme centred on the impact of social networks, including one of the key privacy concerns associated with social networks—profiling and behavioural targeted advertising.

Workshop proposals for IGF 2009 are still under consideration by the IGF Secretariat. As with previous IGF meetings they have been organized under the themes Access, Critical Internet Resources, Diversity, Openness, Security, Capacity Building, and Development. The provisional list of workshop proposals can be found at the IGF website.⁴⁸

⁴⁷ Please see a draft of the IGF 2009 program paper at:

http://www.intgovforum.org/cms/2009/postings/ProgrammePaper.04.06.2009.rtf.

⁴⁸ See list of workshop proposals at:

http://www.intgovforum.org/cms/index.php/component/chronocontact/?chronoformname=WSProposals2009ListView.

Annex B: Brief History of the IGF

The first WSIS in Geneva 2003 proved to be fertile ground for escalating the Internet governance debate. At that time, there was a lack of consensus on the definition of Internet governance with different camps contesting the authority and participation of certain actors. Understandably, ICANN became a focal point in the WSIS Internet governance debate. In the lead up to Tunis 2005, the U.S. government made its position clear—it would retain oversight of the Internet's root servers, despite calls by some countries to turn ICANN's function over to an international body.⁴⁹

It became clear that WSIS delegates were not going to reach consensus on this, as well as many other contentious topics such as free expression, censorship, human rights, intellectual property rights, free software, funding for capacity building and infrastructure development in the poorest countries. There was, however, recognition that these topics of Internet governance were important. In a bid to save the WSIS process, the UN created WGIG with a mandate to define:

- a) Internet governance;
- b) public policy issues relevant to this area; and
- c) the respective roles and responsibilities of stakeholders.

As a UN initiative, the WGIG was precedent setting in that it acknowledged "...the development of the Internet had been driven in the past, and would continue to be driven in the future, by the research and academic communities, the private sector, and civil society..." and "...that these stakeholders deserved to be treated as full partners." The WGIG identified a vacuum within the context of existing structures and came to the conclusion that there would be merit in creating a space to address Internet-related public policy issues through dialogue among all stakeholders. The WGIG report also moved the debate about Internet governance beyond ICANN and concerns related to the management of core Internet resources to a much broader vision of the scope of Internet governance inclusive of many of the other issues debated in the WSIS process. The WGIG report proposed four models for "Global Public Policy and Oversight" of the Internet, three of which were highly controversial. Government negotiators predictably agreed to the soft path of having the UN set up an IGF.

⁴⁹ http://www.circleid.com/posts/us government to retain oversight of the internets root servers.

⁵⁰ http://www.iisd.org/pdf/2007/igsd internet gov.pdf.

⁵¹ http://www.itu.int/wsis/wgig/docs/wgig-report.pdf.

The mandate of the IGF

The mandate of the IGF is set out in Paragraph 72 of the WSIS Tunis Agenda⁵² and can be summarized as follows:

- discuss Internet related public policy issues, including issues relating to critical resources;
- promote exchange of information and best practices;
- identify emerging issues;
- identify issues that are crosscutting and multidimensional or are not addressed in a coordinated manner.
- asses "the embodiment of WSIS principles" in Internet governance processes;
- contribute to capacity-building for Internet governance in developing countries; and
- provide a platform for interaction between internet governance organizations and other institutions.

The IGF lifecycle

Along with stating the mandate of the IGF, the WSIS Tunis Agenda requested that within five years of its creation, the UN Secretary-General make a recommendation to the UN Membership on whether or not the Forum should be continued, after having carried out a formal consultation with Forum participants.⁵³ Taking into consideration the UN Secretary-General's recommendation, the UN General Assembly, in 2010, will decide if it should extend the IGF's initial five-year mandate.

⁵² http://www.intgovforum.org/mandate.htm.

⁵³ WSIS Tunis Agenda for the Information Society, http://www.itu.int/wsis/docs2/tunis/off/6rev1.html.