

Internet Governance: Challenges and Opportunities for the ESCWA Member Countries



ESCWA

ECONOMIC AND SOCIAL COMMISSION FOR WESTERN ASIA (ESCWA)

**INTERNET GOVERNANCE:
CHALLENGES AND OPPORTUNITIES FOR ESCWA MEMBER COUNTRIES**

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“Internet has become the backbone of our globalized world....For the United Nations, it has become a powerful tool in our mission to promote peace and security, development and human rights, particularly in the flows of information and knowledge that it enables”.

The United Nations embraced “the opportunity to provide, through the Forum, a platform that helps to ensure the Internet’s global reach. The Forum can develop a common understanding of how we can maximize the opportunities the Internet offers, how we can use it for the benefit for all nations and peoples, and how we can address risks and challenges”.

*Ban Ki-Moon addressing the second Internet Governance Forum
(Rio de Janeiro, Brazil, 2007)*

“In only a few years, the Internet has revolutionized trade, health, education and, indeed, the very fabric of human communication and exchange. Moreover, its potential is far greater than what we have seen in the relatively short time since its creation. In managing, promoting and protecting its presence in our lives, we need to be no less creative than those who invented it. Clearly, there is a need for governance, but that does not necessarily mean that it has to be done in the traditional way, for something that is so very different.”

*Kofi Annan addressing the Global Forum on Internet Governance
(New York, 24 March 2004)*

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The opinions in this study reflect the views of a wide array of stakeholders with distinct and sometimes conflicting perspectives and viewpoints. In seeking to compile these varying views, not all contributors will necessarily agree with or endorse the points set forth in this document. Efforts have been undertaken to reference and quote contributors as accurately as possible. However, owing to the nature of the topics and the multiplicity of ideas and opinions, it was not possible to reference and quote every idea or opinion stated in this study. In that regard, none of the above contributors from ESCWA, ICANN, ITU or the League of Arab States can be held responsible for any errors, misinterpretation or misrepresentation of any of the enclosed information or opinions. The views, interpretations or conclusions expressed in the document do not necessarily reflect the views of ICANN or the input it provided.

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Preface

Currently, the Internet spans the globe and brings voice, video, data and information to billions of people. Consequently, it has attracted the attention of decision makers in terms of debating public policy at the global level. The crucial role of the Internet in sustainable human development and its significant socio-economic impact leads to the very question of who is actually governing the Internet. The global community has a common interest in developing inclusive and participatory models of governance that ensure Internet security and evolution, with an effective engagement from all involved stakeholders.

The importance that the international community attaches to the Internet came to the forefront at the World Summit on the Information Society (WSIS), which was held in two phases, namely, in Geneva in 2003 and in Tunis in 2005. While WSIS put the Internet in the limelight of an international policy debate, the debate was characterized by a sense of frustration from developing countries because they felt alienated from existing governance structures. They became aware of the importance of participation in the debate and expression of views, and of expectations regarding any governance arrangements.¹ This debate, which started in 2003, is still ongoing.

Following the emergence and maturity of the global debate on issues related to Internet governance, ESCWA embarked on this study with the aim of creating a guidebook for the Arab region in this arena. This study provides an analytical description of the current arrangements of Internet governance and the role of involved parties. It elaborates on the main issues of the debate and focuses on those that are most important for the region. Additionally, it highlights challenges facing the Arab region regarding these issues and provides recommendations for an effective and, it is hoped, unified position for Arab countries in the global debate. This study should assist the League of Arab States Working Group on Domain Names and Internet Issues in terms of formulating an opinion about common views regarding Internet governance issues. The study will pave the way for the next Internet governance forum, which is set to convene in November 2009 in Egypt, as well as subsequent forums.

¹ M. Krummer, "Internet governance and the need for an inclusive multi-stakeholder dialogue", which is available at: <http://www.oecd.org/dataoecd/60/53/37985809.pdf>.

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ABBREVIATIONS AND EXPLANATORY NOTES

ACRP	Attack and Contingency Response Programme
ADNS	Arabic Domain Names System
AFRINIC	African Network Information Centre
ALAC	At Large Advisory Committee
APEF	Asia Pacific Economic Forum
APNIC	Asia Pacific Network Information Centre
APTLD	Asia Pacific Top Level Domain Association
ARIN	American Registry for Internet Numbers
ASCII	American Standard Code for Information Interchange
ASIWG	Arabic Script IDN Working Group
ASN	Autonomous System Number
ASO	Address Supporting Organization
ASIWG	Arabic Script IDN Working Group
ATICM	Arab Telecommunications and Information Council of Ministers
AWG-ADN	Arab Working Group on Arabic Domain Names
AWGDN	Arab Working Group on Domain Names
AWGDNII	Arab Working Group on Domain Names and Internet Issues
CA	Certificate/Certification Authority
ccNSO	Country-code Names Supporting Organization
ccTLD	Country Code Top Level Domain
CERT	Computer Emergency Response Team
CIR	Critical Internet Resources
DAC	Digital Arabic Content
DARPA	Defence Advanced Research Projects Agency
DESA	Department of Economic and Social Affairs
DNS	Domain Name System
DNSSEC	Domain Name System Security Extensions
DOC	United States Department of Commerce
EAIGF	East Africa Internet Governance Forum
G12	Group of Twelve
GAC	Governmental Advisory Committee
GCA	Global Cybersecurity Agenda
GNSO	Generic Names Supporting Organization
gTLD	Generic Top Level Domain
IAB	Internet Architecture Board
IANA	Internet Assigned Names Authority
ICANN	Internet Corporation for Assigned Names and Numbers
ICT	Information and Communications Technology
IDN	Internationalized Domain Name
IESG	The Internet Engineering Steering Group
IETF	Internet Engineering Task Force
IG	Internet Governance
IGF	Internet Governance Forum
IP	Internet Protocol
IPv4	Internet Protocol version 4
IPv6	Internet Protocol version 6
IRA	International Reference Alphabet
IRCAM	Royal Institute of the Amazigh Culture
IRSG	The Internet Research Steering Group
IRTF	The Internet Research Task Force
ISOC	Internet Society

ABBREVIATIONS AND EXPLANATORY NOTES *(continued)*

ISP	Internet Service Provider
ITAA	Information Technology Association of America
ITTU-D	International Telecommunication Union-Development Sector
ITU	International Telecommunication Union
IXP	Internet Exchange Point
JPA	Joint Project Agreement
LACNIC	Latin American and Caribbean Internet Addresses Registry
LIR	Local Internet Registries
MOU	Memorandum of Understanding
NGN	Next Generation Networks
NGO	Non-governmental organization
NITC	National Information Technology Centre
NRO	Number Resource Organization
NTIA	National Telecommunications and Information Administration
OECD	Organization for Economic Co-operation and Development
PIR	Public Interest Registry
PKI	Public Key Information
RFC	Request for Comments
RIPE NCC	Réseaux IP Européens Network Coordination Centre
RIR	Regional Internet Registry
RPoA	Regional Plan of Action
RSSAC	DNS Root Server System Advisory Committee
SSAC	Security and Stability Advisory Committee
TLD	Top Level Domain
TNT	Terranode Network Technology
UNCTAD	United Nations Conference on Trade and Development
UNESCO	United Nations Educational, Scientific and Cultural Organization
USC	University of South California
WGIG	Working Group on Internet Governance
WIPO	World Intellectual Property Organization
WSIS	World Summit on the Information Society
WTPF	World Telecommunication Policy Forum
WTSA	World Telecommunication Standardization Assembly

References to dollars (\$) are to United States dollars, unless otherwise stated.

Introduction

The potential of information and communications technologies (ICTs) to eradicate poverty and improve the life of citizens in developing countries has made it a top priority in the agendas of different decision-making bodies at the international level. In response to this concern, General Assembly resolution 56/183 dated January 2002 provided the framework for the World Summit on the Information Society (WSIS) in order to discuss the issues at stake.²

Despite the fact that the first phase of WSIS in Geneva in 2003 ended with an agreement on the Declaration of Principles and a Plan of Action,³ it left unsolved more controversial issues, including the questions of Internet governance and funding.

When the 2003 summit failed to reach an agreement on the future of Internet governance (IG) or even on its definition, the United Nations Working Group on Internet Governance (WGIG) was formed to come up with ideas on how to progress. This summit entrusted the United Nations Secretary-General with the task of establishing the WGIG in order to clarify the issues and report before the second phase of WSIS, which was convened in Tunis in 2005.

Internet governance issues led to a heated global debate owing to the fact that, while there was an international consensus on the importance of the issue, there was no such agreement on existing governance structures, from which many developing countries felt largely excluded.

At the second phase of the summit in Tunis in 2005, the Tunis Agenda for the Information Society was adopted, which included a request to the United Nations Secretary-General to convene a new forum for multi-stakeholder policy dialogue on the future of Internet governance.⁴ In response, then Secretary-General, Kofi Annan, convened the Internet Governance Forum (IGF) as a five-year process, starting in 2006 and ending by 2010, aimed at facilitating and allowing for a wider global dialogue on Internet policy principles in an open and inclusive process. The mandate of IGF was set as a forum to discuss the main public policy issues related to Internet governance in order to foster Internet sustainability, robustness, security, stability and development.

Internet governance issues are difficult to analyse, discuss and manage given the involved complexity and the various approaches pertaining to different actors who may be part of the solution. According to consultations pertaining to IGF, Internet governance issues were classified into five key public policy areas, namely:⁵ (a) critical Internet resources; (b) access; (c) diversity; (d) openness; and (e) security.

So far, the contributions by developing countries in the debates pertaining to Internet governance issues, including the ICANN process, have been comparatively limited. Even when developing countries do participate in those meetings, the participation is often confined to Government representatives and not expanded to a wide array of stakeholders. Without doubt, most developing countries have been unaware of the process or ways to participate actively in it, thereby missing critical opportunities for bringing their views and needs to the global arena.

² This resolution on the World Summit on the Information Society, which was adopted by the General Assembly at its fifty-sixth session, is available at: http://www.itu.int/wsis/docs/background/resolutions/56_183_unga_2002.pdf.

³ The Geneva Declaration and the Plan of Action are available at, respectively: <http://www.itu.int/wsis/docs/geneva/official/dop.html> and <http://www.itu.int/wsis/docs/geneva/official/poa.html>.

⁴ The Tunis Agenda for the Information Society is available at: <http://www.itu.int/wsis/docs2/tunis/off/6rev1.html>.

⁵ The Internet Governance Forum (IGF) was initially launched with the following four major themes: access, diversity, openness and security. Subsequently, it was agreed to add critical Internet resources at the second meeting in Rio de Janeiro.

This study aims primarily at the following: (a) providing a better understanding of common challenges and prospects of Internet governance from the perspective of the Arab region; (b) building capacity of Arab countries aimed at responding to those challenges; (c) enabling Arab countries to seize opportunities, thereby bringing their views and needs to the global arena and, consequently, shaping an optimum global policy structure for Internet governance; and (d) promoting the role of Arab countries as effective players in the global Internet society.

Moreover, the study serves to assist in formulating opinions and positions on selected issues related to Internet governance from an Arab perspective as part of the preparations for the fourth meeting of IGF, which is set to convene in Sharm el-Sheikh, Egypt, 15-18 November 2009. This meeting will occur just a few months after the expiration of ICANN's Joint Project Agreement (JPA) with the Government of the United States of America (see annex I). This represents the milestone at which the Arab region, among other developing regions, will have continued opportunities to contribute to the newly emerging alternative schemes of Internet governance, thereby better serving strategic objectives of the Arab information society.

This study provides a general overview of the Internet governance debate prior to tackling specific priority issues of Internet governance or particular relevance to the Arab region, namely: critical Internet resources, access and diversity. Finally, the study provides a set of recommendations for the Arab region to launch key initiatives aimed at enhancing its position vis-à-vis the global community as far as Internet governance is concerned.

I. INTERNET GOVERNANCE: AN OVERVIEW

A. EVOLUTION AND HISTORICAL BACKGROUND – FROM WSIS TO IGF

In its two phases, WSIS engaged a wide range of capacities representing high-level Government representatives, civil society, international organizations and United Nations agencies, media and the private sector.⁶

At the first phase in Geneva in 2003, the objective was to establish a clear statement of political will and to take concrete steps in order to establish the core foundations for an equitable information society, thereby reflecting the different priorities of the parties involved. During that first phase, Internet governance emerged as one of the most important issues. In essence, most of the WSIS issues had some relation to Internet governance in one way or another, with a variety of technical, developmental, socio-economic, legal and political aspects and implications. This phase resulted in an agreement on a Declaration of Principles and a Plan of Action.⁷ Box 1 lists the main WSIS principles that relate to Internet governance.

Box 1. WSIS principles related to Internet governance

Several principles of the Declaration of Principles (WSIS, 2003) set out a number of general Internet governance goals, specified the roles and responsibilities of the different actors in achieving these goals, and established norms to guide cooperative action between them. These principles are as follows:

“The Internet has evolved into a global facility available to the public and its governance should constitute a core issue of the Information Society agenda. 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. It should ensure an equitable distribution of resources, facilitate access for all and ensure a stable and secure functioning of the Internet, taking into account multilingualism.

The management of the Internet encompasses both technical and public policy issues and should involve all stakeholders and relevant intergovernmental and international organizations. In this respect it is recognized that:

- (a) Policy authority for Internet-related public policy issues is the sovereign right of States. They have rights and responsibilities for international Internet-related public policy issues;
- (b) The private sector has had and should continue to have an important role in the development of the Internet, both in the technical and economic fields;
- (c) Civil society has also played an important role on Internet matters, especially at the community level, and should continue to play such a role;
- (d) Intergovernmental organizations have had and should continue to have a facilitating role in the coordination of Internet-related public policy issues;
- (e) International organizations have also had and should continue to have an important role in the development of Internet-related technical standards and relevant policies.

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

Source: World Summit on the Information Society (WSIS), “Declaration of Principles – Building the Information Society: a global challenge in the new Millennium” (12 December 2003), paras. 48-50, which is available at: <http://www.itu.int/wsis/docss/geneva/official/dop.html>.

⁶ Full details on the WSIS process can be found at: <http://www.itu.int/wsis/basic/about.html>.

⁷ The Geneva Declaration and the Plan of Action are available at, respectively: <http://www.itu.int/wsis/docss/geneva/official/dop.html> and <http://www.itu.int/wsis/docss/geneva/official/poa.html>.

As result of the first phase of WSIS, a United Nations Working Group on Internet Governance (WGIG) was set up aimed at preparing and making proposals for action for the second phase of WSIS, Tunis 2005, and at adopting a working definition of Internet governance. WGIG issued its report in June 2005 and defined Internet governance as “the development and application by Governments, the private sector and civil society, in their respective roles, of shared principles, norms, rules, decision-making procedures, and programmes that shape the evolution and use of the Internet”.⁸

During the second phase of WSIS, the objective was to put into practice the Plan of Action adopted in Geneva and to reach consensus in order to deploy the necessary financing mechanisms for meeting the challenges of ICTs for development, Internet governance and the implementation of both Geneva and Tunis outcomes. With respect to Internet governance, the Tunis phase reaffirmed the principles that had been agreed at Geneva, adopted the working definition of Internet governance and identified the “highest priority” public policy issues that had been highlighted by WGIG in its report.

Owing to the complexity of the Internet governance discussions and its related issues, there is a high degree of difficulty in terms of reaching a consensus that can reconcile the interests of the public and private sectors, while taking into account technical considerations, controversial views on ways to maintain the Internet as a stable and trusted medium, and how it should be governed and who should govern it.

In fact, during the WSIS process, the Internet governance debate emerged from the need expressed by several developing countries to shift some of the power of managing the Internet from the United States to the international community. This need is derived from the fact that the Internet is considered as a public good. Consequently, from the perspective of other developed countries, its management needs to take into consideration multilateral cooperation as an important element in order to guarantee its stability and reliability.

The Tunis phase of WSIS resulted in the adoption of the Tunis Agenda for the Information Society, which included a call to convene a new forum for Internet governance. Acting on this call, the United Nations Secretary-General convened the new forum for multi-stakeholder policy dialogue, namely, the Internet Governance Forum (IGF) as an open, neutral, transparent and inclusive platform for multi-stakeholder dialogue on the public policy debate on Internet governance. Roughly speaking, one can view IGF as the main outcome, or at least the successor, of the WSIS process for Internet governance.

The mandate of IGF focuses on multi-stakeholder dialogue and the exchange of experiences on how to maintain the stability, accessibility and availability of the Internet. The notion of “multi-stakeholder”, which is embedded in the IGF process, is a significant indicator that cooperation and exchange of expertise in technology issues represent the main drivers of the discussion aimed at reaching consensus on the pressing issues. IGF gathers capacities from different geographic areas whose main concern is to debate on how the Internet can be managed but not controlled (see box 2), which summarizes the mandate, working functions and organization of IGF as spelled out in the Tunis Agenda.

Box 2. The mandate, working function and organization of the Internet Governance Forum

The mandate of the Internet Governance Forum (IGF) mandate is defined in article 72 of the Tunis Agenda, as follows:

“72. We ask the United Nations Secretary-General, in an open and inclusive process, to convene, by the second quarter of 2006, a meeting of the new forum for multi-stakeholder policy dialogue—called the Internet Governance Forum (IGF). The mandate of the Forum is to:

- (a) Discuss public policy issues related to key elements of Internet governance in order to foster the sustainability, robustness, security, stability and development of the Internet.
- (b) Facilitate discourse between bodies dealing with different cross-cutting international public policies regarding the Internet and discuss issues that do not fall within the scope of any existing body.

⁸ “Report of the Working Group on Internet Governance” (June 2005), para. 10, which is available at: <http://www.wgig.org/docs/WGIGREPORT.doc>.

Box 2 (continued)

- (c) Interface with appropriate intergovernmental organizations and other institutions on matters under their purview.
- (d) Facilitate the exchange of information and best practices, and in this regard make full use of the expertise of the academic, scientific and technical communities.
- (e) Advise all stakeholders in proposing ways and means to accelerate the availability and affordability of the Internet in the developing world.
- (f) Strengthen and enhance the engagement of stakeholders in existing and/or future Internet governance mechanisms, particularly those from developing countries.
- (g) Identify emerging issues, bring them to the attention of the relevant bodies and the general public, and, where appropriate, make recommendations.
- (h) Contribute to capacity building for Internet governance in developing countries, drawing fully on local sources of knowledge and expertise.
- (i) Promote and assess, on an ongoing basis, the embodiment of WSIS principles in Internet governance processes.
- (j) Discuss, inter alia, issues relating to critical Internet resources.
- (k) Help to find solutions to the issues arising from the use and misuse of the Internet, of particular concern to everyday users.
- (l) Publish its proceedings.”

Articles 73 to 78 deals with the working function and organization of IGF, as follows:

“73. The Internet Governance Forum, in its working and function, will be multilateral, multi-stakeholder, democratic and transparent. To that end, the proposed IGF could:

- (a) Build on the existing structures of Internet governance, with special emphasis on the complementarity between all stakeholders involved in this process—governments, business entities, civil society and intergovernmental organizations.
- (b) Have a lightweight and decentralized structure that would be subject to periodic review.
- (c) Meet periodically, as required. IGF meetings, in principle, may be held in parallel with major relevant United Nations conferences, inter alia, to use logistical support.”

Source: World Summit on the Information Society (WSIS), Tunis Agenda, available at: <http://www.itu.int/wsis/docs2/tunis/off/6rev1.html>.

B. THE IGF PROCESS AND ITS IMPORTANCE FOR DEVELOPING COUNTRIES

IGF constitutes a challenge and an opportunity for stakeholders with diverse views to enhance cooperation among all involved parties under the main objective, namely, the constructive evolution of the Internet and its use. It is an opportunity to share ideas, views and practical experiences. Despite the fact that this forum is mainly a discussion forum and has no decision-making authority, it offers an unprecedented arena for addressing Internet governance issues and reaching consensus on global policies regarding Internet governance in order to foster the Internet’s sustainability, robustness, stability, security and development. The Under-Secretary-General within the United Nations Department of Economic and Social Affairs (DESA) described IGF as a valuable melting pot for forging a common understanding of complex Internet issues from diverse points of views, and as a space for frank and enlightened debate that was capable of shaping and informing the decision-making processes.⁹

In effect, the United Nations launched the IGF process in 2006, which is expected to carry out its mandate over the five-year period 2006-2010. The decision to extend this forum will ultimately depend on the assessment of delivered results after that period.

⁹ This description by the Under-Secretary-General was delivered at the opening session of the third IGF meeting in Hyderabad, India, 2008. See: <http://www.intgovforum.org/cms/hydera/Chairman's%20Summary.10.12.2.pdf>.

The first meeting was held in Athens (30 October - 2 November 2006) and discussed four themes, namely: access, diversity, openness and security. The second meeting, which was held in Rio de Janeiro (12-15 November 2007), discussed the same themes in addition to a new theme related to critical Internet resources. The third meeting was held in Hyderabad, India (3-6 December 2008) and focused on the overall theme of “Internet for all”. Table 1 depicts the evolution of the main themes and issues discussed so far during the IGF process.

TABLE 1. EVOLUTION OF THE MAIN THEMES OF THE INTERNET GOVERNANCE FORUM

Main themes discussed in the first IGF meeting held in Athens, 2006	Main themes discussed in the second IGF meeting held in Rio de Janeiro, 2007	Main themes discussed in the third IGF meeting held in Hyderabad, 2008
<ul style="list-style-type: none"> - Access - Diversity - Openness - Security 	<ul style="list-style-type: none"> - Access - Diversity - Openness - Security - Critical Internet resources 	<ul style="list-style-type: none"> - Reaching the next billion - Promoting cyber-security and trust - Managing critical Internet resources

Source: Compiled by ESCWA.

The five broad topics of access, diversity, openness, security and critical Internet resources, which were discussed during the first two meetings of IGF, were the basic building blocks for a more holistic structure that was adopted in the third meeting. These five broad topics remained high on the agenda, but were not classified as the official themes for the main sessions. Instead, three main overarching themes that were deemed more distinct and purposeful were brought to the forefront, namely, reaching the next billion, promoting cyber-security and managing critical Internet resources, each of which highlighted a number of the above-mentioned basic topics.

After three global meetings, IGF proved to be an appropriate discussion medium. However, the limited representation of delegates from developing countries, especially from the Arab region, is yet to be balanced with the active participation of professionals, academia, Governments and civil society from developed economies. Additionally, numerous national and regional events related to Internet governance emerged from these three global meetings and aimed at addressing Internet related issues at local and regional levels.

For developing countries, the Internet represents a golden opportunity to benefit from the technological revolution. However, the lack of clear plans and of expertise in specific issues has created a gap between the North and the South, thereby resulting in a debate driven mainly by the priorities of the North that do not necessarily reflect the needs of developing countries. The change of this trend occurred during the consultations of February 2008 whereby civil society stressed the importance of highlighting the Internet governance issues, with significant relevance to the different regions.

The inclusive nature of IGF is considered unique and highly complicated. The forum is open to all the parties that are directly or indirectly related to the Internet field. While the increasing representation of civil society enriches the discussion, decision-making bodies remain under-represented throughout. There is a need to question the reasons behind the lack of interest of governments, private corporations and civil society from the Arab region in this process. Is it the non-binding nature of IGF’s outcome? Or does it stem from a perspective by some regional actors that the process is merely a talk show that has no authority over the decision-making process? Or is it the lack of awareness about the process itself? By its nature, IGF is an opportunity to discuss and engage in a wide variety of issues affecting the Internet and of interest to specific stakeholders and regions.

At this stage, the IGF secretariat is gathering feedback from all participants in an attempt to assess the whole process. The input of participants from the Arab region will help to define how to move the discussion forward with regard to the issues at stake. However, it has to be noted that so far there is not enough consensus from the countries in the region over the process of Internet governance; and this study aims to help to build or strengthen this consensus.

The development agenda is another issue in the Internet governance discussions that took off after the second IGF meeting in Rio de Janeiro.¹⁰ There is an increasing interest of civil society entities in stressing the role of ICT in growth and sustainable development, especially for emerging economies such as those in the Arab region. The development perspective has emerged to highlight the potential of Internet as an indispensable tool aimed at “supporting new environmental monitoring and analysis capabilities; raising awareness of unsustainable practices; and empowering organizations and individuals to self organize, as well as promote the behavioural change necessary for achieving sustainable development”.¹¹ Consequently, integrating this theme in the Internet governance debate is meant to foster tangible solutions that will guarantee exploring all the possibilities aimed at decreasing the digital and knowledge gap between the North and the South.

This cannot be done without considering the regional priorities of developing countries with regard to Internet governance. There are various social, economic and political disparities that do not qualify least developed countries to integrate into the global Internet governance debate. Consequently, there needs to be a formal support from IGF as a legitimate process in order to launch custom-made regional meetings that serve the interest of these entities. A strong support for organizing mini regional Internet governance forums was witnessed during the interventions of the IGF secretariat in the open consultations held in February 2008.¹² It was also the chance to announce the first East Africa Internet Governance Forum (EAIGF), which was organized in Kenya after a series of local Internet governance forums that were held in Kenya, Uganda, Tanzania and Rwanda.¹³ The outcome of this meeting traced the principal issues of concern to the region, namely: universal affordable access, capacity and skill development, legislative frameworks aimed at creating an enabling environment for creativity and innovation, critical Internet resources, the development of a national and regional framework for cyber crime, security and privacy.¹⁴

The IGF process continues to fulfill its mandate by initiating a global dialogue on the core issues related to Internet use. Moreover, it remains an optimal medium to exchange expertise and suggest the way forward. However, some voices have labeled the IGF process a failure and a waste of time owing to the fact that it does not produce binding decisions. Nitin Desai, the chairman of IGF, confirmed at the end of the third IGF meeting in 2008 that its agenda was never meant to generate any legislation aimed at regulating or governing the Internet. Rather, IGF was designed as an open-dialogue forum aimed at gathering all interested stakeholders in decoding the main issues that will guarantee an available, stable and useful Internet.¹⁵

A strong characteristic of IGF is that all the issues related to the Internet can be examined closely from both the user and business perspectives. Unfortunately, it has been noticed that those governments, in whose hands decisions have to be finally made, played a weak role and were often absent from debates. Governments need to be mobilized and represented through ministries and delegations whose work is linked to Internet use. Equally, the process needs to engage parliamentarians as the elected voice of citizens.

Despite its non-binding nature, the IGF process is an important pillar in the policymaking process of Internet governance. Specifically, this Forum is useful in terms of providing a platform to showcase experiences that participants from developing countries can take back to their regions, and of creating an opportunity for cooperation between different stakeholders.

¹⁰ See Internet Governance Forum (IGF), “Second Meeting of the Internet Governance Forum (IGF), Rio de Janeiro, 12-15 November 2007: Chairman’s Summary”, which is available at: http://www.intgovforum.org/Rio_Meeting/Chairman%20Summary_FINAL.16.11.2007.pdf.

¹¹ T. Vetter, “Internet Governance Forum: A development perspective – A primer for the third meeting” (International Institute for Sustainable Development, August 2008), which is available at: http://www.iisd.org/pdf/2008/Internet_gov_forum_primer.pdf.

¹² A record of these open consultations is available at: <http://www.intgovforum.org/cms/IGF-16Sep08%20Consultation.txt>.

¹³ More information on the first East Africa Internet Governance Forum (EAIGF) is available at: <http://www.eai.gf.or.ke/>.

¹⁴ See also: http://www.eaigf.or.ke/images/stories/EAIGF_Report_Summary_for_IGF_India.pdf.

¹⁵ See Internet Governance Forum (IGF), “Third Meeting of the Internet Governance Forum (IGF), Hyderabad, India, 3-6 December 2008: Chairman’s Summary”, which is available at: www.intgovforum.org/cms/hydera/Chairman's%20Summary.10.12.2.pdf.

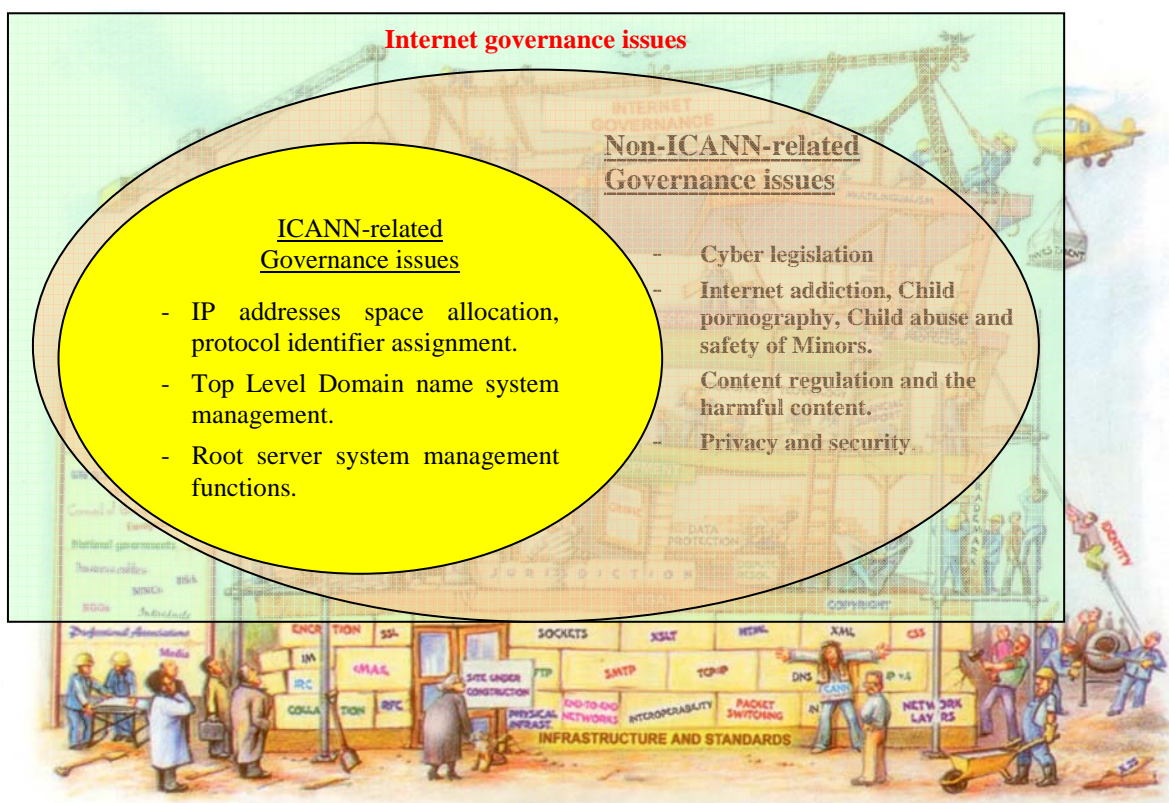
In view of the above, the Arab region must set up an agenda of its priorities aimed at tackling Internet governance from a regional perspective. The contribution of the Arab region in this process will help the discussion in decoding issues that are specific to the Arab region, with a sharp focus on the main themes of IGF.

C. CLASSIFICATION OF INTERNET GOVERNANCE ISSUES

Throughout the WSIS process, the main underlying contentions behind Internet governance were mainly related to the role of the Internet Corporation for Assigned Names and Numbers (ICANN) and the prevailing perception that all Internet governance issues fall under the jurisdiction of ICANN.¹⁶

However, the reality is not exactly congruent with this perception. In fact, the scope of Internet governance is broader than that which is being administered through ICANN. Specifically, it covers a wide range of issues related to international coordination, sovereignty, intellectual property rights, stability, security and responsibility. ICANN promotes competition and develops policy on the Internet's unique identifiers. However, ICANN does not control content on the Internet. It cannot stop spam and it does not deal with access to the Internet. Through its coordinating role of the Internet's naming system, it does have an important impact on the expansion and evolution of the Internet. Hence, the functions of ICANN still encompass the most important elements of the current governance arrangements (see figure 1).

Figure 1. Classification of Internet governance issues

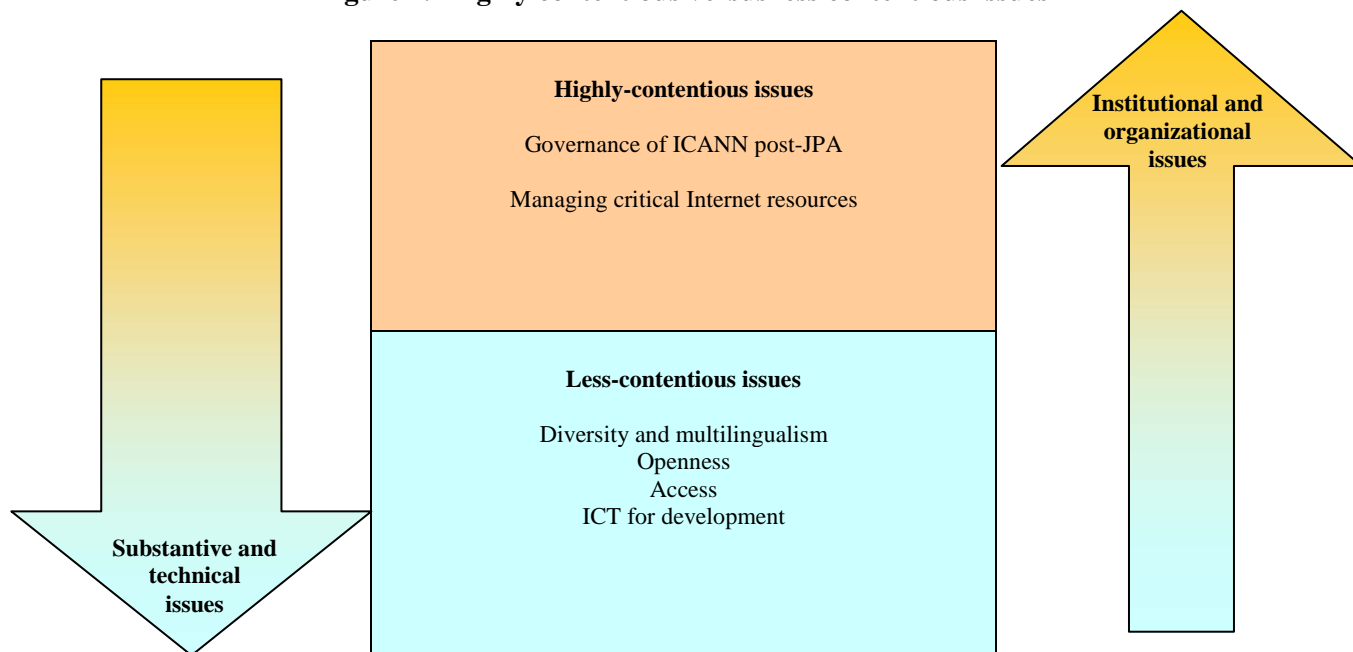


Source: J. Kurbalija and E. Gelbstein, *Internet Governance: Issues, Actors and Divides* (Diplo Foundation, 2005), which is available at: <http://www.diplomacy.edu.ISL/IG/>.

¹⁶ See chapter II for a detailed analysis of the role of the Internet Corporation for Assigned Names and Numbers (ICANN).

From another perspective, Internet governance comprises issues that are more contentious than others (see figure 2).

Figure 2. Highly contentious versus less contentious issues



In 2007, ESCWA and the League of Arab States Working Group on Internet Issues collaborated on a preliminary survey on Internet governance priority issues. The results of this survey, which succeeded in attracting the contributions of a number of experts from Arab countries, were presented at the second IGF meeting and demonstrated the high-level importance of the issues of managing critical Internet resources, access and diversity for the Arab region. For that reason, the following chapters focus in some detail on those selected issues that were deemed relevant or a priority by the experts.

Chapter II deals with the most complex and most contentious of all the issue, namely, the institutional and organizational dynamics. Chapters III, IV and V investigate, respectively, critical Internet resources, access and diversity.

II. INSTITUTIONAL AND ORGANIZATIONAL DYNAMICS

The Internet, which comprises a network of networks whereby innovation occurs at the edge, is a unique medium unlike any that has existed before. Its impact has been felt in all areas, and its evolution and development have contributed to the global potential in many aspects of human life, including, among many others, education, health and business. As the number of Internet users increases to reach the next billion, concerns of the international community are rising with regard to implementing global and regional mechanisms that will allow for the continued evolution, while also addressing concerns of misuse of Internet. The Internet is based on a distributed design and decentralized control, which naturally permits many players to be involved.¹⁷

This chapter deals with the dynamics of Internet governance from an institutional and organizational perspective. It covers the early emergence of a global coordination authority represented by ICANN, analyses the power and priorities of different players, discusses the proposed internationalization of ICANN, and reviews the role of Arab countries in the whole process, including stated and declared comments on the process.

A. EMERGENCE OF AN “AUTHORITY” FOR COORDINATION TRIGGERS THE DEBATE

Historically, owing to the fact that the United States of America launched and commercialized the Internet, it obtained a major supervisory role in specific areas relating to the coordination of the unique identifier system. There are a wide range of organizations involved in the Internet, in addition to the above-mentioned wide range of issues. In 1998, after a series of consultations, the United States sought to establish ICANN. The following timeline demonstrates the early evolution of ICANN:

(a) In 1988, the Internet Assigned Numbers Authority (IANA), which was funded by the Government of the United States, carried out the functions of the administration of critical Internet resources, namely: overseeing global Internet Protocol (IP) address allocation, the Domain Name System (DNS) root zone management, top level domain names assignment and other Internet protocol assignments;

(b) In June 1998, the United States Department of Commerce (DOC) published its Statement of Policy, which addressed the privatization of the technical management of the DNS;¹⁸

(c) On 24 December 1998, the functions of IANA were handed to a new United States private, multi-stakeholder and non-profit corporation, namely, ICANN;¹⁹

(d) In 1999, IANA became an operating unit of ICANN.

Boxes 3 and 4 describe the responsibilities of both parties of the Memorandum of Understanding (MOU) of 1998 between ICANN and DOC.

¹⁷ For more information on the history of the Internet, see also: <http://www.isoc.org/internet/history/>.

¹⁸ This Statement of Policy is available at: http://www.ntia.doc.gov/ntiahome/domainname/6_5_98dns.htm.

¹⁹ ICANN was established in 1998 subsequent to a Memorandum of Understanding between the organization and the United States Department of Commerce (DOC). It was set up as a not-for-profit, public-benefit corporation, with participants from all across the world dedicated to keeping the Internet secure, stable and interoperable. The founding Memorandum of Understanding is reproduced in annex II.

Box 3 shows that DOC undertook the responsibility of providing full support and coordination that was necessary to shift the DNS management functions to ICANN, as well as date-specific milestones designed to help ICANN reach full corporate maturity, while keeping the right to oversee the technical management of the DNS functions.

Box 3. Responsibilities of the United States Department of Commerce under the Memorandum of Understanding of 1998

The United States Department of Commerce agrees to perform the following activities and provide the following resources in support of the DNS Project:

1. Provide expertise and advice on existing DNS management functions.
2. Provide expertise and advice on methods and administrative procedures for conducting open, public proceedings concerning policies and procedures that address the technical management of the DNS.
3. Identify with ICANN the necessary software, databases, know-how, other equipment, and intellectual property necessary to design, develop, and test methods and procedures of the DNS Project.
4. Participate, as necessary, in the design, development, and testing of the methods and procedures of the DNS Project to ensure continuity including coordination between ICANN and Network Solutions, Inc.
5. Collaborate on a study on the design, development, and testing of a process for making the management of the root server system more robust and secure. This aspect of the DNS Project will address:
 - (a) Operational requirements of root name servers, including host hardware capacities, operating system and name server software versions, network connectivity, and physical environment;
 - (b) Examination of the security aspects of the root name server system and review of the number, location, and distribution of root name servers considering the total system performance, robustness, and reliability;
 - (c) Development of operational procedures for the root server system, including formalization of contractual relationships under which root servers throughout the world are operated.
6. Consult with the international community on aspects of the DNS Project.
7. Provide general oversight of activities conducted pursuant to this Agreement.
8. Maintain oversight of the technical management of DNS functions currently performed either directly, or subject to agreements with the United States Government, until such time as further agreement(s) are arranged as necessary, for the private sector to undertake management of specific DNS technical management functions.

Source: The Memorandum of Understanding between the United States Department of Commerce and the Internet Corporation for Assigned Names and Numbers is available at: <http://www.ntia.doc.gov/ntiahome/domainname/icann-memorandum.htm>.

Box 4 shows that responsibilities of ICANN encompass a series of core tasks, including establishing appropriate relationships with the organizations that form the technical underpinnings of the Internet DNS, and assuming coordination and management responsibilities of the Internet's unique identifier system, mainly the global Internet DNS.

Box 4. Responsibilities of ICANN under the Memorandum of Understanding of 1998

ICANN agrees to perform the following activities and provide the following resources in support of the DNS Project and further agrees to undertake the following activities pursuant to its procedures as set forth in Attachment B (Articles of Incorporation) and Attachment C (By-Laws), as they may be revised from time to time in conformity with the DNS Project:

1. Provide expertise and advice on private sector functions related to technical management of the DNS such as the policy and direction of the allocation of IP number blocks and coordination of the assignment of other Internet technical parameters as needed to maintain universal connectivity on the Internet.
2. Collaborate on the design, development and testing of procedures by which members of the Internet community adversely affected by decisions that are in conflict with the bylaws of the organization can seek external review of such decisions by a neutral third party.

Box 4 (continued)

3. Collaborate on the design, development, and testing of a plan for introduction of competition in domain name registration services, including:
 - (a) Development of procedures to designate third parties to participate in tests conducted pursuant to this Agreement;
 - (b) Development of an accreditation procedure for registrars and procedures that subject registrars to consistent requirements designed to promote a stable and robustly competitive DNS, as set forth in the Statement of Policy;
 - (c) Identification of the software, databases, know-how, intellectual property, and other equipment necessary to implement the plan for competition.
4. Collaborate on written technical procedures for operation of the primary root server including procedures that permit modifications, additions or deletions to the root zone file.
5. Collaborate on a study and process for making the management of the root server system more robust and secure. This aspect of the Project will address:
 - (a) Operational requirements of root name servers, including host hardware capacities, operating system and name server software versions, network connectivity, and physical environment;
 - (b) Examination of the security aspects of the root name server system and review of the number, location, and distribution of root name servers considering the total system performance; robustness, and reliability;
 - (c) Development of operational procedures for the root system, including formalization of contractual relationships under which root servers throughout the world are operated.
6. Collaborate on the design, development and testing of a process for affected parties to participate in the formulation of policies and procedures that address the technical management of the Internet. This process will include methods for soliciting, evaluating and responding to comments in the adoption of policies and procedures.
7. Collaborate on the development of additional policies and procedures designed to provide information to the public.
8. Collaborate on the design, development, and testing of appropriate membership mechanisms that foster accountability to and representation of the global and functional diversity of the Internet and its users, within the structure of private-sector DNS management organization.
9. Collaborate on the design, development and testing of a plan for creating a process that will consider the possible expansion of the number of gTLDs. The designed process should consider and take into account the following:
 - (a) The potential impact of new gTLDs on the Internet root server system and Internet stability;
 - (b) The creation and implementation of minimum criteria for new and existing gTLD registries;
 - (c) Potential consumer benefits/costs associated with establishing a competitive environment for gTLD registries;
 - (d) Recommendations regarding trademark/domain name policies set forth in the Statement of Policy; recommendations made by the World Intellectual Property Organization (WIPO) concerning: (i) the development of a uniform approach to resolving trademark/domain name disputes involving cyber piracy; (ii) a process for protecting famous trademarks in the generic top level domains; (iii) the effects of adding new gTLDs and related dispute resolution procedures on trademark and intellectual property holders; and (iv) recommendations made by other independent organizations concerning trademark/domain name issues.
10. Collaborate on other activities as appropriate to fulfill the purpose of this Agreement, as agreed by the Parties.

Source: The Memorandum of Understanding between the United States Department of Commerce and the Internet Corporation for Assigned Names and Numbers is available at: <http://www.ntia.doc.gov/ntiahome/domainname/icann-memorandum.htm>.

While the MOU of 1998 was amended several times, the responsibilities of both parties remained the same until 2006. In September 2006, ICANN signed a new JPA with DOC for the purpose of joint development of mechanisms, methods and procedures necessary to effect the transition of the Internet

domain name and addressing system to the private sector. This agreement expires on 30 September 2009 and is considered as a step towards full independence of ICANN over the Internet system of centrally coordinated identifiers through its multi-stakeholder consultative model (see annex I).

Under this JPA, the responsibilities of DOC and ICANN, which were listed in boxes 3 and 4, were replaced with a new set of responsibilities, as shown in box 5.

Box 5. Responsibilities of the two parties of the Joint Project Agreement of 2006

Department of Commerce: The Department reaffirms its policy goal of transitioning the technical coordination of the DNS to the private sector in a manner that promotes stability and security, competition, bottom-up coordination, and representation. Consistent with this objective, the Department agrees to perform the following activities:

1. *Transparency and Accountability:* Continue to provide expertise and advice on methods and administrative procedures to encourage greater transparency, accountability, and openness in the consideration and adoption of policies related to the technical coordination of the Internet DNS.
2. *Root Server Security:* Continue to consult with the managers of root name servers operated by the United States Government and with other responsible United States Government agencies with respect to operational and security matters, both physical and network, of such root name servers and recommendations for improvements in those matters.
3. *Governmental Advisory Committee:* Participate in the Governmental Advisory Committee so as to facilitate effective consideration by ICANN of GAC advice on the public policy aspects of the technical coordination of the Internet DNS.
4. *Monitoring:* Continue to monitor the performance of the activities conducted pursuant to this Agreement.

ICANN: ICANN reaffirms its commitment to maintaining security and stability in the coordination of the technical functions related to the management of the DNS and to perform as an organization founded on the principles of stability and security, competition, bottom-up coordination, and representation. In conformity with the ICANN Board-approved mission and core values, ICANN agrees to perform the following activities:

1. *Accountability:* To take action on the Responsibilities set out in the Affirmation of Responsibilities established by the ICANN Board in ICANN Board Resolution 06.71, dated September 25, 2006, (Responsibilities) and attached hereto as annex I.
2. *Reporting:* To publish, on or before December 31st of each year, an ICANN Annual Report that sets out ICANN's progress against the following:
 - (a) ICANN bylaws;
 - (b) ICANN's responsibilities;
 - (c) ICANN's strategic and operating plans.

Source: The Joint Project Agreement between the United States Department of Commerce and the Internet Corporation for Assigned Names and Numbers is available at: http://www.ntia.doc.gov/ntiahome/domainname/agreements/jpa/icannjpa_09292006.htm.

From the perspective of ICANN, this JPA recognized the success of the multi-stakeholder model in coordinating the management of the Internet's unique identifier system, and endorsed ICANN's role in that regard. Other stakeholders have also praised the JPA as a step in the right direction. For example, the Information Technology Association of America (ITAA) in Arlington, Virginia, supported the decision and called it "a necessary and important step" towards full autonomy, while noting also that ICANN needed to improve its transparency.²⁰ Equally, the Internet Society (ISOC) stated that the agreement ensured continued stability of the Internet by setting the foundation for an orderly transition of DNS to the private sector.²¹

²⁰ J-C Perez, "Tension envelops US oversight of ICANN following extension", *InfoWorld* (2006), which is available at: <http://www.infoworld.com/d/security-central/tension-envelops-us-oversight-icann-following-extension-190>.

²¹ See: <http://www.isoc.org/isoc/media/releases/060929pr.shtml>.

On the other hand, some see the JPA as an amendment to the MOU of 1998, rather than as a complete document. While it apparently responds to claims requesting full independence of the DNS governance regime from any governmental dominance, in fact the basic relationship between the United States Government and ICANN remains fundamentally unchanged.²² In essence, this agreement keeps the substantial part of the pre-existing MOU in place and reduces the details of DOC oversight. Considered in combination with the IANA contract, which ultimately controls any modification of the DNS root and which is still controlled entirely by the United States Government, many believe that this agreement does not substantially reduce the level of that Government's control over ICANN and Internet identifiers.²³

Before its expiration, some stakeholders have suggested that the JPA should not be renewed in order to liberalize ICANN from United States Government intervention and permit full independence of ICANN, with more legal accountability to the global community.²⁴ Others have suggested keeping the JPA in order to ensure the stability and security of the Internet, and perceive the current model as meeting the needs of all Internet users.

The debate on Internet governance and the need for a governance model that meets the expectations of the global community, which emerged during the first phase of WSIS in 2003, remains to this day. During that time, most of the institutional and organizational debate has focused on the role of ICANN as the body that coordinates the global Internet's systems of unique identifiers, including, among others, root servers, IP addresses, DNS and Top Level Domains. The debate evolved out of a need to understand the motivation behind the creation of ICANN as a non-profit corporation in the first place, and whether or not it should remain the ultimate authority with the power to shape decisions about the core functionalities of the Internet.²⁵

As the debate continues among all Internet players on the best governance schemes for the Internet, stakeholders have come to realize that there is no single organization that coordinates all the issues related to the Internet. Rather, there is a wide range of organizations, including the private sector, intergovernmental and multilateral arrangements, each of which uniquely contributes to the success of the global Internet. The following sections analyse parts of the current ecosystem of Internet governance and the positions of different players in some of these areas.

B. CURRENT ECOSYSTEM FOR INTERNET GOVERNANCE

1. *Background on the Internet ecosystem*²⁶

The Internet has evolved from the research community into a vast, global network connecting tens of millions of computers and more than 1.5 billion individuals across the world. One of the key characteristics of the Internet is interoperability of its all components, a feature that would not have been achieved without standardization. Back in the early days of Internet, researchers had agreed to base their design on open standards, with interfaces that could be made available for free for application developers. Thus, it is evident today that innovation on the Internet always takes place at the edge of the network where anyone can develop applications and make them available online for users all across the world. Collaboration and

²² More opinions on the JPA are available at: <http://blog.Internetgovernance.org/blog/archives/2008/2/8/3512862.html>.

²³ See also: <http://blog.Internetgovernance.org/blog/archives/2006/9/303340162.html>.

²⁴ There have also been similar suggestions made by the EU Commissioner, Vivian Reding, aimed at proposing oversight of Internet governance by a multilateral forum such as a Group of Twelve (G12) for Internet Governance.

²⁵ However, that perception shifted to some extent during the process. As stakeholders continued to engage together in open dialogue, many came to realize that Internet governance includes a wide range of topics other than domain names and numbers. That was articulated in the report of the Working Group on Internet Governance (WGIG) as well as in Article 58 of the Tunis Agenda. See World Summit on the Information Society (WSIS), "The Tunis Agenda for the Information Society", which is available at: <http://www.itu.int/wsis/docs2/tunis/off/6rev1.html>.

²⁶ This section is largely based on a communiqué by ICANN's Manager of Regional Relations in the Middle East.

coordination among organizations and groups is another key word in the success of the Internet. Over the past four decades, the Internet has witnessed numerous developments that would not have been achieved without collaboration and coordination among researchers, industry and members of the Internet community from all across the world. Groups such as the Internet Architecture Board (IAB), the Internet Engineering Steering Group (IESG), the Internet Engineering Task Force (IETF), the Internet Research Steering Group (IRSG), the Internet Research Task Force (IRTF) and the RFC editor have all contributed to the evolution of the Internet into a robust, stable, secure and interoperable network. These groups operate under the auspices of ISOC, which was established in 1992 and has, since then, been playing a fundamental role in education and capacity-building.

The coordination of the Internet system of unique identifiers, namely, the top level domain names, IP addresses, Autonomous System numbers and protocol port numbers, was first carried out by IANA, which was operated by one of the researchers who had contributed to the development of the Internet since the early 1970s. The IANA function was institutionalized in 1992 and was later integrated into ICANN when the latter was established in 1998. ICANN/IANA coordinates the policies of IP addresses with the Number Resource Organization (NRO), which comprise Regional Internet Registries (RIRs) that develop IP address policies within their respective regions. It is also worth noting that participation in technical standardization and policy development processes through any of those organizations is open for anyone and is free of charge.

Organizations and groups mentioned above as well as many others constitute the Internet ecosystem. This ecosystem is global in scope and is built around collaboration and cooperation among all parties involved. A large number of organizations representing all stakeholders and thousands of individual experts have been engaging in this process for many years. It is fair to say that the success of the Internet owes a debt to the vision and the expertise of those who have made the Internet what it is today.

2. *Stated information society interests of the United States*

Basically, the core of the current governance system is exercised by ICANN, which coordinates on the global level, through a multi-stakeholder model accessible to the global community, the Internet's unique identifier system, including DNS, namely generic Top Level Domains (gTLDs) and the country code Top Level Domains (ccTLDs). As discussed above, ICANN had an MOU and subsequently a JPA with the United States Department of Commerce. Hence, it may be useful to refer to the United States interests in this area. Box 6 includes an excerpt from an independent Internet website with regard to the priorities of the United States as presented in the first phase of WSIS.

Box 6. United States priorities identified during the first phase of WSIS

"In a document released on 3 December 2003* the United States delegation to the WSIS advocated a strong private sector and rule of law as the critical foundations for development of national information and communication technologies (ICT). Ambassador David Gross, the United States coordinator for international communications and information policy, outlined what he called 'the three pillars' of the United States position in a briefing to reporters 3 December.

1. As nations attempt to build a sustainable ICT sector, commitment to the private sector and rule of law must be emphasized, Gross said, 'so that countries can attract the necessary private investment to create the infrastructure'.
2. A second important pillar of the United States position was the need for content creation and intellectual property rights protection in order to inspire ongoing content development.
3. Ensuring security on the Internet, in electronic communications and in electronic commerce was the third major priority for the United States. 'All of this works and is exciting for people as long as people feel that the networks are secure from cyber attacks, secure in terms of their privacy', Gross said.

As the Geneva phase of the meeting drew closer, one proposal that was gaining attention was to create an international fund to provide increased financial resources to help lesser-developed nations expand their ICT sectors. The 'voluntary digital solidarity fund' was a proposal put forth by the president of Senegal, but it was not one that the United States could currently endorse, Gross said.

Box 6 (continued)

Gross said the United States was also achieving broad consensus on the principle that a ‘culture of cybersecurity’ must develop in national ICT policies to continue growth and expansion in this area. He said the last few years had been marked by considerable progress as nations update their laws to address the galloping criminal threats in cyberspace. ‘There’s capacity-building for countries to be able to criminalize those activities that occur within their borders...and similarly to work internationally to communicate between administrations of law enforcement to track down people who are acting in ways that are unlawful,’ Gross said.”

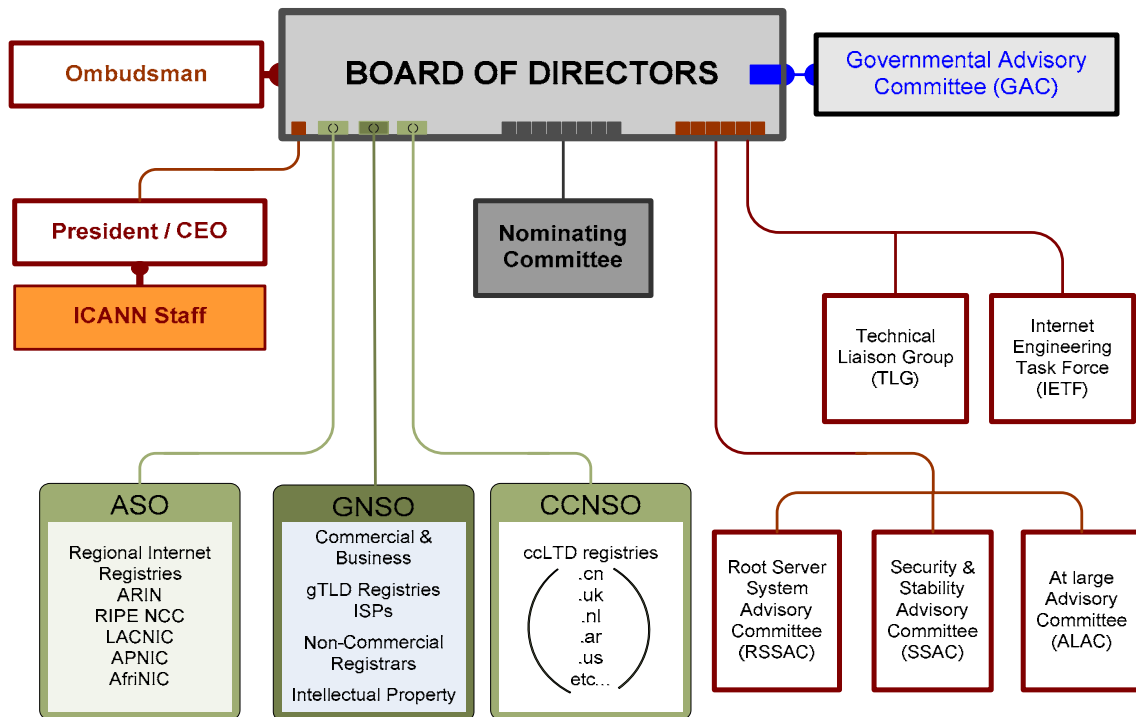
* See C. Porter, “U.S. Outlines Priorities for World Summit on the Information Society” (3 December 2003), which is available at: <http://www.iwar.org.uk/news-archive/2003/12-03.htm>.

While this statement was made at the onset of the debate in the WSIS process, it does give a clear depiction of the United States position at the critical point of a heated debate surrounding Internet governance-related issues. The position at that time was apparently on the hard-line side and was clearly in favour of private-sector leadership over intergovernmental leadership.

3. ICANN functions and structure

ICANN has a mandate to perform technical coordination of core Internet resources, most notably domain names, in order to develop mutually-acceptable relationships with the other key entities that manage critical functions, including the root server operators, regional addressing registries and the ccTLD community; and to develop policies within that scope in a transparent, open, participatory and bottom-up manner.²⁷ ICANN has an international Board of Directors, which has the sole legal responsibility for ICANN policy and decisions, and internal organic mechanisms, councils and committees (see figure 3).

Figure 3. The organization structure of ICANN



Source: ICANN, “Structure”, which is available at: <http://www.icann.org/en/structure/>.

²⁷ More information on the bylaws for Internet Corporation for Assigned Names and Numbers is available at: <http://www.icann.org/en/general/bylaws.htm#I>.

ICANN policy development process originates in the following supporting organizations:

(a) Generic Names Supporting Organization (GNSO), which is responsible for developing policy for DNS;

(b) Address Supporting Organization (ASO), which is responsible for reviewing and developing recommendations on IP address policy and to advise the ICANN Board;

(c) Number Resource Organization (NRO), which is responsible for undertaking joint activities of RIRs, including joint technical projects, liaison activities and policy coordination;

(d) Country-code Names Supporting Organization (ccNSO) which is responsible for developing and recommending to the Board global policies relating to country-code top-level domains, nurturing consensus across the ccNSO's community, including the name-related activities of ccTLDs; and coordinating with other ICANN Supporting Organizations, committees, and constituencies under ICANN.

Advisory committees are composed of representatives from individual user organizations and technical communities and have the right to be consulted on ICANN decisions as well in appointing non-voting liaisons officers on the board. These are as follows:

(a) At Large Advisory Committee (ALAC), which is responsible for considering and providing advice on the activities of ICANN as they relate to the interests of individual Internet users;

(b) Security and Stability Advisory Committee (SSAC), which is responsible for advising the ICANN community and Board on matters relating to the security and integrity of the Internet's naming and address allocation systems;

(c) DNS Root Server System Advisory Committee (RSSAC), which is responsible for advising the Board about the operation of the root name servers of the domain name system, examining and advising on the security aspects of the root name server system, reviewing the number, location and distribution of root name servers considering the total system performance, robustness and reliability;

(d) Governmental Advisory Committee (GAC), which is responsible for advising ICANN with regard to public policy issues and also raising issues of concern to governments, especially in matters that may intersect between ICANN policies and national laws or international agreements.

4. Role of business entities related to ICANN in Internet governance

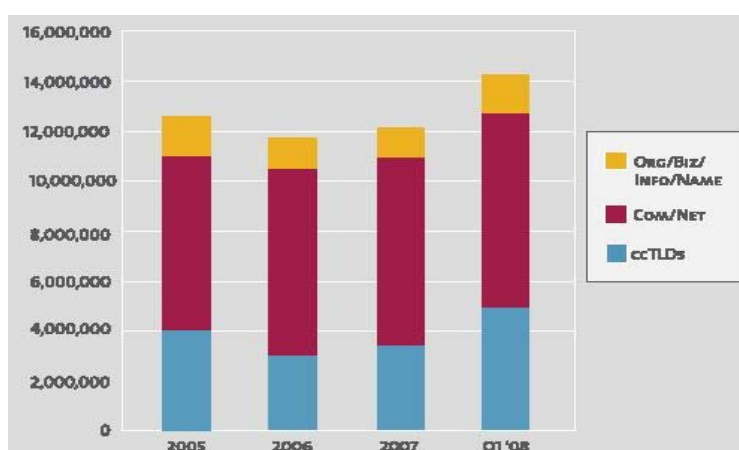
As demonstrated in the section above, the United States considers the private sector to be the appropriate leader of the information society. Moreover, the private sector itself recognizes the powerful role played by the Internet in the economic and social development of communities across the world. This recognition sharpens the interests of the business sector. The business community plays an important role in developing the technological infrastructure, applications and platforms, in addition to promoting innovative technology developments towards next-generation products and services, which contribute to the evolution of the Internet. Business actors are therefore aware of the importance of their contributions in the discussions about Internet policies, which reflect on their businesses and enhance commercial capabilities.

Among the wide range of businesses that participate and are engaged with ICANN is one subgroup of in the domain name industry, namely, the registries and registrars. The main registry function is the administration and the maintenance of the name servers' database to translate domain names into numerical addresses, based on principles of quality, efficiency, reliability and accessibility. The main registrar function is the registration of domain names as requested by end-users, generally referred to as "registrants".

Competition in the domain name space and the ability for users to register domain names with companies across the globe increased after the inception of ICANN.²⁸

According to current ICANN policies, the registry is not entitled to offer the registration of domain names to the registrants directly; only ICANN Accredited Registrars are allowed to register domain names in the name and on behalf of their clients. Figure 4 demonstrates the growth of new registrations under some major top level domains during a period of approximately three years.

Figure 4. Growth of new domain name registrations



Source: VeriSign, *The Domain Name Industry Brief*, vol. 5, No. 5 (December 2008).

ICANN has a number of revenue sources, thereby reflecting the diversity of interests in its global mission. ICANN's budget process occurs annually through consultation with the community on an operational and budget plan. In addition to country code operators and RIRs, registrants via registries and registrars provide substantial funding for the coordination of a globally interoperable Internet through the work of ICANN (see table 2).

TABLE 2. ICANN REVENUE
(United States dollars)

	Fiscal year 2009 budget	Fiscal year 2008 budget	Fiscal year 2008 forecast
gTLD registrar	30.9 million	26.7 million	28.0 million
gTLD registry	25.1 million	19.7 million	19.7 million
RIR	0.8 million	0.8 million	0.8 million
ccTLD	2.3 million	1.8 million	1.3 million
Other	1.5 million	1.3 million	1.2 million
Total revenue	60.7 million	50.3 million	51.0 million

Source: ICANN, "Adopted FY09 Operating Plan and Budget: Fiscal Year Ending 30 June 2009" (25 June 2008), p. 19, which is available at: <http://www.icann.org/en/financials/adopted-opplan-budget-v3-fy09-25jun08-en.pdf>.

Table 2 illustrates that the ultimate source for ICANN revenue comes from gTLD registry and registrars. More specifically, a much greater proportion of ICANN's revenue come from VeriSign (see table 3).²⁹

²⁸ According to a communiqué by ICANN's Manager of Regional Relations in the Middle East.

²⁹ VeriSign is the administrator of the ".com" registry. More information is available at: http://www.ntia.doc.gov/ntiahome/domainname/jpacommments2007/jpacomment_093.pdf; and <http://gnso.icann.org/issues/gtld-policies/pcc-pdp-03aug06.pdf>.

TABLE 3. ICANN REVENUE PROVISIONS FROM REGISTRIES
(United States dollars)

Registry revenue					
gTLD	Fixed fee	Fee per trans	Trans volume	Trans fee	Total
.com	12 000 000	-	88 039 476	-	12 000 000
.pro	121 900	-	6 283	-	121 900
.tel	50 000	-	n/a	-	50 000
.aero	5 000	-	7 331	-	5 000
.coop	5 000	-	3 510	-	5 000
.museum	500	-	n/a	-	500
.cat	10 000	1.00	15 349	15 349	25 349
.jobs	10 000	2.00	19 374	38 748	48 748
.travel	10 000	2.00	38 225	76 450	86 450
.net	-	0.75	13 168 080	9 876 060	9 876 060
.biz	-	0.15	2 114 485	317 173	317 173
.info	-	0.15	5 557 937	833 691	833 691
.name	-	0.15	299 271	44 891	44 891
.org	-	0.15	7 296 500	1 094 475	1 094 475
.mobi	-	0.75	610 789	458 092	458 092
.asia	-	0.75	182 862	137 147	137 147
	12 212 400		117 359 472	12 892 076	25 104 476

Source: ICANN, "Adopted FY09 Operating Plan and Budget: Fiscal Year Ending 30 June 2009" (25 June 2008), p. 21.

Some have argued that ICANN is somehow influenced by the domain name registration industry, which tries to exert a pressure on ICANN aimed at shaping policies that fit with its interest.³⁰ This pressure is believed to arise either in terms of introducing new gTLDs or in terms of defining the fees for these new gTLDs.³¹ In fact, the interests of registries and registrars are not perfectly aligned. While registrars welcome new gTLDs, some registries see gTLDs as potential competitors. The current GNSO representational scheme enables commercial organizations to lobby and participate in ICANN processes in order to guarantee special concentrated economic interests in policy outcomes. In the past few years, however, GNSO has been undergoing a major reform process against the backdrop set forth below.³²

After the first round of introducing new gTLDs in the domain space, the market demonstrated its capacity to absorb more gTLDs, especially those that fulfil the needs of specific communities.

The controversy over the introduction of new gTLDs announced by ICANN clearly demonstrated the power and the privilege of the tycoons of the registry business, which attempt to delay the entry of new gTLDs and IDN fast track to the marketplace. This owes to the simple proposition that the new proposed gTLD programme provides more choices for consumers, genuine uniqueness and specificity in gTLDs and, consequently, greater competition among registries leading to a decrease in their market share. On the other hand and on this special issue, ICANN believes that the community it is serving is diverse and possesses varying and conflicting interests. If some registries have a specific interest in delaying new gTLDs or IDN

³⁰ According to a communiqué by ICANN's Manager of Regional Relations in the Middle East, ICANN's operational planning and budgetary process occurs in consultation with the community, and ICANN's work is conducted in a manner of openness and transparency, as well as seeing to ensure the participation and engagement of all interested stakeholders in the processes, including through public consultations. See: <http://www.icann.org/en/planning/>; and <http://www.icann.org/en/accountability/frameworks-principles/contents-overview.htm>.

³¹ According to a communiqué by ICANN's Manager of Regional Relations in the Middle East, ICANN believes that the proposal it had put for the fees was not influenced by any party and was based, instead, purely to calculations. The financial study is available at: <http://www.icann.org/en/topics/new-gtlds/cost-considerations-23oct08-en.pdf>.

³² More debate and information on these reforms is available at: http://blog.Internetgovernance.org/blog/_archives/2008/6/; and <http://gns0.icann.org/en/improvements/>.

ccTLDs, other registries do not share the same interest. ICANN believes that there are also some governments and ccTLD managers who have no interest in new gTLDs and have more or less interest in IDN ccTLDs.³³

Moreover, many stakeholders consider that the very high fees that ICANN is planning to introduce for new gTLD registrations, at \$185,000, is excessive and favours large and rich companies that can afford to buy thousands of new gTLDs at the expense of smaller and more modest entities.³⁴

Furthermore, the introduction of new gTLDs faced a great opposition from DOC and trademark holders, who continue to have serious concerns about this substantial expansion from 20 or so TLDs to potentially hundreds all at once, and which is considered to be defying logic and sound business sense, as well as being counterproductive in terms competitiveness.³⁵

Generally, the business sector sees the Internet as a great asset and is in favour of maintaining the current status quo that is more aligned with their interests. For example, several Internet-based businesses in the United States are currently raising strong concerns about ICANN ending its agreement with the Government. They are claiming that the organization will be vulnerable to outside takeovers by other governments, and they are sceptical about the possibility of replacing the role of the United States Government with that of another Government. They are convinced that the current control scheme may be better than alternatives and suggest that “the organization’s traditional role be split up, with ICANN retaining responsibility for overseeing generic top-level domains (gTLDs) and a new organization overseeing country-code top level domains (ccTLDs)”.³⁶ Others, however, maintain that “splitting up ICANN’s responsibilities would be a bad idea. Two domain-name system (DNS) groups could cause confusion and cause the Internet to work improperly”.³⁷

5. Role of the civil society in Internet governance

Besides the business sector and governments, the civil society and the Internet community at large represent vital actors in the Internet governance process, as set forth in the definition of Internet governance by WGIG. They actually contribute to the development of Internet protocols, advocating user rights, creating content and developing online communities.

The participation of the civil society in the process is part of the multi-stakeholder model, as is the full engagement in issues relating to the Internet that bring greater public awareness, participation and accountability to the process.

The contribution of the civil society and non-governmental organizations (NGOs) to the Internet governance process and international forums has been increasing and strengthening over the past few years. From that point of view, ICANN, as one of many Internet governance players albeit a powerful one, is an NGO as is the IETF. While both organizations are not typical NGOs, with the former as a sort of multi-

³³ This interest relates to such variables as, among others, country and language. For information on the TLD process, see: <http://www.icann.org/en/topics/new-gtld-program.htm>.

³⁴ It is worth noting, however, that these fees proposed by ICANN were based on detailed analysis and calculations that have been made available for the public for further comments and discussions. See: <http://www.icann.org/en/topics/new-gtlds/cost-considerations-23oct08-en.pdf>.

³⁵ For more information, see: <http://domainnamewire.com/2009/01/05/icann-advertises-to-the-mainstream-update-on-new-tlds/>; <http://domainnamewire.com/2008/12/17/microsoft-time-warner-others-weigh-in-on-new-tlds/>; and <http://domainnamewire.com/2008/10/29/trademark-holders-shouldnt-rush-to-get-new-tlds/>.

³⁶ *IDG News Service*, “US businesses concerned about ICANN changes” (14 January 2009), which is available at: http://www.pcworld.com/article/157076/us_businesses_concerned_about_icann_changes.html.

³⁷ *Ibid.*

stakeholder body and the latter belonging to the technical community, some governments still perceive them as such owing to their non-governmental and non-profit characteristics.

The participation of NGOs started during the WSIS process and has gained strength since then. Box 7 demonstrates the vision and position of the civil society at the conclusion of the WSIS process regarding their participation in the WSIS process and pertaining to Internet governance and the IGF processes. It is to be noted that civil society is also active in the IGF process through dynamic coalitions and movements towards freedom of expression.

Box 7. Civil Society Declaration on WSIS regarding its role and its views about Internet governance

“Civil society is pleased with the decision to create an Internet Governance Forum (IGF), which it has advocated for since 2003. We also are pleased that the IGF will have sufficient scope to deal with the issues we believe must be addressed, most notably the conformity of existing arrangements with the Geneva Principles, and other cross-cutting or multidimensional issues that cannot be optimally dealt with within current arrangements. However, we reiterate our concerns that the Forum must not be anchored in any existing specialized international organization, meaning that its legal form, finances, and professional staff should be independent. In addition, we reiterate our view that the forum should be more than a place for dialogue.

We are concerned about the absence of details on how this forum will be created and on how it will be funded. We insist that the modalities of the IGF be determined in full cooperation with Civil Society. We emphasize that success in the forum, as in most areas of Internet governance; will be impossible without the full participation of Civil Society. By full participation we mean much more than playing a mere advisory role.

The Tunis Agenda addressed the issue of political oversight of critical Internet resources in its paragraphs 69 to 71. This, in itself, is an achievement. It is also important that governments recognized the need for the development of a set of Internet-related public policy principles that would frame political oversight of Internet resources.

It is important that governments have established that developing these principles should be a shared responsibility. However, it is very unfortunate that the Tunis Agenda suggests that governments are only willing to share this role and responsibility among themselves, in cooperation with international organizations. Civil Society remains strongly of the view that the formulation of appropriate and legitimate public policies pertaining to Internet governance requires the full and meaningful involvement of non-governmental stakeholders”.

“With regard to paragraph 63, we believe that a country code Top Level Domain (ccTLD) is a public good both for people of the concerned country or economy and for global citizens who have various linkages to particular countries. While we recognize the important role of governments in protecting the ccTLDs that refer to their countries or economies, this role must be executed in a manner that respects human rights as expressed in existing international treaties through a democratic, transparent and inclusive process with full involvement of all stakeholders.

To ensure that development of the Internet and its governance takes place in the public interest, it is important for all stakeholders to better understand how core Internet governance functions – as for example, DNS management, IP address allocation, and others – are carried out. It is equally important that these same actors understand the linkages between broader Internet governance and Internet related matters such as cyber-crime, Intellectual Property Rights, e-commerce, e-government, human rights and capacity building and economic development. The responsibility of creating such awareness should be shared by everyone, including those at present involved in the governance and development of the Internet and emerging information and communication platforms”.

“The United Nations Working Group on Internet Governance created an innovative format where governmental and Civil Society actors worked on an equal footing and Civil Society actually carried a large part of the drafting load”.

“WSIS has demonstrated beyond any doubt the benefits of interaction between all stakeholders. The innovative rules and practices of participation established in this process will be fully documented to provide a reference point and a benchmark for participants in United Nations organizations and processes in the future”.

“We note that some governments from developing countries were not actively supportive of greater observer participation believing that that it can lead to undue dominance of debate and opinions by international and developed countries’ Civil Society organizations and the private sector. We believe that to change this perception, efforts should be engaged in to strengthen the presence, independence and participation of Civil Society constituencies in and from their own countries”.

Box 7 (continued)

“We want to express concern at the vagueness of text referring to the role of Civil Society. In almost every paragraph talking about multi-stakeholder participation, the phrase “in their respective roles and responsibilities” is used to limit the degree of multi-stakeholder participation. This limitation is due to the refusal of governments to recognize the full range of the roles and responsibilities of Civil Society. Instead of the reduced capabilities assigned in paragraph 35C of the Tunis Agenda that attempt to restrict Civil Society to a community role, governments should have at minima referred to the list of Civil Society roles and responsibilities listed in the WGIG report. These are:

- Awareness raising and capacity building (knowledge, training, skills sharing);
- Promote various public interest objectives;
- Facilitate network building;
- Mobilize citizens in democratic processes;
- Bring perspectives of marginalized groups including for example excluded communities and grassroots activists;
- Engage in policy processes;
- Bring expertise, skills, experience and knowledge in a range of ICT policy areas contributing to policy processes and policies that are more bottom-up, people-centred and inclusive;
- Research and development of technologies and standards;
- Development and dissemination of best practices;
- Helping to ensure that political and market forces are accountable to the needs of all members of society;
- Encourage social responsibility and good governance practice;
- Advocate for development of social projects and activities that are critical but may not be ‘fashionable’ or profitable;
- Contribute to shaping visions of human-centred information societies based on human rights, sustainable development, social justice and empowerment”.

“Civil Society is committed to continuing its involvement in the future mechanisms for policy debate, implementation and follow-up on Information Society issues. To do this, Civil Society will build on the processes and structures that were developed during the WSIS process... and will actively participate in and support the work of the Internet Governance Forum (IGF), and is exploring ways to enhance its working methods and its engagement with relevant stakeholders, especially the research community, to these ends. In addition, the caucus is considering the creation of a new Working Group that will make recommendations on the IGF, and other Civil Society caucuses, and individual Civil Society Working Groups will develop ideas for and participate in the IGF as well”.

Source: Various extracts from World Summit on the Information Society, “Civil Society Statement on the World Summit on the Information Society” (18 December 2005), pps. 7-9 and 15, which is available at: <http://www.itu.int/wsis/docs2/tunis/contributions/co13.doc>.

6. Role of United Nations agencies and other international organizations in Internet governance

In cyberspace, many international organizations collaborate on public policy matters related to the information society, including the International Telecommunications Union (ITU), the United Nations Educational, Scientific and Cultural Organization (UNESCO) and the World Intellectual Property Organization (WIPO). The main concern of United Nations agencies in Internet governance revolves around issues that can be distinct from or overlap with ICANN-related governance issues. These concerns can be technical, ethical, societal and/or legal issues. Indeed, these international organizations still provide a legitimate vehicle through which various governments can engage in cooperative governance efforts.

ITU is the specialized United Nations agency for ICT issues and the global focal point for governments and the private sector in developing networks and services. In accordance with its constitution, the purpose of ITU is “to maintain and extend international cooperation among all its Member States for the improvement and rational use of telecommunications of all kinds”,³⁸ and telecommunications is defined as

³⁸ Constitution of the International Telecommunication Union, Article 1, para.3 (a) , which is available at: http://www.itu.int/aboutitu/Basic_Text_ITU-e.pdf.

any “transmission, emission or reception of signs, signals, writing, images and sounds or intelligence of any nature by wire, radio, optical or other electromagnetic systems”.³⁹

ITU contributes to the technical development of the Internet. In recent years, it has been directly involved in convergent technologies related to the Internet, including VoIP, ENUM, MPLS, cable modems, ADSL and Next Generation Networks, compatible with its role to support key issues related to the continuing evolution of the global telecommunication system.

Furthermore, ITU addresses policy development challenges with diverse functional, cultural and geographic dimensions. It has raised issues directly related to sovereignty, stability, and quality of service of telecommunication networks. From a policy-related aspect, ITU has many policy-related activities, including some specifically related to existing regulatory regimes need to be modified or adapted in order to encourage further development of the Internet. This incorporates such issues as tariff, cost sharing, quality of service, service definitions and security.⁴⁰

In response to calls by some governments for ITU to play a more operational role and to assume its responsibility in this area, based on its successful experience in international coordination and regulation in the telecommunication sector, ITU at a certain point in time was trying to play an active role in Internet governance. It responded to those calls in 2004 by proposing to be put in charge of providing appropriate public policy frameworks at the international level for Internet matters.⁴¹ However, this proposal did not gain full international support. Subsequently, the position developed differently and several ITU member countries stressed the importance of strengthening role of the Union in Internet governance.

Internet governance is a core concern for UNESCO, which is primarily concerned with issues related to openness, freedom of expression in knowledge societies and measures to resist any attempt to censor content, universal access to information, intellectual property rights, capacity-building and recognition of linguistic and cultural diversity. Box 8 below highlights the proposed role of UNESCO in the debate over Internet governance.

Box 8. The proposed role of UNESCO in the debate over Internet governance

“UNESCO intends to play a threefold role in the debate, as follows:

- (a) UNESCO will contribute to the debate on issues within its fields of competence, particularly the broader “cyberspace” policy issues (legal, societal and ethical), insisting on robust analysis, advocating precise language and a depoliticized debate;
- (b) With its record of successfully promoting collaboration among governments and civil society, UNESCO is ready to participate in discussions (such as via the Working Group on Internet governance) and to assist those tasked with the review of Internet governance to develop solutions that fit the diagnosis and are long-lasting in that they reflect a wider consensus on the issues;
- (c) UNESCO will continue to safeguard such key values as freedom of expression, cultural diversity and openness. It will advocate that existing mechanisms, including as ICANN, or any modification of these mechanisms, must reflect the following principles:
 - The inherent openness of the Internet infrastructure must be preserved and should be conducive to the free flow of ideas and knowledge through word and image;
 - Modifications must not result in the global Internet governance system becoming subjected to governmental control, nor should they facilitate or permit censorship;
 - There must be a precise correlation between new mechanisms and the problems they seek to address;

³⁹ Ibid., annex, para. 1012.

⁴⁰ H. Zhao, “ITU and Internet governance – draft input to the seventh meeting of the ITU Council Working Group on WSIS, 12-14 December 2004”, which is available at: <http://www.itu.int/ITU-T/tsb-director/itut-wsis/files/zhao-netgov01.doc>.

⁴¹ Ibid.

Box 8 (continued)

- Technical innovation must continue to be encouraged;
- Modifications to ICANN or new mechanisms should not inhibit interoperability, cause instability, nor should they slow down the continued technical development of the Internet;
- Any global Internet management system or mechanism must be technically competent, transparent and non-partisan.

Whichever mechanism manages the current responsibilities of ICANN, the result should be one that enables greater use of the Internet, thereby promoting greater participation in the modern information world by increasing the number of citizens from diverse linguistic and cultural backgrounds”.

Source: UNESCO, “UNESCO position statement”, which was prepared for the ICT Task Force Global Forum on Internet Governance (New York, 25-26 March 2004), which is available at: http://portal.unesco.org/ci/en/files/25770/12003244003position_statement_en.pdf/position_statement_en.pdf.

Additionally, particular attention needs to be given to the role played by WIPO on matters related to Internet governance, mainly its active involvement in cyber legislation, the resolution of domain name/trade mark disputes, registries conflict and enabling environment issues. WIPO is already active in regulatory actions with direct impact on Internet functions.

Other key international players have issues related to Internet governance on their mandates and cooperate globally on many critical issues, mainly on cyber security, including, among others, the Organisation for Economic Co-operation and Development (OECD), the Council of Europe and the Asia Pacific Economic Forum (APEF). “As the operations and applications of the Internet become more fully integrated into the technical, economic, social, and political activities of the world community, the international organizations that already regulate those activities will exercise increasing influence over the Internet through their influence over the facilities that comprise the Internet and the functions supported by the Internet”.⁴²

C. INITIAL CRITIQUE TO THE PREVAILING INTERNET GOVERNANCE ECOSYSTEM

The above sections in this chapter have highlighted the different roles and interests of various actors, and the resulting thorny and complicated nature of the debate on Internet governance. In addition, the decentralized nature of the Internet and the Internet’s ecosystem of entities imply a unique role and responsibility for all. In fact, much of the debate surrounds the role of ICANN and what constitutes the best governance model.

Initially, there were two main approaches, namely: (a) an intergovernmental governance model, such as ITU, whereby governments take decisions while civil society, businesses and other stakeholders merely have a consulting function; and (b) a multi-stakeholder governance model, such as ICANN, which allows cooperation of the above different players based on what they can offer for a comprehensive solution. Much of this discussion was also reflected in the report by WGIG that contributed to the final discussions resulting in the conclusion documents of the WSIS process.

As has been described above, the current Internet governance system has plenty of supporters who provide arguments in favour of the status quo as a multi-stakeholder governance model with a dynamic nature, away from bureaucratic Government interventions. Equally, there are those who argue for change and believe that effective Internet governance requires a global approach with full involvement of all parties,

⁴² J.H. Matsuura, “Internet governance: To find the Internet’s once and future king”, which is available at: http://www.isoc.org/inet2000/cdproceedings/8g/8g_3.htm#s4.

thereby shifting the control of these global resources to a more representative international and/or intergovernmental mechanism.⁴³

However, there are also some concerns that ICANN, as a private-sector led entity registered in California and subject to Californian laws and United States business codes, could create international imbalances in the global Internet by granting an advantageous position to enterprises based in the United States at the expense of other national or regional interests.

Furthermore, some developing countries and other critics of the status quo argue that the United States Government should share its authority over some of the Internet core resources with the rest of the world, as they consider the Internet a global public good. In their view, a model similar to the ITU should apply to the Internet. On the other hand, some governments and non-governmental stakeholders from all parts of the world have made it clear that they feel left out of classical intergovernmental arrangements and prefer the bottom-up collaborative way the Internet is currently being run.⁴⁴ At issue is ensuring a mechanism that ensures that the Internet continues to evolve, given its decentralized nature and ecosystem of organizations. The WSIS process addressed this during its discussions and conclusions.

Another issue at the core of the global Internet governance debate is the narrow versus broad view of Internet governance. According to the narrow approach, Internet governance mechanisms should only be applicable when dealing with Internet critical resources, namely, the infrastructure (DNS, root servers and IP numbers) and hence the role of ICANN as a key institution is this field. The broad approach is meant to cover a wider range of issues related to Internet use, namely: access, openness, diversity and security.⁴⁵ Based on work undertaken by WGIG in 2005, the Tunis Agenda adopted the broad approach of Internet governance rather than the narrow one, as stated clearly in Article 58: “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”.⁴⁶

By 2005, in addition to concerns related to its oversight by the United States, some actors criticized ICANN as being unaccountable, not fully responding to the needs of the international community, not being transparent enough and not reflecting sound views of governments. These critics perceived it as a body that lacked power in effectively pushing and prioritizing the emerging issues related to the Internet, including the implementation of Internationalized Domain Names, addressing the governmental concerns regarding the registration and operation of ccTLDs, and not sufficiently empowering local communities to be part of the decision-making process related to these issues.⁴⁷ This critique was one of the main drivers for several subsequent steps taken by ICANN to improve its efficiency, transparency and representation.⁴⁸

While ICANN is responsible for the global coordination of the Internet’s system of unique identifiers through a multi-stakeholder model of consultation, the United States DOC still retains high-level authority in

⁴³ I. King, “Internet governance: An analysis of the need for change”, which is available at: <http://www.bileta.ac.uk/Document%20Library/1/Internet%20Governance%20An%20Analysis%20of%20the%20Need%20for%20Change.doc>.

⁴⁴ W.J. Drake, “Reframing Internet governance discourse: Fifteen baseline propositions”, which was presented at the Workshop on Internet Governance (New York, 26-27 February 2004). See: <http://programs.ssrc.org/itic/publications/Drake2.pdf>.

⁴⁵ For more details about the two approaches, refer to: <http://www.diplomacy.edu/ISL/IG/>.

⁴⁶ World Summit on the Information Society (WSIS), “Tunis Agenda for the Information Society”, Article 58.

⁴⁷ A. Kapur, “Internet governance: A primer” (United Nations Development Programme–Asia-Pacific Development Information Programme (UNDP-APDIP), 2005), which is available at: <http://www.apdip.net/publications/iespprimers/eprimer-igov.pdf>.

⁴⁸ ICANN believes that there are many others who fully support it and its model, and that there are thousands who participate in the ICANN process through conviction despite minor disagreements with ICANN over some issues or decisions being taken.

the administration of the most central element of the Internet, namely, the root zone file.⁴⁹ The National Telecommunications and Information Administration (NTIA) within DOC explicitly declared that it had no plans to transition management of the authoritative root zone file.⁵⁰ In that regard, some observers believe that, even if ICANN responds to international requests stressing the importance of concluding the JPA in order to liberate and permit ICANN's transition to the entity intended at its formation, this might still not yield the sought for radical changes.

Given the many issues related to Internet governance in the technical, regulatory, socio-economic, legal and socio-political areas, another criticism to the prevailing Internet governance ecosystem is that it fails neither to cover all those areas nor to identify responsible entities for covering them. Two such areas are as follows: (a) content, given that there is no way to block inappropriate content; and (b) security for which there is no real consensus on cyber security aspects. However, in addition to ICANN, which is engaged with issues related to DNS security, DNSSEC and others, ITU is in fact very active in the field of cyber security.⁵¹

Part of the global community envisages an Internet governance model that is out of ICANN jurisdiction, namely, a model capable of dealing with and finding solutions for many emerging issues that constitute a challenge for the continuity and stability of the Internet;⁵² and of assuring a fair and stable system in the age of convergence networks.⁵³

D. THE RESPONSE OF ITU TO THE GLOBAL DEBATE AND THE IGF PROCESS

ITU plays an important role in promoting the debate on Internet governance, mainly on public-policy Internet matters and preparation for events that is also relevant to this context. ITU is working on many initiatives coordinating with the other players and aimed at resolving crucial issues related to the Internet governance debate. It has been widely believed that ITU would provide accountability and international legitimacy to any model of Internet governance, given its position as a United Nations agency with a successful history in the effective management of telecommunications infrastructure.

ITU has played a very active role in the Internet governance process. ITU was the leading United Nations organizing agency for WSIS. Moreover, the WSIS Outcome Documents further recognized the expertise of ITU in the field of Internet governance and public policy development process.⁵⁴ In addition, ITU's constitution calls on the Union to promote, at the international level, a broader approach to the issues of telecommunications in the global information economy and society;⁵⁵ and resolution 140 of the 2006 ITU Plenipotentiary Conference called for an active role for ITU in the WSIS implementation process.⁵⁶

⁴⁹ S. Schiavetta and K. Komaitis, "ICANN's role in controlling information on the Internet" (April 2003), which is available at: <http://www.bileta.ac.uk/Document%20Library/1/ICANN%E2%80%99s%20Role%20in%20Controlling%20Information%20on%20the%20Internet.pdf>.

⁵⁰ This is currently under the technical functions of IANA and VeriSign under an agreement with the Department of Commerce (DOC) to ICANN. More information is available at: http://www.ntia.DOC.gov/comments/2008/ICANN_080730.html.

⁵¹ A fundamental role of ITU, following the World Summit on the Information Society (WSIS) and the 2006 ITU Plenipotentiary Conference, relates to building confidence and security in the use of information and communication technologies (ICTs). Heads of State and Government and other global leaders participating in WSIS as well as ITU Member States entrusted ITU to take concrete steps towards curbing the threats and insecurities related to the information society. More information on this is available at: <http://www.itu.int/cybersecurity/>.

⁵² Such as, among others, cultural issues, content regulation, grey market VOIP, spam and cyber legislation.

⁵³ Within that context, this could emulate the radio and telephone models, albeit under several jurisdictions given the decentralized nature of the Internet.

⁵⁴ World Summit on the Information Society, "WSIS Outcome Documents" (December 2005), paras. 67-79.

⁵⁵ Constitution of the International Telecommunication Union, Article 1 (g) , which is available at: http://www.itu.int/aboutitu/Basic_Text_ITU-e.pdf.

⁵⁶ The text of resolution 140 of the 2006 ITU Plenipotentiary Conference is available at: <http://www.itu.int/osg/csd/intgov/mandate/Res140.pdf>.

Furthermore, ITU is playing an increasingly active role in the area of domain names and numbering in accordance with its mandate under several resolutions.⁵⁷

However, ITU does have some concerns with the discussions being carried out under the IGF process. During the ICANN annual meeting in Cairo, 6 November 2008, the Secretary-General of ITU, Hamadoun Toure, expressed serious concerns about the current IGF process, its drift in time and its avoidance to solve WSIS controversial issues, especially those related to the management of critical Internet resources, and its attempt to reopen issues that already had a governmental consensus during WSIS.⁵⁸

With respect to WSIS action lines, ITU was given the role of facilitator for information and communication infrastructure, and building confidence and security in the use of ICTs. In response to the global need of promoting cybersecurity and trust, ITU launched the organization's Global Cybersecurity Agenda (GCA) based on the following five pillars: legal measures, technical and procedural measures, organizational structures, capacity-building and international cooperation.⁵⁹

ITU is aware of the changing telecommunication environment. The rapid growth of ICT in recent years includes fixed and mobile telephony, Internet bandwidth and the increased convergence of devices, applications and services that facilitate seamless communications in a multi-service, multi-protocol and multi-vendor environment. This phenomenal growth is highlighted by the number of mobile subscriptions, which reached the four-billion mark at the beginning of 2009. This prompted ITU to convene the fourth World Telecommunication Policy Forum (WTPF) to review the new and emerging directions in telecommunications and ICT (Lisbon, 22-24 April 2009).⁶⁰ This Forum encompassed a much broader focus agenda in order to reflect the rapid rate of ICT evolution, and underlined the critical importance of this sector to overall economic and social prosperity.

Moreover, this Forum aimed at discussing strategies and policies of interest in the changing telecommunications environment and at addressing a number of Internet-related public-policy issues, ranging from cyber security and data protection to multilingualism and the ongoing development of Internet.⁶¹ WTPF 2009 focused on the key policy issues that are driving the current ICT environment, which will guide future regulatory and standardization efforts worldwide. The Lisbon Consensus, which was reached at WTPF 2009, highlighted the agreement reached on a broad range of ICT issues, including "Opinion 1" on Internet-related public policy matters, which calls on the development and promotion of an enabling environment that allows all governments, on an equal footing, to carry out their roles and responsibilities in international public policy issues pertaining to the Internet and in ensuring the stability, security and continuity of the Internet, but not in the day-to-day technical and operational matters that do not impact on international public policy issues.⁶²

⁵⁷ See, for example, resolution 102 of the 2006 ITU Plenipotentiary Conference, which is available at: <http://www.itu.int/osg/spu/resolutions/2006/final-acts-internet-extracts.pdf>.

⁵⁸ For the full text of the speech by the Secretary-General of ITU, Hamadoun Toure, see: <https://cai.icann.org/files/meetings/cairo2008/toure-speech-06nov08.txt>. Other information is available at: http://www.circleid.com/posts/print/20081115_take_over_internet_governance_itu_icann/.

⁵⁹ More information on the Global Cybersecurity Agenda (GCA) is available at: <http://www.itu.int/osg/csd/cybersecurity/gca/pillars-goals/index.html>.

⁶⁰ See: http://portal.unesco.org/ci/en/ev.php-URL_ID=28555&URL_DO=DO_TOPIC&URL_SECTION=201.html.

⁶¹ More information on the fourth World Telecommunication Policy Forum (WTPF) is available at: <http://www.itu.int/osg/csd/wtpf/wtpf2009/statements/itu.html>.

⁶² See the press release by ITU, "Lisbon Consensus emerges at ITU World Telecommunication Policy Forum" (24 April 2009), which is available at: http://www.itu.int/newsroom/press_releases/2009/11.html.

E. THE RESPONSE OF ICANN TO THE GLOBAL DEBATE

In response to the global debate on Internet governance and to improve its process, especially after its JPA with the United States DOC expires in 2009, ICANN has taken some very important steps to prepare a secure, stable and scalable foundation for the future. ICANN is implementing a reform plan to address the concerns of many of its critics; and is working on procedures aimed at streamlining the whole process and at acquiring credibility as an entity playing an international role.

ICANN had to face harsh critics with regard to its approach and structure, thereby leading to major reforms in an attempt to gain global legitimacy. This reform process produced significant outcomes that encourage bottom-up inclusive participation by different stakeholders. Specifically, ICANN has “not placed governments at the forefront of visible activity, but instead placed industry needs and the operation of a competitive deregulated international communications sector as being the major thrust of coordination activities”.⁶³

Moreover, ICANN is continuously seeking to improve accountability and transparency.⁶⁴ Additionally, ICANN is working to improve institutional confidence in itself and to provide the community with all the information needed to engage in a broad public consultation over possible changes to the organization.⁶⁵ Box 9 illustrates the key areas that need to be addressed in order to improve institutional confidence.

Box 9. Key areas to be addressed for improving institutional confidence in ICANN

1. Safeguarding ICANN against capture.
2. Making ICANN accountable for its multi-stakeholder community.
3. Getting ICANN to meet the needs of the global Internet community of the future.
4. Making ICANN financially and operationally secure.
5. Maintaining ICANN’s focus on organizational and operational excellence in performing its technical mission of ensuring safe and stable operations relating to the unique identifiers of the Internet, and of the IANA functions.

Source: Adapted from ICANN, “Improving institutional confidence in ICANN” (16 June 2008), which is available at: <http://www.icann.org/en/jpa/iic/improving-confidence.htm>.

Global, multi-stakeholder models for coordination and standards setting are essential. ICANN believes that the future of the Internet must rely on a proven model for consensus-based decision-making. ICANN considers that its multi-stakeholder model has stood the test of time, thereby showing that it is an effective model for bringing together the Internet’s many stakeholders to develop collaboratively policies for an evolving, yet stable and secure globally interoperable Internet.⁶⁶

ICANN is just one of several organizations involved in ensuring that the Internet operates optimally and is available for all users. While ICANN has a vested interest in the issues affecting continuing global interoperability, governance and accessibility, ICANN has a clear core responsibility in the security, stability and future of the Internet system of unique identifiers, especially IP addresses and the domain name system. Box 10 provides ICANN’s views on the Internet governance debate.

⁶³ According to an opinion piece by G. Huston, APNIC, which is available at: http://www.cisco.com/web/about/ac123/ac147/archived_issues/ipj_8-1/Internet_governance.html.

⁶⁴ See ICANN, *ICANN Accountability and Transparency Framework and Principles* (January 2008), which is available at: <http://www.icann.org/en/transparency/acct-trans-frameworks-principles-10jan08.pdf>. For processes and further discussions, see also: <http://www.icann.org/en/transparency/>.

⁶⁵ See ICANN, “Improving institutional confidence consultation” (16 June 2008), which is available at: <http://www.icann.org/en/jpa/iic/>.

⁶⁶ https://par.icann.org/files/paris/ParisWelcomeCeremony_23June08.txt.

Box 10. Overview of some of ICANN's work and participation in its functions

ICANN develops policy efficiently and effectively with a well-supported, truly representative, global multi-stakeholder community through consensus based, bottom-up processes. The ICANN community has recently taken important steps to prepare a secure, stable and scalable foundation for an Internet for everyone, for the next billion users and those thereafter.

Since the domain name system's beginnings in the early 1980s, cooperation and consensus-building through a multi-stakeholder model have successfully guided the Internet's rapid evolution and innovation while maintaining its global interoperability, security, stability, and resilience. ICANN's bottom-up, consensus driven multi-stakeholder model is a proven model for consensus-based decision-making. It is the most effective model for bringing together the Internet's many stakeholders to collaboratively develop policies for an evolving Internet.

Internet users around the world have come to increasingly rely on the Internet's global system of unique identifiers, including the domain name space, to communicate, transact business, transfer and store data, and gather together in virtual communities. Users demand greater functionality and more multilingual content and access.

This growth will become even more dynamic with the deployment of top level Internationalized Domain Names (IDNs), the introduction of new generic Top Level Domains (gTLDs), and the transition from Internet Protocol version 4 (IPv4) to Internet Protocol version 6 (IPv6). These and other initiatives that are intended to improve openness, accessibility, diversity and security demonstrate that the Internet stakeholders, including those in the Arab region, are contributing to make the Internet truly global.

Participation in any of the ICANN's supporting organizations and advisory committees is open for all, and is free of charge. In fact, participants do volunteer their time and effort to contribute to the ICANN policy process. The Internet community in the Arab world has been for the most part engaged in ICANN through the GAC as well as the ccNSO. Other organizations and individuals from the region also take part in the At-Large Advisory Committee (ALAC) as well as the GNSO. But like for other developing countries, participating actively in ICANN is a bit challenging for the Arab community due to the lack of human and financial resources. ICANN has been working closely with the Arab stakeholders over the past three years to raise awareness and inform community of developments. Also, in 2007 ICANN launched its Fellowship Programme to increase participation from developing and least developed countries, and help individuals from those countries attend ICANN meetings. Since the Programme was launched in mid-2007, around 20 individuals from the Arab region have come and participated in ICANN meetings.

As ICANN is beginning its eleventh year, it is quite evident that its model of policy development, which involves cooperation among multiple technical, business, civil society and Government stakeholders, has supported explosive growth in the use of the naming and addressing system, while at the same time maintaining its security and stability. ICANN is committed to continuing its open, bottom-up and transparent process, and to engaging actively with all stakeholders around the world.

Source: Adapted from a communiqué by ICANN's Manager of Regional Relations in the Middle East.

F. THE PERSPECTIVE OF THE EUROPEAN UNION REGARDING INTERNET GOVERNANCE

The European Union has played a major role in international discussions on Internet governance for many years. The European Commission has repeatedly called for a system of Internet governance fully entrusted to the private sector without Government interference in the day-to-day management, and has supported an open, multi-stakeholder policy dialogue on Internet governance and development. Moreover, the European Commission participates in the Governmental Advisory Committee of ICANN, whose main purpose is to provide advice on public policy aspects of its coordination activities. In May 2009, the EU Commissioner for Information Society and Media, Viviane Reding, called for full privatization, greater transparency and accountability in Internet governance (see box 11).

Box 11. The view of the European Union on Internet governance

In a video posted on her website, Commissioner Reding outlined her view of a new governance model for the Internet after ICANN's agreement with the United States DOC expires on 30 September 2009. This would include a fully private and accountable ICANN accompanied by an independent judicial body, as well as a "G12 for Internet Governance" – a multilateral forum for governments to discuss general Internet governance policy and security issues.

"I trust that President Obama will have the courage, the wisdom and the respect for the global nature of the Internet to pave the way in September for a new, more accountable, more transparent, more democratic and more multilateral form of Internet governance", said EU Commissioner Viviane Reding in her Internet video message. "The time to act is now. And Europe will be ready to support President Obama in his efforts".

Box 11 (*continued*)

Reding stressed that “a moment of truth will come on 30 September this year, when the current agreement between ICANN and the United States Government expires. This opens the door for the full privatization of ICANN; and it also raises the question of whom ICANN should be accountable to, as from 1 October”.

ICANN deals with some of most sensitive issues related to Internet Governance, such as top level domains or management of the internet address system that ensures that millions of computers can connect to each other. ICANN was established in 1998 in California, under an agreement with the United States Government.

“Accountability of ICANN is a must”, said Reding. “The Clinton administration’s decision to progressively privatize the internet’s domain name and addressing system is the right one. In the long run, it is not defensible that the government department of only one country has oversight of an internet function which is used by hundreds of millions of people in countries all over the world”.

EU Commissioner Reding also outlined how a new model of Internet Governance could be shaped after 30 September 2009. It could include in particular the following:

- A fully privatized and independent ICANN complying with the best standards of corporate governance, in particular with those on financial transparency and internal accountability, and subject to effective judicial review;
- A multilateral forum where governments can discuss general Internet governance policy issues, such as a “G12 for Internet Governance” – an informal group of government representatives that meets at least twice a year and can make, by majority, recommendations to ICANN where appropriate. This group would provide swift reaction in case of threats to the stability, security and openness of the Internet. To be geographically balanced, this “G-12 for Internet Governance” would include two representatives from each North America, South America, Europe and Africa, three representatives from Asia and Australia, as well as the Chairman of ICANN as a non-voting member. International Organizations with competences in this field could be given observer status.

On 6 May 2009, the European Commission hosted a public hearing in Brussels to give Europe’s Internet community a chance to voice their expectations for the future of Internet governance.^{a/}

On 11 May 2009, Commissioner Reding gave a speech at the “Future of the Internet Conference” in Prague where she touched on issues of Internet governance, noting that the Internet is “already global: services are offered and consumed without distance limitations. In the future the bulk of the users world-wide will neither be in Europe nor in North-America. They will be elsewhere. This inevitably leads to a strong requirement towards global Internet governance based on a reinforced global partnership and cooperation.”^{b/}

Source: Extracts from “The future of Internet governance” (4 May 2009), which is available at: http://ec.europa.eu/commission_barroso/reading/video/index_en.htm.

a/ Further information on the public hearing on Internet governance of 6 May 2009 is available at: http://ec.europa.eu/information_society/policy/internet_gov/index_en.htm, see also (IP/06/1297) and (IP/06/1491).

b/ The full text of her speech of 11 May 2009 is available at: <http://europa.eu/rapid/pressReleasesAction.do?reference=SPEECH/09/231&format=HTML&aged=0&language=EN&guiLanguage=nl>.

G. ISSUES RELATED TO IANA: SPECIAL CONSIDERATIONS

1. *The role of IANA*

As mentioned above, the functions of IANA are performed by ICANN. Its activities include, among others, the allocation of IP addresses for RIRs and the maintenance of the root zone, in addition to handling ccTLD contacts and assigning protocol parameters.⁶⁷

Prior to the creation of ICANN, IANA performed these technical management functions on behalf of the United States Government under a contract between the Defense Advanced Research Projects Agency (DARPA) and the University of Southern California (USC), as part of a research project known as the Terranode Network Technology (TNT). In 1998, IANA’s functions were handed to ICANN and a new

⁶⁷ For more information on the functions of IANA, see: <http://www.iana.org/about/>.

contract was signed between ICANN and the United States Government related to the operations of IANA (see annex III). This contract is administered by the National Telecommunications and Information Administration (NTIA) on behalf of the United States DOC.

Currently, IANA is operated by ICANN within the framework of its contract with DOC. Additionally, DOC provides an ongoing function whereby it verifies additions and changes made on the root servers aimed at ensuring that IANA complies with its policies.

Owing to its direct links with DOC, IANA cannot be considered a neutral entity. This lack of neutrality may conflict with the interests of the global Internet community. This issue is particularly sensitive given that while the United States Government may be willing to transfer Internet management functions to ICANN, it is not prepared to sever its direct links with IANA, which represents an Internet critical resource.⁶⁸ DOC considers the contract that stipulates the functions of IANA as a discrete instrument, rather than as part of the JPA. In a public comment by NTIA to the Chairman of the Board of Directors of ICANN, the acting Assistant Secretary for Communications and Information in NTIA stated that the Administration was not involved in discussions with ICANN or VeriSign nor intended to initiate such discussions related to changing the respective roles of NTIA, ICANN or VeriSign regarding the management of the authoritative root zone file.⁶⁹

The notion of an implicit influence by the United States Government is often raised as a concern.⁷⁰ In the Arab region, the re-delegation of .iq is viewed, as an aspect of such a concern.⁷¹ However, ICANN assures that any ccTLD delegation or re-delegation follows clear processes. IANA provides reports on a wide range of areas of its work, including reports for all re-delegations.⁷²

The relationship between ICANN and RIRs is such that IANA allocates IP addresses from the pools of unallocated addresses to RIRs according to their needs as described by global policy, and to document protocol assignments made by IETF. When an RIR requires more IP addresses for allocation or assignment within its region, IANA makes an additional allocation to the particular RIR. ICANN/IANA does not make allocations directly to ISPs or end users except in specific circumstances, such as allocations of multicast addresses or other protocol specific needs.⁷³

While there have been a number of proposals aimed at decoupling the IANA function from ICANN completely, these have been recognized as impractical, with the justification that changing the current control structure could risk fracturing the Internet.⁷⁴

The vision for the future development of IANA is still controversial in most debates related to Internet governance. Most global observers still believe that IANA's functions need to be undertaken as tasks housed within ICANN, even after the expiration of the JPA.

⁶⁸ For more on this debate, see M. Ermert, "US Government in Internet control: ICANN can go, IANA is ours", *Intellectual Property Watch* (28 July 2006), which is available at: <http://www.ip-watch.org/weblog/2006/07/28/us-government-on-internet-control-icann-can-go-iana-is-ours/>; and *CircleID*, "US intends to remain in full control of Internet root zone, says letter from NTIA", which is available at: http://www.circleid.com/posts/print/87315_us_in_control_of_internet_root_zone/.

⁶⁹ See: http://www.ntia.doc.gov/comments/2008/icann_080730.html.

⁷⁰ One instance of such influence is the case of IANA's action towards Iraq's ccTLD. More on this issue is available at: http://www.theregister.co.uk/2003/04/09/iraq_its_domain/; and http://business.timesonline.co.uk/tol/business/industry_sectors/media/article544523.ece.

⁷¹ For information on the process of that re-delegation, see: <http://www.iana.org/reports/2005/iq-report-05aug2005.pdf>.

⁷² For more on these IANA processes, see: <http://www.iana.org/domains/root/cctld/>. A complete list of IANA reports is available at: <http://www.iana.org/reports/>.

⁷³ For more on this issue, see: <http://www.iana.org/numbers/>.

⁷⁴ See: <http://wiki.go6.net/index.php?title=IANA>.

The main challenge relates to how IANA can be accountable to the global community, especially in the light of the declared intention by the United States not to relinquish control over IANA. Other questions include the following: (a) can the neutrality and transparency of IANA be secured; and (b) can ICANN's concepts of improving institutional confidence, accountability and transparency be equally applied on IANA, rather than limited to ICANN.

H. THE ARAB PERSPECTIVE REGARDING INTERNET GOVERNANCE

Some experts believe that the level of involvement of the Arab region in Internet governance was comparatively limited initially. This could be attributed to a timid representation in the process by Arab countries at the outset, and to a legitimate stance by the League of Arab States with respect to the recommendations that could impinge on national sovereignties and the need to leave the relevant decisions in the hands of countries in terms of implementing the necessary mechanisms in line with national circumstances.⁷⁵

During the past four to five years, the Arab community has become aware of the importance of Internet governance and is working on improving representation of most of the entities involved in Internet governance. The League of Arab States, particularly the Council of Arab Ministers for Communication and Information Technology, formed the Arab Working Group on Domain Names and Internet Issues (AWGDNII) aimed at tackling matters related to the Internet and the Arabic Domain Names System (ADNS), including expressing a common Arab stand towards many Internet governance issues and handling technical issues related to the implementation of ADNS.

In its meeting held in February 2009, AWGDNII discussed a preliminary list of issues to be analysed and presented at the fourth IGF meeting (Sharm el-Sheikh, Egypt, 15-18 November 2009). This preliminary list, which aims to specify the priorities of concern to the Arab region and address common interests, comprised the following in no order of preference:

- (a) Infrastructure, access costs, interconnection and the establishment of national and regional Internet Exchange Points (IXPs);
- (b) Multilingualism, promotion of online Arabic content and ADNS;
- (c) Establishment of national computer emergency response teams (CERTs) and of a regional CERT network, securing submarines cables, data integrity, authentication and non-repudiation;
- (d) Child abuse and safety of minors, child pornography and Internet addiction;
- (e) Telecommunications, media convergence and mobile broadcasting;
- (f) Internationalization of ICANN and the post-JPA ICANN;
- (g) Transition from Internet Protocol version 4 (IPv4) to version 6 (IPv6).

Actually, the Arab region supports the transition of technical coordination of the Internet's name and numbering resources from the United States to an international organization, meeting the expectations of its multi-stakeholders. It recognizes that ICANN could meet this need after the JPA with the United States DOC expires in 2009 given tangible improvements regarding its policy process, thereby fulfilling its mandate in a

⁷⁵ However, the League of Arab States formally endorsed IGF and the recommendations of the Working Group on Internet Governance (WGIG) in PrepCom-3, in preparation for the second phase of WSIS in Tunis, with the reservation on the Forum's ability to deal with all Internet-related issues, especially public policies and supervision. See: <http://www.itu.int/wsis/docs2/pc3/contributions/co83.doc>.

bottom-up, transparent framework. ICANN would need to improve accountability mechanisms to all stakeholders in order to enhance its performance. The Arab community considers that the debate related to ICANN transition action plan is an opportunity to improve the enhanced cooperation to the benefit of developing countries that were underrepresented.

AWGDNII provided a number of main remarks on improving institutional confidence in ICANN, as follows:⁷⁶

(a) The Arab region encourages greater participation of stakeholders and the business community in ICANN policy processes;

(b) As a non-profit corporation based in California, ICANN is only subject to the laws of California. However, given its envisaged role as an entity serving the global community, it should seek a legal presence that matches its attempt to gain more international recognition, for instance in Geneva, such as other international organizations;

(c) The Arab region expressed reservations on the advisory status of the Governmental Advisory Committee (GAC) vis-à-vis ICANN, and would like GAC to play more than merely an advisory role. This attitude is based on the Arab perspective of the need to take into consideration the interests of national governments;

(d) Given that the security and stability of the Internet unique identifiers represent the most important aspects of ICANN's mission, ICANN needs to have full control over the functions of IANA;

(e) The representation on the ICANN Board needs to be increased in order to achieve geographical and organizational balance.

Subsequent to the thirty-third meeting of ICANN in Cairo, an Arab discussion group, referred to as ArabICANN, was established by a group of Arab experts, professionals and Government representatives aimed at promoting active discussions on Internet governance issues that reflect the views of the Arab region, and at voicing the opinion of Arab communities to ICANN and the rest of the world.

In response to the request for comments from ICANN on improving institutional confidence through consultation, AWGDNII prepared a set of comments expressing the Arab position (see box 12).

Box 12. Comments of AWGDNII on ICANN's initiative on improving institutional confidence

Very important issues are raised in the context of ICANN's initiative on improving institutional confidence. An attempt to improve confidence, in a manner not fully aligned with the wishes and needs of the international community may actually widen the confidence gap. Confidence would be best improved by addressing points such as the following:

1. ICANN must restructure itself to be a truly independent and international body. The "new ICANN" must not be a subcontractor of the United States Department of Commerce and cannot remain captured by the interests of a single government. Nor can it be subject to the laws of one specific jurisdiction, whether California or anywhere else. A truly internationalized body such as the WHO, ILO or ITU may serve as an example.

The Internet has become for many States, and is fast becoming for the other States, critically important to the functioning of their governments, their economies, and all aspects of daily lives of their residents. All States have a stake in the Internet and must be equally represented through an appropriate intergovernmental body, in order to control its management, administration, development, and future direction. While recognizing the very important role that the United States has played in establishing and evolving the Internet, it has now grown to the point where no one State or group of States can be allowed to impose their will on its management and its future.

⁷⁶ See ICANN, "Improving institutional confidence in ICANN [Revised, September 2008]", which is available at: <http://www.icann.org/en/jpa/iic/improving-confidence-revised.htm>.

Box 12 (*continued*)

2. The “new ICANN” must be a technical body that implements public policies established in accordance with WSIS principles. In the Geneva Declaration of Principles, article 49, and the Tunis Agenda, article 35, the international community has declared that policy authority for Internet-related public policy issues is the sovereign right of States. Such policy direction to the “new ICANN” cannot be interpreted as advisory but must be mandatory under a new, truly internationalized instrument of incorporation and bylaws.

3. The “new ICANN” must fully support WSIS goals as outlined, for example, in the Tunis Agenda, article 90. This reaffirms the commitment of the international community to providing universal, equitable, non-discriminatory, and affordable access to information and knowledge. Funding considerations and operational processes must be realigned to implement these goals.

4. The “new ICANN” must not engage in international public policy setting, which should only be undertaken by the aforementioned intergovernmental body, as this may fundamentally destabilize the Internet and the world in unforeseen ways. It is essential that the Internet evolve and grow according to the will of the international community that it serves and the needs of all members of that community. This should not be carried out at the expense of any States in that community or through the unilateral control of others.

Source: The response of AWGDNII, as adopted by the League of Arab States, on the feedback questionnaire relating to ICANN, “Improving institutional confidence in ICANN” (16 June 2008).

III. ISSUES RELATED TO CRITICAL INTERNET RESOURCES

Critical Internet resources (CIR) refer to resources without which the Internet could not function at all. Overseeing these resources on an equitable basis is important for Internet governance functions. Issues relating to the management of CIR include the following:

- (a) Administration of the root zone files and root server system;
- (b) Administration and allocation of DNS;
- (c) IP addresses;
- (d) Innovative and convergent technologies;
- (e) Technical standards.

Given the global nature of CIR, they are truly global governance issues.

A. CRITICAL INTERNET RESOURCES AND THE INTERNET GOVERNANCE DEBATE

The debate about the governance of CIR is thorny and complicated, given the criticism of the current structure and ICANN's role in relation to some issues falling under CIR, as one of several in the Internet's ecosystem. Some critics have expressed a feeling of dissatisfaction and objection to the relationship between ICANN and the United States Government, particularly in the light of ICANN's relationship with the United States DOC within the framework of their JPA, and have called for the non-renewal of that Agreement upon its expiration in September 2009.⁷⁷

Given that IANA performs a central role in the two main core activities relating to CIR, namely, the allocation of IP addresses to RIRs and the maintenance of the "dot" root zone, it exercises an implicit influence on the governance of CIR, with no direct legal relationship between IANA and its own stakeholders who want to participate in its direct oversight. In this regard, there are pressures to let the control of these critical resources to be more global in order to reflect its distinctive international nature. On this point, ICANN argues that the management of these resources is already truly global. For instance, policies pertaining to the distribution of IP addresses are set by RIRs that exist in five continents across the world through their members, namely, the Local Internet Registries (LIR), which incorporates, among others, ISPs, network service providers, universities and governments. Global policies with regard to numbers are then recommended by the Address Support Organization (ASO) to the ICANN Board for final approval, with no input to or from the United States DOC. Specifically, DOC is not on the ICANN Board nor does the Board take permission from DOC before passing any resolutions.

B. SUMMARY OF THE DISCUSSIONS ON CRITICAL INTERNET RESOURCES DURING THE IGF MEETINGS

The first meeting of IGF in Athens, 2006, focused on discussing the overarching issues tied to the future of ICTs, including control over the Internet architecture and the numbering and naming system. Participants agreed on the need to develop globally applicable principles on public policy issues with respect to critical Internet resources.

While the CIR theme was not on the Athens substantive agenda, the issue was addressed during discussions, including questions on how the dominance of the United States in the control of the DNS root could be overcome, and questions relating to the administrative management of the DNS and IP addresses. Discussions on CIR that emerged in Athens were considered an effective beginning that needed to be built upon in subsequent IGF meetings.

⁷⁷ Intellectual Property Watch, "Internet Governance Forum to return to critical Internet resources issue", which is available at: <http://governanca.cgi.br/noticias/internet-governance-forum-to-return-to-critical-internet-resources-issue/>.

During the meeting of IGF in Rio de Janeiro, the main debate focused on defining the items of the CIR thematic axis and on whether its narrow or broad view should be adopted. The broad definition had been taken from the report by WGIG and contained issues related to infrastructure, technical standards, peering and interconnection, telecommunications infrastructure, innovative and convergent technologies, and multilingualism. The delegation from Brazil pushed to include such issues as interconnection costs, telecommunications infrastructure, root-servers administration, and names and numbers registry.

There was a general feeling of the need for new channels to move forward the CIR debate, particularly given the lack of a clear definition of a common framework to address related issues. Shaping the future of this discussion was left to the IGF as the main medium for discussion on public policy issues.

The discussion also stressed the fact that governance of CIR had significant public policy implications. Moreover, while the current ICANN arrangements led by the private sector were working well, many underscored the need for ICANN itself to be accountable to the international community at large rather than only to the United States, thereby ensuring the principles of multilateralism, democracy and transparency.

It was also reported that the CIR theme needed to be viewed within a broader context of Internet governance and linked to national and local management of these resources.⁷⁸

In the meeting of IGF in Hyderabad, the discussions related to CIR focused mainly on the transition from IPv4 to IPv6 and its impact on some of the current technical processes, taking into consideration that both IPv4 and IPv6 would coexist well in the future. It was agreed that policies controlling the allocation and management of numbers within RIRs needed to be developed through an open, bottom-up process that engaged the entire Internet community.

Despite the availability of IPv6 equipment on the market and the support from vendors, operators were slow to deploy IPv6. This was attributed to the absence of an obvious commercial driver and customer demand, and to operator mistrust in the efficiency of vendor support. However, operators were beginning to recognize the need to begin migration to IPv6.

There was a strong consensus that a smooth transition from IPv4 dominance to an environment where IPv6 becomes dominant required sharing responsibilities among civil society and the private and public sector institutions, using task forces on a national basis as a viable model. Governments needed to highlight IPv6 on their national agendas and seek to adopt harmonized approaches at the regional level. Additionally, it was agreed that there was a need for public awareness, education and training in order to engage citizens in the migration processes.

Furthermore, the discussions focused on global, regional and national arrangements for Internet governance, with an emphasis on public policy issues in managing CIR as a part of enhanced cooperation. However, while there was uncertainty among the participants with regard to the categories of organizations in which enhanced cooperation needed to take place, there was a consensus on the necessity of involving all stakeholders in the process, namely, governments, the private sector and civil society; and on the positive influence of the discussions that could reflect on the critical issues debate. It should be noted that a number of participants expressed their wishes for the United States Government to step down from its current role of overseer of critical Internet resources through its JPA with ICANN.

C. SELECTED ISSUES RELATED TO CRITICAL INTERNET RESOURCES

1. *Administration of the root zone files and root server system*

There are 13 root servers for the Internet across the world, which are operated by 12 different organizations; these root servers are authoritative for queries to the global DNS root zone. NTIA within the United States DOC divides the responsibility for the creation, editing and distribution of the master root zone

⁷⁸ See: http://www.intgovforum.org/cms/Rio_Meeting/IGF2-Critical%20Internet%20Resources-12NOV07.txt.

file between itself, ICANN (represented by IANA) and VeriSign.⁷⁹ In order to facilitate the stability of the Internet, there are more than 176 mirror root servers across the world, including four that exist in three ESCWA member countries, namely, Egypt, Qatar and the United Arab Emirates.⁸⁰ However, all these roots are slaves to the master servers, where the master root zone file is administered. In fact, under the existing system described above (DOC-NTIA, ICANN-IANA and VeriSign), this administration essentially falls under the jurisdiction of only one Government, namely, the United States, given that DOC authorizes VeriSign to affect changes to this master root zone file.

Besides operating one of the root servers, ICANN also coordinates the operation of the root name server system. The Root Server System Advisory Committee (RSSAC) advises the ICANN Board about the operation of the root name servers of the domain names system. RSSAC provides advice on security aspects of the root name server system, and reviews the distribution of the root servers, taking into consideration the overall system performance, robustness and reliability. The Committee includes representatives of organizations responsible for operating the world's 13 root name servers and other organizations concerned with the stable technical operation of the root server system.

2. Administration of the domain name system

Since the domain name system started in the early 1980s, IANA became specifically responsible for the allocation of globally unique names and numbers that are used in Internet protocols.

ICANN coordinates the management of the technical elements of DNS, including gTLDs and ccTLDs. This ensures universal resolvability so that all Internet users can find valid addresses, and maintains the domain names database.

The domain name technical system effectively meets most of the naming needs of the Internet and the applications that rely on it. However, the broadening and deepening penetration of the Internet and its applications into global communications, commerce and culture poses new challenges to the basic technology of DNS, namely:⁸¹ (a) improving the security of DNS; (b) linking the telephone and Internet naming systems; (c) internationalizing domain names; and (d) responding to domain name errors.

3. Ensuring stability and security of the Domain Name System

ISOC believes that no single entity controls DNS, which is an important aspect for ensuring stability and security of the System (see box 13).

Box 13. Who controls the Domain Name System?

“No single entity or organization controls the entire DNS. Different aspects of DNS are managed by a number of bodies and oversight mechanisms. This responsibility is distributed administratively and geographically. For example, ICANN manages the authoritative “root” of DNS; country code Top Level Domains (ccTLDs) are administered at a national level; generic Top Level Domains (gTLDs) are administered by accredited organizations; and root servers are operated by a range of organizations around the world. Other interested parties also participate in the day-to-day development and management of the Internet (for example, the IETF’s role in developing technical standards)”.

Source: Internet Society, “Key Issues”, which is available at: http://www.isoc.org/pubpolpillar/issues/domain_name.shtml.

⁷⁹ VeriSign is the profit-making private company that runs the “.com” domain.

⁸⁰ See: <http://www.root-servers.org>.

⁸¹ More information on the Domain Name System (DNS) is available at: http://books.nap.edu/openbook.php?record_id=11258&page=152.

Driven by its unprecedented growth, the Internet has become a key instrument in advancing the economy of all countries. At the same time and owing to the substantial upsurge in the use of the Internet, it has become an attractive medium for malicious attacks and online crimes. These and other innovations, including, for example, the growing popularity of Web-enabled mobile devices, have the potential to destabilize the Internet. Given that these technologies could be disruptive, the Internet's stability, security and resiliency are more important than ever before. In addition to increasing cyber attacks and cyber crime, the issue of whether and the extent to which new services and new technologies affect Internet interoperability and stability must be evaluated in every effort to formulate policies. Ensuring global interoperability and continued global cooperation in making decisions that affect the security and stability of the Internet is paramount.⁸²

DNS in particular has become a target of disruptive attacks as well as means for enabling malicious activity. An example of malicious activities within DNS is cache poisoning in which a DNS resolver is compromised by an attack so that a DNS query for a domain returns an IP address of the attacker's domain instead of the correct domain. This has become an area of growing concern and the DNS technical community realized that the best available solution to mitigate this problem was by deploying DNS Security Extensions (DNSSEC). Specifically, DNSSEC extends DNS to provide authentication and integrity of DNS data. It aims to protect the Internet from such attacks as DNS cache poisoning. The resolution process in DNSSEC establishes a "chain of trust" between zones from the root, through TLDs, to the domain server that is resolved.

While DNSSEC goes a long way in addressing the "man-in-the-middle" and cache poisoning types of attack, it still does not address a critical issue, namely, the mechanism for authenticating public keys, which could be the weak link in the chain. Within that context, ITU's X.509 standard for public key infrastructure (PKI), which has been in existence since 1988, provides a way for the secure distribution of public keys by binding them to the identity of the owner. At this stage, a third party, usually a certificate authority (CA), attests by signing a certificate that the enclosed public key is valid for the designated entity. ITU's X.509-v3 is considered the industry standard for public key certificates. Moreover, the root signing authority is of critical importance to the security, stability and reliability of the Internet.⁸³

According to ITU-D, governments need to play an equal role in policy formulation governing the harmonized and global coordination of such services and, moreover, "should have an equal role and responsibility for international Internet governance and for ensuring the stability, security and continuity of the Internet" as per Tunis Agenda.⁸⁴

ICANN is endeavouring to work with key stakeholders in order to ensure the signing of DNSSEC of the DNS root zone by the end of 2009, and to foster the implementation of PKI aimed at enhancing security and stability. Additionally, ICANN has developed a plan to enhance the security, stability and resiliency of the Internet's naming and addressing systems as called for in its strategic plan and in accordance with its bylaws (see box 14). This plan is posted for public comment.⁸⁵

Box 14. ICANN's plan for enhancing Internet security, stability and resiliency

ICANN's plan notes how the Internet has thrived by engaging many stakeholders who collaborate to foster communication, creativity and commerce in a global commons. The interoperability of the global commons depends on the operation and coordination of the Internet's unique identifier systems. ICANN and the operators of these systems acknowledge that maintaining and enhancing the security, stability and resiliency of these systems is a core element of their collaborative relationship. The plan notes the growing risks to the security, stability and resiliency of the unique identifier systems and the need to collaboratively address these risks.

⁸² Adapted from a communiqué by ICANN's Manager of Regional Relations in the Middle East.

⁸³ Adapted from a communiqué by ITU-D.

⁸⁴ World Summit on the Information Society (WSIS), "Tunis Agenda for the Information Society", para. 68.

⁸⁵ See ICANN, "Plan for enhancing Internet security, stability and resilience" (21 May 2009), which is available at: <http://www.icann.org/en/announcements/announcement-2-21may09-en.htm>.

Box 14 (continued)

The plan delineates ICANN's specific programmes that will address security, stability and resiliency. It also details planned activities that will enhance its contributions through the next operational year. This first version of the plan is intended as a foundation for ICANN and its community to establish a framework for organizing its security, stability and resiliency efforts. The plan does not envision major new roles or programmes for ICANN in this area.

The programmes and initiatives in which ICANN plans to engage during the 2009-2010 operating year include:

- Improving root zone management through automation; improve authentication of communications with TLD managers and support implementation of DNS Security Extensions (DNSSEC);
- Ensure the maturation of the gTLD registry continuity plan and test the data escrow system;
- Build on the collaborative efforts of the Internet security community efforts to effectively respond to malicious abuses of the Domain Name System (DNS).

Source: Adapted from ICANN, "Plan for enhancing Internet security, stability and resilience" (21 May 2009), which is available at: <http://www.icann.org/en/announcements/announcement-2-21may09-en.htm>.

The principal focus of ICANN's activities in the short term relate to global engagement on security, stability and resiliency is the joint Attack and Contingency Response Programme (ACRP), which was established in conjunction with the ccNSO and the regional TLD organizations to provide training on best practices and exercise assistance. The Programme focuses on improving security and resiliency through proactive planning and strong response capabilities against a full range of disruptive threats and risks. The Programme is rapidly becoming global in scope, leveraging the regional TLD organizations, their membership and partners. Over the next year, ICANN plans to build its capabilities in order to deliver the Programme in languages other than English.⁸⁶

Security and stability are so important to building a trustworthy foundation for the Internet of the future that ICANN now has Internet security experts as staff. Moreover, ICANN's Board recently formed a risk committee charged with identifying and evaluating risks associated with ICANN's work as well as risks to the security and stability of the Internet, which is very much a part of ICANN's mandate.

Consequently, the two main challenges confronting the Arab region can be summarized as follows:

(a) There is a concern of some governments in the Arab region that the current governance based on the control of the master root zone file by a single Government authority correlates with possible vulnerabilities to the system, especially in the light of the recent declaration by the United States DOC regarding its intention to retain control over the IANA function;

(b) Arab ccTLDs operators need to formulate a clear vision regarding the best scenario for the root zone signing activities, while taking into account the impact or possible vulnerabilities of a single entity overseeing the root signing process, and must seek possible alternative processes that distribute authority for root zone key management (generation, signing).

There is therefore a need for action by the Arab region aimed at the following:

(a) Forging a formal relationship with root server operators located in the Arab region who operate under a contract with ICANN setting the rules of management for these servers;

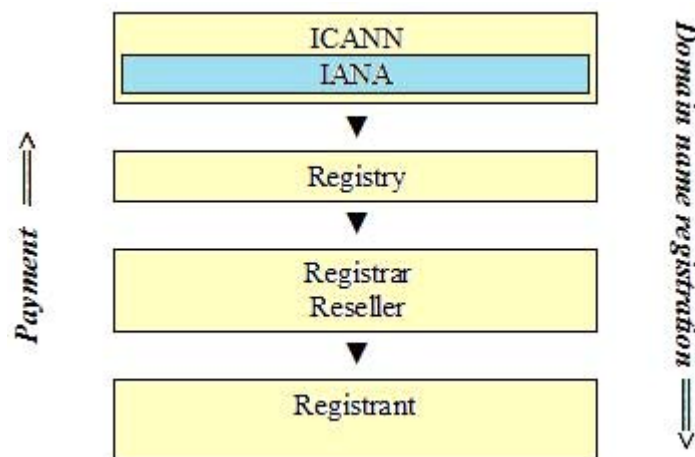
(b) Encouraging ccTLDs operators in the Arab region to deploy DNSSEC in their zones as a first step in the worldwide deployment of DNSSEC.

⁸⁶ According to a communiqué from ICANN.

3. Expanding the Domain Name Space

Figure 5 illustrates the current market model related to domain name registration.

Figure 5. The current market model related to domain name registration



Source: ICANN, which is available at: <http://www.icann.org/>.

ICANN is currently developing a transparent process for the development of policies and procedures to introduce new gTLDs.

While the Arab region represents 5 per cent of the world's population, it accounts for a mere 2.6 per cent of global Internet usage. Moreover, the percentage of Internet users among the population in the Arab world is a low of 11 per cent, compared to the global rate of 21.9 per cent. However, Internet usage in the region has grown by 1,426 per cent between the years 2000 and 2008, which represents a prodigious increase, particularly compared to the average world growth rate of 305.5 per cent over the same period.⁸⁷ It is reasonable to infer, therefore, that the usage growth could have been even more significant if DNS was available in Arabic characters. The introduction of IDNs represents the beginning of an exciting new chapter in the history of the Internet. Specifically, IDNs offer many potential new opportunities and benefits for Arab Internet users by allowing them to establish domains in their native languages and alphabets, and to create a whole range of services and localized applications on top of those domains.⁸⁸

Soon after ICANN began a project to deploy IDNs in the top level, it learned that many developing regions, particularly the Arab region, wanted ICANN to find a shortcut for implementing IDN ccTLDs. This shortcut was subsequently called the "Fast Track" mechanism. ICANN has been working with the technical community and policy groups to devise a draft Fast Track implementation plan that proposes a methodology and makes recommendations for meeting short-term demand for the introduction of a limited number of internationalized ccTLDs in regions of greatest need. ICANN is currently working on updating this draft implementation plan based on input from the community. At the same time and through the ccNSO, ICANN is set to launch the long-term policy development process for introducing IDN ccTLDs.⁸⁹

Box 15 depicts comments by AWGDNII on the draft IDN ccTLD Fast Track Implementation Plan (see annex IV for more details).

⁸⁷ See Internet World Stats at: <http://www.Internetworldstats.com/stats5.htm>.

⁸⁸ See ICANN, "Internationalized Domain Names", which is available at: <http://www.icann.org/en/topics/idn/>.

⁸⁹ Ibid.

Box 15. Comments of AWGDNII on the IDN ccTLD Fast Track Draft Implementation Plan

The Arabic working group for domain names and Internet issues has been established by the League of Arab States (LAS) to discuss issues related to implementing IDN, more specifically: Arabic domain names. Several countries members of the group are extremely interested in the fast track approach and are more than willing to participate. However, the current position of the working group is to push for IDN support by ccTLDs and NOT by gTLDs for several reasons mainly related to mixing languages using the same script and the risk of visual confusion. A pilot project running IDNs for several ccTLDs in the region is currently running with 10 member countries (unfortunately, this project is not accessible from outside member countries).

The Arab working group for Domain Names joins the position of Asia Pacific Top Level Domain Association (APTLD) as it sees the delegation of IDN ccTLDs in the same light as existing ccTLDs – they are for the local communities to operate for their own communities use – the only significant difference is that the IDN ccTLD finally provides a facility for people to completely use the Internet in their own language or script. Otherwise, we see no change in the status quo relationship from the existing ccTLDs. A few issues have been raised regarding ICANN’s interim report on the Fast Track, namely:

1. The report clearly identifies the purpose of Fast Track as “to meet pressing demand”. However, it defines its scope as “experimental in nature”. The WG has some worries regarding the meaning of “experimental”, which should not mean that the fast track delegations are temporary, or that registered domain names during the fast track could become invalid at a later stage. Also it should not discourage the application developers from putting their full support to IDNs.
2. Regarding delegation of IDN ccTLD, countries/registries should not be forced to sign documents/agreements they believe would limit their full control over their IDN ccTLDs. The signing of documents/agreements may involve a very heavy and slow governmental process that contradicts the fast track concept.

Critical points on the IDN ccTLD Fast Track Draft Implementation Plan

1. In some sections it is not clearly stated that support or approval of the Government is a condition. This needs to be explicitly mentioned, especially in the below listed sections.
2. Re-phrasing is needed to clarify that each country or territory may be delegated one string – in a given script – representing each of the official language communities within this country or territory.
3. There should be at least one correspondence/communication between the Technical Committee and the IDN ccTLD requestor before refusing a string.
4. Agreements between ICANN and the IDN ccTLD operators should not be made a condition for IDN ccTLDs delegation.
5. Financial contributions should not be made mandatory.
6. Input on contentious issues with the Existing TLDs and new gTLD Applications.
7. Registries should use language tables and not script tables.
8. Annual review would help fine tune the process.

Source: Based on the output of AWGDNII and on notes by its Chairman, which are available at: <http://forum.icann.org/lists/ft-implementation/dock3h82LOMEy.doc>.

Concurrently with IDNs, ICANN worked on opening the competition in the domain name marketplace with new gTLDs. After nearly two years of steady collaborative work toward developing policies to ensure that new gTLDs could be launched in a stable and secure DNS, ICANN is on the verge of opening the first round of applications. As with the IDN Fast Track Implementation Plan, a draft applicant guidebook for new gTLDs is now being updated that takes into account feedback and public comments from the global Internet community. It is worth noting that the new gTLDs could also be in IDNs in addition to being in ASCII. This means that, in addition to IDN ccTLDs, there are potential opportunities in the generic names space for users and businesses in the Arab region to create and offer new and innovative services.⁹⁰

Both initiatives have been the subject of considerable discussion in ICANN meetings over the course of the past three years. The keen interest by the Internet community and the open, multi-stakeholder participation has been essential in bringing both initiatives to fruition. The Arab community has been

⁹⁰ Ibid.

working hard since 2003 to develop guidelines for using Arabic script in domain names, with the active involvement of AWGDNII over the past four years. In 2008, ESCWA together with the Public Interest Registry (PIR) and Afiliis launched the Arabic Script in IDNs Working Group (ASIWG), which comprises experts in DNS, ccTLD operators, business, academia, as well as members of regional and international organizations. ASIWG aims to develop a unified IDN table for the Arabic script, and constitutes an example of community collaboration that helps local and regional expertise engage in global policy development as well as technical standardization.⁹¹

Most Arab countries seem to consider that country code domain names are public resources that fall within the scope of national sovereignty, given that most Arab ccTLDs operators are public authorities. On the other hand, one of the major interests for the Arab region has come to the fore with regard to the newly suggested gTLD “.arab”, which has been perceived as a sovereignty issue for the region, as well as a solution for an Arab identity based more on language, culture and history than on geographic location. The concept behind this is the creation of a cyberspace to be populated by large-scale Arabic portals and content providers that would serve a wider community, namely, the worldwide Arab community.

In terms of administrating and allocating DNS, ESCWA made the following main recommendations for the Arab region:

(a) To encourage investment in the “registrar” industry, especially after the reservation of “.arab” and given that only two Arab-based registrars are accredited by ICANN to sell domain names for ICANN accredited registries. The Arab ICT sector could be encouraged to invest in such a segment of the business according to the demand generated in the region by “.arab”;

(b) To create a new Arabic registry to manage Arabic gTLDs and to provide registrars with an IDN compliant toolkit for registration in order to manage the generation of domain labels and ensure that it conforms to the specifications;

(c) To manage Arabic domain names through companies in the region, which understand the cultural relevance well enough to manage its domain names;

(d) To maintain the progress towards making the Internet fully multilingual, including advancing standards for multilingual TLDs, email addresses and keyword lookup;

(e) To maintain support for the full internationalization of Internet domain and host names;

(f) To contribute towards enhancing bottom-up policy for the introduction of multilingual domain names.

4. *Internet Protocol addresses*

ICANN, through its IANA function, coordinates the global IP pool and Autonomous System (AS) numbers space, and delegates the allocation of Internet address blocks to five RIRs, namely:⁹² (a) African Network Information Centre (AFRINIC); (b) Asia Pacific Network Information Centre (APNIC) for Asia and the Pacific region (created in 1995); (c) American Registry for Internet Numbers (ARIN) for North America and parts of the Caribbean (created in 1997); (d) Latin American and Caribbean Internet Addresses Registry (LACNIC) for Latin America and parts of the Caribbean region; and (e) Réseaux IP Européens Network Coordination Centre (RIPE NCC) for Europe, the Middle East and Central Asia (created in 1991).

These RIRs operate as self-regulatory bodies and undertake the role of management of IP number resources and follow their regional policies of sub-delegation of these resources to Local Internet Registries (LIRs), network operators and ISPs. Table 4 below shows the provisioning responsibility of these organizations, while figures 6 and 7 illustrate the geographical distribution of RIRs.

⁹¹ Ibid.

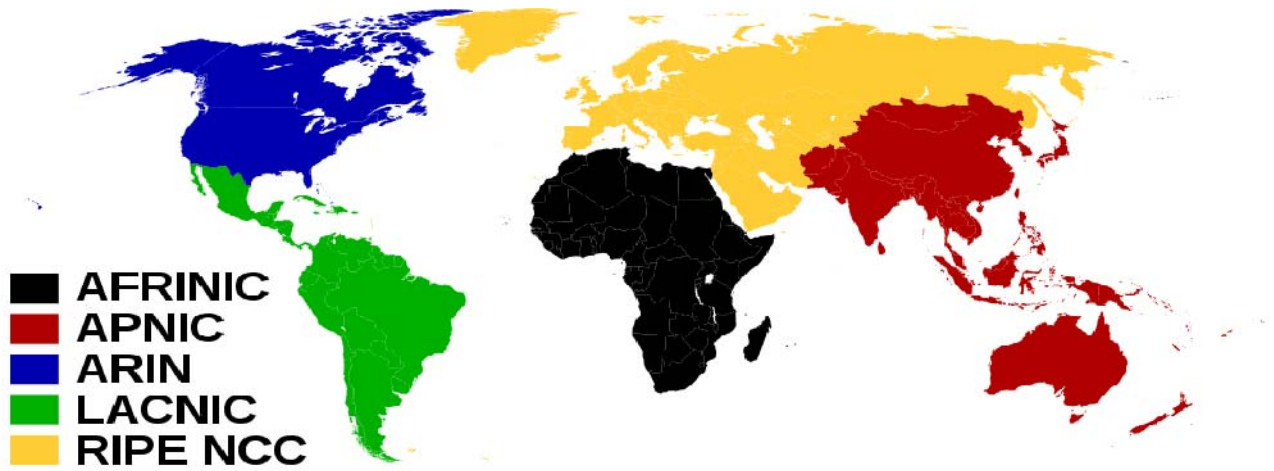
⁹² For more on this issue, see: <http://www.iana.org/numbers/>.

TABLE 4. PROVISIONING RESPONSIBILITY OF THE ORGANIZATIONS

Organization	Provisioning responsibility
ICANN [IANA]	Manage global IP address pool [Allocate Internet number resources to RIRs]
RIRs [AFRINIC, APNIC, ARIN, LACNIC and RIPE NCC]	Manage regional IP address pool [Allocate Internet number resources to LIRs/ISPs] [Assign Internet number resources to enterprises]
NIRs/LIRs/ISPs/Enterprises	Manage local IP address pool [Allocate Internet number resources to LIRs/ISPs] [Assign Internet number resources to enterprises and infrastructure]

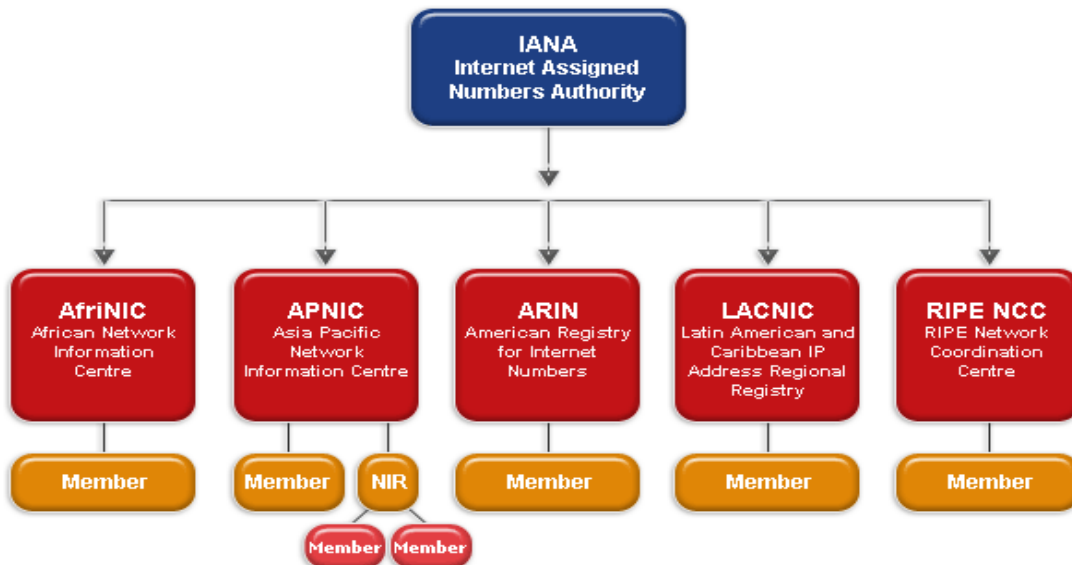
Source: Based on R.A. Pizak, “Allocation of remaining IPv4 addresses: What is a fair and equitable model to the Internet users?”, which is available at: https://par.icann.org/files/paris/NRO_WhitePaperALACParisWKSP.pdf.

Figure 6. Regional Internet Registries world map



Source: Wikimedia, “Regional Internet Registries world map”, which is available at: http://upload.wikimedia.org/wikipedia/commons/9/95/Regional_Internet_Registries_world_map.svg.

Figure 7. Internet resource allocation flowchart



Source: Number Resource Organization (NRO), “Global Structure”, which is available at: <http://www.nro.net/about/structure.html#dev>.

Collectively, the five RIRs are part of the Number Resource Organization (NRO) formed as a body to represent their collective interests, formalize their cooperative efforts, undertake joint activities and coordinate RIR activities globally. The main concerns of NRO are in protecting the unallocated number resource pool, promoting and protecting the bottom-up policy development process and acting as a focal point for Internet community input into the RIR system.⁹³

Figure 8. Components of the Number Resource Organization (NRO)



Source: Number Resource Organization (NRO), “Components of NRO”, which is available at: <http://www.nro.net/documents/presentations/ASO-Marrakech-Final.ppt#266.4>.

NRO has entered into an agreement with ICANN for the establishment of the Address Supporting Organization (ASO), which undertakes coordination of global IP addressing policies within the ICANN framework as shown below in figure 9.

Figure 9. Address Supporting Organization (ASO)

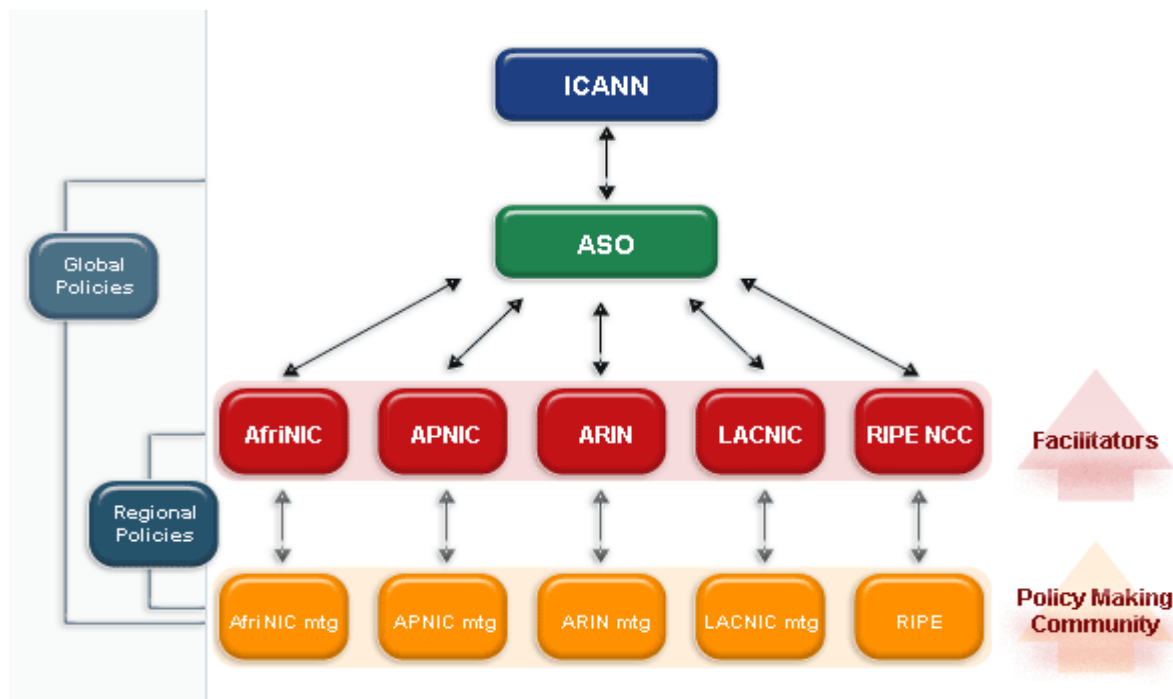


Source: Number Resource Organization (NRO), “Address Supporting Organization (ASO)”, which is available at: <http://www.nro.net/documents/presentations/ASO-Marrakech-Final.ppt#266.4>.

Each RIR has contributed equally to the formation of ASO, through a memorandum of understanding signed on 18 October 1999. Subsequently, a memorandum of understanding between ICANN and NRO, on behalf of RIRs, was signed on 21 October 2004 in Reston, United States. Figure 10 depicts the relationship between ICANN, ASO and RIRs.

⁹³ See: www.nro.net/documents/presentations/ASO-Marrakech-Final.ppt.

Figure 10. Policy development process: Address Supporting Organization (ASO)



Source: Number Resource Organization (NRO), “Global Structure”, which is available at: <http://www.nro.net/about/structure.html#dev>.

ITU is equally very active in this area. During the World Telecommunication Standardization Assembly (WTSA-08), which was held in Johannesburg, South Africa in 2008, ITU member countries and sector members reached consensus and adopted resolution 64 on IP address allocation and encouraging the deployment of IPv6. This aimed at promoting awareness of the availability of IPv4 addresses and at deploying IPv6. In that regard, ITU works closely with ICANN and other organizations, including, for example, IETF, RIRs and NRO. Given its unique position as public-private partnership composed of 191 governments and more than 700 private sector entities, ITU can complement current work by providing mechanisms for a consensus-based approach towards deployment, management and policymaking strategies relating to IPv6.⁹⁴

ITU is contributing actively in various areas, including as follows: (a) providing capacity-building and technical assistance for developing countries; (b) cooperating with and contributing to the work of relevant organizations, for example RIRs; and (c) providing technical and standardization issues as appropriate.

IP numbers are considered common pool resources that serve the global community. While they are fundamental to the future of the Internet, for historical reasons, there remains an inequitable distribution of IPv4 addresses and the majority of the assigned numbers are either unused or unrouted.⁹⁵ Currently, concern is focused on adopting the best address transfer policy of reclaiming and reusing the unused IP addresses in response to the depletion of the IPv4 address space.⁹⁶

⁹⁴ According to a communiqué by ITU.

⁹⁵ This issue has already been addressed by RIRs.

⁹⁶ At the current rate of depletion, the IPv4 address space will be exhausted around 2011. See T. Hain, “A pragmatic report on IPv4 address space consumption”, *The Internet Protocol Journal*, vol. 8, No. 3, which is available at: http://www.cisco.com/web/about/ac123/ac147/archived_issues/ipj_8-3/ipv4.html. More information is also available at: <http://www.potaroo.net/tools/ipv4>.

There are two proposed scenarios, namely: (a) legitimizing address transfer markets, thereby allowing organizations that hold unused IPv4 addresses to sell them to other organizations; and (b) seeking the automatic return of IP addresses that are not used and have been allocated for a long period of time for reallocation to others. See box 16 for an analysis of IPv4 depletion versus IPv6 adoption.

Box 16. IPv4 depletion and IPv6 adoption

In many parts of the world, especially in developing nations, the infrastructure to deliver Internet access to homes and businesses often lags behind the infrastructure developed to support mobile telephony. In many cases, this means the Internet is bypassing the laptop altogether and going directly – and sometimes exclusively – to mobile devices. At the same time, the expansion of networks, especially the Internet and its convergence with mobile communications, represents a revolutionary shift in the provision of information and empowerment to individuals throughout the world.

Ten years ago, when ICANN was first formed, there were an estimated 30 million computers on the Internet and an estimated 70 million users. In the ensuing decade, the user population has grown to almost 1.5 billion and the number of servers on the Internet now exceeds 500 million. As this decade comes to a close, the domain name system is undergoing a major change to accommodate the use of non-Latin character sets in recognition of the fact that the world's languages are not exclusively expressible in one script. A tidal wave of newly Internet-enabled devices as well as the increasing penetration of Internet access in the world's population is consuming what remains of the current IPv4 address space, driving the need to adopt the much larger IPv6 address space in parallel with the older one. Over three billion mobiles are in use today and roughly 15 per cent of these are already Internet-enabled. The number of mobiles is expected to reach five billion by the end of 2010, and many of those devices will need an IP address.

Source: Adapted from a communiqué by ICANN's Manager of Regional Relations in the Middle East.

Given the scarcity of IPv4 addresses and the legacy IPv4 allocation mechanisms, there are calls for changing the role of RIRs by developing policies for getting control of unused IPv4 address space, managing the new IPv6 and planning for the transfer of IPs. In response to IPv4 depletion, RIRs issued a global policy proposal in February 2009 aimed at governing the allocation of IPv4 addresses from IANA to RIRs, which could be implemented in two phases as follows:

- (a) Phase I: recovering IPv4 address space;
- (b) Phase II: allocating recovered IPv4 addresses by IANA.⁹⁷

On the other hand, the global community and the business market believe that IPv6 is in essence a continuation of the current set-up in IPv4, with the additional advantage of availability of additional addresses; and that both IPv4 and IPv6 could coexist well.

Businesses are making remarkable progress towards readiness for IPv6 deployment in terms of relevant products, equipment and applications. However, the obstacles owe mainly to the lack of customer demand, commercial driver and insufficient vendor support.

The transition period requires a shared responsibility between governments, operators, vendors and consumers. The role of RIRs is set to be crucial during this transition to the emergent environment. The scarcity of IPv4 addresses is expected to boost the anticipated demand and could lead to the development of policies for such emerging issues as methodology for the transfer of IP address space, reclaiming and gaining control of unused address space, security and management of this new IPv6 address space, and handling the emergence of possibly secondary markets.

Within that context, NRO announced that the rate of new entrants into the IPv6 routing system has increased by approximately 300 per cent over the past two years. This growth stemmed largely from the

⁹⁷ See: <http://www.apnic.net/policy/discussions/prop-069-v002.txt>.

active promotion of IPv6 by the five RIRs and their communities. Developing economies, such as India, are also playing an increasingly important role in generating demand for global IPv6 deployment.⁹⁸

ITU considers that IPv6 address space allocation policies should ensure that the interests of all nations are safeguarded. Recent ITU resolutions have called for a greater role for the Union in terms of deploying IPv6, which have been strongly supported by countries in the Arab region.⁹⁹

The main challenges for the Arab region with respect to IP addressing schemes are as follows:

(a) The depletion of IPv4 address space constitutes an obstacle for Internet growth in general and for developing countries in particular;

(b) Owing to the IPv4 scarcity, it is expected that an increasing number of restrictive measures for requests for IP allocation could be imposed. Consequently, there will be a need for IP allocation policies that are most appropriate for the efficient allocation of the remaining IPv4 addresses in the region;

(c) Arab countries in Africa are currently affiliated to AFRINIC, while those in Asia are currently affiliated to RIPE NCC, with the absence of a regional IP registry responsible for the Arab region as a whole. Some Arab governments see this arrangement as inappropriate for the “Arab region” at large.¹⁰⁰

In the light of the above, ESCWA recommends the following for the Arab region:

(a) To study the strategic importance of the creation of a new RIR for the Arab region, which could be called “ARABNIC”;

(b) To increase its involvement and activity in consultations related to regional issues with ICANN, thereby expressing the interests of the Arab region with respect to the envisaged “ARABNIC”;

(c) To continue to work closely with ICANN, ITU and other concerned organizations on both policy and implementation aspects;

(d) To ask RIRs to facilitate the reclamation and reuse of a substantial amount of unused addresses and to redistribute them fairly, thereby ensuring balanced access to resources on a geographical basis and extending the life of IPv4 so that Internet growth can continue to be sustained using IPv4 address space;

(e) To highlight the importance of making interregional address transfers given that most of the IPv4 address space is allocated to North America;

(f) To insist on changing the restricted procedure of allocating IP addresses for developing countries and to agree on a new strategy aimed at providing liberal and competitive IP allocation for all countries;

(g) To participate effectively in the actual policy development process in RIRs on the use of the remaining IPv4 pool;

(h) To raise public awareness of the importance of IPv6 at the national level in all Arab countries, with intense education and training programmes in order to build confidence in the migration;

(i) To allocate fixed shares of IPv6 pools for different countries based on population and expected growth rates for the next decade;

⁹⁸ More information on the growth of IPv6 is available at: http://www.nro.net/documents/press_release_031108.html.

⁹⁹ According to a communiqué by ITU.

¹⁰⁰ Those Arab countries in Africa are part of AFRINIC and face considerably fewer problems.

- (j) To promote the use of IPv6 by forming an Arab IPv6 task force and national task forces;
- (k) To encourage Arab countries to participate in developing, promoting and deploying IPv6 by being active in many industry groups, including the IPv6 forum and IPv6 task force steering committees;
- (l) To motivate operators to move to IPv6 by demonstrating the opportunities and benefits of such a migration;
- (m) To sign an agreement with RIRs aimed at ensuring that the allocation policies for IPv6 provide equitable access to resources;
- (n) To enhance the stability of the Internet by smoothing the transition from an Internet infrastructure where IPv4 is predominant to one where IPv6 is predominant;
- (o) To shorten the transition period by providing mechanisms and incentives for the rapid adoption of IPv6;
- (p) To provide a recommendation to those Arab governments that are in the process of building their backbone networks, thereby ensuring compatibility with IPv6;
- (q) To work on capacity-building in IPv6 addressing;
- (r) To support transition as the responsibility of private and public sector as well as the civil society;
- (t) To stress the fact that the real risks are associated with a failure to migrate to IPv6.

D. CONCLUSIONS AND RECOMMENDATIONS

The Internet governance debate proved to be the ideal medium for developing countries to address CIR issues. It represents an opportunity to increase their awareness on the importance of these issues as they relate to the evolution and sustainability of the Internet. Before IGF, Arab countries were not fully aware of the implications of CIR on the development of their countries and the necessity of being at the heart of the debate in order to better serve their concerns and interests.

CIR constitutes an important challenge to Arab countries, particularly regarding IPv4 scarcity and the transition from IPv4 to IPv6. The absence of sufficient experience in IPv6 operation and implementation stems from a lack of involvement in the protocol development process from the beginning. The transition period needs to be undertaken by taking into consideration its technical, social and economic aspects. Related discussions have proved to be a unique experience in the exchange of expertise between stakeholders, which need to be reflected in national and regional strategies in order to guarantee a smooth transition.

Management of CIR and enhanced cooperation in that regard are issues of global concern, with implications on economic and social development across the world, including the Arab region. In order to maintain the interest of the region, Arab countries must be active and follow up on CIR issues, and must participate effectively in the related forum with a clear vision as to their needs and expectations.

Consequently, one of the most important priorities for the countries of the Arab region is to participate effectively in the global CIR debate in order to enhance their position and address their needs with respect to this issue, thereby helping them to improve their presence on the digital map.

Within that context, the main recommendations for the Arab region are as follows:

- (a) To raise awareness of the importance of CIR and develop a consensus around globally applicable public policy principles for governing them;
- (b) To raise awareness of the importance of increasing the effective participation of the Arab community in the Internet technical governance and coordination process, thereby leading to an increased participation in the high-level functions of Internet governance;¹⁰¹
- (c) To amend the current Internet governance arrangements such that they become more equitable for the benefit of developing countries and in line with the WSIS criteria for transparency, accountability and multilateralism, while addressing all public policy issues related to Internet governance in a coordinated manner;
- (d) To emphasize the importance of Arab participation in the reform of ICANN decision-making procedures;
- (e) To highlight the importance of having a unified Arab position on issues discussed with ICANN.

¹⁰¹ ESCWA, "Internet governance: Main directions and priorities – ESCWA contribution to the Global Forum on Internet Governance" (March 2004).

IV. ISSUES RELATED TO ACCESS

Access, which can be defined as reaching content on the Internet, encompasses access to the Internet, information and resources. This involves a number of issues, including accessible content, technologies needed to ensure connectivity and added value for end users.

A. ACCESS WITH RESPECT TO INTERNET GOVERNANCE

While access is not an issue for developed countries given their satisfactory Internet penetration rates, it represents a priority issue and a significant challenge for developing economies. In fact, there is a clear divide in terms of Internet access, with the highest rates of the Internet access penetration, especially broadband access, in America and Europe and the lowest rates in Africa.

Access plays a very important role with respect to Internet governance because of the emergence of the notion of “Internet for all”, which is set to redefine Internet governance rules in terms of accommodating the rights and sensitivities of the new entrants to the Internet. Clearly, given the lack of Internet access for some five billion people across the world, Internet governance is naturally biased. Increasing Internet access will have a strong impact on Internet governance because it will lead to reshaping Internet governance to accommodate the concerns of those who had no say in shaping the Internet at its inception.

Expanding Internet access cannot be achieved merely by expanding infrastructures. Rather, it requires raising awareness of the utility of the Internet for socio-economic development and creating incentives for people to use the Internet to meet their needs and aspirations, including the disabled and rural populations.

B. SUMMARY OF THE DISCUSSIONS ON ACCESS DURING THE IGF MEETINGS

One of the mandates of IGF is to “advise all stakeholders in proposing ways and means to accelerate the availability and affordability of the Internet in the developing world”.¹⁰² These issues reflected directly on the debates during the IGF meetings, thereby increasing the understanding of the issues and challenges that inhibit access to the Internet in developing countries.

Access was one of the broad main themes of the first IGF meeting in Athens in 2006. Many contributions, particularly from developing countries, stressed that access represented the overarching issue to most people who were without access.

The debate persists and, as mentioned above, one of the main themes of the third IGF meeting centred on how to reach the next billion Internet users, and on the need of the global community to address issues and challenges related to access and multilingualism. To that end, several key issues include multilingualism, connectivity, affordability and utility. IGF discussions related to the issue of access highlighted that rather than being limited to business concerns, the Internet was also about empowerment that depended on access. There was a consensus among all participants in the Internet governance debate, including governments, the private sector, civil society, the Internet community, international organizations and the media, on the importance of Internet access as it expands to the next billion people.

It was agreed that the availability and affordability of the Internet is related to many factors, including appropriate regulatory environment, national policies that encourage investments, Internet exchange points (IXPs), promotion of broadband networks and competition in the ISP industry. Additionally, there was recognition that the costs of international connectivity affect affordability of the Internet. The discussion raised the importance of addressing access issues not solely through the prism of infrastructure, rather by

¹⁰² World Summit on the Information Society (WSIS), “Tunis Agenda for the Information Society”, para. 72 (e), which is available at: <http://www.itu.int/wsisis/docs2/tunis/off/6rev1.html>.

considering quality, content and affordability as equally important concerns. It was stressed that access and openness of information were interrelated concepts.

Another issue that was raised was the importance of open standards in maintaining the openness of the Internet, promoting competition on an equal basis across a wide range of Internet markets, and in the significant positive network effects that could be delivered through them. Many organizations highlighted their roles in the international community with respect to standards-making processes, which help decision makers to understand the implications of Internet technologies, and to develop effective and fair Internet coordination policies.

Moreover, the issue of interconnection costs was tackled, particularly the way in which costs of networking, access and associated revenues were distributed among the different players, as well as the need for agreed arrangements for Internet traffic and interconnection in order to reduce costs.¹⁰³

During the IGF meeting in Rio de Janeiro, there was a consensus on the potential of ICT tools for economic growth and social development, particularly for rural and local access. This resulted in a call to promote and adopt a multi-sector approach aimed at achieving universal, affordable and equitable access. Specific recommendations included the integration of ICT regulations and policies with local development strategies, as well as the exploitation of complementarities between different types of development infrastructure. The participants stressed the importance of encouraging regulatory reform at the local level and as a common requirement in order to enable a more conducive and lower cost access environment.¹⁰⁴

The business community emphasized the role played by the public sector in the enabling environment in terms of establishing adequate legal, regulatory and political conditions in a transparent and competitive manner. This role facilitated the deployment of infrastructure, especially broadband infrastructure, and ensured the efficient and effective use of the radio spectrum.¹⁰⁵

In the IGF meeting in Hyderabad, access was discussed indirectly through the main theme “reaching the next billion”, during which there was a consensus that the Internet, more than limited to business concerns, was about empowerment, which in turn depended on access. The discussion focused on factors required for access, including connectivity and affordability, and on innovative ways of providing access either through community services or through new business models, noting the potential of mobile communications as a means of reaching many of the new Internet users.

The discussion examined the issues of access from three main areas, namely, supply, demand and development. There was a strong consensus that access needed to be viewed in the context of an ecosystem, and the access gap could not be addressed without considering various facets, such as policy, regulation and affordable infrastructure. To that end, governments were encouraged to develop a public policy environment that created incentives for investment. It was highlighted that reaching the next billion required an enormous investment of capital, with an independent, transparent and predictable regulatory regime.

Furthermore, with the aim of promoting collaborations and complementarities, the discussion focused on the roles of the different stakeholders, namely: governments, the private sector, civil society and technical community.

¹⁰³ IGF Secretariat, “The Internet Governance Forum (IGF): Inaugural Meeting”, which is available at: <http://www.intgovforum.org/cms/synth/E.doc>.

¹⁰⁴ IGF Secretariat, “The Internet Governance Forum (IGF): Second Meeting”, which is available at: http://www.intgovforum.org/cms/Rio_Meeting/IGF.SynthesisPaper.24.09.2007.rtf.

¹⁰⁵ This refers to reducing the restrictions on the services that can be used on certain radio frequencies in order to support and provide access to rural or low-income areas.

C. ISSUES DIRECTLY RELATED TO ACCESS

Access comprises various facets, which be categorized as follows: (a) devices, including, for example, computers, laptops, and mobile and handheld devices; (b) connectivity, including, for example, local loop and international connectivity; (c) user interface, including multilingualism; and (d) content, particularly in terms of adequacy, standards for representation, multilingualism and retrieval through search.

These aspects are set forth below, each dealt with separately in terms of status, challenges and recommendations both on the technological side, and on the financial and economic side.

1. *Devices and usability*

Devices are the appliances that permit end users to access the Internet. While they are available at increasingly affordable prices, there remains a large segment of the global population that cannot afford them. Accordingly, there is a growing interest among most communities to have affordable Internet connectivity products and appliances that permit users to benefit from reliable and inexpensive access. Without such products there is no way to popularize affordable access to the Internet and e-mail.

From a technological aspect, the steady evolution of this industry coupled with market trends permit the development and availability of such devices as the Internet computer for surfing the Web or for sending and receiving e-mails without the complexity of personal computers (PCs) and at affordable prices. Parallel to this is the concern related to developing appliances that are compatible with the needs of people with disabilities in order to enable their inclusion as an active segment of Internet users.

When referring to access in the Internet governance context, the attention is drawn to the importance of using new ways of providing access either through community means or through new business models, wherein access is effectively paid by a third party. In that regard, governments must continue to support access to the Internet from any location as part of their national development strategies. This has already been applied in some countries by putting into place national development policies aimed at educating citizens in the use of ICTs, and at promoting access for the majority of the population via community telecentres.

Examples of this in the ESCWA region include the following: (a) IT clubs in Egypt; (b) the Reefnet Project in the Syrian Arab Republic; (c) knowledge stations in Jordan; and (d) the PiPOP Project in Lebanon.

Equally, there is an ongoing live example of a global project, entitled “Knowledge networks through ICT access points for disadvantaged communities”, which was implemented by ESCWA in coordination with the national governments of several ESCWA member countries. The project aims to transform ICT access points into knowledge hubs, and group these hubs at the regional and the global levels.

Recommendations for developing countries include the following:

(a) To build a national strategy that supports the use of personal computers and the development of an Internet devices industry;

(b) To facilitate the acquisition of access devices through feasible loans by stimulating the participation of the private sector;

(c) To urge the industry to produce reliable and easy-to-use ICT equipments at affordable prices, thereby encouraging their acquisition by the low-income population;

(d) To provide incentives for the wide use of ICTs in order to create a new generation of Internet users;

(e) To emphasize the role of governments in educating users on the proper use of the Internet;

(f) To stimulate the global community to standardize the new devices with such concepts as Internet-sharing devices;¹⁰⁶

(g) To encourage communities to demonstrate the significant market potential for Internet computers, thereby encouraging manufacturers and vendors to develop such a segment of the industry;

(h) To define the requirements of people with special needs regarding Internet access appliances that facilitate Internet access, thereby encouraging developers to respond to those needs.

2. Connectivity

Another element that is needed to expand access is Internet connectivity, both by way of local loops and international connectivity. Connectivity entails improving the telecommunications infrastructure and the core network to provide integrated services, and making available sufficient international bandwidth, which requires an enormous capital investment. Connectivity is therefore linked with policy, regulations and investment.

The deployment and upgrade of the telecommunications infrastructure is one of the main enablers of Internet access. There is a strong relationship between the nature of the technology deployed and the possibilities for the expansion of Internet access. Access technologies can be classified into copper, wireless and fibre technologies, as described in box 17.

Box 17. The different types of infrastructure technologies

(a) *Copper technology*, which typically provides narrowband connectivity, and represents most of the existing infrastructure deployments. However, through DSL techniques, broadband connectivity can be provided over copper;

(b) *Wireless technology*, including wireless broadband, could be the key for bridging the access divide by providing connectivity and reaching people in rural and disadvantaged areas or in Greenfield situations, where there is no real network infrastructure to start with, in particular with regard to the last mile. In fact, rather than posing an investment issue related to wireless deployment, the real problem for large-scale wireless deployment exists at the spectrum allocation level and the standardization level;

(c) *Fibre optic technology* provides a high quality yet very expensive alternative.

From the perspective of end users, the price is a crucial factor, irrespective of the technology used whether it is WI-FI, local loops or WI-MAX. The main challenge is optimizing existing and new technologies to provide efficient and affordable access.

Source: Compiled by ESCWA.

The dominant emergence of Next Generation Networks (NGN) represents a significant challenge with the complex concept of the separation between services and technologies, particularly given that the packages of services to end users will be widely expanded. From a financial point of view, the implementation of telecommunications infrastructure is very costly. Given the deep penetration of mobile telephony, especially in countries where data backbones do not exist yet or where budgets are too limited to implement them, governments could benefit from the existing mobile infrastructure to provide Internet services even with a narrowband speed.

¹⁰⁶ More information on Internet-sharing devices is available at: http://www.cable-modem.net/information/Internet_sharing_devices.html.

The current cost structure for international connectivity is one of the main barriers that impede the spread of the Internet. In fact, the way costs are internationally shared for Internet connection is different from traditional cost sharing arrangements for international telephone calls. For developing countries, the main concern still resides in the high cost of Internet connectivity. While an Internet link, by definition, connects two end-points, bearing the cost of this link in the current situation is a burden only on one end-point. In fact, Arab countries have to pay the full cost of these links, in addition to the interconnections costs, to developed countries. In addition to cost imbalances, and because of the geographical distance from Internet backbones and the long distance of cables to “hook” to the Internet, ISPs in the region pay huge amounts of money to ISPs in the United States and Europe, which directly reflect on the overall cost of the Internet in these countries. This situation contradicts the fundamental WSIS goals of promoting the Internet usage and bridging the digital divide in developing countries.

For the Arab region, connecting Arab countries means connecting Arab people with similar content, culture and profile, which in turn leads to promoting Internet access. On the other hand, it reconfigures the “Arab region” to become part of the “global Internet backbone” instead of paying substantial sums of money to gain access through others’ cables which are directly connected to the Internet. The challenges facing the implementation of such a scheme lie in the cost of regional transport and in national regulations.

Consequently, in order to lower this cost element there is a strong need to have Internet exchange points at the national and regional levels. Full support is required to build inter-country, intraregional and international peering networks. Building the regional infrastructure connectivity and exchange points makes sense from all perspectives (see box 18).

Box 18. Internet Exchange Points

At the national level, implementing Internet Exchange Points (IXPs) allows operators, content providers and other ISPs who have an Autonomous System Number (ASN) to exchange traffic, and permit to transfer data locally and directly without going through the expensive Internet transit points.

Moreover, IXPs could represent a perfect place for critical infrastructure, such as root servers, or to host the most popular content providers that consume approximately 10 per cent of the international traffic.

The benefit of implementing IXPs is that it reduces the cost of connectivity, reduces international link consumption, improves the quality of service by reducing the delay and keeps all the local traffic local.

Source: Compiled by ESCWA.

In that regard, the Internet governance debate can play a crucial role in reducing Internet routing costs, thereby rendering it equitable among different economies. IGF needs to stimulate the global community to examine existing pricing policies and to develop a fair international pricing and cost-sharing telecommunications regime. One of the important challenges related to Internet governance is its capacity to negotiate and shape an inter-country arrangement on data bandwidth costs. In parallel, it is also important to accentuate the principle of “universal access”, which ensures the right of access to ICTs and incites the global community to progress towards this endeavour.

To that end, ESCWA recommends the following for the Arab region:

(a) Given the important role played by governments in enhancing the telecommunications infrastructure and setting regulation for access infrastructure, especially broadband, they must seek to stimulate the participation of the private sector under an appropriate legislation scheme, thereby forcing it to provide universal access through a model that separates retail service competition from public backbone service provision;

(b) Spreading access requires a public policy environment that creates incentives for investment, which needs to emphasize regulatory transparency and predictability through an independent regulatory regime;

(c) Member countries need to develop strategies aimed at enhancing competitive and collaborative models for the provision of Internet access, and at exploiting the complementarities between different types of existing and new infrastructure;

(d) Member countries must engage in enabling bilateral or multilateral agreements with Internet backbones operators in order to reduce connectivity cost in return for exploiting new markets. In that regard, there is a need to engage in a debate on the asymmetrical pricing model described above;

(e) Governments need to promote Internet access through wireless solutions and encourage the establishment of and accessibility to national and regional IXPs that maximize the local and regional exchange of traffic and improve the quality and the cost of Internet access;

(f) Governments need to solicit donor support as a financing mechanism aimed at providing funds for initiatives that advance connectivity, IXPs and local content in developing countries.

3. *User interfaces*

The issue of user interfaces does not relate to content as such, rather to tools that enable users to reach content. There is recognition that the expansion of Internet access raises questions about the technology's user-friendliness for different people; and in fact, user interface refers to the actual means through which people communicate with a given system.¹⁰⁷ End users need to have a familiar environment in order to use the Internet, without which the expansion of Internet access can be severely hampered.

The global Internet governance debate and the emergence of access issues have led the global community to respond to the needs of a large number of communities that do not have compatible tools in terms of user interfaces or software. Recently, the global community became aware of the importance of designing and developing tools and solutions that help to overcome obstacles related to differences in cultures, needs and languages. Consequently, it is working to develop high-quality user interfaces that are accessible and usable by a diverse user population with varying abilities, skills, requirements and preferences in a variety of contexts and through a variety of technologies.¹⁰⁸

Developing appropriate user interfaces must take into considerations three important factors, namely, language issues; tools, including, among others, relevant software and browsers; and special needs as discussed below.

Communities that use non-Latin scripts and characters are forcing the Internet governance community to respond to their needs regarding the specificities of their local languages. The most important example is the Internationalized Domain Names (IDNs) implementation, which permits Internet users to write and use domain names in their native languages. Despite the technical difficulties of the implementation in terms of standards, a substantial effort at the level of standardization is being exerted aimed at meeting the aspirations for Internet evolution with respect to multilingualism. Efforts are also being exerted to correct the shortcomings of earlier versions of the IDN standard that had originally been drafted by people who were not experts in the specificities of all the local languages of different language communities.

¹⁰⁷ D-Lib Magazine, "Design and evaluation: A review of the state-of-the-art" (July/August 1998), which is available at: <http://www.dlib.org/dlib/july98/nrc/07nrc.html>.

¹⁰⁸ C. Stephanidis, "User interfaces for all: New perspectives into human-computer interaction", in *User interfaces for all - Concepts, methods, and tools*, C. Stephanidis ed. (2001), which is available at: http://www.ics.forth.gr/hci/files/stephanidis_ui4all_2001.pdf.

With regard to such Internet tools as application software and browsers, there are problems in terms of supporting the different types of digits, especially in Arabic. Specifically, Arabic characters can take up to three different forms depending on where they are located within a word, and are written from right to left unlike Arabic numerals that are written from left to right. For example, some systems, notably Microsoft's Windows, map both types of Arabic digits and other digits for internal storage into European ones and not into Unicode, thereby rendering them according to localization rules and not matching what the user originally typed. Another example is that most Internet browsers do not support scripts that are written from right to left. There is therefore a real need to overcome such problems through the participation and collaboration of Arab experts in global standardization groups.

In terms of promoting access among the elderly and persons with special needs, there is a clear need to design suitable applications and evaluate their adaptive interfaces, including, among others, Web browsers, and augmentative and alternative communication aids. Additionally, there is a need to develop innovative interaction techniques, including different scanning techniques, or novel hardware interfaces, such as head-mounted switches, eye-gaze trackers and brain-computer interfaces, among others. These are naturally more complicated innovations and applications that require a diverse range of abilities and user interface concepts.¹⁰⁹ Given that very few human-computer interaction models target users with disabilities, finding ways to stimulate developers and programmers to support the multiple needs of end users and local communities, including those with special needs, remains a major challenge.

Typically, technologies that support user interfaces are not sufficiently standardized in order to expand the Internet for different needs, preferences and cultures; and the cost to support and obtain this standard is usually prohibitive.

It is important for the global and regional Internet community to aim at the following: (a) develop tools and software to help people with special needs and motivate them to use the Internet, thereby making it more relevant to all populations; (b) emphasize the importance of NGOs in identifying the needs of people with disabilities and in urging developers and manufacturers to work on developing suitable tools to help them; and (c) increase regional technical participation with regard to the standardization of tools related to the needs of the Arab region.

4. *Content*

Another concern raised during the IGF debates regarding Internet access is digital content. The fact that there is not enough diversified content that meets the needs of all communities, including the non-Latin script communities, reduces the usefulness of access to the Internet, thereby limiting the future expansion of the network. The debate stressed the importance of considering the next billion users as creators of content and sources of innovation, rather than merely as receivers of information.

Content issues encompass two main aspects, namely: content availability and content hosting.

(a) *Content availability*

Although Arabic speaking people account for 5 per cent of the global population, yet Arabic is not listed among the 10 languages most used on the Internet. The number of Arabic Web pages did not exceed 1.6 per cent of the total 400 billion Web pages on the Internet in 2007-2008.¹¹⁰

¹⁰⁹ See P. Biswas, "Simulating HCI for sp[ecial needs]", *Sigaccess Newsletter*, No. 89 (September 2007), which is available at: http://www.sigaccess.org/newsletter/sept07/Sept07_03.pdf.

¹¹⁰ <http://www.ecssr.ac.ae/CDA/en/FeaturedTopics/DisplayTopic/0,1670,801-102-82,00.html>.

For ESCWA member countries, Arabic content plays an important role in promoting the use of the Internet as a development tool and a global public good. Specifically, more Arabic content on the Internet provides the Arabic speaking population with more reasons to go online. Eventually, some of these new users will produce their own content, thereby increasing the overall content available in Arabic and inevitably leading to the expansion of the Internet.

One of the impediments facing the use of Arabic on the Internet is the lack of unified standards, particularly with respect to character sets. Other obstacles include weak telecommunications infrastructure, lack of Arabic content on the Internet and lack of Arabic Internet access programs for the Web and e-mail. The Arab region is facing a significant challenge in terms of promoting local content with cultural diversity, which requires encouraging the business community to be part of supporting initiatives regarding the spread of digital Arabic content, thereby directly affecting access to information at the content level (see box 19).

Box 19. Promotion of the Digital Arabic Content Industry through Incubation

In 2007, as part of its role of promoting the information society in the region, ESCWA launched a project, entitled “Promotion of the Digital Arabic Content (DAC) industry through incubation” in collaboration with selected technology incubators in the region. The project aims at creating national competitions to incubate the best digital Arabic content that will address subjects relevant to the socio-economic development of the Arab region, including e-government and e-learning, as well as in the areas of culture, media, health and science. To date, five ESCWA members are involved in this project, namely: Jordan, Lebanon, Palestine, Syrian Arab Republic and Yemen.*

The objective of the project is to contribute to the growth of the DAC industry in Western Asia by supporting and promoting the development of DAC applications in ICT incubators. The project will be implemented following the two tracks, namely: (a) assessment of the DAC industry needs, proposal of region-appropriate DAC applications, and development of business and partnership models for the expansion of this industry; and (b) practical implementation through by supporting five DAC projects in selected ICT incubators in member countries.

* More information on this project is available at: <http://www.escwa.un.org/divisions/projects/dac/index.asp>.

Given that the Internet today is heavily reliant on search engines, and that the majority of search engines are not fully developed to support intelligent search in scripts other than Latin-based, access for local people looking for a specific content in their own language is impeded. This shortcoming was acknowledged by the managing director for emerging markets at Google for whom the Arab region represents “a high priority”. Within that context, Google is aiming to provide more tools, including Blogger and Knol, in local languages.¹¹¹

Moreover such sectors as the media, banks and finance in the region have already started to adapt their online content to meet the needs of their Arabic-speaking users.

The absence of content regulation and the increase of harmful content reflect negatively on the trust to use the Internet as a development tool. The challenge for the Arab region in Internet governance forums is to overcome these obstacles and to incite the global community to find best practices aimed at solving them.

(b) *Content hosting*

Content hosting incorporates two aspects, namely: hosting digital Arabic content; and mirroring other global content in the region. Where local content exists it is typically hosted outside the region, even if those outside servers are unable to support the different types of scripts. There is a real need to encourage users to conduct local hosting and establish regional data centres with Arabic content; and to encourage the private

¹¹¹ Knol is a Google project aimed at including user-written articles on a range of topics and constitutes the next stage for Google in terms of localizing research activity for a new/future market. See: <http://knol.google.com>.

sector to invest in local hosting business, which will have a financial impact on reducing the overall connectivity cost by avoiding the unnecessary use of international links.

In effect, most of the bandwidth consumption in Arab countries goes towards downloading content from abroad, and the majority of server links to Arabic Internet access are hosted abroad. Moreover, increasing the mirroring servers in the region has a great impact on the bandwidth consumption given that it disposes of the need to browse outside the region, with the concomitant cost savings.

The Arab region needs to take account of the following:

(a) Governments need to include content development in their national strategies and build useful local applications and online Government services in local languages, thereby building demand based on content;

(b) Regional and national stakeholders need to support the digital Arab content industry; stimulate the development of a wide range of content, service and applications sources; and demonstrate the impact of such content on social-economic development.

D. THE ROLE OF BROADBAND IN INTERNET ACCESS

The notion of broadband connectivity has emerged as a new challenge in terms of Internet expansion. Currently, the trend is moving towards broadband, whether fixed, wireless or mobile technology, owing to the fact that most interesting applications and services need fast connection speeds. It has been demonstrated that countries with high broadband penetration rates enjoy high economic growth. The nature of the content that is developed to meet the needs of developed communities imposes a broadband connection to benefit from and use effectively the information on the Internet; and more sophisticated content calls for considerably more network requirements.

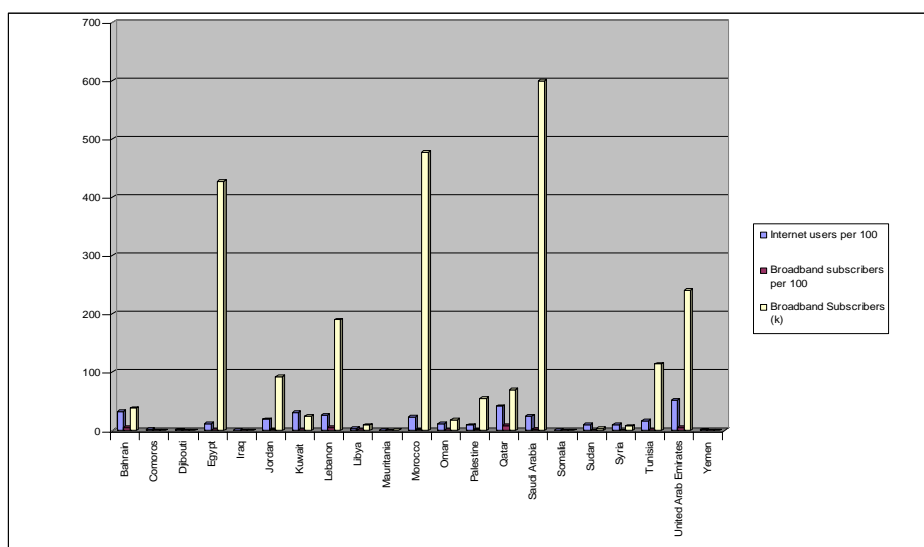
In order to encourage wide-scale Internet access, there is a real need to develop broadband access. The development of broadband access has several related issues, namely: technology, national policy, business model, applications and price.

From a technical point of view, technology based on copper is often limited and unreliable. On the other hand, fibre-based technology needs outdoor cabinets with special conditions. Consequently, some countries, particularly developing countries, have difficulties achieving these conditions in terms of climate, environment and electricity. Wireless broadband technology is set to play a leading role in rural areas where the cost of laying hundreds of kilometres of fibre to serve a few customers can be daunting. It allows a far more rapid rollout of midsize broadband speeds, which can be replaced by fibre when business cases for such deployments justify such replacement.

On the other hand, the deployment of broadband infrastructure is the cornerstone for the convergence services. Key factors for broadband growth are as follows: investment in networks, regulatory environment and consumer demand. Governments are directly responsible for defining national policies aimed at deploying large-scale broadband Internet and at transforming this into a socio-economic development tool. However, price continues to affect demand, while the propagation of broadband will significantly decrease Internet cost, specifically “the cost of delay”.

The current situation in most Arab countries with respect to broadband is very modest owing to the high cost of implementation and the inefficient deployment of that technology. In addition, the telecommunications sector in these countries is not sufficiently regulated to permit a quick deployment. For the above reasons, Arab countries have failed to reach a large-scale penetration rate in terms of broadband access. It is important for the Arab region to encourage investments in broadband deployment at the national level with a solid regulatory model, which will reflect on reinforcing socio-economic development. Figure 11 illustrates the statistics on ADSL penetration in the Arab region.

Figure 11. ADSL penetration in the Arab region, 2007

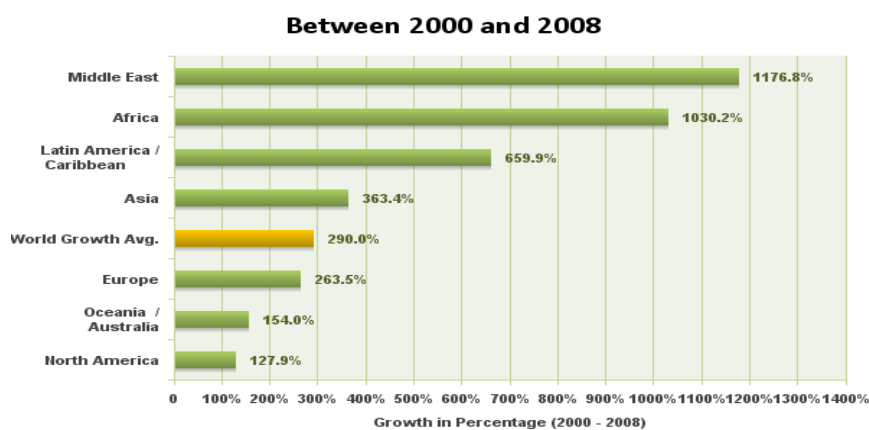


Source: Adapted from ITU, “Broadband penetration in the Arab world in 2007”. <http://www.itu.int/ITU-D/ICTEYE/Indicators/Indicators.aspx>.

E. ACCESS CONSIDERATIONS IN THE ARAB REGION

Access has been the main theme during all IGF meetings, and bridging the digital divide in all its different forms must remain the first priority for the Arab region. Since the introduction of the Internet in the mid-1990s, the region has been underrepresented in terms of the number of Internet users and the level of penetration. Currently, out of an estimated 360 million Arabic speakers across the world, only 5.4 per cent use the Internet.¹¹² At that percentage, Arabic is ranked seventh out of the top ten languages used on the Web, while it holds fifth place in the real, off-line world by virtue of the total number of Arabic speakers. However, as illustrated by figure 12, there has been a dramatic growth of Internet users in the Arab region, at 1,176.8 per cent, over the period 2000-2008.

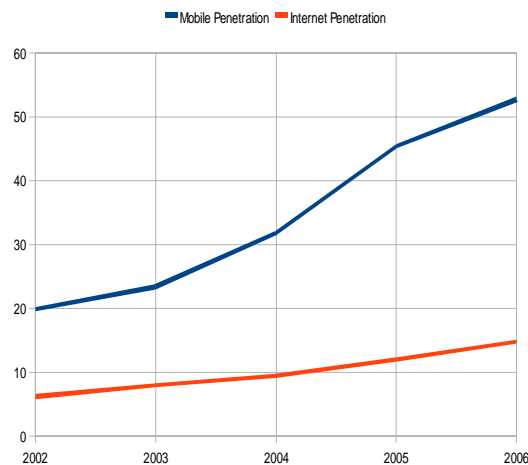
Figure 12. Growth of Internet users by region between 2000 and 2008



Source: <http://www.internetworldstats.com/stats.htm>.

¹¹² Internet World Stats are available at: <http://www.Internetworldstats.com/stats7.htm>.

Figure 13. Mobile and Internet penetration in the Arab region



Source: Adapted from United Nations Conference on Trade and Development (UNCTAD), *Information Economy Report 2007-2008* (2007).

The increase in Internet penetration has stemmed from the implementation of new regulatory policies. These new policies included institutional, restructuring and organizational reforms, which constituted an important driver in terms of liberalizing the telecommunications sector and which hitherto had been State-owned monopolies across the region.

Barriers to access encompass availability, affordability and the regulatory environment. At the same time, convergence with mobile communications represents a revolutionary shift in the provision of information and empowerment to individuals across the world. While the regional surge in the mobile communications sector does not directly equate with an Internet boom, it constitutes one of the enablers of the media and content industry in the region. Content providers favour this online advertising medium and willingly provide content through cellular and free satellite channels.

The regulatory aspect represents an important factor to empower access, which can reduce access prices and improve services. Regulations need to be provided by an independent body, which, additionally, is flexible, transparent and predictable. These regulatory frameworks must provide certainty, stability and incentives for investment in order to liberalize markets and make them competitive and efficient, particularly given that the competitive market model lowers connection and service costs. A wide and fair competitive environment and a free market economy play a key role in spreading the Internet, including to rural and underserved areas, by ensuring a more balanced access, promoting customer choice and decreasing prices. For example, competition in the ISP market has led to a fall in connection costs both in terms of dial-up and broadband, which in turn has resulted in a considerable rise in the number of Internet users.

Additionally, the Arab region is facing challenges in terms of making digital information available to the public. This has to be addressed through initiatives launched by governments, the private sector and civil society, and aimed at promoting open access as a step towards an equitable knowledge society, based on collaboration and sharing. Many stakeholders and countries in the Arab region have initiated projects to enable Arab access to the Internet.

Specifically, the Arab ICT Strategy for 2007-2012 focused on four axes, namely: infrastructure, development of the DAC industry, ICT services, and building confidence and security. While the national ICT strategies of these countries aimed at providing the necessary infrastructure to access the Internet, they barely tackled an important issue, namely, how the Internet can be used effectively by citizens in order to improve their standard of living and boost their incomes.

Recommendations for access in the Arab region include the following:

- (a) To convince governments to formulate policies aimed at open Internet access and at encouraging market liberalization and competition, thereby lowering prices;
- (b) To raise awareness of policy and decision makers on the importance of broadband;
- (c) To encourage developed countries to bridge the gap in Internet access by supporting efforts aimed at building human resources and capabilities in developing countries;
- (d) To promote access by marginalized groups, including the poor people and disabled;
- (e) To develop periodic national indicators of Internet usage in order to help in realistic decision-making;
- (f) To emphasize the role of civil society in spreading Internet access by promoting a non-commercial, Web-based and self-publishing media outlet, thereby increasing public awareness, participation and accountability.

V. ISSUES RELATED TO DIVERSITY

A. DIVERSITY: THE KEY FOR A GLOBAL INTERNET

Diversity in cyberspace is an issue that cuts across the Internet governance debate. It is at the core of a more inclusive information society and was strongly supported in both the WSIS Geneva Declaration of Principles and the Tunis Commitment.¹¹³ The outcomes from both phases stressed the fact that maintaining cultural and linguistic diversity constitutes a prerequisite for the flexible integration of users from various cultural and linguistic backgrounds in the information age (see box 20).

Box 20. An information society for all: key principles related to diversity

- “...create an enabling environment at all levels; develop and widen ICT applications; foster and respect cultural diversity; recognize the role of the media; address the ethical dimensions of the Information Society; and encourage international and regional cooperation. We agree that these are the key principles for building an inclusive Information Society”.
- “Cultural diversity is the common heritage of humankind. The Information Society should be founded on and stimulate respect for cultural identity, cultural and linguistic diversity, traditions and religions, and foster dialogue among cultures and civilizations. The promotion, affirmation and preservation of diverse cultural identities and languages as reflected in relevant agreed United Nations documents including UNESCO’s Universal Declaration on Cultural Diversity, will further enrich the Information Society.
- The creation, dissemination and preservation of content in diverse languages and formats must be accorded high priority in building an inclusive Information Society, paying particular attention to the diversity of supply of creative work and due recognition of the rights of authors and artists. It is essential to promote the production of and accessibility to all content—educational, scientific, cultural or recreational—in diverse languages and formats. The development of local content suited to domestic or regional needs will encourage social and economic development and will stimulate participation of all stakeholders, including people living in rural, remote and marginal areas.
- The preservation of cultural heritage is a crucial component of identity and self-understanding of individuals that links a community to its past. The Information Society should harness and preserve cultural heritage for the future by all appropriate methods, including digitization.”

Source: Extracts from World Summit on the Information Society (WSIS), “Declaration of Principles – Building the Information Society: a global challenge in the new Millennium” (12 December 2003), which is available at: <http://www.itu.int/wsis/docss/geneva/official/dop.html>.

The notion of diversity is equally enshrined in the Universal Declaration on Cultural Diversity by UNESCO, which deals exhaustively with all aspects of the concept of sustainable development and its impact.¹¹⁴

When referring to diversity in the Internet governance context, there is a need to focus on a multilingual Internet, particularly given that Internet access is in no way restricted to English-speaking users. While English content has dominated the Internet, this content is not available to non-English speakers. Consequently, over the past few years, there has been a growing recognition of the need to give voice and, in turn, access to a broad spectrum of people from diverse cultures.

The founders of the Internet deployed this medium to be supported only by the American Standard Code for Information Interchange (ASCII) characters, which comprise the 26 letters of the Latin script, the 10 numerals and the hyphen. At that time, it had not been anticipated that ASCII characters would limit the ability to provide content in other languages based on non-Latin characters. This resulted in the widespread uptake of the Internet among the English-speaking population, which currently accounts for 29.4 per cent

¹¹³ See: <http://www.itu.int/wsis/docs/geneva/official/dop.html>; and <http://www.itu.int/wsis/docs2/tunis/off/7.html>.

¹¹⁴ The Universal Declaration on Cultural Diversity is available at: <http://unesdoc.unesco.org/images/0012/001271/127162e.pdf>.

of all Internet users.¹¹⁵ As Internet usage expanded geographically, it has become important to make it available in relevant local languages in order to encourage its use.

The concept of a multilingual Internet can be tackled from various perspectives, namely, deployment of domain names in languages other than English, access to local content, and the protection of cultural identity and diversity. The general issue related to the linguistic aspect of the Internet is that “it needs close monitoring on global, regional and local scales, which requires a large expenditure of resources and human capacity. Another important problem depends on the English language dominance of the Internet.”¹¹⁶ The English language has several sectors where it is very important and considered the preferred means of communication, such as business and science.

There is no doubt that ICTs have a significant impact on economic, social and cultural development. Investing in technology is an important criterion in assessing the development of countries and measuring their competitiveness. Consequently, Internet content in local languages is of paramount importance if the goals of economic and social development are to be achieved.

Moreover, multilingualism is a key concept in terms of ensuring cultural diversity and participation for all linguistic groups in cyberspace. There is a growing concern that hundreds of local languages could fall by the wayside, albeit unintentionally, in the radical expansion of Internet communication and information.

Additionally, the goal of multilingualism is not limited to making the Internet accessible globally; rather, it must be consistent with expectations that derive from the normal use and evolution of languages within cultures. The real issues can be summarized as follows: (a) how to make content available in every language; (b) how to increase levels of access for all populations; and (c) how to generate presentation forms that are appropriate to each culture.

Reaching consensus on whether a multilingual Internet can be set as a priority in every national agenda poses a significant challenge. Despite this challenge, the benefits that can accrue are clear, particularly in terms of sustainable development, good governance, economic growth, and improving the wellbeing of many people in the wired and connected world. Within the context of developing countries, a multilingual information society is fundamental for increasing solidarity, promoting effective networks and sharing knowledge.

At the global level, UNESCO, joined by both ITU and ICANN, seeks to convene all major stakeholders across the world towards an agreement on universal standards regarding language issues in cyberspace. Such issues are far broader than deploying IDNs as they extend to standards for fonts, character sets, text encoding and language implementations within major computer operating systems, content development tools, automatic translation software and search engines across languages. Ultimately, equitable access to information can be only achieved if language barriers are removed and, at the same time, communication infrastructures are built and capacity-building programmes are deployed.

UNESCO, in its role as the main vector for promoting diversity in all its forms at the global level, has launched many initiatives to conserve multilingualism and cultural diversity on the Internet.¹¹⁷ UNESCO expressed an early interest in the role of ICT-based networks in socio-economic development, which resulted in launching research projects aimed at highlighting the need to measure online linguistic diversity. Equally, it provided recommendations on how to promote Internet multilingualism and universal access.

¹¹⁵ Internet World Stats, op. cit.

¹¹⁶ V. Cretu, R.A. Valencia and Q. al-Shatti, “Multilingualism: The communication bridge”, which is available at: <http://textus.diplomacy.edu/thina/TxFsetW.asp?tURL=http://textus.diplomacy.edu/thina/txgetxDOC.asp?IDconv=3241>.

¹¹⁷ See, for example, “UNESCO Observatory on the Information Society”, which is available at: http://portal.unesco.org/ci/en/ev.php-URL_ID=7277&URL_DO=DO_TOPIC&URL_SECTION=201.html.

The main aspects of diversity were discussed by the three IGF meetings. The salient points of these discussions are set forth below.

B. SUMMARY OF THE DIVERSITY DEBATE DURING THE IGF MEETINGS

The diversity debate in the first IGF in Athens focused mainly on English as the dominant language of online content. The participants highlighted the importance of having a multilingual Internet in order to foster an inclusive, democratic, legitimate and locally empowered information society.

It was agreed that the availability of information in local languages and the development of local content represented key elements in promoting multilingualism on the Internet. However, the participants underscored the many technical challenges that hinder the provision of content in non-Latin scripts, given that the Internet was initially deployed to support only ASCII characters.

There was also recognition that, rather than being restricted to linguistic diversity, the concept of diversity needed to take into consideration the disabled and the challenges of illiteracy and lack of knowledge of the dominant languages, thereby aiming to make Internet content available to all people. Moreover, the discussion raised the importance of preserving cultural heritage and the right of indigenous people to be equally represented online. Some participants pointed out the value of audio-visual applications available on the Web, especially for communities where cultures were not recorded in a written language, in addition to the role played by multimedia applications aimed at eradicating illiteracy.¹¹⁸

Another issue raised was the necessity to develop IDNs in other languages, particularly given that some official or native languages were not represented in the International Reference Alphabet (IRA). Some argued that this issue posed a technological and policy challenge owing to that fact that certain adjustments would be needed in order to preserve the security and stability of DNS. The discussion involved an explanation of Unicode character sets and how language communities needed to be involved in making decisions on code-points; and of the work by the technical bodies, namely, ICANN, ITU and IETF, aimed at improving IDN and at testing IDN in the root zone file. There was a general understanding that the support of IDNs involved more than DNS.

There was a strong consensus on the need for governments to dedicate the necessary technical and financial resources in order to develop local content and make it available; and to establish incentives aimed at encouraging people to become content creators, thereby guaranteeing a democratic and more participatory environment. Within that context, UNESCO plays a major role in coordinating global initiatives to guarantee online linguistic diversity.¹¹⁹ The IGF meeting highlighted the usefulness of such initiatives for local communities.

Discussions raised a critical challenge related to the support of languages that were not commercially viable, pointing out that market forces were sometimes insufficiently strong to provide countries with localized software. Consequently, the issue of linguistic diversification was perceived to expand beyond local strategies, and to encompass political lobbying aimed at finding sponsors able to invest in developing software for localized products.

The main outcome of the diversity debate in the first IGF meeting in Athens resulted in a multi-stakeholder programme aimed at gathering the main actors in this field, principally UNESCO, ITU, ICANN and ISOC/IETF, in order to come up with tangible solutions for the future.

¹¹⁸ IGF Secretariat, "The inaugural session of the Internet Governance Forum (IGF): Summing-up by the IGF Secretariat", which is available at: <http://www.intgovforum.org/Summary.Final.07.11.2006.htm>.

¹¹⁹ More information on this issue is available at: <http://www.intgovforum.org/cms/IGF-SummingUp-011106.txt>.

Another important outcome was the establishment of a dynamic coalition on diversity, namely, the World Network for Linguistic Diversity MAYAA, to work with various organizations, including governments, civil society and international organizations and aimed at assessing and promoting linguistic diversity as a basis of unity for human communication in cyberspace.¹²⁰

During IGF in Rio de Janeiro, the discussion on diversity moved forward significantly and emphasized the achievements made since Athens, while stressing the various dimensions of diversity, including, among others, linguistic and cultural media issues and helping the disabled. The debate also focused less on issues related to IDN, focusing instead on the need to distinguish between multilingual content and the role of IDN.

Moreover, the discussion raised the issue of bridging the knowledge gap and the need to find feasible ways to reconcile access to information for diverse populations with the protection of intellectual property. One of the main suggestions was to develop a global compact on languages that could be used to release copyrighted materials for localized languages and for representation in all forms.

Additionally, the participants reported on the importance of establishing the necessary tools in order to measure diversity, thereby assessing its progress. Finally, the attention was drawn to the fact that the Internet needed to be made available in native languages in order to better reflect cultural identity and values.

In the third IGF meeting in Hyderabad, the discussion on diversity focused mainly on the challenges of deploying a multilingual Internet. It was agreed that online content needed to be available in local languages in order to encourage users to produce and share content with their peers without falling victim of miscommunications. This issue could remain a significant challenge, particularly in over-populated countries that use several official languages.

Another challenge that was discussed by the participants related to the provision of localized software and hardware in multiple languages, and the broader need of focusing on multimedia aspects in order to reap the maximum benefit of the Internet in terms of generating and exchanging knowledge.

While there was an emphasis on the policy and political complexity and the technological hurdles related to deploying IDN, no specific solutions were proposed, with the exception of the model presented by the Arabic script IDN Working Group. Equally, the participants reaffirmed that a diverse Internet needed to serve illiterate people, the disabled, women and indigenous groups while protecting their cultural identities and diversity.

There was a general sense of a need to find new channels for the discussion on diversity to go forward, especially given the lack of a common framework to address diversity issues. The option to trace the future of the global discussion was left to IGF as the main medium for addressing diversity issues in cyberspace.

In its three years, IGF has gathered capacities from all across the world to debate diversity. During those meetings, participants have benefited from many lessons and case studies, which they have taken to their regions and which, in turn, have translated into many initiatives aimed at raising the importance of having a diverse cyberspace.

The following section elaborates in greater detail on the contributions made by the Arab region with regard to deploying a multilingual Internet and the efforts made at the local level.

C. THE INPUT OF THE ARAB REGION AND THE EFFORTS TO PROMOTE INTERNET DIVERSITY

As mentioned above, Arabic is currently ranked seventh out of the top ten languages used on the Internet, with a penetration rate at almost 17 per cent.¹²¹ The Arab region has become a pioneer in raising

¹²⁰ See Internet Governance Forum (IGF), “Dynamic coalition for linguistic diversity”, which is available at: <http://maayajo.org/spip.php?article27>.

¹²¹ Internet World Stats, op. cit.

the issue of promoting a multilingual Internet and in highlighting the importance of developing local content in Arabic. In 2003, ESCWA launched the DAC Initiative and subsequently included a programme on digital Arabic content in the Regional Plan of Action (RPoA) for Building the Information Society in Western Asia. Furthermore, ESCWA launched another initiative in 2007 aimed at promoting the DAC industry through incubation (see box 16 for more details).

Moreover, in 2003, ESCWA called for the establishment of the Arabic Domain Name Task Force aimed primarily at the following:¹²² (a) raising awareness among stakeholders about the importance of ADNS; (b) defining standards for ADNS through “Request For Comments” (RFC) documents; (c) promoting the adoption of standards in a coordinated fashion; (d) obtaining global recognition for these adopted standards; and (e) facilitating the deployment of these standards by the various stakeholders.

In 2005, ESCWA published an analytical study about the importance of deploying ADNS, highlighting the technical, linguistic and operational challenges surrounding this issue.¹²³ It also proposed recommendations that defined regional cooperation as a key element in the whole process.

Moreover, ESCWA assisted the Arab Working Group on Arabic Domain Names (AWG-ADN), which was established by the League of Arab States in 2004, whose role in implementing internationalized domain names in the top level of Internet addresses for the Arabic language was discussed in chapter III of this study.¹²⁴ Within that context, it made great strides in terms of promoting diversity by participating effectively in the IDN ccTLD Fast Track of ICANN and introducing new gTLDs activities; and in terms of addressing various issues of concern, including the following: (a) financial contributions and refund policy; (b) ambiguity regarding the right of each country or territory to delegate one string in each script, thereby representing each official language; (c) contention issues with existing TLDs and new gTLD applications; (d) relationship between ICANN and the IDN ccTLD operator; and (e) relationship with the ccNSO.

Some ESCWA member countries have started to develop projects and plans for content development, including Egypt, Jordan, Lebanon and United Arab Emirates. A milestone achievement of digital content in the region is the Library of Alexandria in Egypt, which contains six specialized digital libraries for almost 10 billion pages of text and content.

The National Information Technology Centre (NITC) in Jordan is encouraging institutions to publish electronic content in Arabic. Similarly, the National Commission for Information has launched an initiative to publish all research works and studies prepared by researchers in Jordanian universities electronically, which is set to promote Arabic content in various areas of cultural and scientific interest to researchers.

The Arab Union for Internet Writers has also a distinctive role in gathering Arab writers, intellectuals and scholars online. The Union aims to contribute effectively in disseminating Arab creative literature and culture, and to spread awareness about digital culture among intellectuals, writers and the Arab media as well as to establish an Arab cultural exchange point.

In Morocco the Royal Institute of the Amazigh Culture (IRCAM) was created to preserve and promote the Amazigh language and culture.¹²⁵ Besides introducing Amazigh in schools and using it in the national

¹²² A. el-Sherbiny and I. Oueichek, “ESCWA’s extended guidelines on ADNS with focus on operational issues”, which was presented at the Arab Regional Workshop on IP Strategies and IDN Issues (Damascus, 16-18 May 2006). The presentation is available at: www.ituarabic.org/PreviousEvents/2006/IPS-IDN/DOCUMENTS/DOC09-Presentation%20on%20ADNS.ppt.

¹²³ ESCWA, “Development of an Arabic Domain Name System” (E/ESCWA/ICTD/2005/Technical Paper.2), which is available at: <http://www.escwa.un.org/information/publications/edit/upload/ictd-05-tech2.pdf>.

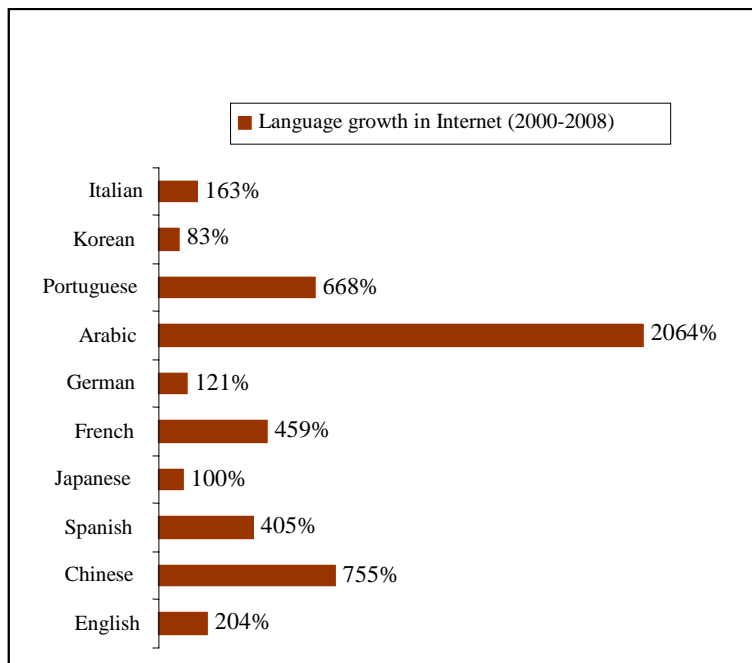
¹²⁴ This Working Group subsequently expanded and became the Arab Working Group on Domain Names and Internet Issues (AWGDNI).

¹²⁵ In Arab Maghreb countries, French is still the common language of digital content.

media, IRCAM started to promote Amazigh on the Web, thereby contributing to the global multilingual efforts. Within that context, IRCAM is developing Unicode fonts to type Tifiniagh, the script of Amazigh, and has made available for free download fonts and keyboards to type Tifinagh.¹²⁶ Separately, some Moroccan associations and personal bloggers are also using Amazigh on the Internet.

Interestingly, the growth of Arabic content over the Internet has taken the lead and a significant amount of content is posted on Web pages. Figure 14 illustrates the growth of Arabic compared to other languages over the period 2000-2008.

Figure 14. Growth by language used on the Internet, 2000-2008



Source: Internet World Stats, which is available at: <http://www.internetworldstats.com/stats7.htm>.

This growth stems largely from the size of the population that speaks Arabic either as a mother tongue, estimated at more than 186 million, or as a second language, at some 35 million. Moreover, Arabic is the official language in all Arab countries and is spoken widely outside the Arab region among Arab expatriates across the world.

This provides invaluable opportunities for cooperation in solving technical problems related to the use of Arabic in software, designing the production of Internet content, and investing in applications and in software solutions that rely primarily on Arabic. This highlights the importance of a regional Arabic content industry. While the Arab region is rich in qualified human resources and young university graduates, it lacks the experience and competence in this area.

On the other hand, digital Arabic content faces further challenges that prevent making Internet diversity an undisputable reality in the Arab region. The section below highlights those challenges and traces a possible scenario for benefiting fully from the digital age with regard to diversity.

¹²⁶ The website of the Royal Institute of the Amazigh Culture (IRCAM) has an Amazigh version. See: <http://www.ircam.ma/amzfr.htm>.

D. INTERNET GOVERNANCE: THE CHALLENGES OF DIVERSITY IN THE ARAB REGION

The most prominent factors that obstruct a diverse Internet and a flourishing digital content industry in the Arab region is the absence of specific strategies for the content industry, weak research and development efforts in the use of Arabic in software tools and the lack of a regional vision on this issue.

Another challenge faced by the region is the significant digital divide in its various forms, including those stemming from rural, gender and disability issues. The penetration rate of the Internet is relatively low owing to the cost of PCs and connections and, moreover, to the mentality and culture of the regional population. Currently, some 9.4 per cent of people from the Arab region have access to the Internet, which is very low vis-à-vis other regions.¹²⁷

In order to be able to promote diversity and represent all the society's entities online, Internet access remains a prerequisite. Assuming the availability of the Internet, users need be literate and computer literate to be able to access online content. The rate of illiteracy is still high, with more than 80 million illiterate people in the Arab world.¹²⁸ This poses the main challenge for the region and must remain a priority.

Another challenge is the lack of a regional vision on how to enable an adequate environment for the private sector in order to contribute in the industry of digital content. This is related to the weak demand on Arabic content and the absence of profitable activities.

The challenge to deploy a diverse and multilingual Internet can relate to the lack of engagement at the national level and lack of local policies. Given that initiatives aimed at establishing successful models of a diverse Internet need to take off locally, this crucially depends on the political will of national leaderships.

The Arab region also lacks the necessary tools to measure market force and user needs. Given that user opinions are essential in shaping policies, the region must have in place adequate parameters to overcome this issue.

Finally, funding remains a main concern for many developing countries in the Arab region. While the priorities of governments are mainly focused on political stability and national integrity, a very low share of budgets in Arab countries is dedicated to Internet initiatives owing to the assumption that they might not generate tangible benefits to society.

In sum, Arab countries need a stronger will to benefit fully from the digital revolution and, more specifically, from the Internet, particularly given its role in shaping the future of the global economy. Developing multilingual local content to preserve the cultural diversity of the region is also important in order to guarantee full inclusion of Arab populations in the new world order.

E. RECOMMENDATIONS

Promoting diversity in cyberspace in the Arab region must be systematically supported by Government initiatives. Specifically, governments can play a pioneering role if a clear strategy that takes into account the global trends of content industry is aimed at guaranteeing full social inclusion, promoting cultural dialogue, cultural sustainable development, and active participation of citizens in the information society, and empowering users by enhancing public participation in content production. Moreover, governments need to take appropriate measures to develop this industry by implementing policies that

¹²⁷ Internet World Stats, op. cit.

¹²⁸ UNESCO Institute for Statistics, "International literary statistics: A review of concepts, methodology and current data", which is available at: <http://www.uis.unesco.org/template/pdf/Literacy/LiteracyReport2008.pdf>.

identify national and regional priorities with regard to digital content, thereby reaping the economic benefits. This can lead to a positive effect that can improve competitiveness at the local and the regional level, generate employment and business opportunities, and increase the use of information resources in product development.

This can be achieved through the following:

(a) Increasing the availability of access to computers, software and the Internet to develop digital content, with governments playing a key role in providing technological resources;

(b) Launching regional initiatives to develop search engines in Arabic;

(c) Encouraging investments in digital content and providing incentives to stimulate economic opportunities that can attract capital;

(d) Launching research units at universities and local institutions that can focus on measuring and developing strategies to promote digital content;

(e) Encouraging bilateral and multilateral cooperation with countries that have experience in this field;

(f) Developing translation software from dominant languages, particularly English and French, into Arabic;

(g) Creating special units to define processes for developing digital content in the key ministries whose work is directly related to economic, social and cultural development, such as telecommunications agencies, information technology, media, culture, education, higher education ministries, and the ministry of economy;

(h) Securing the necessary funding in the budgets of the above-mentioned governmental institutions in order to encourage digital content development;

(i) Creating custom-made programmes aimed at involving groups that are underrepresented in cyberspace, namely, women, minorities, and the disabled;

(j) Launching special multimedia projects for illiterate and computer illiterate people;

(k) Launching capacity-building programmes for digital content;

(l) Reinforcing a legal environment aimed at enabling a smooth functioning of the industry and at preserving the rights of producers and authors.

VI. RECOMMENDATIONS AND CONCLUDING REMARKS

The Internet governance process has come a long way since its launch. It proved to be a unique experience for exchanging opinions and expertise between stakeholders who have conflicting interests and different priorities.

However, a common interest for all stakeholders exists that involves maximizing the benefits of the information society in order to ensure a secure, reliable and stable Internet for all. There are many issues of interest to all countries and institutions, including security, privacy and the costs related to Internet use.

A majority of developing countries and others who criticize the status quo argue that the Government of the United States needs to share its authority over some of the critical Internet resources with the rest of the world, given the posit that the Internet is global public good. In their view, a model that resembles ITU needs to apply to the Internet. Their point of reference is the world of telecommunications, where ITU provides the role of central clearing house for all policy discussions. On the other hand, non-governmental stakeholders, mainly the business sector and civil society, have made it clear that they feel left out of classical intergovernmental arrangements and prefer the bottom-up collaborative way the Internet is being run and led by ICANN.

Consequently, Internet governance is a complicated issue that needs more coordination among all parties in order to guarantee the evolution and the stability of the Internet. Developing countries see the various institutions dealing with the Internet as being dominated by the North and, therefore, they feel marginalized. Owing to the complex and fragmented nature of the various mechanisms that run the Internet, developing countries have significant difficulty in providing a meaningful input to the different Internet governance processes. Furthermore, they find great difficulty in making their voices heard in this process. Challenges exist also in building the skills and competencies of delegates to participate actively in the IGF and ICANN meetings in order to address the local and regional concerns.

Nevertheless, while the participation of the Arab region in the process does not echo the strategic importance of this arena, Arab countries have worked consistently on the technical solutions aimed at deploying a multilingual Internet, which is a key issue in the Internet governance debate, and at developing strategic issues related to CIR and institutional reform.

A. RECOMMENDATIONS

Arab countries need to participate actively in the global debate on Internet governance, particularly given that through this participation they can address challenges and questions related to many issues of interest to the entire Arab region, which may not be equally important for other countries. Such participation must be supported by a list of priorities and concerns of the Arab region, with common solutions and views aimed at inciting the global community to shape the future of Internet that takes into consideration the needs and expectations of the Arab region.

Internet governance has long been ignored. The time has come for all regional stakeholders to join efforts in order to guarantee the evolution, development and stability of the Internet. A number of actions need to be taken at the national, regional and international levels, with full contributions from governments, civil society and the private sector.¹²⁹

Recommendations regarding participation in the IGF process include the following:

(a) Arab Governments need greater awareness with regard to the importance of Internet governance and its profound impact on the development and growth of the Internet, especially for developing countries, and the importance of their inputs to shape outcome of those issues;

¹²⁹ This section is partly based on recommendations made by the Central Agency for Information Technology in Kuwait to the twenty-fourth meeting of the permanent committee for ICT in the Arab region (21-24 December 2008), which is mandated by the Arab Telecommunications and Information Council of Ministers (ATICM) and affiliated to the League of Arab States.

(b) Developing countries must realize that Internet governance encompasses more than merely reshaping ICANN. Specifically, it is also related to content regulation and cultural issues, which are currently out of the scope of ICANN, and there is to date no clear candidate to coordinate them;

(c) Arab stakeholders need to participate in the IGF process, with an eye on the post-IGF future, when real binding decisions could be taken.

Recommendations regarding building a unified Arab position and action plan regarding IGF process include the following:

(a) The future agenda of the leadership in the Arab region needs to give more attention to pressing Internet governance issues, given that the Internet is on the verge of a new economic world order. Lagging behind in the negotiation process will create an even deeper gap that could be very difficult to bridge;

(b) One of the most important priorities for the region is to implement the necessary policies and solutions to support the concept of a diverse Internet aimed eventually at helping Arab countries to improve their presence on the digital map. Given the continuing need to implement the necessary mechanisms to benefit effectively from the proposed policies and solutions, an action plan needs to be devised at the regional level in order to boost the stance of the Arab region with regard to Internet governance issues;

(c) Least developed countries in the Arab region could have other local priorities that prevent them from joining the global Internet governance debate. However, it is very important to adopt a long-term vision aimed at ensuring a simultaneous take-off of all the key projects that will promptly have a positive impact on the economy, thereby leading to sustainable development;

(d) Raising awareness on the importance of Arab community participation in the global process is required in order to develop consensus around globally applicable public policy principles for the Internet governance;

(e) The Arab region needs to interact and participate in the process of reshaping ICANN. A critical issue within that context is to activate the role of GAC in order to give it more than an advisory role;

(f) Focus must be made on local expertise to ensure the effective participation and cooperation of the Arab region in addressing complex and important technical challenges for the global Internet, thereby providing the Arab region with a better chance for high-level participation in the Internet governance process;

(g) There is a need for pan-Arab cooperation on such important issues as information security policy, Arab CERT and ARABNIC;

(h) Benefits could be reaped by holding the next IGF meeting in an Arab country, particularly in terms of building momentum in favour of a unified Arab position on issues related to Internet governance. A massive presence of all Arab stakeholders will add a considerable weight to this position;

(i) There is a need to work towards assuming leadership positions in the existing Internet governance arrangements.

B. CONCLUDING REMARKS

The Internet governance process has come a long and hard way, and requires more effort to come to a fruitful end. This study provides a step to help pave the way and constitute the nucleus for a unified Arab position capable of attracting the interest of the international community and of helping to shape the long-awaited global consensus on Internet development problems and their solutions.

There is no doubt that the telecommunications revolution has greatly contributed to reshaping the lives of people across the world. The exponential growth of human knowledge and the bid of humanity on technology and innovation to find an adequate response to the complex challenges facing the globe add to the driving forces for the development of the telecommunications field. A considerable part of the innovation in this field has stemmed from the development of convergent communication, with the Internet at its heart. The Internet is positioned as one of the fastest (if not the fastest) growing and incredibly innovative areas of that field.

The IGF process focuses on an extremely important question, namely: will the efforts of developing countries acting alone be sufficient to solve the problem of Internet penetration in their countries? Feedback from the IGF process suggests that the solution does not lie solely at the level of local policies of these countries. Rather, the problem is global in nature, given that the Internet is a global network, and the contribution of everyone is needed to push forward its development. Developing countries, with their comparatively limited human and financial resources, find great difficulty in making their voices heard. The challenge is in building the skills and competencies of stakeholders such that they become able to participate actively in the IGF process and address the region's concerns, thereby seeking to assume leadership positions in the existing governance arrangements.

The current IGF debate is critical because it tries to shed light on the real reasons behind the problems of the Internet. Arab countries must seize the opportunity of having one of the IGF meetings hosted in an Arab country in order to make a major participation and where they could define and support a unified Arab position on all the issues of major concern to the region. Such participation needs to be supported by a list of priorities and concerns of the Arab region, with proposed solutions and views that incite the global community to shape the future of the Internet, while taking into consideration the needs and expectations of the Arab region.

Annex I

**JOINT PROJECT AGREEMENT BETWEEN THE UNITED STATES
DEPARTMENT OF COMMERCE AND THE INTERNET
CORPORATION FOR ASSIGNED NAMES
AND NUMBERS¹³⁰**

Preamble

The U.S. Department of Commerce (Department) has an agreement (the Joint Project Agreement) with the Internet Corporation for Assigned Names and Numbers (ICANN) for the purpose of the joint development of the mechanisms, methods, and procedures necessary to effect the transition of Internet domain name and addressing system (DNS) to the private sector.

The Department continues to support private sector leadership in the innovation and investment that has characterized the development and expansion of the Internet around the globe. Furthermore, the Department continues to support the work of ICANN as the coordinator for the technical functions related to the management of the Internet DNS. Both Parties agree that preserving the security and stability of the Internet DNS is a priority, with ICANN's focus on DNS security matters being critical to this effort.

Agreement between the parties

In recognition of the Parties' desire to institutionalize the private sector technical coordination and management of the Internet DNS to the private sector, the Parties hereby agree as follows:

I. To strike Section V.B. from the Joint Project Agreement in its entirety and to substitute the following:

B. Department. The Department reaffirms its policy goal of transitioning the technical coordination of the DNS to the private sector in a manner that promotes stability and security, competition, bottom-up coordination, and representation. Consistent with this objective, the Department agrees to perform the following activities:

1. *Transparency and Accountability*: Continue to provide expertise and advice on methods and administrative procedures to encourage greater transparency, accountability, and openness in the consideration and adoption of policies related to the technical coordination of the Internet DNS;
2. *Root Server Security*: Continue to consult with the managers of root name servers operated by the U.S. Government and with other responsible U.S. Government agencies with respect to operational and security matters, both physical and network, of such root name servers and recommendations for improvements in those matters;
3. *Governmental Advisory Committee*: Participate in the Governmental Advisory Committee so as to facilitate effective consideration by ICANN of GAC advice on the public policy aspects of the technical coordination of the Internet DNS; and
4. *Monitoring*: Continue to monitor the performance of the activities conducted pursuant to this Agreement.

¹³⁰ The Joint Project Agreement between the United States Department of Commerce and the Internet Corporation for Assigned Names and Numbers is available at: http://www.ntia.doc.gov/ntiahome/domainname/agreements/jpa/icannjpa_09292006.htm.

II. To strike Section V.C. from the Joint Project Agreement in its entirety and to substitute the following:

C. ICANN. ICANN reaffirms its commitment to maintaining security and stability in the coordination of the technical functions related to the management of the DNS and to perform as an organization founded on the principles of stability and security, competition, bottom-up coordination, and representation. In conformity with the ICANN Board-approved mission and core values, ICANN agrees to perform the following activities:

1. *Accountability*: To take action on the Responsibilities set out in the Affirmation of Responsibilities established by the ICANN Board in ICANN Board Resolution 06.71, dated September 25, 2006, (Responsibilities) and attached hereto as annex A; and
2. *Reporting*: To publish, on or before December 31st of each year, an ICANN Annual Report that sets out ICANN's progress against the following:
 - (a) CANN Bylaws;
 - (b) ICANN's Responsibilities; and
 - (c) ICANN's Strategic and Operating Plans.

III. Strike Section VII from the Joint Project Agreement in its entirety and to replace it with:

A. This Agreement will become effective upon signature of ICANN and the Department. This Agreement will terminate on September 30, 2009.

B. In furtherance of the objective of this Agreement, and to support the completion of the transition of DNS management to the private sector, the Department will hold regular meetings with ICANN senior management and leadership to assess progress. In addition, the Department will conduct a midterm review of progress achieved on each activity and Responsibility that will include consultation with interested stakeholders.

C. This Agreement may not be amended except upon the mutual written agreement of the Parties. Either Party may terminate this Agreement by providing one hundred twenty (120) days written notice to the other Party. If this Agreement is terminated, each Party shall be solely responsible for the payment of any expenses it has incurred. This Agreement is subject to the availability of funds.

IV. Except as specifically modified by this document, the terms and conditions of the Joint Project Agreement remain unchanged.

FOR THE NATIONAL
TELECOMMUNICATIONS AND
INFORMATION ADMINISTRATION:

FOR THE INTERNET CORPORATION
FOR ASSIGNED NAMES AND
NUMBERS:

Name: John M.R. Kneuer
Title: Acting Assistant Secretary for
Communications and Information
Date: September _____, 2006

Name: Dr. Paul Twomey
Title: President and CEO
Date: September _____, 2006

Annex II

MEMORANDUM OF UNDERSTANDING BETWEEN THE UNITED STATES DEPARTMENT OF COMMERCE AND THE INTERNET CORPORATION FOR ASSIGNED NAMES AND NUMBERS¹³¹

I. PARTIES

This document constitutes an agreement between the U.S. Department of Commerce (DOC or USG) and the Internet Corporation for Assigned Names and Numbers (ICANN), a not-for-profit corporation.

II. PURPOSE

A. Background

On July 1, 1997, as part of the Administration's Framework for Global Electronic Commerce, the President directed the Secretary of Commerce to privatize the management of the domain name system (DNS) in a manner that increases competition and facilitates international participation in its management.

On June 5, 1998, the DOC published its Statement of Policy, *Management of Internet Names and Addresses*, 63 *Fed. Reg.* 31741(1998) (Statement of Policy). The Statement of Policy addressed the privatization of the technical management of the DNS in a manner that allows for the development of robust competition in the management of Internet names and addresses. In the Statement of Policy, the DOC stated its intent to enter an agreement with a not-for-profit entity to establish a process to transition current U.S. Government management of the DNS to such an entity based on the principles of stability, competition, bottom-up coordination, and representation.

B. Purpose

Before making a transition to private sector DNS management, the DOC requires assurances that the private sector has the capability and resources to assume the important responsibilities related to the technical management of the DNS. To secure these assurances, the Parties will collaborate on this DNS Project (DNS Project). In the DNS Project, the Parties will jointly design, develop, and test the mechanisms, methods, and procedures that should be in place and the steps necessary to transition management responsibility for DNS functions now performed by, or on behalf of, the U.S. Government to a private-sector not-for-profit entity. Once testing is successfully completed, it is contemplated that management of the DNS will be transitioned to the mechanisms, methods, and procedures designed and developed in the DNS Project.

In the DNS Project, the parties will jointly design, develop, and test the mechanisms, methods, and procedures to carry out the following DNS management functions:

- (a) Establishment of policy for and direction of the allocation of IP number blocks;
- (b) Oversight of the operation of the authoritative root server system;
- (c) Oversight of the policy for determining the circumstances under which new top level domains would be added to the root system;
- (d) Coordination of the assignment of other Internet technical parameters as needed to maintain universal connectivity on the Internet; and
- (e) Other activities necessary to coordinate the specified DNS management functions, as agreed by the Parties.

¹³¹ The Memorandum of Understanding between the United States Department of Commerce and the Internet Corporation for Assigned Names and Numbers is available at: <http://www.ntia.doc.gov/ntiahome/domainname/icann-memorandum.htm>.

The Parties will jointly design, develop, and test the mechanisms, methods, and procedures that will achieve the transition without disrupting the functional operation of the Internet. The Parties will also prepare a joint DNS Project Report that documents the conclusions of the design, development, and testing. DOC has determined that this project can be done most effectively with the participation of ICANN. ICANN has a stated purpose to perform the described coordinating functions for Internet names and addresses and is the organization that best demonstrated that it can accommodate the broad and diverse interest groups that make up the Internet community.

C. The Principles

The Parties will abide by the following principles:

1. *Stability*

This Agreement promotes the stability of the Internet and allows the Parties to plan for a deliberate move from the existing structure to a private-sector structure without disruption to the functioning of the DNS. The Agreement calls for the design, development, and testing of a new management system that will not harm current functional operations.

2. *Competition*

This Agreement promotes the management of the DNS in a manner that will permit market mechanisms to support competition and consumer choice in the technical management of the DNS. This competition will lower costs, promote innovation, and enhance user choice and satisfaction.

3. *Private, Bottom-Up Coordination*

This Agreement is intended to result in the design, development, and testing of a private coordinating process that is flexible and able to move rapidly enough to meet the changing needs of the Internet and of Internet users. This Agreement is intended to foster the development of a private sector management system that, as far as possible, reflects a system of bottom-up management.

4. *Representation*

This Agreement promotes the technical management of the DNS in a manner that reflects the global and functional diversity of Internet users and their needs. This Agreement is intended to promote the design, development, and testing of mechanisms to solicit public input, both domestic and international, into a private-sector decision making process. These mechanisms will promote the flexibility needed to adapt to changes in the composition of the Internet user community and their needs.

III. AUTHORITIES

A. DOC has authority to participate in the DNS Project with ICANN under the following authorities:

(1) 15 U.S.C. § 1525, the DOC's Joint Project Authority, which provides that the DOC may enter into joint projects with nonprofit, research, or public organizations on matters of mutual interest, the cost of which is equitably apportioned;

(2) 15 U.S.C. § 1512, the DOC's authority to foster, promote, and develop foreign and domestic commerce;

(3) 47 U.S.C. § 902, which specifically authorizes the National Telecommunications and Information Administration (NTIA) to coordinate the telecommunications activities of the Executive Branch and assist in

the formulation of policies and standards for those activities including, but not limited to, considerations of interoperability, privacy, security, spectrum use, and emergency readiness;

(4) Presidential Memorandum on Electronic Commerce, 33 Weekly Comp. Presidential Documents 1006 (July 1, 1997), which directs the Secretary of Commerce to transition DNS management to the private sector; and

(5) Statement of Policy, *Management of Internet Names and Addresses*, (63 Fed. Reg. 31741(1998) (Attachment A), which describes the manner in which the Department of Commerce will transition DNS management to the private sector.

B. ICANN has the authority to participate in the DNS Project, as evidenced in its Articles of Incorporation (Attachment B) and Bylaws (Attachment C). Specifically, ICANN has stated that its business purpose is to:

(i) Coordinate the assignment of Internet technical parameters as needed to maintain universal connectivity on the Internet;

(ii) Perform and oversee functions related to the coordination of the Internet Protocol (IP) address space;

(iii) Perform and oversee functions related to the coordination of the Internet domain name system, including the development of policies for determining the circumstances under which new top-level domains are added to the DNS root system;

(iv) Oversee operation of the authoritative Internet DNS root server system; and

(v) Engage in any other related lawful activity in furtherance of Items (i) through (iv).

IV. MUTUAL INTEREST OF THE PARTIES

Both DOC and ICANN have a mutual interest in a transition that ensures that future technical management of the DNS adheres to the principles of stability, competition, coordination, and representation as published in the Statement of Policy. ICANN has declared its commitment to these principles in its Bylaws. This Agreement is essential for the DOC to ensure continuity and stability in the performance of technical management of the DNS now performed by, or on behalf of, the U.S. Government. Together, the Parties will collaborate on the DNS Project to achieve the transition without disruption.

V. RESPONSIBILITIES OF THE PARTIES

A. General

1. The Parties agree to jointly participate in the DNS Project for the design, development, and testing of the mechanisms, methods and procedures that should be in place for the private sector to manage the functions delineated in the Statement of Policy in a transparent, non-arbitrary, and reasonable manner.

2. The Parties agree that the mechanisms, methods, and procedures developed under the DNS Project will ensure that private-sector technical management of the DNS shall not apply standards, policies, procedures or practices inequitably or single out any particular party for disparate treatment unless justified by substantial and reasonable cause and will ensure sufficient appeal procedures for adversely affected members of the Internet community.

3. Before the termination of this Agreement, the Parties will collaborate on a DNS Project Report that will document ICANN's test of the policies and procedures designed and developed pursuant to this Agreement.

4. The Parties agree to execute the following responsibilities in accordance with the Principles and Purpose of this Agreement as set forth in section II.

B. DOC. The DOC agrees to perform the following activities and provide the following resources in support of the DNS Project:

1. Provide expertise and advice on existing DNS management functions.

2. Provide expertise and advice on methods and administrative procedures for conducting open, public proceedings concerning policies and procedures that address the technical management of the DNS.

3. Identify with ICANN the necessary software, databases, know-how, other equipment, and intellectual property necessary to design, develop, and test methods and procedures of the DNS Project.

4. Participate, as necessary, in the design, development, and testing of the methods and procedures of the DNS Project to ensure continuity including coordination between ICANN and Network Solutions, Inc.

5. Collaborate on a study on the design, development, and testing of a process for making the management of the root server system more robust and secure. This aspect of the DNS Project will address:

(a) Operational requirements of root name servers, including host hardware capacities, operating system and name server software versions, network connectivity, and physical environment;

(b) Examination of the security aspects of the root name server system and review of the number, location, and distribution of root name servers considering the total system performance, robustness, and reliability;

(c) Development of operational procedures for the root server system, including formalization of contractual relationships under which root servers throughout the world are operated.

6. Consult with the international community on aspects of the DNS Project.

7. Provide general oversight of activities conducted pursuant to this Agreement.

8. Maintain oversight of the technical management of DNS functions currently performed either directly, or subject to agreements with the U.S. Government, until such time as further agreement(s) are arranged as necessary, for the private sector to undertake management of specific DNS technical management functions.

C. ICANN. ICANN agrees to perform the following activities and provide the following resources in support of the DNS Project and further agrees to undertake the following activities pursuant to its procedures as set forth in Attachment B (Articles of Incorporation) and Attachment C (By-Laws), as they may be revised from time to time in conformity with the DNS Project:

1. Provide expertise and advice on private sector functions related to technical management of the DNS such as the policy and direction of the allocation of IP number blocks and coordination of the assignment of other Internet technical parameters as needed to maintain universal connectivity on the Internet.

2. Collaborate on the design, development and testing of procedures by which members of the Internet community adversely affected by decisions that are in conflict with the bylaws of the organization can seek external review of such decisions by a neutral third party.
3. Collaborate on the design, development, and testing of a plan for introduction of competition in domain name registration services, including:
 - (a) Development of procedures to designate third parties to participate in tests conducted pursuant to this Agreement;
 - (b) Development of an accreditation procedure for registrars and procedures that subject registrars to consistent requirements designed to promote a stable and robustly competitive DNS, as set forth in the Statement of Policy;
 - (c) Identification of the software, databases, know-how, intellectual property, and other equipment necessary to implement the plan for competition.
4. Collaborate on written technical procedures for operation of the primary root server including procedures that permit modifications, additions or deletions to the root zone file.
5. Collaborate on a study and process for making the management of the root server system more robust and secure. This aspect of the Project will address:
 - (a) Operational requirements of root name servers, including host hardware capacities, operating system and name server software versions, network connectivity, and physical environment;
 - (b) Examination of the security aspects of the root name server system and review of the number, location, and distribution of root name servers considering the total system performance; robustness, and reliability.
 - (c) Development of operational procedures for the root system, including formalization of contractual relationships under which root servers throughout the world are operated.
6. Collaborate on the design, development and testing of a process for affected parties to participate in the formulation of policies and procedures that address the technical management of the Internet. This process will include methods for soliciting, evaluating and responding to comments in the adoption of policies and procedures.
7. Collaborate on the development of additional policies and procedures designed to provide information to the public.
8. Collaborate on the design, development, and testing of appropriate membership mechanisms that foster accountability to and representation of the global and functional diversity of the Internet and its users, within the structure of private- sector DNS management organization.
9. Collaborate on the design, development and testing of a plan for creating a process that will consider the possible expansion of the number of gTLDs. The designed process should consider and take into account the following:
 - (a) The potential impact of new gTLDs on the Internet root server system and Internet stability;
 - (b) The creation and implementation of minimum criteria for new and existing gTLD registries;

(c) Potential consumer benefits/costs associated with establishing a competitive environment for gTLD registries;

(d) Recommendations regarding trademark/domain name policies set forth in the Statement of Policy; recommendations made by the World Intellectual Property Organization (WIPO) concerning: (i) the development of a uniform approach to resolving trademark/domain name disputes involving cyberpiracy; (ii) a process for protecting famous trademarks in the generic top level domains; (iii) the effects of adding new gTLDs and related dispute resolution procedures on trademark and intellectual property holders; and recommendations made by other independent organizations concerning trademark/domain name issues.

10. Collaborate on other activities as appropriate to fulfill the purpose of this Agreement, as agreed by the Parties.

D. Prohibitions

1. ICANN shall not act as a domain name Registry or Registrar or IP Address Registry in competition with entities affected by the plan developed under this Agreement. Nothing, however, in this Agreement is intended to prevent ICANN or the USG from taking reasonable steps that are necessary to protect the operational stability of the Internet in the event of the financial failure of a Registry or Registrar or other emergency.

2. Neither Party, either in the DNS Project or in any act related to the DNS Project, shall act unjustifiably or arbitrarily to injure particular persons or entities or particular categories of persons or entities.

3. Both Parties shall act in a non-arbitrary and reasonable manner with respect to design, development, and testing of the DNS Project and any other activity related to the DNS Project.

VI. EQUITABLE APPORTIONMENT OF COSTS

The costs of this activity are equitably apportioned, and each party shall bear the costs of its own activities under this Agreement. This Agreement contemplates no transfer of funds between the Parties. Each Party's estimated costs for the first six months of this Agreement are attached hereto. The Parties shall review these estimated costs in light of actual expenditures at the completion of the first six month period and will ensure costs will be equitably apportioned.

VII. PERIOD OF AGREEMENT AND MODIFICATION/TERMINATION

This Agreement will become effective when signed by all parties. The Agreement will terminate on September 30, 2000, but may be amended at any time by mutual agreement of the parties. Either party may terminate this Agreement by providing one hundred twenty (120) days written notice to the other party. In the event this Agreement is terminated, each party shall be solely responsible for the payment of any expenses it has incurred. This Agreement is subject to the availability of funds.

Joe Sims
Counsel to ICANN
Jones, Day, Reavis & Pogue
1450 G Street N.W.
Washington, D.C. 20005-2088

J. Beckwith Burr
Associate Administrator, NTIA
U.S. Department of Commerce
Washington, D.C. 20230

PARTIES ESTIMATED SIX MONTH COSTS

A. ICANN

Costs to be borne by ICANN over the first six months of this Agreement include: development of Accreditation Guidelines for Registries; review of Technical Specifications for Shared Registries; formation and operation of Government, Root Server, Membership and Independent Review Advisor Committees; advice on formation of and review of applications for recognition by Supporting Organizations; promulgation of conflicts of interest policies; review and adoption of At-Large membership and elections processes and independent review procedures, etc; quarterly regular Board meetings and associated costs (including open forums, travel, staff support and communications infrastructure); travel, administrative support and infrastructure for additional open forums to be determined; internal executive, technical and administrative costs; legal and other professional services; and related other costs. The estimated six month budget (subject to change and refinement over time) is \$750,000 - 1 million.

B. DOC

Costs to be borne by DOC over the first six months of this Agreement include: maintenance of DNS technical management functions currently performed by, or subject to agreements with, the U.S. Government, expertise and advice on existing DNS management functions; expertise and advice on administrative procedures; examination and review of the security aspects of the Root Server System (including travel and technical expertise); consultations with the international community on aspects of the DNS Project (including travel and communications costs); general oversight of activities conducted pursuant to the Agreement; staff support equal to half-time dedication of 4-5 full time employees, travel, administrative support, communications and related other costs. The estimate six month budget (subject to change and refinement over time) is \$250,000 - \$350,000.

Annex III

**CONTRACT BETWEEN ICANN AND THE UNITED STATES GOVERNMENT*
FOR THE PERFORMANCE OF THE IANA FUNCTION**



* <http://www.icann.org/general/iana.contract.09feb00.htm>.

SUPPLY, EQUIPMENT, OR SERVICE ORDER

This Order Number must appear on all invoices and packages. Freight charge over \$100 requires initial loading.

8. ORDER NUMBER

40SBNT067020

1. PAGE 1 OF 10	2. RECEIVING OFFICE NO.	3. CONTRACT ORDER AGAINST	A. PURCHASE ORDER (See Reverse) X	DELIVERY ORDER (See Block 3)	7. SUB
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9. SUPPLIER Internet Corporation for Assigned Names and Numbers 4676 Admiralty Way, Suite 330 Marina del Rey, CA 90292-6801	4. ORDER DATE February 8, 2000	5. SOURCE
	6. SHIP TO: REFERENCE ORDER NO. 40SBNT067020 (INCLUDE ON SHIPPING LABEL) National Telecommunications and Information Agency 1401 Constitution Avenue, NW Room 4701 Washington, DC 20230	

TELEPHONE CONTACT: (310) 823-9358

10. 1099 TAX	11. EMPLOYER I.D. #	9. REQUISITION NUMBER 909-S-0043	C. REQUISITIONER INFO: (Last Name, Initial, Phone, Bldg., Room) Karen Rosa/Becky Burr, Room 4701, (202) 482-1885
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12. LINE ITEM	13. AC CD	13a. QTY REC.	14. DESCRIPTION	16. BUDGET OBJECT	15. ACC LINE	17. QUANTITY	18. UNIT ISSUE	19. UNIT PRICE	20. AMOUNT
000			The Contractor shall provide services to perform the operation of the Internet Assigned Numbers Authority (IANA) in accordance with the Statement of Work, Section 12 of this purchase order.						

21. FOB POINT	23. DISCOUNT TERMS	23. PROMPT PAYMENT	24. SUB-TOTAL 0.00
25. DELIVERY DATE	26. SHIP VIA	27. ESTIMATED FREIGHT	28. TOTAL 0.00

D. B A L C L R E N S	Reference Order No. 40SBNT067020 (include on invoice)	29. ACC LINE	30. BUREAU CODE	31. ACCOUNTING CLASSIFICATION N/A	32. DIST.	33. AMOUNT 0.00
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E. (DO NOT SHIP OR BILL TO THIS ADDRESS)

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National Institute of Standards and Technology
 Acquisition and Assistance Division
 Building 301, Room B117
 100 Bureau Drive, Stop 3572
 Gaithersburg, MD 20899-3572

F. ORDERED BY (Name and Title)
 Teresa A. Reefer, Contracting Officer

ACCEPTANCE: I certify that articles and/or services specified above have been received, inspected, and accepted as complying with this order as of the date shown.	34. RECEIPT DATE	35. ACCEPTANCE DATE	G. FOR INQUIRIES CALL: Teresa A. Reefer (301) 975-6384, teresa.reefer@nist.gov
36. ACCEPTANCE SIGNATURE, TITLE, & PHONE NO.	37. TYPE SHIPMENT	H. CONTRACTING OFFICER'S SIGNATURE <i>Teresa A. Reefer</i>	I. DATE SIGNED 2-9-00

1. ATTACHMENTS

The following documentation submitted by the Internet Corporation for Assigned Names and Numbers (ICANN) is hereby incorporated by reference:

- a. ICANN quotation dated February 2, 2000 signed by Michael M. Roberts.
- b. USC/ICANN Transition Agreement by and between the University of Southern California and the Internet Corporation for Assigned Names and Numbers (Transition Agreement).

2. SCHEDULE OF SERVICES

The Contractor shall provide services to perform the operation of the Internet Assigned Numbers Authority (IANA) in accordance with the Statement of Work, Section 12 of this purchase order.

3. COMPENSATION

Contractor shall perform under this purchase order without any cost to the United States Government. At the effective date of this purchase order, the Contractor shall not impose or collect any fees for performing the IANA functions under this purchase order. After the effective date of this purchase order, ICANN may establish and collect fees from third parties (i.e. other than the United States Government) for the functions performed under this purchase order, provided the fee levels are approved by the Contracting Officer before going into effect, which approval shall not be withheld unreasonably provided the fee levels are fair and equitable and provided the aggregate fees charged during the term of this purchase order do not exceed the cost of providing the functions.

4. APPROVALS AND ADHERANCE TO CONFIDENTIALITY OBLIGATIONS

(a) As contemplated by Section 5.4 of the Transition Agreement, the United States Government hereby gives approval of the transfer of functions and responsibilities contemplated in Section 1 of the Transition Agreement.

(b) As contemplated by Section 2.6 of the Transition Agreement, the United States Government hereby approves the acquisition by ICANN of USC's entire right, title and interest in and to the Licensed IP Rights as defined in the Transition Agreement.

(c) The Government acknowledges that data submitted by applicants in connection with the IANA function is Confidential Information. To the extent permitted by law, the Government shall accord any data submitted by applicants in connection with the IANA function with the same degree of care as it uses to protect its own confidential information, but not less than reasonable care, to prevent the unauthorized use, disclosure or publication of confidential information. In providing data to the United States Government that is subject to such a confidentiality obligation, the Contractor shall advise the United States Government of that obligation.

5. ESTIMATED PURCHASE ORDER VALUE

At the time of purchase order award, the estimated value of this purchase order is under \$10,000.

6. PERIOD OF PERFORMANCE

The period of performance of this purchase order is from the date of award through September 30, 2000.

7. KEY PERSONNEL

(a) The Contractor shall assign to this purchase order, the following key personnel:

1. Michael M. Roberts
2. Louis Touton
3. Joyce K. Reynolds
4. Suzanne Woolf

(b) During the first ninety (90) days of performance, the Contractor shall make no substitutions of key personnel unless the substitution is necessitated by illness, death, or termination of employment. The Contractor shall notify the Contracting Officer within 15 calendar days after the occurrence of any of these events and provide the information required by paragraph (c) below. After the initial 90-day period, the Contracting Officer shall submit the information required by paragraph (c) to the Contracting Officer at least 15 days prior to making any permanent substitutions.

(c) The Contractor shall provide a detailed explanation of the circumstances necessitating the proposed substitutions, complete resumes for the proposed substitutes, and any additional information requested by the Contracting Officer. Proposed substitutes should have comparable qualifications to those of the persons being replaced. The Contracting Officer will notify the Contractor within 15 calendar days after receipt of all required information of the decision on substitutions. The purchase order will be modified to reflect any approved changes of personnel

8. ORGANIZATIONAL CONFLICT OF INTEREST

(a) The Contractor warrants that, to the best of the Contractor's knowledge and belief, there are no relevant facts or circumstances which could give rise to an organizational conflict of interest, as defined in FAR Subpart 9.5, or that the Contractor has disclosed all such relevant information.

(b) The Contractor agrees that if an actual or potential organizational conflict of interest is discovered after award, the Contractor will make a full disclosure in writing to the Contracting Officer. This disclosure shall include a description of actions which the Contractor has taken or proposes to take, after consultation with the Contracting Officer, to avoid, mitigate, or neutralize the actual or potential conflict.

(c) Remedies – The Contracting Officer may terminate this purchase order for convenience, in whole or in part, if it deems such termination necessary to avoid an organizational conflict of interest. If the Contractor was aware of a potential organizational conflict of interest prior to award or discovered an actual or potential conflict after award and did not disclose or misrepresented relevant information to the Contracting Officer, the Government may terminate the purchase order for default, debar the Contractor from Government contracting, or pursue such other remedies as may be permitted by law or this purchase order.

(d) The Contractor further agrees to insert provisions which shall conform substantially to the language of this clause, including paragraph (d), in any subcontract or consultant agreement hereunder.

9. FOR ADMINISTRATIVE INFORMATION PERTAINING TO THIS PURCHASE ORDER CONTACT

Teresa A. Reefe
Contract Specialist
National Institute of Standards and Technology
Building 301, Room B117
100 Bureau Drive, Stop 3572
Gaithersburg, Maryland 20899-0001
Phone No. (301) 975-6364
Teresa.reefe@nist.gov

10. CONTRACTING OFFICER'S AUTHORITY

The Contracting Officer (CO) is the only person authorized to make or approve any changes in any of the requirements of this purchase order and notwithstanding any provisions contained elsewhere in this purchase order, the said authority remains solely in the CO. In the event that the Contractor makes any changes at the direction of any person other than the CO, the change will be considered to have been without authority and no adjustment will be made in the purchase order prices to cover any increase in costs incurred as a result thereof.

11. THE CONTRACTING OFFICER'S TECHNICAL REPRESENTATIVE PERTAINING TO THIS PURCHASE ORDER IS

Karen Rose
U.S. Department of Commerce
1401 Constitution Avenue, NW
Room 4701
Washington, DC 20230
(202) 482-1866

12. DESCRIPTION/SPECIFICATIONS/WORK STATEMENT

12.1. STATEMENT OF WORK/SPECIFICATIONS

The contractor shall furnish the necessary personnel, material, equipment, services and facilities (except as otherwise specified), to perform the following Statement of Work/Specifications.

12.2. BACKGROUND

The Department of Commerce (DOC) has initiated an effort to transition the technical management of Internet Names and Addresses from the United States Government to the private sector. In June, 1998, DOC issued its Statement of Policy "Management of Internet Names and Addresses," 63 Fed. Reg. 31741 (1998) (Statement of Policy) that sets forth the transition process. The Statement of Policy indicates that in order to maintain the stability and continuity of services, the United States Government will continue to participate in oversight Internet technical management functions during the transition.

Part of the transition process relates to the performance of certain Internet technical management functions collectively known as the Internet Assigned Numbers Authority (IANA). The IANA functions are currently performed by the Information Sciences Institute at the University of Southern California (USC) pursuant to a contract with the Department of Defense's Advanced Research Project Agency (DARPA).

The portion of the IANA functions related to the DARPA/USC contract is nearing completion. However, the continued performance of these technical functions is vital to the stability and smooth functioning of the Internet. The National Telecommunications and Information Administration (NTIA), an agency of DOC, has initiated this purchase order action to fulfill its need for stability and continuity of services in the performance of the IANA technical functions during the transition period described in the Statement of Policy, and other related activities.

12.3. CONTRACTOR REQUIREMENTS

NTIA has a requirement for a contractor to maintain the smooth operation of the Internet by performing the technical functions collectively known as the Internet Assigned Numbers Authority (IANA). The IANA technical functions are currently operated by the Information Sciences Institute at the University

of Southern California pursuant to a contract with the Department of Defense's Advanced Research Projects Agency. In performance of this purchase order, the contractor shall perform the following IANA functions:

- Coordination of the assignment of technical protocol parameters. This involves the review and assignment of unique values to various parameters (e.g., operation codes, port numbers, object identifiers, protocol numbers) used in various Internet protocols. This function also includes the dissemination of the listings of assigned parameters through various means (including on-line publication) and the review of technical documents for consistency with assigned values.

- Administrative functions associated with root management. This function involves facilitation and coordination of the root zone of the domain name system. It includes receiving requests for and making routine updates of ccTLD contact and nameserver information. It also includes receiving delegation and redelegation requests, investigating the circumstances pertinent to those requests, and reporting on the requests. This function, however, does not include authorizing modifications, additions, or deletions to the root zone file or associated information that constitute delegation or redelegation of top-level domains. The purchase order award will not alter root system responsibilities defined in Amendment 11 of the Cooperative Agreement.

- Allocation of IP address blocks. This involves overall responsibility for the allocation of IPv4 and IPv6 address space. It includes delegations of IP address blocks to regional registries for routine allocation, typically through downstream providers, to Internet end-users within the regions served by those registries. It also includes reservation and direct allocation of space for special purposes, such as multicast addressing, cable blocks, addresses for private networks as described in RFC 1918, and globally specified applications.

- Other services. The contractor will perform other IANA functions as needed upon request of DOC. These functions may include the performance of periodic functions or supplemental functions identified by the contractor as part of the three (3) month performance progress report.

12.4. REPORTING REQUIREMENTS

Performance Reporting. The contractor shall prepare a final report regarding the performance of the IANA technical functions that shall include a description of the techniques, methods, software, and tools employed in the performance of the functions. The purpose of the report is to document standard operating procedures that may be readily adopted by other organizations. Further, the contractor shall submit a performance progress report every three (3) months that documents the performance of the functions. The contractor, therefore, shall:

- Prepare and submit a final report on the performance of the IANA functions that documents standard operating procedures (including a description of all techniques, methods, software, and tools).

- Prepare and submit a performance progress report every three (3) months that contains statistical and narrative information on the performance of the functions during the previous three (3) months. The report shall include a summary of the major work performed for each of the functions during the previous three (3) months, including technical status, major events, problems encountered, and any projected significant changes related to performance of the functions.

12.5. PERFORMANCE EXCLUSIONS

- The performance of administrative functions associated with root management does not include authorizing modifications, additions, or deletions to the root zone file or associated information that constitute delegation or redelegation of top-level domains. The purchase order award will not alter root system responsibilities defined in Amendment 11 of the Cooperative Agreement.

- This purchase order, in itself, does not authorize the contractor to make substantive changes in established policy associated with the performance of the IANA functions. Procedures for policy development will remain the subject of a Joint Project Agreement (JPA) between DOC and ICANN. The JPA contemplates that the policy-development procedures developed under the JPA may result in adoption of new or changed policies concerning Internet technical management functions. To the extent those policies require alterations in the manner in which the IANA functions are performed, those alterations may be implemented upon mutual agreement of the parties.

13. CONTRACT CLAUSES

52.213-4. Terms and Conditions--Simplified Acquisitions (Other Than Commercial Items) (June 1999)

(a) The Contractor shall comply with the following Federal Acquisition Regulation (FAR) clauses that are incorporated by reference:

- (1) The clauses listed below implement provisions of law or Executive order:
 - (i) 52.222-3, Convict Labor (Aug 1996) (E.O. 11755).
 - (ii) 52.233-3, Protest After Award (Aug 1996) (31 U.S.C. 3553).
- (2) Listed below are additional clauses that apply:
 - (i) 52.225-11, Restrictions on Certain Foreign Purchases (Aug 1998).
 - (ii) 52.232-1, Payments (Apr 1984).
 - (iii) 52.232-8, Discounts for Prompt Payment (May 1997).
 - (iv) 52.232-11, Extras (Apr 1984).
 - (v) 52.232-25, Prompt Payment (Jun 1997).
 - (vi) 52.233-1, Disputes (Dec 1998).
 - (vii) 52.244-6, Subcontracts for Commercial Items and Commercial Components (Oct 1998).
 - (viii) 52.253-1, Computer Generated Forms (Jan 1991).

(b) The Contractor shall comply with the following FAR clauses, incorporated by reference, unless the circumstances do not apply:

- (1) The clauses listed below implement provisions of law or Executive order:
 - (i) 52.222-20, Walsh-Healey Public Contracts Act (Dec 1996) (41 U.S.C. 35-45) (Applies to supply contracts over \$10,000 in the United States).
 - (ii) 52.222-26, Equal Opportunity (Feb 1999) (E.O. 11246) (Applies to contracts over \$10,000).
 - (iii) 52.222-35, Affirmative Action for Disabled Veterans and Veterans of the Vietnam Era (Apr 1998) (38 U.S.C. 4212) (Applies to contracts over \$10,000).
 - (iv) 52.222-36, Affirmative Action for Workers with Disabilities (Jun 1998) (29 U.S.C. 793) (Applies to contracts over \$10,000).
 - (v) 52.222-37, Employment Reports on Disabled Veterans and Veterans of the Vietnam Era (Jan 1999) (38 U.S.C. 4212) (Applies to contracts over \$10,000).
 - (vi) 52.222-41, Service Contract Act of 1965, As Amended (May 1989) (41 U.S.C. 351, et seq.) (Applies to service contracts over \$2,500).
 - (vii) 52.223-5, Pollution Prevention and Right-to-Know Information (Apr 1998) (E.O. 12856) (Applies to services performed on Federal facilities).

- (viii) 52.225-3, Buy American Act--Supplies (Jan 1994) (41 U.S.C. 10) (Applies to supplies, and to services involving the furnishing of supplies, if the contract was--
 - (A) Under \$25,000; or
 - (B) Set aside for small business concerns, regardless of dollar value).
- (ix) 52.232-33, Payment by Electronic Funds Transfer--Central Contractor Registration (May 1999). (Applies when the payment will be made by electronic funds transfer (EFT) and the payment office uses the Central Contractor Registration (CCR) database as its source of EFT information).
- (x) 52.232-34, Payment by Electronic Funds Transfer--Other than Central Contractor Registration (May 1999). (Applies when the payment will be made by EFT and the payment office does not use the CCR database as its source of EFT information.)

(2) Listed below are additional clauses that may apply:

- (i) 52.209-6, Protecting the Government's Interest When Subcontracting with Contractors Debarred, Suspended, or Proposed for Debarment (July 1995) (Applies to contracts over \$25,000).
- (ii) 52.211-17, Delivery of Excess Quantities (Sept 1989) (Applies to fixed-price supplies).
- (iii) 52.247-29, F.o.b. Origin (Jun 1988) (Applies to supplies if delivery is f.o.b. origin).
- (iv) 52.247-34, F.o.b. Destination (Nov 1991) (Applies to supplies if delivery is f.o.b. destination).

(c) FAR 52.252-2, Clauses Incorporated by Reference (Feb 1998). This contract incorporates one or more clauses by reference, with the same force and effect as if they were given in full text. Upon request, the Contracting Officer will make their full text available. Also, the full text of a clause may be accessed electronically at this/these address(es): WWW.ARNET.GOV/FAR

52.227-1 AUTHORIZATION AND CONSENT (JUL 1995)

52.227-2 NOTICE AND ASSISTANCE REGARDING PATENT AND COPYRIGHT INFRINGEMENT (DEC 1998)

52.227-11 PATENT RIGHTS – RETENTION BY THE CONTRACTOR (SHORT FORM) (JUN 1997)

52.227-14 RIGHTS IN DATA – GENERAL Alternate I (JUN 1987)

52.227-14 RIGHTS IN DATA – GENERAL Alternate II (JUN 1987)

52.227-14 RIGHTS IN DATA – GENERAL Alternate III (JUN 1987)

52.227-14 RIGHTS IN DATA – GENERAL Alternate V (JUN 1987)

52.227-16 ADDITIONAL DATA REQUIREMENTS (JUN 1987)

(d) Inspection/Acceptance. The Contractor shall tender for acceptance only those items that conform to the requirements of this contract. The Government reserves the right to inspect or test any supplies or services that have been tendered for acceptance. The Government may require repair or replacement of nonconforming supplies or reperformance of nonconforming services at no increase in contract price. The Government must exercise its postacceptance rights—

- (1) Within a reasonable period of time after the defect was discovered or should have been discovered; and
- (2) Before any substantial change occurs in the condition of the item, unless the change is due to the defect in the item.

(e) Excusable delays. The Contractor shall be liable for default unless nonperformance is caused by an occurrence beyond the reasonable control of the Contractor and without its fault or negligence, such as acts of God or the public enemy, acts of the Government in either its sovereign or contractual capacity, fires, floods, epidemics, quarantine restrictions, strikes, unusually severe weather, and delays of common carriers. The Contractor shall notify the Contracting Officer in writing as soon as it is reasonably possible after the commencement of any excusable delay, setting forth the full particulars in connection therewith, shall remedy such occurrence with all reasonable dispatch, and shall promptly give written notice to the Contracting Officer of the cessation of such occurrence.

(f) Termination for the Government's convenience. The Government reserves the right to terminate this contract, or any part hereof, for its sole convenience. In the event of such termination, the Contractor shall immediately stop all work hereunder and shall immediately cause any and all of its suppliers and subcontractors to cease work. Subject to the terms of this contract, the Contractor shall be paid a percentage of the contract price reflecting the percentage of the work performed prior to the notice of termination, plus reasonable charges that the Contractor can demonstrate to the satisfaction of the Government, using its standard record keeping system, have resulted from the termination. The Contractor shall not be required to comply with the cost accounting standards or contract cost principles for this purpose. This paragraph does not give the Government any right to audit the Contractor's records. The Contractor shall not be paid for any work performed or costs incurred that reasonably could have been avoided.

(g) Termination for cause. The Government may terminate this contract, or any part hereof, for cause in the event of any default by the Contractor, or if the Contractor fails to comply with any contract terms and conditions, or fails to provide the Government, upon request, with adequate assurances of future performance. In the event of termination for cause, the Government shall not be liable to the Contractor for any amount for supplies or services not accepted, and the Contractor shall be liable to the Government for any and all rights and remedies provided by law. If it is determined that the Government improperly terminated this contract for default, such termination shall be deemed a termination for convenience.

(h) Warranty. The Contractor warrants and implies that the items delivered hereunder are merchantable and fit for use for the particular purpose described in this contract.

**DETAILED FEEDBACK ON THE DRAFT IMPLEMENTATION PLAN FOR IDN
ccTLD FAST TRACK PROCESS BY THE ARAB WORKING GROUP
FOR DOMAIN NAMES AND INTERNET ISSUES**

Overarching position

The Arab Team for Domain Names joins the position of Asia Pacific Top Level Domain Association (APTLD) as it sees the delegation of IDN ccTLDs in the same light as existing ccTLDs – they are for the local communities to operate for their own communities use – the only significant difference is that the IDN ccTLD finally provides a facility for people to completely use the Internet in their own language or script. Otherwise, we see no change in the status quo relationship from the existing ccTLDs.

Critical Point

1. **In some sections it is not clearly stated that support or approval of the government is a condition. This needs to be explicitly mentioned, especially in the below listed sections.**

Pages 6 – Section 2.2:

“In such a case proof of support and approval from the country or territory corresponding to the relevant ISO 3166-1 entry must be provided”

- Government support and approval should be explicitly mentioned.

Pages 15 – Section 5.1.1:

“1. Support from the country or territory that the selected string is a meaningful representation of the country or territory name.”

“2. Support from the country or territory for the selected registry operator.”

- Government support should be explicitly mentioned.

Pages 25 – Section 6.1.4:

“1.7 The prospective manager has the requisite authority to operate the TLD appropriately, with the desire of the government taken very seriously.”

- Government approval should be an explicitly mentioned condition.

2. **Re-phrasing to clarify that each country or territory may be delegated one string in each script representing each official language.**

Pages 8 – Section 3.3:

“One string per official language or script per country or territory”

- The word ‘or’ is a bit confusing. It’s more clear if the wording is changed to:

“One string in each script used to represent each official language per country or territory”

3. **There should be at least one correspondence/communication between the Technical Committee and the IDN ccTLD requestor before refusing a string.**

Pages 13, 20, 23:

- If a proposed string is to be refused by the technical committee, it is important that the committee shares its concern(s) with the requestor before doing so, to make sure that the committee and the requestor, both, have common understanding of the problem. Furthermore, in such a learning phase, the committee may receive additional information from the requestor that further clarifies the problem or proposes a solution to it.
- This should also be reflected in the flow chart in page 23.

Critical Point

4. **Agreements between ICANN and IDN ccTLD operator should not be made a condition for IDN ccTLDs delegation**

Module 7 - Section 7.1: Relationship between ICANN and IDN ccTLD operator

- It is important to ensure ongoing compliance with the IDN technical standards, including IDNA protocol and IDN guidelines and operators must commit to technical compliance from a pure technical point of view.
- IDN ccTLD operators may be encouraged to sign framework agreement with ICANN yet, same as with ASCII ccTLDs, agreements should be kept voluntary and should not be made a condition for IDN ccTLDs delegation.
- Posting of a template of such an agreement may guide the decision of IDN ccTLD operator.
- Government support should be sought before entering into such agreements.

Critical Point

5. **Financial Contributions should not be made mandatory.**

Module 7 - Section 7.2: Financial Contributions

- Mandatory financial contributions will be a burden, especially for developing countries. Thus in a trial to solve the language barrier, a cost barrier would be introduced.
- Governments, especially of developing countries, have developmental objectives that should be facilitated by the introduction of IDN ccTLDs and may be hindered by financial obligations.

6. **Input on contention Issues with the Existing TLDs and new gTLD Applications.**

Module 7 - Section 7.4: Discussion of Contention Issues with the Existing TLDs and new gTLD Applications

- Normal mechanisms should be followed to ensure that a new IDN ccTLD string is not in conflict with an existing ccTLD or gTLD. Cross matching should take into consideration characters that are listed as variants to others.
- Rare cases, where an applied for gTLD is identical or confusingly similar to a requested ccTLD, may be detected by early coordination between both processes and the posting or publication of the new gTLDs and new ccTLDs if needed.

- IDN ccTLD strings do not have to be confidential and may be posted if this would help the process yet IDN ccTLDs should not be subject to a public objection procedure where everyone has to agree (or at least not to object) that a proposed string represents the country name. It should be considered sufficient that the string meets the following fast track requirements:
- String approved by government, local community and ccTLD registry
- String meets technical requirements
- String meets language/script requirements
- String meets meaningfulness requirements (country name, part of it or abbreviation)
- After meeting the above criteria, if conflict still exists, priority should be given to the IDN ccTLD string.

7. Registries should use language tables and not script tables.

Module 7 - Section 7.5: IDN Table Procedure

- A language table includes the code points of all characters used to represent a specific language. A script table includes all code points of all characters used in a specific script that may be used to represent one or more languages. A variant table includes cross reference of code points of a certain language with their variants (confusingly similar) across languages (whether or not from the same script).
- Although on the protocol level there may be no difference in dealing with different languages as far as they all belong to the same script family, yet users understand languages, speak languages and expect to register domain names in their own languages.
- Rules on script are mandated across registries while language rules are applied on registry-by-registry basis, i.e. it's a registry decision.
- A registry should not support a whole script table. Instead a registry supporting more than one language using the same script should support only the union of the character sets/language tables representing the languages supported.
- Supporting a whole script table would only increase the possibility of security problems by allowing registration of characters that are not required by any of the language communities. Script tables usually include legacy characters that are not currently used by any language and whose characteristics and variants are not known.
- IANA should separate 2 different categories of IDN tables: language tables and script tables.
- Language communities using the same script should be encouraged to cooperatively work out their respective script tables and variant tables.
- Registries should be encouraged to make use of language tables already defined by other registries of language communities.

8. Annual review would help fine tune the process.

Module 7 - Section 7.6: Proposed Evaluation of Fast Track the Process

Conducting an annual review as proposed would help fine tune the fast track process, yet this should not delay the finalization of the full PDP process.

One year before the conclusion of the global Internet Governance Forum (IGF) process (2006-2010), and shortly before the conclusion of one of the most important and contentious global agreements shaping the current global Internet governance structure, ESCWA is publishing this study to support the Arab region in its efforts to develop a regional framework for Internet governance.

The study provides a general overview of the Internet governance debate since its inception and critically analyses current global arrangements for Internet governance and the role of different stakeholders across the world. It includes, elaborates and discusses the distinct and sometimes conflicting perspectives and viewpoints held by the wide array of stakeholders regarding Internet governance.

Specific Internet governance priority issues with particular relevance to the Arab region are also presented and analysed in depth. These issues relate to critical Internet resources, access to the Internet and multilingualism/diversity on the Internet. In each of these issues, light is shed on the Internet governance challenges and opportunities facing the Arab region.

Finally, the study provides a set of recommendations aimed at developing a regional framework for Internet governance that enhances the prospects of the Arab region vis-à-vis the global community.



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