

**Internet governance:  
creating opportunities for all**

Fourth meeting of the Internet Governance Forum

*Sharm el-Sheikh*

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Background paper

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## Introduction

1. The present background paper is intended to provide information for discussion during the fourth meeting of the Internet Governance Forum (IGF). It gives an overview of the topics on the agenda and builds on the discussions at the first three IGF meetings and the papers that were submitted for discussion at those meetings. The transcripts of sessions, workshop reports, Dynamic Coalition statements and submissions can be found, in full, on the IGF website.<sup>1</sup> Those materials should be consulted by anyone seeking a more comprehensive picture, as the present background paper cannot do justice to the full breadth of the discussions and submissions.
2. The agenda for the meeting was announced by the United Nations Under-Secretary-General for Economic and Social Affairs in his invitation to all stakeholders. The agenda is as follows:
  - (a) Managing critical Internet resources;
  - (b) Security, openness and privacy;
  - (c) Access and diversity;
  - (d) Internet governance in the light of WSIS principles;
  - (e) Taking stock and the way forward: on the desirability of the continuation of the Forum;
  - (f) Emerging issues: impact of social networks.

### **I. Internet governance: creating opportunities for all**

3. The theme for the current meeting, “Internet governance: creating opportunities for all”, marks a progression when viewed against the themes of the previous IGF meetings, “Internet governance for development” (2006 and 2007) and “Internet for all” (2008). Those earlier themes have been linked to the cross-cutting priorities of development and capacity-building. They are derived from the World Summit on the Information Society (WSIS) and in one form or another have motivated all IGF discussions to date.
4. Since the inception of IGF, there has been a general understanding that it should have an overall development orientation that includes capacity-building as a cross-cutting priority. Discussions on capacity-building in development have centred on the importance of fostering the ability and knowledge of all stakeholders to participate in Internet governance processes.
5. Development in the context of Internet governance has meant more than providing access to the Internet to the billions of people currently unable to use it. It has meant providing access to such people in their own languages and with content relevant to diverse cultures. Development has also been discussed as critically important to persons with disabilities and those who are otherwise disadvantaged, such as minorities and elderly people, as a means of ensuring that the Internet provides services that improve their lives and help to make them more fulfilling. The Internet has been seen as a platform for greater dialogue aimed at encouraging tolerance, mutual cooperation and social cohesion. Among the important considerations frequently emphasized has been the importance of using universal design principles in designing future applications so that they are useable by people who have disabilities or are otherwise disadvantaged.
6. Participants at previous IGF meetings have observed that there is a link between sustainable development and Internet governance. Decisions by policymakers on how to expand infrastructure to reach the billions of underserved people have long-term implications for the environment, which in turn affect the sustainability of the infrastructure itself. Specific discussions have been held on green Information and Communication Technology (ICT), which juxtapose the environmental impact of the ICT industry with the contribution that the industry can make to reducing the environmental impact of other industries through, for example, monitoring, measuring and tackling climate change and enabling behavioural and economic changes aimed at reducing industrial carbon demand. Mention has been made during these discussions of the Tokyo Declaration, which contains recommendations for development, including the following:
  - (a) Reducing the environmental impact of ICT by cutting ICT electricity consumption and by combating spam, which uses significant server capacity;
  - (b) Reducing environmental impact by using ICT to measure and monitor compliance existing agreements and promoting new and improved business practices;
  - (c) Achieving the goal of mitigating the challenges of climate change by enabling the exchange of information, developing a road map for change, developing market-based approaches to reduce

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<sup>1</sup> <http://www.intgovforum.org/cms/index.php/contributions>

greenhouse gases and enabling early action.

7. With the current meeting approaching, global concerns came to the fore with regard to the economy and global environmental issues and energy problems. Many contributors said that the Internet and ICT should have a major role to play in solving those global challenges.

## **II. Managing critical Internet resources**

### **A. Overview**

8. The theme “critical Internet resources” was first introduced at the second IGF meeting, held in Rio de Janeiro, Brazil, in 2007. It was also dealt with at the third meeting in Hyderabad, India, in 2008. There is no universally recognized definition of the term “critical Internet resources”. It was introduced into the international debate by the Working Group on Internet Governance in 2005, whose report (paragraph 13 (a)) gave the following description of a policy area connected to critical Internet resources:

Issues relating to infrastructure and the management of critical Internet resources, including administration of the domain name system and Internet protocol addresses (IP addresses), administration of the root server system, technical standards, peering and interconnection, telecommunications infrastructure, including innovative and convergent technologies, as well as multilingualization.

9. The Tunis Agenda, in paragraph 58, refers to critical Internet resources as follows:

We recognize that Internet governance includes more than Internet naming and addressing. It also includes other significant public policy issues such as, inter alia, critical Internet resources, the security and safety of the Internet, and developmental aspects and issues pertaining to the use of the Internet.

10. The discussions at these meetings often referred to the Geneva Principles and the Tunis Agenda regarding Internet governance, in particular the notion that the “international management of the Internet should be multilateral, transparent and democratic, with the full involvement of Governments, the private sector, civil society and international organizations”.<sup>2</sup> This issue is also part of the agenda item dealt with in the present background paper under the heading “Internet governance in the light of the WSIS principles”.

11. The discussion of critical Internet resources has covered many issues and has extended to the cross-cutting theme of capacity-building and the other IGF themes of access and security, in addition to Internet routing and the basic need for electricity. Those issues have all been said to be critical to the Internet’s development in its continuing deployment and evolution. The primary focus, however, has remained on domain names and Internet Protocol (IP) addresses and the Internet Corporation for Assigned Names and Numbers (ICANN) as the organization responsible for their management.

12. Some have argued that ICANN should be placed under intergovernmental oversight, rather than under the oversight of a single Government. Others have pointed out that the Internet has evolved securely and flexibly and that it functions well under the current governance structure; they advised against any sudden introduction of an intergovernmental governance system.

13. Arguments made over the years have called for a fair distribution of resources, facilitating universal access and ensuring the sustained and secure functioning of the Internet with due allowance for multilingualism.

14. The discussions on critical Internet resources in IGF meetings have also covered, among other issues:

- (a) Management of root servers;
- (b) Standards;
- (c) Interconnection points;
- (d) Telecommunications infrastructures, including converging and innovative technologies;
- (e) Digital object identifiers;
- (f) ENUM (Electronic Numbering);
- (g) Radio spectrum, backbone and Internet service providers (ISPs);
- (h) Regional management activities such as Regional Internet Registries (RIRs);

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2 Geneva Declaration of Principles, para. 48 and Tunis Agenda, para. 29.

- (i) Transition to multilingualism.

## **B. Transition from IPv4 to IPv6**

15. The eventual exhaustion of unassigned IPv4 addresses has been a recurrent theme of IGF meetings. Projections were reported that, at the present rate of depletion, IPv4 address space could be exhausted by 2011. While it was made clear that that would not cause the Internet to fail, it was used to indicate the importance of the effort to bring the IPv6 network online and the need for full interoperability between the IPv4 and IPv6 networks. Some suggested adopting policies that would encourage IPv6 connectivity among all ISPs. Others expressed the view that there was no need to impose a deadline to forestall the inevitable, because the market was dictating IPv6 deployment. It was also noted that there was a great need for the private and public sectors and civil society to be involved in the process. It was a shared responsibility and one that required the promotion and enabling of a smooth transition from IPv4 dominance to IPv6 dominance.

16. It was felt that there was a need for public awareness and education, in addition to training. IPv6 needed to be highlighted as part of the national agendas of all countries. It was also said that it would be useful and helpful if, as part of the education process, case studies were made available and published, for example on the IGF website.

17. IPv6 was seen as a continuation of IPv4 with additional addresses. There was also, however, a discussion of the impact that the transition would have on technical processes. Because of incompatibilities between the two versions, every IP-based product would be affected; IPv6 equipment was on the market and vendors were supporting and migrating applications to IPv6. It was explained that the use of dual IPv4 and IPv6 protocol stacks and a focus on developed countries taking the initiative in promoting the use of IPv6 addresses was a response to the limited availability of IPv4 addresses.

18. Even though IPv6-ready products were available for deployment, operators had been slow to take up IPv6. That was attributed to the number of challenges that they were facing, such as there being no obvious commercial driver for network operators to move to IPv6 and there being expenses but no revenue associated with the migration to the new address format. There was also no initial customer demand and operators were believed to perceive that there was insufficient vendor support. Operators were, however, beginning to recognize that the time for migrating had come and were doing so incrementally. There would be a need to resolve hardware and software issues in their customer-premises equipment and customer equipment and there would be costs associated with migration, hardware and software and training, together with labour costs of converting.

19. In such an emergent environment, it was felt, the role of RIRs might be changing. The scarcity of IPv4 would demand that RIRs look at and develop policies for the transfer of IP address space, reclaiming and obtaining control of unused address space, ensuring the security of and managing new IPv6 addresses and handling the emergence of possible secondary markets. There was also discussion of how to deal with the many unused and unaccounted for IPv4 addresses. Some were in favour of creating a legal market for those addresses, thereby preventing sales from being limited to the black or grey markets.

20. It was considered certain that IPv4 and IPv6 would need to coexist well into the future and that IPv6, notwithstanding its importance, would only be adopted when the industry determined that the required drivers were in place.

## **C. Joint project agreement, the Internet Assigned Numbers Authority contract and the role of Governments**

21. Over the years, there has been discussion on the future of ICANN in the context of the discussion of the joint project agreement between that body and the Department of Commerce of the United States of America. With the expiration of the agreement in September 2009, the current meeting constitutes a timely opportunity to review the situation.

22. A number of speakers over the years have said that the United States Government should step down from its pioneer role in the oversight of the DNS. In general, they held the view that the agreement should not be continued. Opinions were expressed, however, that some method of accountability should be introduced as a replacement. It was suggested that IGF could provide a space for further developing such ideas.

23. Among the topics discussed during previous IGF meetings was the essential bottom-up nature of the ICANN processes and the requirements for their regular external review. Other points covered the relationship of Governments with ICANN and whether it was appropriate for the Government Advisory Committee (GAC) to play only an advisory role as opposed to one that would entail fuller powers in terms of international public policy, such as oversight or review. It was argued that the participation of

Governments in GAC was one of the most important features of ICANN, and, on the other hand, that the current model with GAC as part of ICANN was unstable.

#### **D. Internationalization of critical Internet resources management**

24. The subject of internationalizing the management of critical Internet resources has been discussed frequently during IGF meetings, with a variety of voices and positions being heard.

25. One of the frequent arguments made against a system of governance for critical Internet resources by a Government-led international body is that it would not be capable of the rapid decision-making that is necessary in the management of the Internet. Some speakers have voiced support for the largely unregulated environment that allowed the Internet to grow, pointing out that the Internet has been able to thrive in a wide variety of market environments under competitive conditions and should therefore remain free of centralized regulation.

26. While some participants generally supported ICANN being independent of Governments, others said that Governments should play a more significant role and that they should be allowed, on an equal footing, to play their sovereign role in global public policymaking. In that respect, current ICANN reforms, and the perspectives for the recognition of ICANN as an international entity and its independence from any Government, have been followed with interest.

27. The proposal was made that the Secretary-General should establish a special multi-stakeholder working group on critical Internet resources within the IGF framework. That group's work would include discussion of the gradual transfer of Internet governance to the authority of the international community.

28. Various speakers have described the process by which policies that control the allocation and management of numbers within RIRs as one developed through an open, bottom-up process that engages the entire Internet community. That is seen as a self-regulating process that could serve as an example for other governance processes.

#### **E. Importance of new top-level domains and internationalized domain names for development**

29. While there has been much discussion during IGF meetings of Internationalized Domain Names (IDN) in the context of enabling diversity and as a prerequisite to multilingual development goals of bridging the digital divide, there has been little discussion of the upcoming release of new Top-Level Domains (TLDs) by ICANN in 2010. Such a discussion will feature many of the issues and concerns that have been discussed internationally regarding the upcoming opening of the name space and what it will mean for development.

30. Some of the more visible issues in the area have included:

- (a) Stability and security of the Internet as the number of names increases;
- (b) Protection of trademark rights;
- (c) Risks of increased malicious use of the Internet;
- (d) Competition and the respective roles of IDN, generic TLDs (gTLDs) and IDN country code TLDs (ccTLDs).

#### **F. Enhanced cooperation**

31. During the first two IGF meetings there were varying views expressed on whether the concept of "enhanced cooperation", as defined by the Tunis Agenda, should be discussed. While some felt that that topic did not fall within the purview of IGF, others argued that it was an essential responsibility. Discussions at the third IGF meeting for the first time covered enhanced cooperation.

32. All speakers highlighted aspects of how discussions of enhanced cooperation were having a positive impact. Examples mentioned included actions to combat child abuse images in Brazil, the extended involvement of stakeholders in the 2008 Organisation for Economic Cooperation and Development (OECD) ministerial meeting and improvements in the way in which IP address registries interacted with relevant stakeholders.

33. The third meeting left participants with a broader understanding of various stakeholder positions on the issues. It was suggested that IGF had a valuable role as a non-threatening environment for discussion, where participants could talk, share practical experiences from various perspectives and move to the point at which people listen to one other, progressing from a disconnected series of statements to an engaged conversation.

34. Some speakers considered IGF itself to be an example of enhanced cooperation. Some suggested that the concept was about bringing together various stakeholder points of view across traditional boundaries, while others said that it was about achieving development objectives. One speaker noted that the Tunis Agenda indicated that enhanced cooperation was not about creating new institutions. Speakers also suggested that it could be an IGF function to help to reach agreement on the meaning of enhanced cooperation.

35. Participants heard that the United Nations Department for Economic and Social Affairs had written to relevant organizations asking them to provide annual performance reports, in accordance with the Tunis Agenda. The organizations included the International Telecommunication Union (ITU), the United Nations Educational, Scientific and Cultural Organization (UNESCO), the World Intellectual Property Organization (WIPO), OECD, the Council of Europe, ICANN, the Internet Society (ISOC), the Number Resource Organization (NRO) and the World Wide Web Consortium (W3C).

36. The information reported by those organizations showed a focus on four main areas:

- (a) The meaning of “enhanced cooperation” to most organizations concerned facilitating and contributing to multi-stakeholder dialogue;
- (b) The purpose of such cooperation, which ranged from sharing information and experience, building consensus and raising funds to transferring technical knowledge and providing capacity-building;
- (c) The thematic focus of the arrangements covered by the reporting organizations, which were very much in line with those being discussed at IGF;
- (d) Cooperative arrangements that had already taken place among the organizations, and more of which were being developed with other partners.

37. The various speakers shared their understanding of the meaning of the term “enhanced cooperation”. One speaker referred to what he termed “creative ambiguity”, which had enabled various stakeholders to discuss a difficult set of issues in ways that were mutually acceptable. Another panellist emphasized the phrase “Governments, on an equal footing” from paragraph 69 of the Tunis Agenda, saying that it supported the view that “enhanced cooperation” meant a process involving Governments. In response it was suggested that paragraph 71 of the Tunis Agenda referred to the participation of “stakeholders in their respective roles”. From that perspective, the paragraph supported the position that WSIS created no new areas of competence for existing organizations.

38. There was equal uncertainty among speakers about in which organizations “enhanced cooperation” should take place. One speaker suggested that it should be understood as an evolving concept.

### **III. Security, openness and privacy**

#### **A. Overview**

39. The agenda for the current meeting includes the following issues:

- (a) Respect for privacy as a business advantage;
- (b) Identity theft, identity fraud and information leakage;
- (c) Web 2.0;
- (d) Social networks;
- (e) Cloud computing and privacy, e.g., control of one’s own data and data retention;
- (f) Cultural and technical perspectives on the regulation of illegal web content;
- (g) Regulatory models for privacy;
- (h) Ensuring the open architecture of the Internet;
- (i) Net neutrality;
- (j) Enabling frameworks for freedom;
- (k) Ethical dimensions of the Internet.

40. The discussion on the related themes of security, openness and privacy has evolved since the inaugural IGF meeting, in 2006. In the first two years that cluster of issues was dealt with in two main sessions, one on security and one on openness. At the third IGF meeting the subject evolved under the title of “promoting cybersecurity and trust”, with a focus on the following cluster of issues:

- (a) Dimensions of cybersecurity and cybercrime;

(b) Fostering security, privacy and openness.

41. Discussions during previous years and a realization that there is a strong relationship between the issues have led to a formulation that today links security, openness and privacy. The debate began by looking to strike a balance between security, openness and privacy with the oft-expressed view that those concerns should mutually reinforce one another and that no solution fitted all situations.

42. The challenge in that dialogue was seen to be how to convert areas of tension or conflict into areas of convergence so that the issues of security, openness and privacy could be resolved in the proper perspective. Previous debates had shown that those issues were as complex in nature as they were important.

43. Some of the discussion related to the difficulty that many countries and organizations faced in fulfilling the commitments of the Universal Declaration of Human Rights<sup>3</sup> when balancing protected freedoms with the need to protect society against misuses of the Internet such as terrorism or paedophilia. There was a clear sense that, while the rights set forth in the Declaration might be difficult to meet, all countries had the obligation to uphold them.

44. The discussions pointed toward an emerging consensus that dealing with cybercrime, cybersecurity, privacy and openness was the joint responsibility of all stakeholders. There was a need for further information about where victims of cybercrimes could go to find a remedy.

45. While there was some scepticism about whether a decision on solutions could be reached at IGF meetings, there appeared to be a general feeling that the IGF discussion could provide greater understanding. It was pointed out that stakeholders involved in that area were not part of the debate. As the discussion moved forward, there was a need to bring those communities and interested parties into the discussion to enrich the debate and to help to understand the implications for other users of some of the cybersecurity measures being considered. There was a feeling that, whatever the way forward, it had to be achieved through multi-stakeholder cooperation, dialogue and partnership in the spirit of shared responsibilities. In that regard it was said that it was necessary to enable developing countries to participate fully and to share their needs, challenges and concerns. There was some feeling that discussion had matured enough in that area so that a common environment could be created in which all relevant stakeholders could build trust and work together.

## **B. Security**

46. Discussions on security recognized that it was a critical issue that varied from country to country. It was a multi-dimensional issue with multi-stakeholder involvement and cooperation being essential ingredients towards finding a solution. A key factor was that no broad agreement on a single definition of the term “security” existed. Several speakers offered their own definitions; those included national security, security for business and users, network security and network reliability. The need to prevent security breaches and to find solutions quickly after breaches occurred was stressed. Resilient and secure networks were also mentioned as key elements.

47. The discussions began with a reminder of how much the Internet had grown and how critical it had become for Governments, for commerce, for the economy in general, for civil society and for researchers. It was pointed out that the Internet was originally built for openness rather than security and that, while intrinsically good, also made the Internet vulnerable. It was noted with considerable concern that those engaged in maliciously causing security problems were often one step ahead of the users and maintainers of the Internet. Quite often they were more technically advanced than those engaged in solving the problems, especially in countries with developing economies.

48. One of the major issues discussed was the protection of children on the Internet. It was said that there was a need for a more nuanced debate on what was meant by terms such as “child”, “harm” and “harmful content”. The discussion also raised the conflict between freedom of sexual expression over the Internet and the need to protect children.

49. It was noted that most offline crimes had now also moved online. There were also new forms of crime that were specific to the Internet, such as hacking or phishing. In addition, there were attacks on countries’ critical infrastructure, such as distributed denial of service attacks. Attacks on sewerage and air traffic control systems were also mentioned in that context. There was general acceptance that crime and criminality in any society was dealt with through law enforcement, but it was also noted that law enforcement was made difficult by the Internet’s borderless nature. While in the offline world the perpetrator of a crime could be traced to the locality where the crime was committed, that was not

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<sup>3</sup> The Universal Declaration of Human Rights, article 12, states that “No one shall be subjected to arbitrary interference with his privacy, family, home or correspondence, nor to attacks upon his honour and reputation. Everyone has the right to the protection of the law against such interference or attacks.”

necessarily the case in the online world. Law enforcement was, therefore, confronted with problems of jurisdiction and geographical boundaries. In addition, legislation in general was slow to adapt to a fast-changing technological environment.

50. Many speakers emphasized the legal dimension of the security debate. It was widely recognized that a crime was a crime and that the online and offline worlds should not be treated differently. It was mentioned that 95 per cent of the crimes committed online were covered by existing legislation. While some called for additional legislation, there was also a warning against over-regulation. Many speakers pointed out that collaborative, multi-stakeholder efforts on cooperation could be sufficient. It was noted that both hard law and soft law solutions were needed to enhance security. There was a strong call for harmonizing legislation between countries and also for bringing into force new legal instruments that applied to the online world. The Council of Europe Convention on Cybercrime was mentioned as an example of a promising approach that more nations should adopt.

51. In terms of soft law solutions, the OECD guidelines in fields such as the security of information systems and networks, electronic authentication, cryptography policy, protection of privacy and transborder flows of personal data and cross-border cooperation in the enforcement of laws protecting privacy, were mentioned as possible solutions. It was pointed out that representatives at the OECD ministerial meeting held in Seoul in June 2008 had concluded that there was a correlation between information flows, ICTs, innovation and economic growth, while recognizing that there were risks associated with the use of those technologies and the need to tackle them in an appropriate fashion.

52. The ITU Global Cyber Security Agenda was presented as a possible solution. ITU based its work on five pillars:

- (a) Legal measures;
- (b) Technical and procedural measures;
- (c) Organizational structures;
- (d) Capacity-building;
- (e) International cooperation.

53. While the problem was global, there was also a need for action at the local level. For that reason ITU had employed a combined bottom-up and top-down approach.

54. Some of the issues discussed can be summarized as follows:

- (a) Need for prevention in addition to remediation. Prevention was defined as proactive measures to make attacks harder;
- (b) Need for more resilient architecture;
- (c) Need to establish a feedback loop between prevention, analysis of incidents and remediation;
- (d) Need to coordinate many actors, for all categories of stakeholder, involved in the prevention, remediation and related issues
- (e) Essential to build trust networks among those actors;
- (f) Time required to build such a network.

55. The importance of Computer Security Incident Response Teams (CSIRT) as part of an effective framework against current and future threats was generally recognized. The role of ISPs was seen as crucial. For some the key issue here was ISP liability, which needed to be considered in further detail.

56. The need to consider security when designing and implementing network systems was also mentioned, as was the need to consider security in the context of the operational process as a whole. A culture of cybersecurity was seen as relevant to any solution. The importance of security at the international level was confirmed during the sixty-second session of the General Assembly, when its members voted unanimously in favour of a proposal by the Russian Federation on how to achieve security for information at the international level.

57. There was a need for raising awareness and for training people to handle security problems. There was also a need for international collaboration and for the training of law enforcement officials and the judiciary. In many discussions the problems were represented as challenges not only to law enforcement agencies but also to parliamentarians, civil society, intergovernmental organizations, the private sector and the technical community. Several speakers highlighted the need for high levels of cooperation among law enforcement agencies – a process that needed to be enhanced in respect to online criminals. There was a discussion of the various definitions of cybersecurity and the notion that law enforcement might not always



be the best option, especially when dealing with cases of access to information. Several speakers observed that in some cases law enforcement officers might be part of the problem rather than the solution.

58. One of the themes that emerged from the discussions was that creating a sustainable environment of trust for all stakeholders was essential in the pursuit of security, the achievement of which required everyone's cooperation. There was a general understanding that there was a need for multi-stakeholder collaboration, cooperation and coordination at all levels, including national, regional and international.

## **C. Openness**

59. In the sessions on openness there was a generally held view that openness was multifaceted and multidimensional, not so different in that respect from most issues discussed during IGF meetings. Participants portrayed it as a cross-cutting issue with linkages to other IGF themes, namely, diversity, access and security, with legal, political and economic dimensions.

60. Apart from the stability of the Internet, data integrity and content reliability, user protection and the fight against cybercrime, it was stated that utmost priority should be accorded to the building of "a people-centred information society". In that regard, the right to privacy and the due process of law should always be taken into account. It was recommended that the possibilities for legal harmonization on cybersecurity should be evaluated in the light of specific national priorities and the distinct realities of developed and developing countries. Governments had a fundamental role in making cyberspace a secure environment for human interaction and should count on the help of civil society and the private sector for that purpose.

61. Several contributors wrote of the importance of open access to the Internet, freedom of expression and access to knowledge. They said that there was a need to strike a balance between government regulation and private self-regulation to combat harmful content on the Internet while promoting freedom of expression. Contributors also wrote of a need to establish a new balance between copyright protections and practical use of content to foster new and creative endeavours.

62. Several declarations and documents were mentioned as points of reference with regard to the free flow of information:

- (a) Universal Declaration of Human Rights;
- (b) Tunis Agenda (paragraphs 4 and 42);
- (c) OECD ministerial meeting in Seoul in 2008;
- (d) Resolution 69 on non-discriminatory access and use of Internet resources, by which the ITU World Telecommunication Standardization Assembly invited member States to refrain from taking unilateral or discriminatory actions that could impede the access of other member States to public Internet sites;
- (e) Global Network Initiative, which brought together a number of non-governmental organizations and companies to discuss protecting freedom of expression and privacy for users;
- (f) Declaration of the Rights of the Child;
- (g) Convention on Cybercrime.

63. Several speakers pointed out that openness involved several questions of balance. There was a balance between the two IPs as referred to by several speakers: the IP for Internet protocol and the IP for intellectual property. It was pointed out that while on the surface there might appear to be a dichotomy, that was not the case. There was also a question of balance between freedom of expression and free flow of information and the freedom to enjoy the fruits of one's labour. Moreover, there was the issue of balance between privacy and freedom of expression.

64. The various panels and discussions accorded a strong emphasis to the fundamental freedoms, the freedom of expression and the free flow of information, as enumerated in article 19 of the Universal Declaration of Human Rights, the Geneva Declaration of Principles and the Tunis Agenda in the WSIS context. It was said that a human rights perspective should go beyond paying lip service to those universally accepted principles. The observance of human rights was not only for Governments, but also for businesses and other stakeholders. It was said that compliance with human rights obligations was a journey rather than a destination. One speaker was concerned that human rights had slipped down the Internet governance agenda and that issues such as child pornography, credit card fraud or terrorism were treated as priority issues. It was felt that an "either/or" approach should be eschewed and that solutions to those genuine problems should build on human rights. The principles that were accepted by all needed to be translated into practical solutions based on respect for human rights. For those reasons many had called for human rights to be treated as a cross-cutting theme for IGF.

65. It was also pointed out that law was always a product of society and reflected commonly held standards. With regard to the protection of intellectual property and copyright it was always possible to make exceptions, as in the case of education. One speaker pointed out that open access to scientific knowledge was an essential element in the development process and therefore very important for developing countries. Movements such as the creative commons movement were mentioned in that context.
66. The discussions also covered open standards and free and open source software. It was said that they might lower the barriers of entry and promote innovation and were therefore important for developing countries. It was underlined that there was no contradiction between free and open source software and intellectual property. It was also recalled that, in the WSIS outcome documents, both open source and proprietary software were seen as equally valuable and having merit.
67. There was a discussion on what kind of regulation was needed. Several speakers emphasized the usefulness of self-regulation and many favoured a mix of hard and soft law instruments.
68. With regard to the economic dimension, there was discussion of market dominance and virtual monopolies and their relationship to openness and freedom of expression. It was pointed out that the IGF discussion had a relationship with discussions held in WIPO, in particular with regard to its Development Agenda, and UNESCO with regard to the Convention on the Protection and Promotion of the Diversity of Cultural Expressions.
69. Participants mentioned that legislation needed to be adapted to cyberspace. It was said that legislation was not something taking place outside society but something that needed to reflect the wishes of society and be adapted to what society wanted. Freedom of expression was described as a fundamental human right that should be ensured and that required the free flow of information and content from diversified sources. More than any other means of communication, the Internet was described as capable of embracing the cultural diversity and pluralism that characterized democracy. The conversion of that potential into reality required the preservation of the open architecture features of the Internet.

## **D. Privacy**

70. It was noted that interest in the right of privacy increased in the 1960s and 1970s with the advent of information technology. The surveillance potential of powerful computer systems prompted demands for specific rules governing the collection and handling of personal information. Two crucial international data protection instruments, the OECD Guidelines on the Protection of Privacy and Transborder Flows of Personal Data and the Council of Europe's 1981 Convention for the Protection of Individuals with regard to Automatic Processing of Personal Data, set out specific rules covering the collection, storage and dissemination of electronic data.
71. The discussions indicated that user protection should be accorded high priority in building a people-centred information society. In that regard, it was argued that the right to privacy and the due process of law should always be taken into account. The connection was made between security issues and human rights and privacy. It was said that developing privacy laws was actually a contribution to enhancing security. It was pointed out that that was especially the case with regard to identity theft, which was greatest in nations that had the weakest privacy protection. The role of anonymity on the Internet was discussed, especially in relation to privacy in spheres such as medical information.
72. Increased awareness of the importance of data protection was mentioned in relation not only to the protection of the private sphere of individuals, but also their very freedom. Internal and international security requirements and market interests could lead to the erosion of fundamental safeguards of privacy and freedom. It was discussed how data that were collected for one specific purpose were often made available for others to bodies, both public and private, that were not the intended recipients.
73. Developing countries and regions would be affected by privacy regulation. There, external constraints such as the European Union data protection regime or trade agreements, in addition to the lack of capacity among developing countries' lawmakers, might have an impact that should be reviewed. In addition, people in developing countries tended to use technology in other ways (e.g., connecting in cybercafés much more than through their own computers) therefore their needs for privacy protection were considered different. Global technical and legal standards should include the perspectives of developing countries.
74. Participants in various discussions and workshops pointed out that the basis for the protection of individual privacy was the Universal Declaration of Human Rights,<sup>4</sup> in particular its article 12. Nearly every State included a right of privacy in its constitution, either directly or in relation to another right. At a minimum, those provisions included the inviolability of the home and the secrecy of communication. It was

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4 <http://www.un.org/Overview/rights.html>

also noted that most recent constitutions included specific rights to access and control of personal information.

## **IV. Access and diversity**

### **A. Overview**

75. Issues mentioned for that session included:
- (a) National and international regulatory issues;
  - (b) National and regional backbones;
  - (c) Infrastructure;
  - (d) Interconnection costs;
  - (e) Enabling Internet Exchange Points (IXPs);
  - (f) Modes of access and regulatory challenges;
  - (g) Safety and redundancy of access, e.g., cable cuts;
  - (h) Issues in mobile access;
  - (i) Multilingualism and IDNs;
  - (j) Access for persons with disabilities.

### **B. Access**

76. Panellists at past meetings highlighted that the issue of access to the Internet remained the single most important issue for many countries, in particular in the developing world. Speakers stressed the Internet's development impact. A theme that emerged during the first IGF meeting was that, while having one billion Internet users was considered a huge success, the focus should shift towards the next billion and the billions after that. The discussion eventually moved on to considering the last billion.

77. Several panellists questioned who the next billion people to connect to the Internet might be. One asserted that talking about one billion Internet users would have seemed unthinkable 10 years earlier. Providing statistics, another speaker pointed out that, since the first IGF meeting, much progress had been made in terms of broadband, quality of access and those actually connected to the Internet. In Hyderabad, it had been pointed out that the number of users on the Internet had increased to nearly one and a half billion – a significant growth since the beginning of the WSIS process.

78. Participants demonstrated that the underlining IGF theme – multi-stakeholder cooperation – was also extremely important with regard to access. There was acknowledgement that Governments had an important role to play, but had to work closely with private sector, civil society and the Internet community in that regard. Many participants spoke of the need for innovative solutions, including public-private partnerships, and for private companies to work with Governments and civil society to provide access to those living in rural areas.

79. There was a general understanding that every country had to find its own solution and that no solution fitted all circumstances. In that regard, the size of local markets was mentioned as a problem for small countries. One speaker pointed to the African experience, where a large continent had only an extremely small portion of the Internet, noting that each country had endeavoured to go it alone instead of adopting a regional approach.

80. The importance of regional multi-stakeholder collaboration in terms of creating regional Internet Exchange Points (IXPs) was stressed by many speakers. The experience of the regional IXPs was recognized as a good example of ways in which collaboration could enhance access for users, support local content and reduce costs.

81. There was a clear convergence of views that Governments had an important role to play in creating a solid regulatory framework and ensuring that the rule of law was well established and respected. Many speakers stressed the need for open markets, while others emphasized that market forces alone could not solve the issue of accessibility and Governments bore the responsibility of designing and implementing universal access policies.

82. International connection costs were described as a burden for developing countries. In that respect, it was considered that a fair environment for business competition on a global scale would contribute to an overall improvement in access conditions. Governments should stimulate the establishment and maintenance of such an environment whenever possible and take action to correct market imperfections, if

necessary. It was also suggested that international financing arrangements should be developed to support investment in areas in which it was not commercially viable. Regional cooperation and Internet Exchange Points were particularly valuable resources to help to reduce demand on intercontinental backbones, thus reducing access costs.

83. Many speakers mentioned the particular issue of backbone networks and noted that that remained an important issue. Local initiatives to enhance access depended on the provision of backbone networks, both nationally and internationally.

84. On the demand side, many contributors had observed that access was much broader than connectivity. The link had to be made between access and development and thence the needs of users must be understood. It was generally felt that access could not just be measured in terms of technological parameters. Clearly prices, quality, availability and content were also significant issues.

85. Many speakers maintained that providing access to the next billion people required new business models and partnerships to support users who were living on two dollars a day or less. As one speaker observed, that probably meant less than two dollars a month to spend on telecommunications and Internet services. The appropriateness and value of access was therefore seen as a key issue in shaping and integrating the use of ICTs into the development process. It was noted that Governments were often the single largest buyer of ICT services, which meant that demand could be used to anchor new access projects in under-served areas.

86. During the global e-governance and access to information community of practice meeting in Hyderabad, several points were made:

(a) Empowerment was critical and access was critical to empowerment. The Internet was not just about business, but also empowerment, which was dependent on access;

(b) Access depended on a number of factors, some related to connectivity, others to affordability. It was stated that affordability did need not only mean low-cost devices and that ownership of devices was not equivalent to access. Affordability could also be achieved through new business models where access was effectively paid for by somebody else;

(c) There was a need to consider both the demand and supply sides and position those in a development framework. A demand-pull might be as effective or sometimes more effective than a supply-push, but the two probably needed to work together to achieve development needs.

(d) Connectivity was a means to an end, providing access to information and content.

87. Overall, there was general agreement that issues of access remained central to the IGF agenda and that, as the next billion people came online, new challenges and opportunities would emerge.

## **C. Diversity**

88. The discussion on diversity evolved into a very strong plea for diversity in all its facets. There was recognition that the digital divide was also a knowledge divide and that respect for diversity was a global issue.

89. Speakers identified various dimensions of diversity: linguistic, cultural, media and relating to persons with disabilities. Several speakers remarked that the notion of diversity extended to the need to include all people, including immigrants living in a country with another language and culture and native peoples living in countries with a dominant culture that was not their own.

90. Discussions also underlined the challenge of making the Internet available to people in all scripts and languages. India provided a good case study of a region in which many languages and scripts were in use and where the Internet would not spread to the whole population until it had become fully multilingual. While those topics were taken up in general in discussions of development, they were taken up in detail under the theme of diversity.

91. To include persons with disabilities, use of universal design and assistive technologies were important. Representatives were reminded that an important aspect of supporting diversity in that consideration should be given to spoken languages that were not written and to sign languages that were not spoken and that, when written, used iconic representations.

92. One speaker said that culture was at the core of any discussion of identity, enabled social cohesion, and was critical to the development of any knowledge economy. An example was given of the loss of freedom of African children when they were forced to learn in a foreign language that ignored their culture when they first entered school.

93. During the discussion, a parallel was drawn between linguistic diversity and biodiversity; linguistic diversity was as important for human freedom as biodiversity was for nature. It was recommended that the

precautionary principle, i.e., that actions involving possible irreparable harm should not be taken, should also be adapted to Internet governance.

94. The impact of standards and the importance of open, non-proprietary standards were mentioned, together with the use of free and open source software as important elements. Adhering to standards was described as another way to promote diversity, especially with regard to accessibility standards.

95. When IGF discussions on diversity first began, the primary topic was the Internationalized Domain Name system (IDN). Over the years, the topic has evolved and speakers have pointed out that there has been less need to discuss issues related to IDNs. Some speakers stressed the need to distinguish between content in various languages and the role of the IDN system. It was apparent that the debate had moved on, though IDN, and especially the deployment of IDN, remained an important aspect of diversity.

96. It was also mentioned that the Internet, if available in a local language, could help to change society. Bringing together the network culture with local culture through a narrowing of the knowledge gap facilitated that change. Some speakers saw a need to find economically sustainable ways to balance protecting property while allowing the free spread of knowledge to the diverse populations who needed it to flourish.

97. There was some discussion of the urgency of the need to provide for content in diverse languages and formats. Not only was that described as necessary for the world's people, but as necessary to prevent the loss of the world's languages and the cultures they represented.

98. There was a general feeling that the Internet provided an opportunity to protect cultural diversity. For that to be possible it was said that it should be managed for the benefit of the whole of humanity, so that all people could use their own languages with their own values and cultural identities. To that end, the Internet needed to expand to reflect in its content and naming systems the cultural and linguistic diversity and regional and local differences that characterized civilization.

99. As one speaker put it, there was not only a need to get the next billion people online, there was also a need to get them online with economically, culturally and socially relevant content in their own language, to truly reflect the diversity of the human race.

100. Full and active participation of all, in particular persons with disabilities, was mentioned as the yardstick to measure whether diversity had been achieved.

101. On a final note, as one speaker put it, to respect diversity, the Internet should be a caring, peaceful, and barrier-free place.

102. The Internet offers unprecedented opportunities for the expression of cultural content from all corners of the world and for the creation, dissemination, recombination and diffusion of content. The conversion of that potential into reality requires that the Internet be managed for the benefit of mankind as a whole. Every individual should be able to take part in the Internet in his own language and in forms that are in harmony with his or her values and cultural identity. The Internet should expand in a way that reflects, in its content and addressing system, existing cultural and linguistic diversity, including regional and local differences, which characterizes civilization. The particular needs of people with disabilities should be addressed through the creation and dissemination of specific peripherals at affordable prices in addition to the adoption of accessibility standards by the industry.

## **V. Internet governance in the light of the WSIS principles**

103. The agenda item builds on the WSIS principles, as contained in the Geneva Declaration of Principles and the Tunis Agenda for the Information Society and is based on paragraph 72 (i) of the Tunis Agenda, which mandates IGF to "promote and assess on an ongoing basis the embodiment of WSIS principles in Internet governance processes".

104. Two paragraphs were seen as particular relevant for that session:

(a) Paragraph 29: "The international management of the Internet should be multilateral, transparent and democratic, with the full involvement of Governments, the private sector, civil society and international organizations";

(b) Paragraph 31: "We recognize that Internet governance, carried out according to the Geneva principles, is an essential element for a people-centred, inclusive, development-oriented and non-discriminatory Information Society".

105. The present paper deals with the reference to paragraph 29 in the section on managing critical Internet resources.

106. The reference to paragraph 31 relates to the development goals of the Tunis Agenda. That aspect has been explored in its many facets in the three IGF meetings. Capacity-building has often been described

as one of the primary methods by which development can be achieved and for many participants it has been the driving purpose for both main sessions and workshops. Many have emphasized the importance of focusing on Internet governance issues in the developing world, especially in Africa.

107. Development and capacity-building have not, in themselves, been themes of the main sessions, though they have been touched upon in almost all sessions. In addition, they have been discussed in workshops and referred to in opening and closing sessions.

108. Many speakers have emphasized the theme of development over the years. Speakers asked what IGF could do for the billions of people who currently lack access. Many have focused on the multiple dimensions of bringing the next billion users online. Questions were raised pertaining, among other things, to capacity-building, education, new governance structures, internationalized domain names and building appropriate national regulatory frameworks to enable growth and investment in the information society.

109. Another of the main messages to come out of the discussion on development was that no single stakeholder could go it alone and that multi-stakeholder cooperation was a prerequisite for good Internet governance. Many felt that it was important to reach agreement on the roles of the various stakeholders: the State, the private sector, civil society and technical experts. Concern was expressed regarding how those stakeholders could collaborate and ensure complementarity as opposed to working at cross-purposes as they had so often in the past. Cooperating on Internet governance for development was seen as necessary and as providing the foundation of IGF as a place for dialogue.

110. There has been much discussion of the significant barriers confronting those who are not yet online and how governance can assist in meeting the tremendous pent-up demand. An element of that discussion has centred on the important role that developed nations have to play in supporting improved Internet access in developing countries with specific reference to the creation of an environment in which international private sector investment is able to contribute to building a developing country's infrastructure. There have been frequent discussions about the role of national policies in protecting investment and in enabling the private sector to undertake the necessary risks to invest in infrastructure and ICT, within a competitive environment.

111. Existing barriers in many countries in terms of market entry have been listed as a fundamental reason for the inability to provide affordable access. Those barriers have been linked to policy issues that could and should be tackled. Some suggested that liberalizing markets was an obvious solution, but others argued that the manner of doing so was extremely important. It was noted that liberalizing markets was more than simply a matter of opening up markets. As with infrastructure industries, it would be difficult to achieve the kind of perfect competition that would allow for the efficient allocation of resources.

112. Enabling regulatory frameworks that provided certainty and stability and incentives for investment were seen as being required. Discussions pointed to the need for a public policy framework that would take into account market structure, competition and regulation, while also resolving issues of market failure, questions of universal service and the importance of ensuring equity between those who have access and those who have not. Furthermore, it was suggested that the regulatory environment should include transparency and predictability provided by an independent regulatory regime.

113. In addition to focusing on the role of the private sector in meeting the needs of the billions of new users, special attention was paid to the role of Governments in providing stimulus by establishing seed funding, training and incubator services.

114. Many speakers have considered leadership to be a key factor, linking aspects of policy and regulation to investment and to capacity development. It has been considered significant that to achieve sustainability a process of institutionalization is required: one-off policy reforms will not provide lasting solutions and regulatory institutions have to be able to adapt to change to provide continuity.

## **VI. Emerging issues: impact of social networks**

115. Over the past few years, the development of social media (social networks, user-generated content sites, microblogging, collaboration tools, etc.) has been considerable, bringing them into mainstream Internet use. Commercial or non-profit, so-called "Web 2.0 tools" affect not only the daily lives of the young people who were among the first to adopt them, but almost every field of activity, from entertainment to business and the political space. As social media have continued to evolve, governance issues have continued to emerge.

116. The evolution of social media has various facets. Their continued development may require the modification of traditional policy approaches, in particular regarding:

- (a) Privacy and data protection;
- (b) Rules applicable to user-generated content and copyrighted material;

(c) Freedom of expression and illegal content.

117. Another important issue pertains to the terms of service of large platforms, how they are developed and their relationships with emerging business models. An examination of all the issues related to social networks could benefit from behavioural analysis.

118. Issues pertaining to Web 2.0 and its implications for Internet governance were discussed at the second IGF meeting. Social media, though dependent on advanced technology and access, were predominantly seen as an issue that needed to be approached from social, cultural, political and economic perspectives. Some claimed that the Web 2.0 of social networks and user-generated content were a profound cultural revolution, furthering globalization and democratization. Others made the counterclaim that the consequences of Web 2.0 were actually less democracy and egalitarianism, whether in terms of culture, gender, legalities or geography. In economic terms, it was argued that the real profits of Web 2.0 were going to a tiny handful of investors and not to the users who were creating the content.

119. On regulation and self-regulation of social networks and Web 2.0 communities, participants said that it was difficult to identify the appropriate level of regulatory authority. Considerations of legalities concerning user-generated content and online social communities were some of the major emerging issues in Internet governance of Web 2.0.

120. A number of points emerged from the discussions, including:

(a) There was a range of opinions about whether, on balance, content on today's Web 2.0 (and future Web 3.0) was necessarily creating a better-informed, thinking and more caring society;

(b) Producing content for the web was done simply and at a low cost, and in principle could be done by everyone from schoolchildren to media professionals;

(c) Though there was much creative and valuable content on the web prepared by ordinary people who were not skilled media professionals, there was, equally, much more that was considered to be of little value;

(d) User-generated media, as with other web sources, could be exploited through marketing and politics;

(e) User-generated content could have a dramatic impact and high value for society, particularly when it captured news stories that would be otherwise hidden from the world;

(f) Mainstream professional journalism was reported not to be in good condition everywhere. It was said to be in danger of being swept away by the attraction of content produced by the public at low or no cost.

121. Several points were raised, including on patterns of user behaviour and the management of privacy or intimacy in social network sites. There was broad agreement that issues of anonymity and authentication were critical, but appropriate policies were often country-specific and case-specific. It was argued that in some cases anonymity created the potential for negative impacts and could undermine democracy and pose risks. It was also pointed out, however, that in countries with restrictions on the freedom of expression, anonymity protected the Internet user and was essential in promoting democracy. There was widespread agreement that Web 2.0 raised many important issues to which IGF could make a significant contribution.

## Annex

### Glossary of Internet governance terms

<b>AfriNIC</b>	Regional Registry for Internet Number Resources for Africa (Member of NRO)
<b>ASCII</b>	American Standard Code for Information Interchange; seven-bit encoding of the Roman alphabet
<b>ccTLD</b>	Country code top-level domain, such as .gr (Greece), .br (Brazil) or .in (India)
<b>CoE</b>	Council of Europe
<b>CSIRTs</b>	Computer Security Incident Response Teams
<b>DNS</b>	Domain name system: translates domain names into IP addresses
<b>DRM</b>	Digital Rights Management
<b>DOI</b>	Digital Object Identifier
<b>F/OSS</b>	Free and Open Source Software
<b>GAC</b>	Governmental Advisory Committee (to ICANN)
<b>gTLD</b>	Generic top-level domain, such as .com, .int, .net, .org, .info
<b>IANA</b>	Internet Assigned Numbers Authority
<b>ICANN</b>	Internet Corporation for Assigned Names and Numbers
<b>ICT</b>	Information and communication technology
<b>IDN</b>	Internationalized domain names: Web addresses using a non-ASCII character set
<b>IETF</b>	Internet Engineering Task Force
<b>IGF</b>	Internet Governance Forum
<b>IGOs</b>	Intergovernmental organizations
<b>IP</b>	Internet Protocol
<b>IP Address</b>	Internet Protocol address: a unique identifier corresponding to each computer or device on an IP network. Currently there are two types of IP addresses in active use. IP version 4 (IPv4) and IP version 6 (IPv6). IPv4 (which uses 32 bit numbers) has been used since 1983 and is still the most commonly used version. Deployment of the IPv6 protocol began in 1999. IPv6 addresses are 128-bit numbers.
<b>IPRs</b>	Intellectual property rights
<b>IPv4</b>	Version 4 of the Internet Protocol
<b>IPv6</b>	Version 6 of the Internet Protocol
<b>ISP</b>	Internet Service Provider
<b>ITU</b>	International Telecommunication Union
<b>IXPs</b>	Internet exchange points
<b>LACNIC</b>	Latin American and Caribbean Internet Addresses Registry (Member of NRO)
<b>MAG</b>	Multi-stakeholder Advisory Group
<b>MDGs</b>	Millennium Development Goals
<b>MoU</b>	Memorandum of Understanding
<b>NAPs</b>	Network access points
<b>NGN</b>	Next generation network
<b>NRO</b>	Number Resource Organization, grouping all RIRs – see below
<b>OECD</b>	Organisation for Economic Cooperation and Development
<b>Registrar</b>	A body approved (“accredited”) by a registry to sell/register domain names on its behalf



<b>Registry</b>	A registry is a company or organization that maintains a centralized registry database for the TLDs or for IP address blocks (e.g. the RIRs — see below). Some registries operate without registrars at all and some operate with registrars but also allow direct registrations via the registry.
<b>RIRs</b>	Regional Internet registries. Not-for-profit organizations responsible for distributing IP addresses on a regional level to Internet service providers and local registries.
<b>Root servers</b>	Servers that contain pointers to the authoritative name servers for all TLDs. In addition to the “original” 13 root servers carrying the IANA managed root zone file, there are now large number of Anycast servers that provide identical information and which have been deployed worldwide by some of the original 12 operators.
<b>Root zone file</b>	Master file containing pointers to name servers for all TLDs
<b>TLD</b>	Top-level domain (see also ccTLD and gTLD)
<b>UNESCO</b>	United Nations Educational, Scientific and Cultural Organization
<b>WGIG</b>	Working Group on Internet Governance
<b>WHOIS</b>	WHOIS is a transaction oriented query/response protocol that is widely used to provide information services to Internet users. While originally used by most (but not all) TLD Registry operators to provide “white pages” services and information about registered domain names, current deployments cover a much broader range of information services, including RIR WHOIS look-ups for IP address allocation information.
<b>WSIS</b>	World Summit on the Information Society

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