Internet Governance: A Discussion Document

Prepared for the United Nations ICT Task Force

by

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TABLE OF CONTENTS

1. INTRODUCTION

1.1 The WSIS mandate on Internet Governance

1. Discussions on Internet governance have been taken place for several years and predate the World Summit on the Information Society (WSIS) process. To a large extent, the many global debates on the subject grew in volume due to the technology boom of the late 1990s and the heavy involvement and interest of the ICT private sector in the process. The boom not only suggested the apparent emergence of a new economy but also the enormous social and political transformation power that the Internet and related new technologies could deliver into the hands of citizens throughout the globe.

2. Recognizing the importance of ICTs generally, and the Internet in particular, for the development of the Information Society, the WSIS process focused, *inter alia*, on the issue of governance mechanisms for the ICT sector. This issue was one of the more contentious that consumed the preparatory work for the Summit, in part because of widely differing viewpoints held by specific sectors, individual countries and by groups of countries. In addition, the uniqueness of the Internet's development, characterized not only by extraordinary rapidity and success of its diffusion, but also by bottom-up participatory and transparent decision making spurred by the not-for-profit and private sectors, provided no precedent upon which to rely. The existing governance structures were both questioned and defended, and consensus was reached only on the relevance of the issue.

3. These and other issues were addressed in the many WSIS preparatory sessions and at the summit itself. However, no short-term agreement was feasible before or at the Geneva Summit itself and, as a result, WSIS set out a follow-up process on Internet governance with the WSIS-2 Tunisia Summit in November of 2005 as a target for obtaining an acceptable position on this subject.

4. The World Summit permitted people from government, business, international organizations, and non-governmental organizations to discuss, *inter alia*, the Internet and the policies, standards, and organizations that are affecting its operation and evolution. Particular attention was focused on ways that developing countries can better exploit the Internet, on the allocation of Internet names and numbers, on cyber-security, on intellectual property rights, and on how to better support e-government, education, and health.

5. "Internet Governance" was one of several major themes that were discussed. One motivation for the discussion was a challenge, made by several developing countries, to the role of the Internet Corporation for Assigned Names and Numbers (ICANN).[1] ICANN's role is to exercise technical coordination functions with respect to the Internet, and in particular, to

[1] The proposals presented by this group of countries at the various WSIS meetings included: (1) a request for a UN body or a truly inter-governmental and international organization to assume a key role on Internet governance issues; (2) the start of work on moving/creating regionally-based DNS root servers; (3) full internationalization of Internet domain and host names; and (4) larger involvement in the above processes by country registries and country stakeholders.

coordinate the management of the technical elements of the domain name system (DNS) to ensure universal resolvability so that all users of the Internet can find valid addresses.[2]

6. The Summit participants included the following point in the Plan of Action produced by the Summit:

> **"13.** To maximize the social, economic and environmental benefits of the Information Society, governments need to create a trustworthy, transparent and non-discriminatory legal, regulatory and policy environment. Actions include:
>
> …….
>
> b) We ask the Secretary General of the United Nations to set up a working group on Internet governance, in an open and inclusive process that ensures a mechanism for the full and active participation of governments, the private sector and civil society from both developing and developed countries, involving relevant intergovernmental and international organizations and forums, to investigate and make proposals for action, as appropriate, on the governance of Internet by 2005. The group should, *inter alia*:
>
> i) develop a working definition of Internet governance;
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> ii) identify the public policy issues that are relevant to Internet governance;
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> iii) develop a common understanding of the respective roles and responsibilities of governments, existing intergovernmental and international organisations and other forums as well as the private sector and civil society from both developing and developed countries;
>
> iv) prepare a report on the results of this activity to be presented for consideration and appropriate action for the second phase of WSIS in Tunis in 2005."

7. As an initial step, the UN ICT Task Force has assumed the initial responsibility of preparing the ground for the implementation of the above request. The Task Force has requested a series of background papers on Internet governance and the policy options associated with alternative concepts of the governance structure. A global forum on this subject facilitated by the UN ICT Task Force was held in New York during 25-26 March 2004.

1.2 Objective of this document

8. The goal of this background paper is to provide a framework that can contribute to sorting out and understanding the issues surrounding the term "Internet governance." It is our belief that this term has been used to represent a variety of different aspects of the operation and use of the Internet and the manner with which it interacts with society. Since one of the purposes of this paper is to delineate what is meant by "Internet governance," we will use the term in quotes until the point at which we can arrive at a definition of it.

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[2] The creation of ICANN (Internet Corporation for Assigned Names and Numbers) in 1998 by the US government, through a Memorandum of Understanding (MoU) between the U.S. Department of Commerce, provided a global forum to which all stakeholders involved in the process could contribute to the various issues. This same action created a quasi-global governance process with open and bottom-up participation to specifically deal with a mainly technical issue — the management and administration of Internet names and numbers. The most recently issued version of the MoU is intended to be the last and sets out a series of goals for ICANN that, when achieved, will result in a fully independent ICANN organization.

9. We would like to make it clear at the outset that this paper is aimed primarily at those issues that are of importance and relevance to developing countries. A good portion of what has been discussed using the label "Internet governance" is perhaps of little relevance to countries that have larger problems than, for example, how top level global domain names are chosen or implemented. Issues of education, health, employment, and entrepreneurship, among many others, are central to developing countries and directly related to the achievement of the Millennium Development Goals (MDGs). ICTs, including the Internet are important to developing countries to the extent that they can be key contributors in helping to achieve those goals. The issues of governance, policy and implementation vis-à-vis developing countries matter because they allow for harnessing the new technologies in a more effective fashion in targeting social and economic goals.

10. In writing this paper, we hope to add clarity to the discussion by presenting a framework that provides certain fundamental delineations between different aspects of the activities surrounding the Internet. Such a framework should provide for a more informed and efficient discussion of the real policy issues and differences of opinion that deserve to be considered in this context. Our goal is that this framework should be useful and perhaps even compelling conceptually, rather than to attempt to be comprehensive in detail.

11. We provide a short history of the evolution of the Internet and the parallel evolution of administrative mechanisms needed for its efficient and effective functioning. Within the province of "Internet governance," we then sharpen a fundamental distinction between, on the one hand, the technical administration and coordination of the Internet, including the policy choices introduced to implement this administrative regime and their governance implications, and on the other hand the myriad of issues caused by the introduction of new ICTs into our existing social, economic and governmental environment.

12. We then describe how the Internet is now administered and coordinated, followed by a review of the broader set of ICT governance issues and the organizations and institutions that today have full or partial responsibilities for addressing them. In addition, we provide some observations and conclusions with respect to an understanding of what Internet and ICT governance are, as well as some views regarding how such governance issues might best be viewed.

1.3 Analytical framework for addressing the issues

1.3.1 Understanding governance

13. One of the reasons why this issue of "Internet governance" has been the subject of so much discussion and considerable debate is the lack of a clear and common understanding on the concept of governance itself. In this respect, it is possible to find at least two levels that need to be differentiated: (1) the distinction between government and governance; and (2) the relations between governance, policy and implementation of policy.

14. Governance is a relatively new concept that has been used in relatively wide variety of ways.[3] In general terms, governance refers to the rules, processes and procedures, and specific

[3] In effect, governance has been used in the context of: the minimal state; corporate governance; the new public management; good governance; ICT networks; and self-organizing networks. See "*The new governance: governing without government"*, R.A.W. Rhodes, Political Studies, 44 (4), 1996.

actions that impact the way in which power is exercised on a specific area of concern. It can thus be said that an organization has a governance responsibility for an issue, area, or activity. Note that this general definition of governance applies to any sort of organization and it is not intrinsically limited to governments. Governance is in fact a broader concept than government in that government essentially has "governance" responsibilities limited to specific areas (constitution, judiciary, legislative, etc.).[4]

15. It is perhaps important to stress this last point. Governance does ***not*** rely on the existence of any form of organized government structure. Non-governmental organizations and the private sector can self-organize and assume governance responsibilities on issues that are not necessarily related to their own internal operation or corporate structure.[5] This is in fact the case for many of the existing organizations that have been involved in Internet governance. Furthermore, it is *not* necessarily the case that government or governments decide what the governance structure or the scope of governance responsibilities are to be for an organization.[6] In fact, it is quite possible that a government may be prohibited from exercising a governance responsibility by virtue of restrictions on its involvement contained in the country's constitution.

16. Nor should it be assumed that restrictive governance, in the sense of control over policies and/or modalities of implementation, is necessarily better than a permissive governance model offering maximum degrees of freedom. In particular and of substantial importance for this discussion, much of the success of the Internet to date has been due to decentralized development and the absence of controls on either its expansion or the services that have evolved that use it.

17. Many "Internet governance" issues have a global scope and thus seem to require resolution on a global scale. From the point of view of governance alone, it is thus pertinent to distinguish between international governance and global governance. For our purposes here it will suffice to say that the latter, in contrast with the former, is characterized by an increased involvement of transnational and non-governmental actors at all levels vis-à-vis governments and a broader geographical scope that includes regional, sub-regional and local levels in addition to countries[7]. Thus, any suggestions or recommendations as to the type of organization that should or could address "Internet governance" should take this difference into account.

1.3.2 Governance, policy and policy implementation

18. Based on the above understanding of governance, we would like to introduce the following operational way of looking at the relationship between governance, policy, and implementation.

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[4] Although governance in itself does not include any normative considerations, it is possible to assess it effectiveness by using concepts such as openness, participation and accountability among others.

[5] It should be noted that the emergence of the Internet and new ICT have provided very powerful and effective tools to promote bottom-up governance organizations that can operate on a national, regional or global scale in ways that were not possible 20 years ago.

[6] In other words, who decides "who" (in the structure posited above) can have many different answers, and there can in fact well be a number of organizations that make such decisions in some fashion. The process of how that governance responsibility is assigned and/or legitimized, i.e. how and by whom that authority is conferred upon an organization of any type, is inherently a political or social question and is not explored in this document.

[7] For a detailed discussion on the subject see for example "Global Governance and the United Nations System", United National University, 2002.

With respect to issue areas, whether in the broad ICT sector or specifically with respect to the Internet:

- Governance responds to the "who" question, i.e. who has the authority to make decisions with respect to a specific set of issues or problems, and therefore, who takes the responsibility for the issue area, i.e. who has the mandate;
- Policy responds to the "what" question, i.e. what policies are to be put into effect to deal with a set of issues or problems; and
- Implementation responds to the "how" questions, i.e. once the policies are in effect, how shall they be implemented and enforced.

19. It is our sense that a considerable amount of ongoing discussions of "Internet governance" mix elements from all these three categories into one, and this has confused many of the issues, including the role of a number of institutions, including ICANN. Second, this is probably the result of the fact that these three issues are closely related and a number of the issues at stake are seen to cut across them. A key point is that stakeholders involved in the ongoing Internet governance discussion should adopt a more "holistic" approach to the issues on the table before moving to specific recommendations on the governance of any aspect of ICT or the Internet.

1.3.3 Proposed framework for approaching Internet Governance

20. This paper proposes the following framework for discussing the issue of governance in relation to ICT and the Internet. The first part of the model is based upon 3 conceptual groupings, each of which is a superset of the grouping below it:

1. ICT governance issues, which contain as a subset:
2. Internet governance issues, which contain as a subset:
3. Administration and coordination of Internet names and numbers

One can visualize the relationships between the groups spatially as a set of concentric circles, with circle 1 containing circle 2, which in turn contains circle 3. It should be noted that each of these groups contains a variety of pure technical activities as well as governance and policy implications.

21. The first grouping above and the largest in scope relates to the emergence of the so-called information society triggered in large part by the emergence of new ICTs (including the Internet) which have brought forward a series on new issues (and some old but now recast in a global scope) that require the attention of both governments and stakeholders.[8] We define this series of issues under the "Global ICT Governance" umbrella. The second grouping is perhaps the most well referenced and most heavily discussed in the last several years. It is the "Internet governance" issue, which is indeed a subset of the first with an exclusive focus on the Internet. The third grouping is the more basic and perhaps even "simpler" issue of the administration and coordination of the assignment of Internet names and numbers — one of the components on the

[8] It should be noted that there are other new ICTs that are emerging, most notably second and third generation cellular phone services and other wireless networking technologies. The key point is that the convergence of information in digital form, combined with the Internet's ability to transmit it effectively, has changed the landscape both of ICT-base services and the regulatory and policy models that are appropriate to harness the technologies effectively.

broader Internet governance — for which ICANN has taken the lead and the initiative — as well as the governance implications of these functions, at the global level.

22. A second and important component of the framework is the geography dimension. The assignment of governance functions in each of the above categories depends on the geographic dimension under consideration — global, regional, national or local. Once we move from one geographic level to another, issues of institutional readiness, local capacity, ICT use, etc. vary tremendously from country to country. This is particularly true for developing countries. These differences must be taken into account if the issues of ICT governance are to be addressed and implemented across the globe. Global and local tensions do exist today on many of the issues[9], and this seems to indicate that a 'one size fits all' solution is not at all feasible. On the other hand, the notion of "one country, one solution" should also be avoided.

1.3.4 Scope of the Framework

23. This paper will focus on both Internet and ICT governance, but does not aim at providing a comprehensive view of the latter. Rather, the focus will be on highlighting the key issues and priorities in these areas while drawing from some of the lessons learned. Our goal is to provide a simple structure for the issues involved, abstracting what seems important to us and neglecting hat we believe to be detail, without being simplistic in doing so.

24. In this context one can now speak of "ICT Governance," consisting of a broad set of issues and a corresponding set of organizations that can provide a policy framework for ICTs to be deployed to promote the emergence and strengthening of the Information Society. While the main focus of this paper is the Internet and "Internet governance," we need to keep in mind that the Internet is just one instance of a number of technologies, each of which has resulted in a set of existing understandings of varying strength and a set of existing institutions that over time has been shaped to guide the use of the technology.

25. The widespread use of the Internet and new ICTs now affects many aspects of the inner workings of society. These effects need to be confronted by an examination and possible alteration of policy, including legal and regulatory changes, required to address such changes. On the one hand, ICTs can impact areas and problems that previously existed in a way that may well required new governance mechanisms, continued policy dialogue, and innovative policies. Like previous emerging ICTs, the Internet's presence have changed the nature of the problems in such a way that existing policy, laws and regulations may no linger address them adequately or comprehensively. On the other hand, the introduction of ICTs may also raise new issues and thus create a governance and policy vacuum that did not exist before that requires prompt attention by the various stakeholders involved in these processes.[10] [11]

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[9] This in fact relates to the ongoing discussion on the character and scope of Global governance and its relation to development. See as an interesting example "The Global Governance of Trade: As If Development Really Mattered",
http://www.undp.org/mainundp/propoor/docs/pov_globalgovernancetrade_pub.pdf

[10] One example is provided by criminal behavior. Theft, fraud, invasion of privacy, and destruction of property have existed since the beginning of time, and governments and international agencies have established national legislation and international frameworks and institutions to address these problems. These laws and institutions exist on a local, national, regional and global scale. The introduction of the Internet has permitted new manifestations of criminal behavior, so that the ability of current legislation and institutional capabilities may be insufficient to cope. Therefore, a re-examination of what is needed to cope with this new manifestation of old behavior may be required. This is an example of an Internet public policy issue.

2. HISTORY OF ICT AND INTERNET GOVERNANCE ISSUES

2.1 Background

26. To a large extent, the continuous global debates on Internet governance have grown in volume because of the recognition on the part of governments and societies worldwide that the Internet is becoming a crucial component of global commerce and human development. The technology boom of the late 1990s and the heavy involvement and interest of the ICT private sector in the process of developing predictable, transparent rules, has contributed significantly to this recognition.

27. In addressing the issue of Internet governance, it is important to regard the development of the Internet in historical perspective, and within a context of the many and diverse technologies that are grouped under the rubric of Information and Communication Technologies (ICTs). In the last 100 years, and more prominently in the last 50+ years since World War II, ICTs have evolved from a relatively primitive state to one characterized by rapid technological progress and a multiplicity of services that would have been considered in the realm of science fiction at the beginning of the period.

28. At the beginning of the 1950s, direct dial telephony was in its infancy. Long distance and international direct dialing was practically non-existent, and long distance circuits were based upon noisy copper wire analog transmission. FM radio broadcasting was a relative novelty, and black and white television was just beginning to find a consumer market. Postal airmail was an expensive alternative to ordinary mail transported by land and by sea. Facsimile transmission (fax) was not known. The first artificial earth satellite, Sputnik, was several years away from its launch. Telegrams and cables were the workhorses of international communications; telex represented the first truly international e-mail service. Cell phones were almost completely a speculation of science fiction. The transistor, a fundamental building block of today's ICTs, had just been invented and had not yet been incorporated into commercial products. Electronic calculators did not exist. Computers, both huge in size and primitive in capacity, had just been introduced into commercial service, and cost millions of 1950 U.S. dollars.

29. The inventions referred to above have clearly changed our world irrevocably. Just as the automobile disrupted prior patterns of life and made possible entirely new patterns of working and living, ICTs such as cellular telephony, direct dial digital telephony, television, communications satellites, worldwide courier service, satellite TV broadcasting, computers and finally the Internet have further shrunk our world and have provided is with a capability to communicate, almost anytime, almost anywhere, with almost anyone, with a quality and types of services unimaginable to our ancestors. Needless to say, the spread of ICT is far from uniform

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[11] Another example is provided by 'spam,' or unwanted bulk electronic mailings. While it has always been possible to send unsolicited mail, faxes, or other forms of messages to many recipients, previous technologies have imposed both costs and speed limitations that have kept the level of annoyance of recipients to acceptable levels. The Internet, however, allows the distribution of unsolicited material to millions of people at a much lower cost, the result being that by current estimates such spam accounts for well over half of the e-mail sent on the Internet. This imposes aggregate costs for ISPs, which are in the long run passed onto users. More insidious is that such behavior imposes enormous aggregate costs on the user population in coping individually with such messages. It further globally threatens the attractiveness and utility of the medium, and in excessive cases, becomes a de facto tool for denial of service. While the problem existed before the Internet, the introduction of the Internet has transformed the problem into one where existing responses and policies are no longer adequate to deal with the threat.

both across and within countries and to a large extent reflects existing socio-economic differences.

30. Each new use of technology has posed its own challenges in terms of how the deployment and use of the of technology should be guided or regulated, if at all, to have a clear impact and benefit at the country level from the perspective of economic and social progress and development. These challenges have been met over time by the establishment of institutions on multiple levels — provincial, national, and international — to deal with issues rose by the introduction and exploitation of new technologies. Perhaps the best-known example of this in the last 15 years is the deregulation of the telecommunications sector in many countries.

31. The manner of dealing with each new technology and its commercial manifestations varies from technology to technology. The important thing to note is that as technologies have appeared, most nations both individually and collectively have created and changed institutions to address the issues that they have presented. A partial list of such institutions dealing with issues raised by ICTs at the global level would include, *inter alia*, IOS, ITU, OECD, UNCITRAL, UNCTAD, WTO, WIPO, G-8, COE, APEC, EU and the World Bank. In addition, many ICT governance issues are adequately handled by non-governmental bodies, such as industry associations and standards bodies, without recourse to intergovernmental involvement.

32. Thus there exists a broad variety of both issues and of existing institutions that have evolved to address the appropriate deployment of ICTs and the effects of their introduction on societies. This collection of organizations and institutions includes, *inter alia*, intergovernmental institutions, professional societies, industry trade groups, as well as voluntary associations of various types. For some issues, it has been decided that they are best left to private markets, requiring no institutional intervention, guidance, or regulation. This is particularly true in developed countries where internal markets are large and efficient. The fundamental question regarding the imposition or of such guidance should ideally be what form of guidance, if any, is best suited to ensuring that effective deployment of the technology for the public good.

2.2 Governance of ICTs and the Internet and the relevance for developing countries

33. New ICTs and in particular the Internet are in some respects remarkably different from previous ICTs, and offer a new range of powerful services that combine access to information and the ability of communication. Like any other new technology, they have the capacity to be well used or misused according to societal norms. What kind of an environment of governance surrounding them will maximize their potential in the various important areas of human endeavor? What will their effects be on society and what policies, if any, need to be instituted to cope with them? Of great importance, how can they be best employed to assist developing countries to achieve their full potential in the global economy? These are the important questions that emanate from WSIS as well as from other concerned bodies and people.

34. The rapid development of the Internet has led to the emergence and quick deployment of new services that have *de facto* contributed to the creation of a global economy in which networks of all sorts and networking have become the salient features. Examples of this include the rapid growth of wireless technologies and networks as well as the increasing convergence of the various new technologies.

35. However, the full promise of the new ICTs and the Internet has not been reached. This is perhaps best reflected in the recent discussion of the so-called “digital divide” both between and

within countries. Although some observers are now suggesting that the ICT gap between countries is closing[12], the same cannot be said about access to ICT within countries, particularly in developing countries. In fact, not only do most people in developing countries have limited or no access to the new technologies but they also have more pressing individual needs.

36. Does this mean that developing countries should not be concerned with the issues emerging from the deployment and widespread global use of ICTs? Certainly, the participation of developing countries in emerging ICT global issues, including the ICANN process, has been minimal by any standard. Moreover, when participation has occurred, generally only government representatives have been involved. Without doubt, most developing countries have been oblivious to the process, missing critical opportunities to bring their views and needs to relevant global fora.

37. In addition, our experience to date indicates that the new ICTs are disruptive technologies, with the capacity to affect many if not most aspects of our lives. New technologies bring new challenges with them, especially when they are capable of operating on a global level and disregarding national boundaries. Developed countries are generally rich in institutions that can capitalize upon the benefits of the Internet, and they are also generally well endowed with governmental and non-governmental organizations that address the issues and problems that the Internet brings. The corresponding institutions in developing countries on the other hand often do not exist, and when they do they often lack the knowledge and the resources to cope with significant issues.

38. To be effective players and key actors in the new global society, developing countries must build both the awareness of "ICT governance" and the capacity to respond to the new challenges. As it is today, the "ICT governance" agenda has been essentially driven by developed countries that are pressed to confront the issues and have ready solutions at hand. However some aspects of governance will require global and international action, and developing countries need to get involved and be active participants in order to fully reap the benefits of the new technologies and exploit them to support their development agendas.

2.3 Distinction between administration and governance of ICT public policy issues

39. We believe that there is a fundamental difference between certain functions that we label as the *Internet administration* part of Internet governance — the third innermost circle in the model presented above — and other functions that we include in *Internet governance*. Internet administration involves itself with the operation of the network, ensuring that it is interoperable, functional, stable, secure and effective over the long run. It is concerned with functions that did not exist prior to the Internet, most obvious being the coordinated cooperative management of a very large, global packet switching network based upon hierarchical, open, decentralized network administration. This is new territory for technologists, but one that is being successfully addressed by the coordinated efforts of a variety of groups.

40. The bifurcation of administration and policy is not as sharp as has been described above. Because of the malleability of the underlying software technology, approaches to policy problems as well as solutions often have both a technological component and a policy component. In most cases they are separable. Technologists can describe possible technological assists to problems, while policy makers need to determine that mix of technology and policy that best satisfies the

[12] See "*Canyon or mirage?*", http://economist.com/printedition/displayStory.cfm?Story_ID=2367710

general good. In other words, it appears to be the job of the Internet governance apparatus (or the relevant arm of it) to make decisions regarding how a specific issue is to be addressed, using, *inter alia*, information from technologists and administrators that enhance the set of possible solutions. The technical community is then responsible for creating the best tools possible implementing public policy — but policy considerations should drive the discussion regarding how the issue is dealt with.

41. Within this framework, the implications of Internet administration are quite important. In the next two sections, we focus upon each of these areas. The emphasis upon ICANN follows from WSIS' focus upon it because of its association in the minds of many (incorrectly in our view) with Internet governance, and *not* on its relative importance in Internet governance issues. To the extent possible, we believe that Internet administration should be policy free, and should be open, collaborative, consensus driven, bottom up, reflecting the current operating culture that pervades the core Internet community. This approach has worked well up to now.

3. MANAGEMENT AND ADMINISTRATION OF INTERNET SPACE

3.1 Internet administration and coordination

42. The network research project that eventually became the Internet started in the late 1960's with funding from the US government for a project known as the ARPANET. Over time, the ARPANET became the Internet, which now claims over 900 million users in all countries of the world.[13] During its formative years, Internet administration and coordination was a simple business, but the basis for it that was established during that time has allowed the Internet to scale rapidly and successfully. Annex 1 contains a brief history of the Internet and its governance prior to 1998.

43. It is very important to understand that no single person, organization or country manages the Internet. The Internet is managed by many entities, all of them working within an open, coordinated framework. The management model is one of distributed management, and is provided by groups of cooperating entities. These entities are both geographically and organizationally distributed, but their actions are coordinated by a commonly accepted set of standards and modalities of action. ICANN occupies a key role in that it provides, *inter alia*, central coordination at the global level of the addressing functions that allow it to operate. Because of the bottom up orientation of the Internet's architecture and management model, such required coordination may be defined globally, but implementation is distributed and occurs at the local level in a bottom-up manner. This implies that governance models for the Internet are also likely to be distributed and cooperative in nature. [

44. Within the realm of Internet technical administration, ICANN is by far not the sole responsible institution. The technical management of the Internet is also directed by the

[13] "Population Explosion!", http://www.clickz.com/stats/big_picture/geographics/article.php/3347211. Note however that estimates of the number of users of the Internet, as well as definitions of what constitutes an Internet user, vary significantly. Furthermore, any estimate made rapidly becomes invalid because of the rapid growth of the user population. Suffice it to say that the number is probably about and possibly in excess of 15% of the total world population, and it is therefore a very important technology no matter what the actual number is.

following principal actors on the Internet stage, who are now responsible for the technical management of the Internet and related ICT functions: [I agree with Fred's suggestions.

- The Internet Engineering Task Force (IETF) is the Internet's standards organization, responsible for the development of tested standards upon which the Internet rests.
- The Internet Architecture Board (IAB), chartered by ISOC, provides oversight of aspects of the architecture for the protocols and procedures used by the Internet.
- •The Internet Society (ISOC) contains the Internet Engineering Steering Group (IESG), which sets the general agenda for the work of the IETF. In addition, ISOC is the entity that provides the legal umbrella for the activities of the IETF and the IAB.
- The Internet Corporation for Assigned Names and Numbers (ICANN) is responsible for technical coordination of the Internet address space (IP numbers) and the Domain Name System.[14]
- The Computer Emergency Response Team (CERT) in the U.S. and the growing number of national CERTs in other countries, that have banded together into the Forum of Incident Response and Security Teams (www.first.org), have responsibility for monitoring network-related threats to the integrity of the Internet and its attached computers.
- The Regional Internet Registries (RIRs) are responsible for the allocation of IP addresses in their regions of responsibility.[15]
- The Internet Assigned Numbers Authority (IANA) is responsible for various administrative functions associated with management of the Internet's domain-name system root zone.
- The root server operators maintain a synchronized set of distributed common database of the directories for top level domains.[16]
- The World Wide Web Consortium (W3C) is responsible for standards pertaining to the World Wide Web.
- The International Telecommunications Union (ITU provides comprehensive standards at layer 1, (e.g. telephony) for communications technologies that carry Internet traffic. The ITU also provides international coordination of the allocation and use of the communication frequencies of the electromagnetic spectrum, among many other things.
- The network operator groups, including RIPE, Apricot, NANOG, APNG, SANOG, AFNOG, SilkNOG, and others, serve as important coordination points for the major operators.
- The approximately 100 companies that provide the core of the Internet,[17] coordinate their activities through formalized network operators' groups, and have peering arrangements between themselves provide connectivity to other ISPs.

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[14] ICANN is also technically responsible for the assignment of numbers to specific protocols defined by the IETF. This is a purely technical function, and is delegated to the IETF.

[15] Regional Internet Registries will soon exist for every continent in the world. The African registry, the last to be defined, is currently being established.

[16] There are 13 root server operators, the majority of which are located outside of the United States. See http://www.root-servers.org/.

[17] Technically, these companies provide the default-free routing zone.

45. The above list includes an intergovernmental agency, a number of professional societies, several operational entities, an administrative organization, and a meritocracy with no direct legal status. Voluntary cooperation and transparency of operation, a position publicly avowed by all participants, allows these organizations to work together.

46. The continuing involvement of the U.S. Government in the administration of ICANN has been troubling for some countries. In effect, ICANN has operated under contract to the U.S. Department of Commerce, and is in theory subject to its direction. In practice, ICANN is more like an international organization, with a Board of Directors composed of more than 50% non-North American members. For all intents and purposes, the U.S. Department of Commerce has not made any attempt to overtly control any specific aspects of ICANN's activities. We believe that if the U.S. Government were to relinquish control of ICANN, many issues of Internet governance would de-escalate somewhat.

3.2 A job of technical coordination and management

47. As we have noted, the Internet is a new form of communication. It shares characteristics with previous forms, but has attributes that set it off from any previous form and make it unique. It rests on concepts that are technically elegant, and that has allowed it to scale to hundreds of millions of connected computers distributed over almost all countries. In the process of that evolution, however, its actual structure has become quite complex. Further, its fundamental architecture has had to evolve to meet some of the social issues that it has generated, most visibly the need to harden its infrastructure against individuals who want to cause it harm or use it to do harm to others. Such people were not part of the cooperative environment in which that architecture initially evolved, but are currently users of it.

48. The management of the Internet has the objective of maintaining the operation, the integrity and the interoperability of the global Internet. It is a new technical effort. Before the Internet there was no knowledge about how to manage large packet networks, what addressing structures would work, what economic models of either cost sharing or economic sustainability would prove to be durable and effective in meeting an increasing demand for services offered. The early technical management of the Internet was helped by a clear and relatively scalable architectural vision and the very substantial input of many cooperative volunteers from multiple sectors through the Internet Engineering Task Force (IETF), which still serves as the formulating body for Internet standards even though it is essentially a body of interested and informed volunteers.

49. An essential aspect of the technical administration of the Internet has been that the administrative mechanisms that have evolved had little if any precedent, and that their creation and evolution have been essentially a technical task, invisible to the average user of the net. We believe that this is one of the two most important conceptual distinctions to make in the larger discussion of Internet governance. Internet administration concerns itself with the effective functioning of the network. In the execution of the administrative and coordination mandate, decisions have been needed that have governance implications. The set of Internet policy issues, discussed later in this report, concerns itself with the interaction of the Internet and a large set of public policy issues that preceded the Internet. In addressing these public policy issues, governance issues are prominent and diverse.

50. The technical administration of the Internet does involve some choices and the establishment of some policies by necessity. A discussion of these matters may be found in Annex 2.

3.3 Technical administration and coordination: An assessment

51. The current administration and coordination of the Internet's functions is a result of historical evolution. In general, given the pace of both technological change and growth of the Internet, the record has been quite good, particularly in industrialized countries. The policies that have been in place, combined with the informal and generally cooperative nature of the players in the Internet industry, have provided the flexibility and freedom for innovation that have fashioned the Internet into the ubiquitous and productive tool it is today.

52. The circumstances surrounding the Internet today are significantly different from the past, and it is reasonable to ask how a different set of policies and governance mechanisms for the administration and coordination of the Internet itself would assist in achieving certain goals. For the purposes of this exercise, the goal is certainly the rapid spread of the accessible and affordable Internet to as many people as possible, but with special reference to its availability and affordability in the developing countries, with the availability of useful and relevant content to assist in the development process.

53. Growth in companies and organizations inevitably requires change. The organizations in the Internet industry, including those listed above responsible for the operation and coordination of the network have exhibited change over time. Alternative governance structures are certainly possible. However, in contemplating change, one should always consider the possibility of unintended consequences. Internet administration and coordination is a complex task in which there are many players, and the value provided by changes must clearly exceed the disruption and uncertainty that they may cause.

54. The situation in most developing countries is more complicated. First, although clear rules, guidelines and procedures have been established at the global level, their implementation and enforcement at the national level has been very uneven. It is still possible to find situations where users of the Internet are being asked to pay additional charges for the assignment of IP addresses. In addition, the price for domain names is usually higher, and ISPs often operate in a quasi-monopolistic market. As a result, users seeking domain names in their countries are often bypassing the use of ccTLDs. Secondly, in most developing countries there is little awareness of the existing rules and procedures for Internet administration and coordination. This is partly due to the fact that most of the population in these countries is usually not connected to the Internet, combined with the fact that there is no national organization or governance mechanism to oversee the implementation and management of existing procedures. Finally, many developing countries still lack the local capacity to address these issues and insufficient effort has been made at the global level to promote national capacity development for this purpose. Contrast this with the now multiple capacity building efforts for telecom regulators supported by developed countries and bi/multi-lateral organizations.

4. ICT GOVERNANCE AND PUBLIC POLICY ISSUES

55. The growth and increasing pervasiveness in the use of ICTs, including the Internet, has raised a large group of public policy issues, some new, some old now seen under a new light, that have acquired global relevance and have required concerted action for being addressed in a successful fashion. These issues offer a considerable challenge, arising from the introduction and impact of the Internet into a sphere of activity that previously existed but did not then have to contend with any of the disruptions that the Internet may have introduced. In addition, in many transitional and developing countries, Internet aspects of policy issues are arising at the same time

that legal reforms are being undertaken in the underlying legal environment applicable to offline transactions.

56. For example, some countries eager to take advantage of the Internet's commercial potential do not have the legal rules and enforcement mechanisms that will support credit or debit cards even for face-to-face transactions. Similarly, the development of national and international rules for electronic funds transfers predated the Internet, but participation in that system will be necessary if the Internet is to be used for online commerce. Fundamental issues like transparency, the adoption and constant application of rules that are both predictable and flexible, and an efficient non-corrupt court system — all major objectives of law reform efforts generally — are also crucial to the development of the Internet.

57. We suggest that this distinction defines an area of policy concerns that we believe is appropriate to consider labeling as a separate group of issues, and to consider labeling the group as the domain of Internet-related policy issues that are not related to Internet administration, but come from the intrusion of the Internet into existing human activities. The issue areas involved are the same areas that presented issues prior to the introduction of the Internet, but the unique and distinguishing nature of the Internet, as described above, requires at the very least an examination of whether existing legal and other policy instruments suffice or whether a more fundamental rethinking of the national and international policy environment is required to cope with new and different manifestations of those issues.

58. In particular, the relative elimination of distance by the Internet requires a rethinking of the geographic scope of policy instruments that may have sufficed in pre-Internet days. Policies that previously could be more or less successfully applied at the local or national level may now have to be coordinated at the national or global level, bringing into play the complexity of and interaction between different legal systems and the need for international resolution of issues that were previously more local in character.

59. If this framework is accepted, then it becomes clear that Internet-related public policy issues need to be addressed in a distributed manner, by multiple organizations at multiple levels. This conclusion derives directly from the fact that the responsibility for ICT policy, as well as implementation and enforcement, of those same issues in pre-Internet times was distributed throughout multiple organizations at multiple levels.

60. Furthermore, and of considerable importance, is the fact that there are existing institutions that already work at multiple levels and that currently address each of these problem areas, and they have the expertise and credibility that is crucial to the resolution of the Internet-related policy issues. These existing institutions include a mix of national governments, regional and international bodies, self-regulatory bodies, trade associations, and consensus-based voluntary standards bodies. Viewed in this light, Internet and ICT policy governance already spans a large space of issues, and this governance is shared among many institutions of significantly different types.

61. The policy issues within scope of ICT and Internet governance are, *inter alia*, described in the following sections.

4.1 Content issues

62. Content issues may be among the most difficult issues that the Internet affects in new ways. The question of what is acceptable content has always been a subject of debate. While it is recognized that different cultures and countries have different standards, there has been a worldwide commitment to freedom of expression and a movement in recent decades towards an expansion of freedom of expression. Article 19 of the Universal Declaration of Human Rights provides that "Everyone has the right to freedom of opinion and expression; this right includes freedom to hold opinions without interference and to seek, receive and impart information and ideas through any media and regardless of frontiers." Similar language appears Article 19 of the International Covenant on Civil and Political Rights (CCPR), in Article 10 of the European Convention of Human Rights (ECHR), and in Article 13 of the American Convention on Human Rights. In the age of the borderless Internet, the protection of a right to freedom of expression "regardless of frontiers" takes on new and more powerful meaning.

63. In the past, content has been regulated physically (censorship of indigenous publishers and border inspections to keep out objectionable materials from abroad) and in a very gross way by the jamming of TV and radio signals and prohibitions on the ownership of receiving devices (satellite dishes). While Internet traffic is capable of being filtered, the process of filtering is much more complex due to the millions of sites of material and the ability of a site to add or change addresses of potentially objectionable material.

64. We see differences among different groupings of content types that may be useful in guiding public policy:

- content that is universally hateful and illegal. Child pornography is in this class of content.
- content that is culturally objectionable and possibly illegal; often pornography, doubts about the established religion criticism of government fit into this category
- content that is politically objectionable. Generally criticism of government beyond tolerable limits (which may not exist)
- Libelous content – content that causes injury to reputation.
- content that is objectionable not because of its substance but because of its means of transmission, such as spam, which increases transmission costs, places a burden on recipients, and degrades the on-line experience

In this context it is important to note that while there are issues of “objectionable content”, there is also the principle of the right of access to information, free of censorship.

65. Public policy needs to address all of these types of content, within the framework of cultural diversity, international human rights and the continuing relevance of the nation state. What may be objectionable in one place may not be objectionable in another, and vice-versa. Despite the borderless nature of the Internet, nations still retain the authority to regulate their own nationals. France, for example, can still punish French citizens who access neo-Nazi material. The hardest issue, and one that remains unresolved, is the question of jurisdiction. There are a variety of ways in which content can cross national boundaries in such a way that laws or standards are violated, and there is no clean method of deciding the jurisdiction in which the case is to be considered. International human rights bodies, including the European Court of Human Rights and the UN Commission on Human Rights, continue to define the scope of the freedom of expression. These

bodies have recognized that the scope of the freedom depends in part on the nature of the medium and that the Internet is entitled to the highest form of protection.

66. One of the most difficult issues concerning Internet governance is the question of jurisdiction. The Hague Conference on Private International Law has been drafting an international convention in an effort to set international rules for determining the court in which foreign parties can be sued and when countries must recognize the judgments of foreign courts.

67. Some argue that crafting a convention to address jurisdictional issues will take too long and that alternative dispute resolution may provide an interim solution. The World Intellectual Property Organization helped craft a policy instituted in late 1999 by the Internet Corporation for Assigned Names and Numbers, the organization charged with managing the Internet's domain name system, for resolving trademark disputes involving domain names. Others complain, however, that the ICANN process is one-sided in favor of business interests. WIPO has launched other initiatives aimed at addressing some of the questions surrounding applicable law and jurisdiction raised by the Internet, including draft guidelines for how the same trademarks in different countries can coexist on the Internet.

68. Meanwhile, national courts continue to exercise jurisdiction over their own nationals, and countries are seeking bilateral cooperation on matters of mutual interest.

69. Distinct from the question of what is illegal is the question of who is liable for illegal content. Generally, the more developed countries of Europe and North America have adopted a rule that holds the creators of content liable, but that does not impose liability on ISPs or other mere conduits of information. Under this approach, reflected in the EU regulatory framework, an ISP is not responsible for monitoring traffic over its system. A entity hosting content it did not create is liable only if it is notified of the illegal content and fails to take it down.

4.2 Crime and cybersecurity

70. The introduction of the Internet has brought with it new ways of committing illegal acts. These new ways depend upon knowledge of Internet technology, and often prey upon users who are not sophisticated or suspicious. A recent issue of *The Economist* introduced an apt term for some of these behaviors and actions: *e-hooliganism*.

71. Some examples of e-hooliganism follow. It should be noted that countries' legal systems vary widely regarding their defining any or all of these behaviors as illegal and criminal.

- Data interception - to intentionally intercept, without right, by technical means, non-public transmissions of computer data to, from or within a computer system. Deterrence of this crime constitutes an essential element of cyber-trust, for it protects the confidentiality of communications.
- Data interference - to intentionally damage, delete, degrade, alter or suppress data in someone else's computer without right. This would include, for example, intentionally sending viruses that delete files, or hacking a computer and changing or deleting data, or hacking a web site and changing its appearance.
- System interference - to intentionally cause serious hindrance without right to the functioning of a computer system by inputting, transmitting, damaging, deleting, deteriorating, altering or suppressing computer data. This would include things like

denial of service attacks or introducing viruses into a system in ways that interfere with its normal usage.

- Illegal access: - intentionally accessing, without right, the computer system of another. It can be thought of as the cyberspace equivalent of trespass.
- Forging phony e-mail addresses to avoid identification
- Typosquatting, i.e. trapping the results of user mistyping and catching it with, e.g. a domain name containing the often frequent misspelling.
- Hijacking people's use of networked computers through the installation of hidden back doors
- Spyware, such as hidden software in a computer that records keystrokes and/or screen information that is then secretly transmitted to the party that installed the spyware
- Display of material not requested, such as advertisements; these tools are often referred to as adware, pop-up windows, or pop-under windows.
- Increased ease of identity theft through increased availability of publicly available information on the Internet..
- Financial fraud through exploitation of financial data, most often attempted using credit card information.

72. A number of international institutions have undertaken efforts to harmonize national laws on cybercrime and address issues of cybersecurity. The European Union has developed a cybersecurity strategy in a series of Communications and proposals from the Commission. The APEC forum has adopted a cybersecurity strategy drafted by its Telecommunications and Information Working Group. OAS has done regional work as well. OECD has issued a set of Guidelines that constitute a road map for governments and private enterprises in developing cybersecurity strategies. One of the most extensive efforts was undertaken by the Council of Europe, which has drafted a convention on cybercrime.

4.3 Intellectual Property Issues (other than DNS issues)

73. Protection of intellectual property (IP) is crucial to many aspects of the information society, ranging from online e-commerce to IT-enabled outsourcing to software development. The Internet poses special challenges to the protection of intellectual property, especially as broadband services make transfer of large music and video files feasible.

74. The three main branches of intellectual property law are copyright, trademark and patents. There are more than two dozen international agreements concerning IP. The World Intellectual Property Organization (WIPO) is an international organization under the umbrella of the United Nations tasked with administering international IP treaties and assisting governments, organizations and the private sector with IP-related issues. Two of the crucial international treaties are the WIPO Copyright Treaty (WCT) and the WIPO Performances and Phonograms Treaty (WPPT), which came into force in March and May 2002 respectively.

75. Equally important is the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS), which nations must adopt in order to be part of the World Trade Organization (WTO). TRIPS sets a minimum standard for IP protection that all signatories must meet, based primarily on the Paris Convention for the Protection of Industrial Property and the Berne Convention for the Protection of Literary and Artistic Works. Countries that join the WTO, and

thereby agree to be bound by its rules, must amend their domestic law to conform to these conventions. TRIPS provides for the resolution of disputes between nations through the WTO.

4.3 The Economics of Interconnection for Developing Countries

76. Payments for international voice telephone calls are split between the connected countries and financial settlements are then computed for all countries. This has been a boon for developing countries, most of which maintain high international tariffs as a source of foreign exchange — although this has changed somewhat in the last few years due in part to increased competition among operators of voice services in developing countries.

77. This is not the case for Internet Service Providers (ISPs) who, to date, remain oblivious to geographic settlements. As a matter of fact, a globally agreed policy does not exist for this issue. As a result, ISPs settle payments among themselves. In this case, developing countries no longer have a subsidy and in fact often pay for the full cost of connecting to the global Internet. Tier 1 ISPs have argued in the past that this reflect the actual economics of the connection as most traffic from developing countries passes through them, regardless of its final destination. Although a thorny issue, the critical question here is both a lack of adequate empirical analysis to determine whether the current system is "fair," and the lack of a "governance" space to deal with the issue on a more systematic and complete fashion. As it stands today, the issue is not likely to be resolved in the short or medium run.[18]

4.4 Privacy and confidentiality of information

78. Privacy of communications and stored data is a critical element of consumer and user trust in an on-line environment and a necessary condition for the development of electronic commerce. Three international organizations have developed guidelines or rules that set forth a consistent set of basic consumer privacy protections: the Organization for Economic Co-operation and Development, which promulgated Guidelines on the Protection of Privacy and Transborder Flows of Personal Data in 1980 and has continued to monitor their implementation and to provide policy and practical guidance for implementing privacy protection online, addressed to member countries, business and other organizations, individual users and consumers; the Council of Europe, whose Convention for the Protection of Individuals with Regard to Automatic Processing of Personal Data (1981) sets out the basic principles for data protection, and the European Union, whose Data Protection Directive (1995) the OECD guidelines have been adopted by countries that are not members of the OECD, and the EU Data Protection Directive has had an impact far beyond Europe.

79. Privacy is also widely recognized as a human right. Article 12 of the Universal Declaration of Human Rights states, "No one should be subjected to arbitrary interference with his privacy, family, home or correspondence, nor to attacks on his honour or reputation. Everyone has the right to the protection of the law against such interferences or attacks." Other international

[18] It is not easy to understand why this issue has not been addressed by communications economists. Even though the situation changes continuously, it should be possible to study under some alternative sets of assumptions whether the real cost of providing the totality of transport services over the Internet is mirrored relatively accurately by the income paid to and accrued by the transport providers. The current situation of arguing about the fairness or unfairness of the current balance in the absence of any thorough analysis does not help the current governance discussions.

human rights instruments specifically recognize privacy as a right, including the International Covenant on Civil and Political Rights (Article 17).

80. On the regional level, various treaties make these rights legally enforceable, including Article 8 of the European Convention for the Protection of Human Rights and Fundamental Freedoms and Article 11 of the American Convention on Human Rights. International human rights tribunals and commissions have begun to define the meaning of this privacy right in the digital era. Concern with privacy is manifesting itself in public policy discussions around the world. For example, the Asia Pacific Economic Cooperation (APEC) group held a conference in February 2003 entitled "Addressing Privacy Protection: Charting a Path for APEC." The conference brought privacy advocates, businesses and government representatives together to develop a new approach to online data privacy for the Asia-Pacific Region.

4.5 Contracts and e-commerce

81. As commerce moved to the Internet, legal questions arose as to the validity and enforceability of contracts entered into by electronic means. Over time, many legal systems had given special significance to signatures as an expression of intent to be bound to a contract. This raised the question of what is a signature online. Similarly, evidentiary laws of some countries gave preference to the introduction of the "original" of a document. What is the original of a digital document?

82. The United National Commission on International Trade law has addressed these issues, developing model laws on Electronic Commerce and Electronic Signatures. The Bank for International Settlements has promulgated a set of Core Principles for Systematically Important Payment Systems. The EU has an extensive body of rules and procedures on electronic funds transfers, including a directive on electronic money institutions and UNCITRAL has a model law on International Credit Transfers i.e. wire transfers.

4.6 IP Telephony (VoIP)

83. Voice over Internet Protocol (VoIP), in addition to video, is perhaps the best example of both the convergence of technologies and the recast of an existing issue into our proposed 3-D space. Since its beginnings, the provision of telephone services has been the exclusive realm of telecom operators. Based on circuit-switching technologies, the provision of the service in developing countries, usually furnished by telecom monopolies until recently, relied on small markets with high-profit margins and did not reach most of the population. The liberalization of the national telecom sector in many countries coincided with the emergence of VoIP. VoIP poses a tremendous challenge to existing telecom operators as new competition in the provision of phone services — in addition to cellular phone service — can undermine their core business. For our purposes, it will suffice to say the VoIP also poses a challenge to traditional telecom regulation as, being an Internet based technology solution, it also falls under the scope of ICT governance.

4.7 Universal access and service policies

84. Universal access refers to providing access to telecommunications facilities to all inhabitants of a country. Universal service refers to connecting every residence with telecommunications

services. These concepts come from voice telephony, and generally involve policy issues of cross subsidization between areas of low connections costs, generally cities, and areas of high connection costs, generally rural areas.

85. The concepts of universal access and universal service apply equally to ICTs other than voice telephony, including the Internet, although the services may be delivered in different ways provided by the technologies. The locations of service may be different for universal access, viz. telecentres may be appropriate for voice whereas libraries and schools may be equally appropriate for Internet.

86. The more general issue is how to propagate the diffusion of Internet as widely as possible in a country, in a manner that is financially sustainable and accomplishes the social objectives desired. Both intergovernmental agencies, the World Bank and the ITU among others, and bilateral aid agencies provide substantial assistance to countries in this area, directly and through non-governmental organizations.

4.8 Liberalization of telecommunications

87. In its early phases, the Internet operated on top of the telephone system. Important policy decisions in the telecommunications arena paved the way for the development of the Internet, especially the worldwide trend towards "liberalization:" the introduction of competition and the privatization of telephone companies. With the convergence of wire line telephony, wireless communications and cable, the broad policy environment for ICTs is based on competition, interconnection, universal service obligations, and the elimination of many licensing requirements, among other policies. The major institutions driving these policy developments have been the World Trade Organization, through the GATS system and its Basic Agreement on Telecommunications, and the World Bank. The OECD and the European Union have also played important roles.

4.9 Consumer protection

88. E-commerce will flourish only if legal systems enforce both commercial and consumer contracts. Special protections are warranted in the case of consumers. For example, the protection of consumers includes laws prohibiting misleading advertisements, regulating consumer financial services and consumer credit, and concerning liability for defective products.

89. With regard to online contracts and other distance contracts, rules should ensure that, prior to the conclusion of any contract, the consumer is provided with clear and comprehensible information concerning key matters such as the identity and the address of the supplier; the characteristics of the goods or services and their price; and the arrangements for payment, delivery or performance. For major online transactions and other distance contracts, consumers should be afforded a right of withdrawal, which makes it possible to cancel credit agreements concluded in connection with a transaction. Unless otherwise agreed to, the supplier should be required to perform a contract within thirty days. Where the supplier fails to perform his side of the contract, the consumer must be informed and any sums paid refunded, unless the consumer agrees to accept an equivalent good or service. Consumers should not be held liable for amounts billed to them for "unauthorized transactions." In the event of fraudulent use of his payment card, the consumer may request cancellation of payment and reimbursement of the amounts paid. Vendors should promptly refund consumer payments for unauthorized transactions or sales

transactions in which consumers did not receive what they paid for. Where unsolicited goods or services are supplied, the consumer's failure to reply does not constitute consent.

90. International bodies that have developed models on the protection of consumers in respect of distance contracts and e-commerce include the European Union and the OECD.

4.10 Taxation of goods and services on the Internet

91. Key principles for the taxation of electronic commerce were agreed to at the OECD Ministerial Conference in Ottawa in 1998. The OECD concluded that the taxation principles that guide governments in relation to conventional commerce should also guide them in relation to electronic commerce. The OECD framework provides that the present international norms are capable of being applied to electronic commerce, but that some clarifications should be given as to how these norms, and in particular the Model Tax Convention, applies. In the consumption tax area, the framework provides that taxation should occur in the jurisdiction where consumption taxes place, and that the supply of digitized products should not be treated as a supply of goods. In the tax administration area, information reporting requirements and tax collection procedures should be neutral and fair, so that the level and standard is comparable to what is required for traditional commerce (although different means may be necessary to achieve those requirements).

92. Based on these principles, European Commissioner Frits Bolkstein stated in September 2000, "We have international agreement on the principle that for consumption taxes the rules should result in taxation in the jurisdiction where consumption takes place." The EU endorsed three main principles drawn from the OECD framework. The first is that no new or additional taxes need be considered for e-commerce but that existing taxes — and specifically VAT — should be adapted so that they can be applied to e-commerce. The second principle is that, for consumption taxes, electronic deliveries should not be considered as goods. In the case of the EU VAT system, they should be treated as supplies of services. The third principle is that taxation should take place in the jurisdiction where consumption takes place.

4.11 Local content, languages and character sets

93. In order for information to be of use to people, they have to be able to read it. This implies that the content has to be in a language that is understood, and moreover, that the written characters that the language uses need to have a standard representation understood by all readers and writes of the language. This is often referred to as the multilingual issue, which is also implicitly a multi-alphabet issue.

94. The historical development of computing and networking in English-speaking countries has meant that most of the initial content of the Internet was expressed in the English language using a character set, ASCII, that did not include even common variants of the Latin alphabet. This situation is changing substantially as computer software is being adapted to use a much larger superset of characters, UNICODE, which is being increasingly adopted by he computing industry. Adoption of this standard is slower in the area of application programs (for market reasons) and in domain names (for technical reasons), but progress is being made.

95. Among the organizations working to achieve the penetration of multi-lingual, multi-alphabet capability into all aspects of the Internet are the IETF, the W3C, ICANN, and the various national standards bodies that have responsibility for defining their subsets of the character code tables. [19]

4.12 Enabling entrepreneurism and the private sector

96. The Internet and the information society in general are characterized by innovation, speed and flexibility. To support Internet development, legal and regulatory frameworks should be transparent, predictable and flexible. These are matters within the control of national and local governments. There is growing recognition worldwide that many policies that promote ICT development are the same policies that promote entrepreneurship in general. Entrepreneurs online and offline should be able to form a business and begin operations without having to satisfy unnecessary licensing requirements. The streamlining of regulatory burdens and the elimination of bureaucratic corruption can support all forms of business development including development of the Internet. Another key concern is redress, via an independent and efficient judicial system for the enforcement of contracts.

97. These legal reforms have been a major theme of international institutions, ranging from the World Bank to the United Nations, and are the focus of development aid initiatives both multilateral and bi-lateral in origin.

4.12 Organizations engaged in Internet governance and public policy

Summarizing the foregoing, it should be clear that there are many institutions engaged in Internet governance (even if they do not think of themselves as doing Internet governance), i.e. working in cooperation with countries to establish policies and implement them in order to contribute to their economic and social development:[20]

98. At the global level

- UNCITRAL (United National Commission on International Trade Law) –e-commerce and electronic signatures
- WTO – Basic Agreement on Telecommunications – telecommunications liberalization
- *Organization for Economic Cooperation & Development (OECD) – guidelines on privacy, security, cryptography*
- *World Intellectual Property Organization (WIPO) – intellectual property*

99. At the regional level

- Asian Pacific Economic Cooperation (APEC) – cybersecurity
- European Union (EU) – telecommunications, e-commerce, privacy
- Council of Europe (COE) – cybercrime, freedom of expression

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[19] The issue of introducing multilingualism into all aspects of the Internet has been a difficult issue due to the initial environment in which the Internet evolved. The IETF in particular has spent a great deal of time and energy in constructing a phasing in of multilingual capabilities in such a way that the Internet remains completely interoperable and efficient.

[20] For a more comprehensive list of organizations involved in Internet governance, see the *Guide to International ICT Policy Making*, The Markle Foundation, 2003.

- Regional Trade Agreements (NAFTA, Mercosur)

100. Other international organizations, including NGOs

- G-8 – cybercrime and cybersecurity, Okinawa Charter on the Global Information Society
- Human rights bodies

101. At the national level

- Government ministries
- Specialized organizations, e.g. universities, research institutions
- Private sector associations
- Not-for-profit organizations

5. THE RELEVANCE OF ICT GOVERNANCE FOR DEVELOPMENT

5.1 The Broad Scope of ICT and Internet Governance

102. Based on the discussion presented in the previous section, we can conclude that there are indeed a plethora of complex issues on the subject. In addition, there are also existing organizations that have been addressing some of the issues and could, in principle, tackle the ones that are emerging on a global scale. Unfortunately, there is no one-to-one correspondence between generic issues and institutions. Furthermore, each issue, either new or old — recast into new dimensions by the enhanced used of ICT and the Internet, now cuts across traditional policy sectors and the organizations that were created to handle them. In many instances for example, the new set of global issues that have emerge are challenging the competencies of existing organizations which *de facto* do not have the knowledge and expertise to address them alone.

103. Let us exclude from this discussion what we have labeled the pure technical administration of the Internet and other ICTs which, in any case, are required to ensure their continued proper functioning and operation. This does not mean that technical administration is not an important piece of the puzzle. Many developing countries, for example, still do not have such capacity to manage some of the key ICT issues at the national level and thus depend on external support to be part of the global ICT community. But this is certainly not a governance issue *per se*. The responsibility for this is clear: technical experts must do the task of technical administration.

104. Technical administration also implies the need for policy decisions and the establishment of specific policies to guarantee that those administrative functions proceed expeditiously and on a uniform standard. Perhaps the best example here is all the policies and procedures that ICANN has established for the proper management of the DNS. The same can be said for example of any other ICT issues described in section 4. However, it is not clear what the venue should be for these policy discussions and decisions associated closely with the technical administration of the Internet. There are indeed governance implications emanating from this technical coordination that needs be addressed. This has in fact been one of the main issues confronting ICANN, and one that ICANN has tried to address using a bottom-up approach with global participation by all sectors. Fortunately for the developing countries, that class of issues is of little import when it comes to impacting countries' development goals, as is discussed in the following section.

105. Internet governance issues and policy implications that are of interest to the global community involved in the ongoing discussions on the subject have two distinct characteristics. First, they are truly new, and we are grappling with them now, trying to understand their visible and hidden consequences, both short and long term. If we have come more or less to terms with the effects of other ICTs in these areas, it is because the issues are at least familiar to us, and we have at least developed a context in which to regard them and some methods of dealing with them. Second, the manner in which the new ICTs and the Internet is impacting us now will be seen in retrospect, hindsight notwithstanding, as fundamentally different and more powerful than its predecessors. The Internet in particular defies easy classification and this is being complicated even more by the convergence of a wide variety of technologies into digital form. Thus, it should not be surprising that we somehow lack the ability to quickly respond to the new challenges in a manner that permits re-use of existing process, institutions and solutions.

106. There is yet another dimension that needs to be incorporated into the analysis that relates to the global/local dichotomy. The Internet and new ICT have greatly facilitated the creation of a "global community" in which stakeholders from most countries (those with access) can be part and participants in relevant discussions and networks. In this context, national boundaries appear to be weak. However, national boundaries are still essential not only for the implementation of global agreements and policies but also for setting the local governance mechanisms to participate in the global discussions. Only a handful of developing countries have been able and/or have the capacity to do so. The enforcement of IPR on a global scale is a good example that, by the way, goes well beyond ICT-related issues (i.e., WTO and TRIPS).

5.2 Developing countries and ICT Governance

107. To date, the involvement and participation of developing countries on most ICT and Internet governance issues and mechanisms has been scant and certainly not consistent over time. Needless to say, most of them are member of the various international organizations that have been setup to manage several of the issues — WTO is perhaps the most recent example here. But usually representation is limited to government officials and policy makers on the basis that most of these issues are in the realm on international governance where national governments make policy and promote its implementation on a national scale.

108. Although this is completely accurate, this is a sign of confusion between governance, government and policy making. Governance is not necessarily held by government organizations. Policies can be designed and implemented on the basis of various governance models, including open and participatory processes that involve a wide variety of citizens and sector, including businesses and NGOs. We describe these processes as 'Global Governance' processes, in which national governments are just one stakeholder among many others. This process is in fact further facilitated nowadays, and in contrast with say 20 years ago, by the increased use of ICT tools to create, support and enhance local, national, regional and global networks. Building bridges between governments and citizens on a global scale is probably now easier than in any other time in history.

109. The issues for developing countries are however more complex that the above. For starters, there is the issue of the "digital divide" — to a large extent a reflection of existing socio-economic differences between and within countries. Most of the discussions on the subject have focused on the gap between countries. Some recent studies now suggest that the gap is closing.

However, for developing countries the news is mixed, since the internal "divide" is growing in size and scope. [21]

110. It is possible to find in many poor countries state-of-the-art technologies that are widely used in industrialized countries. In some developing country capitals for example it is now feasible to get a fiber optic (100 megabits/sec, broadband) connection to the Internet for less than 70 dollars a month, a services that is, by the way, not yet available in New York City. In this narrow context, we can certainly say that these countries are leap-frogging well into the 21st century. As it is now however, the issue is that in developing countries the new ICT are only available to a handful of users, usually the elites and/or those who can afford to pay for access.[22]

111. As mentioned before, many developing countries still do not have the human and institutional capacity to start addressing the emerging ICT and Internet governance issues in an immediate fashion, This is clearly a challenge — but also an opportunity in the sense that these set of countries do not have existing legacy institutions and organizations and thus could start the process from a clean slate. There are several issues here however.

112. First, we should understand that developing countries are not at all homogeneous; as examples, consider countries such as Haiti, Somalia, Brazil, India and South Africa, to name a few, all very different in multiple ways. Some of these countries do have capacity to work on the emerging issues and, in fact, some have been quite active in some of these areas. Poorer nations could certainly benefit from partnering and learning from the experiences of these countries in addition to related experiences in industrialized countries. In other words, increased South-South cooperation and joint action could only be beneficial to all developing countries and thus lead to more informed global discussions on ICT governance issues –and beyond.

113. Second, discussions on the "digital divide" within developing countries must be linked to core development issues and agendas to be relevant for its citizens. The lack of relating one to the other has led to the now infamous and artificial debate between "PCs vs. penicillin". Governments and other stakeholders need to be fully aware of the opportunities that ICT in general can provide in improving the delivery of basic services such as health and education, promoting government transparency and accountability and fostering democratic governance in general.

114. With this in mind, developing countries need to do their part to kick-start the process internally to promote policies and programmes that involve the vast majority of citizens in terms of design, implementation and impact. It is only in this context that the broad issues found under the umbrella of ICT governance acquire real and critical importance for them. It is thus not a question of technology *per se*, but of using technology in a manner that furthers the economic and social development goals of a country.

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[21] The issue of the "digital divide" and observations of its change are prone to misinterpretation. Once could also think of similar divides vis-à-vis health or education. Rather than decry the unequal diffusion of ICTs within developing countries, attention might instead be given as to how ICTs can help these countries achieve specific development goals and examine how public policy, at the national level backed up by assistance from the international community, can be shaped to fashion penetration rates that go along with local needs.

[22] Note that for the average Least Developing Country (LDC), 70 dollars a month is about 2 times the average annual GDP per capita.

5.3 Institutional options for coping with ICT governance

115. As already mentioned, there are a large number of national, regional and global institutions and organizations whose mandate, at least partially, includes their involvement in one or more of the ICT and Internet issues described above. However, we also saw that, if the aim is to properly address those issues, it is clear that most of those issues go beyond the t scope of any one institution or organization.

116. Does this imply a need to create a variety of new organizations? Or are current institutions in some combination sufficient for coping with the issues raised by ICT and Internet governance? What about developing country needs and development processes? Can one global institution alone take care of most of the existing issues? Is there an "institution gap" that needs to be filled? There is indeed no easy answer to any of these questions.

117. However, looking at the specific issue of the management and coordination of Internet names and numbers, the answer to this set of questions is clear: a new organization, ICANN, was created by a national government with the sole purpose of assuming full global responsibility on a very specific issue. Although the focus of this paper is not ICANN, it is perhaps interesting to take a quick look at the organization from the point of view of the institutional arrangements.

118. ICANN was the first ever organization whose functions were exclusively concentrated on the Internet — or to be more precise, on one of the technical aspects of the Internet. At the time, there was a clear global (in the Internet sense) need and even urgency to establish some sort of entity that could support, manage and coordinate the Domain Name System — or otherwise face chaos or collapse of the network.

119. The governance structure of ICANN quickly became one of the main issues given both its nature and origin. The first ICANN board was chosen by Jon Postel and was then appointed by the US government, which raised substantial controversy in Internet circles. To balance this, it was decided that approximately one half of the Board would be replaced by electing replacements in an open and democratic fashion. To a large extent, this concept does correspond to the inherent character of the Internet — essentially open and horizontal.

120. This heavily contributed to a shift in the public perception of the role of ICANN, from an essentially technical and administration entity to one in charge of the first experiment in "Internet governance" in which all Internet users (at least those connected, which did not then include many developing country stakeholders) could vote. The election of some board members through Internet voting provide additional elements that further contributed to the emergence of this dichotomy vis-à-vis ICANN which still persists today — in spite of recent efforts by ICANN itself. The dichotomy is characterized by whether ICANN should be "thin" and perform its original mandate in a narrow sense, or whether it should become "thick" and take on other Internet governance functions.

121. From the vantage point of the management and coordination of Internet names and numbers, it can be said that ICANN has been successful. Clear rules, procedures and related polices which guarantee the full operation of Internet space have been established. There are still a series issues which remain to be solved and are presented in some detail in Annex 1. There are also some governance issues that are regarded as unresolved and open, such as enhancing the participation of developing countries and the true internationalization and legal independence of ICANN from any national government among others. However, it should be clear that many other Internet and ICT related issues have also emerged, as we noted in section 4, and require the

urgent attention of all countries and perhaps concerted efforts at the international level. Some of the issues that ICANN is facing today do require cooperation with other existing entities for addressing them in a satisfactory manner.

122. The "experiment" on "Internet governance" carried out under the ICANN umbrella had, at the eyes of many, mixed results and did not really yield the expected results. Nevertheless the important point here is to learn from this unique experience and determine if there is value in any similar process for addressing in an open and participatory manner the larger set of ICT governance issues. In this context, the ICANN process should be considered as a bottom-up exercise in global governance that made use, perhaps for the first time, of the new ICTs to include a variety of stakeholders from many countries. Clearly, these and other issues are fundamentally more important than the policy issues associated with the more detailed and technical issues of the management and coordination of IP addresses and names.

123. The existence at the international level of a variety of intergovernmental, non-governmental, and voluntary private organizations working on the various ICT and Internet issues seems to support the thesis that the creation of yet other specialized entities is not required. On the contrary, cooperation among national governments and these organizations spans all ICT-related issues, and it seems evident that the extension of this cooperation should be the primary direction for addressing the Internet-specific issues. The key question here is how this can be accomplished in an open and balanced manner.

124. There is an argument to be made that governments, especially developing country governments, would benefit from having a focal point within the government for overall coordination of policy with respect to ICT. It might be useful for countries to consider establishing a lightweight, nimble, coordination point within government that can distribute information, assist with problems, and ensure that government policy is informed and consistent. Such an entity could also serve as a 'first among equals' connection to organizations operating in the international space, and could in fact liaise with ICANN or any other technical administration organizations on matters of policy relating to their country's needs. For such a structure to be legitimate, however, such an organization must be inclusive and provide a meaningful voice for national non-governmental sectors and stakeholders. This possibility needs to be examined on a country-by-country basis, depending on specific local conditions and the particular issues at stake.

125. Finally, from the point of view of non-governmental stakeholders, there is ample room for creating and strengthening new and existing national and international networks. These networks can on the one hand promote not only South-South but also North-South cooperation and transfer information, knowledge and expertise to local stakeholders. They can also bring to the international discussion and processes, additional perspectives and views on various ICT governance issues and perhaps even serve as regional advocacy groups and increase national and local dialogue with national governments. Such a process is in fact quite feasible today due substantially to the Internet and the new ICTs.

6. OBSERVATIONS AND CONCLUSIONS

126. The issues surrounding Internet governance are complex, and the ultimate decisions regarding the legitimacy of various governance structures are not a part of this paper.

127. We have therefore attempted to address also the set of issues raised by the evolution of ICTs and the introduction of the Internet and the new ICTs which all countries are faced with, including the developing countries in perhaps special ways. Those issues represent focal points for a re-examination of existing policy and/or its implementation. If governance of the Internet is to be meaningful, the structures must be those that best meet those needs.

128. We feel obliged to offer our views in a manner so as to respond to the framework defined by the WSIS process, since this was our starting point. However, as our conclusions indicate, we believe that this framing of the debate until now has been less than helpful in delineating the important issues with respect to the needs and interests of developing countries.

1. ICT governance, and Internet governance as a subset of it, encompasses a multiplicity of issues, some of which are in turn related to each other. Furthermore, most of these issues cut across traditional "sectors" and override national boundaries, and thus defy simple classification and classical solutions.

2. There are a variety of institutions and organizations that have already been involved in addressing the issues. These organizations include intergovernmental organizations, non-governmental organizations, professional societies, trade associations, and voluntary groups. Nevertheless, it is not always possible to map ICT governance issues to existing organizations on a one-to-one basis. Thus, addressing and finding solutions for a rather large set of critical issues will probably require collaboration and cooperation between existing institutions and organizations. Being that as it may, the creation of new organizations or institutions does not seem to be a desirable option at this point in time

3. Most developing countries still do not see ICT governance as critical, especially those poor nations where access to ICT in general is limited to small segments of the population. The emerging issues that have become priorities in other countries do not seem to apply to them as more basic development issues still remain to be addressed.

4. The great majority of the public and technical policy issues that ICTs, including the Internet, pose for developing countries have direct impact on their development agendas and goals. It is not just a question of technology, standards or compliance with international mandates. Developing countries need to be involved in the various ICT governance processes and develop local capacity and policies to harness its benefits. Furthermore, the development of the information society does require that these issues are adequately addressed.

5. The principle of *participating globally* and *implementing locally* is a useful one in addressing ICT-related issues, including modalities of governance, national policies, implementation alternatives, and sources of assistance. Specific national, regional and international fora and the creation and strengthening of national and international multi-stakeholder networks can be very helpful in fostering cooperation between countries and enabling the transfer of knowledge and experience among them, especially when the underlying technologies provide a common base for discussion.

6. Internet Governance is considerably larger than ICANN. ICANN's purpose in life is very detailed and narrow, and only includes a small subset of broader and emerging issues. ICANN's work is only about the management and global governance of domain names and numbers, which is not a critical priority for most developing countries. Thus, ICANN should not be the locus for the ongoing debates on Internet governance. This must be

clear to all governments and stakeholders. ICANN is likely to be seen in a more favorable light to the extent that it becomes independent of U. S. government control.

7. ICANN should be assessed in this overall context. While it is surely possible to improve ICANN, calls for its demise should be considered vis-à-vis the relevance of its scope. Reforming or replacing ICANN with any other mechanism should be at a lower priority than the emerging ICT governance issues at the global and national levels that have overtaken in importance and relevance ongoing DNS discussions. However, the management of DNS does include specific governance issues that still need to be addressed and solved.

8. ICT governance issues are not and should not be the exclusive concern of governments only. ICT governance falls in the realm of global governance, and thus open participation and engagement with other sectors and stakeholders (in particular civil society organizations and the local private sector) are required to ensure that ICT issues are more closely linked to regional, sub-regional and local development needs and requirements. The emerging Information Society implies by definition more transparent and horizontal governance mechanisms and decision making processes.

9. The most effective direction that ICT governance can take is to concentrate specifically on the policy issues and prioritize them in such a fashion that developing countries are able to address their most pressing issues at a national, regional and global levels. The prioritization should be strongly guided by the extent to which each issue impacts individual users living in their own countries. These are not simple issues, as the history of ICT governance indicates. However, many organizations of all kinds have already been involved for years, and have the responsibility of helping countries with such issues.

129. This document has tried to address the issue of Internet governance in a broad context, and with a special relationship to the issues of social and economic development. As is the case with most such documents, there is much more that could be said, and there is without doubt a rich set of ideas and opinions regarding this topic. We believe that this is a very important topic, and we encourage others to participate in the discussion.

ANNEX 1: THE INTERNET AND INTERNET GOVERNANCE PRIOR TO 1998

130. The network research project that eventually became the Internet started in the late 1960's with funding from the US government for a project known as the ARPANET. Starting with electronic communication lines between four institutions in the western United States in 1969, the ARPANET grew as a tool for researchers in specific institutions (most of them working for US government agencies or on research projects financed by the US government) both to connect themselves to remote computing and information resources and to communicate among each other. Over time, the ARPANET became the Internet, which now claims at least 400 million users in all countries of the world.

131. The early environment surrounding the Internet was technical, research-oriented, practical, and cooperative, and until about 1985, the Internet was essentially a tool for people in the scientific and technical communities. During the period 1985-1995, commercial Internet providers emerged to provide Internet services to the commercial sector, and by 1995 they were fully integrated into an increasingly commercial Internet, a seamless network of TCP/IP networks connecting eventually all countries.

132. From its beginning, Internet development and operation have been characterized by bottom-up development, control decentralized down to individual networks, standards formulation through rough consensus and running code, and a system of coordination by multiple organizations, each having some responsibility for the Internet's operation. Its operation has been open and participatory, both by necessity because of its bottom-up orientation and through its initial culture strongly oriented to research, education, and sharing of information. The basic Internet protocols were developed in the 1970s and the 1980s and, to coordinate their development, called the TCP/IP protocol family, the Internet Engineering Task Force (IETF) was formed in the 1980sas a voluntary, unincorporated, non-governmental meritocracy open to anyone capable of contributing to their goals.

133. In the early days of the Internet, administration of addresses was a simple process. The early addressing function was located at the University of Southern California and eventually became formalized as the Internet Assigned Numbers Authority, or IANA. IANA undertook this activity as part of a grant agreement with the United States government, which funded the research work that created the ARPANET that later metamorphosed into the Internet.

134. Jon Postel, an Internet pioneer, administered the US government grants to IANA to maintain lists of unique reference numbers for entities such as protocols and network addresses, which were used by everyone involved in the Internet to assure interoperability. Later, when the domain name system (DNS) was introduced, IANA took on the responsibility of creating and maintaining the root server, i.e. the server that pointed to servers for all second level domains, which included the global top level domains (gTLDs) and the country code top level domains (ccTLDs). IANA also took the responsibility to create additional root servers, distributed geographically, for redundancy, security, and efficiency of access. The U.S. National Science Foundation held initial responsibility for operation, or governance, of second level gTLD name service.

135. In 1993 the National Science Foundation, realizing that its control of the expanding Internet could not be sustained within a government body, transferred operation of its Internet-related administrative functions to three external non-governmental organizations. One of these organizations was Network Solutions, Inc. a private U.S. company, with whom NSF signed a 5-

year contract for the administration of the Domain Name System (DNS). The impending termination of that contract in 1998 was one of the motivating factors for a reconsideration of Internet administration in 1997-98.

136. In 1998, as a result of the explosive growth of the Internet and serious concern regarding the scaling of both the Internet and the Domain Name System, the U.S. Department of Commerce (which had inherited the contractual relationship with ARPA) commissioned several studies of the problem. The U.S. government concluded that it should privatize the DNS functions, open them to competition, and bring them under some system of non-governmental but nevertheless global oversight. This process led to the creation of the Internet Corporation for Names and Numbers (ICANN), which has been concerned with managing Internet names and numbers since then.

ANNEX 2: POLICY ISSUES ASSOCIATED WITH INTERNET TECHNICAL COORDINATION

137. The material in this annex provides more detail regarding the major policy issues that arise out of necessity from the technical coordination and management of the Internet number and naming spaces.

138. This responsibility is currently in the hands of ICANN, which has held it from its inception in 1998. The governance structure of ICANN has itself been complex, with a currently self-perpetuating Board of Directors, Board of Directors and a number of constituent supporting organizations representing the major Internet stakeholder groups. Further, it depends upon cooperation with a significant number of other groups listed in this document, all of which have different governance mechanisms. As an example, the IETF depends upon an open, consensual process supported only by those participating in the process.

139. Technical management of the Internet has clearly involved some policy choices as the Internet has evolved and grown in size. In general, such choices have been necessary in order to build a viable Internet, and have been consistent with expectations at the time of the decision of the Internet's future use. Some of these decisions might be characterized as engineering design decisions as much as policy decisions, although they may have had policy implications. Governance implications stem from the non-technical aspects of this activity and the need to make choices when fashioning such choices.

140. A discussion of the major such issues follows. In some cases we believe that it would be possible and perhaps desirable to separate the policy issues and decisions from the technical administration and coordination function provided that there was an agreed upon governance mandate for an institution or institutions capable of exercising the policy functions.

141. *Scarcity of IP address space*. Decisions regarding address space and the allocation of Internet addresses, or IP addresses, have been part of the Internet engineering design process. An initial decision in the early 1970s to provide an address structure that allowed at most 256 hosts was soon found to be too restrictive. Work soon started on a new addressing scheme, IP version 4 (IPv4), which allowed a theoretical maximum of 4 billion IP addresses, although the structure of the address space and the manner of its allocation has been such that the actual usable number is less.

142. The assumption underlying IPv4 that an address space of 4 billion addresses would suffice was challenged by the growth of the Internet in 1990s, and in spite of increasing rationing by the Regional Internet Registries, address allocations had to become restrictive and other ways had to be found to provide addresses, One such method is the utilization of private address space, an extension that extended the availability of addresses although with some reduced functionality. Quite a few developing countries that connected to the Internet late in its development received only a few addresses relative to the number of addresses available in developed countries. While this was the result of an early low growth engineering estimate that seemed improbably high at the time, the result was that many developing countries were disadvantaged by it.

143. The Internet engineering community, in particular the IETF, has been quite aware of the situation and early in the 1990s started the design of IP version 6 (IPv6) that would very significantly increase the size of the address space to the point where no shortage would be

perceived for many, many years and therefore there would be no scarce resource resulting in disputable allocation decisions. The particulars of the addresses in this version are primarily the result of engineering decisions, although significant features have been added to improve policy aspects of individual privacy and security, among others.

144. The technical underpinnings that will support IPv6 are spreading through the Internet now. The total number of addresses that will be available should provide an adequate supply for many years. The issue of address allocation across regions and countries is still a policy issue, and is independent of making the Internet IPv6-ready.

145. The remaining issue is the governance issue: who decides upon the allocation of this new address space. Is it regarded as sufficiently large so that the scarcity is not an issue, and therefore any reasonable allocation works? Or is there a case for specific intervention?

146. *Domain name space: introduction of new generic TLDs*. The original composition of the DNS contained 7 generic domain names (gTLDs) and country code TLDs (ccTLDs) as defined by the two letter ISO-3166 codes. The governance structure for this standard is maintained by and available from the German National Statistical Office, while changes to it are made by the authority of the UN Statistical Department.

147. Since before 1998, there has been a sense in the Internet community that the gTLD space was too small, and that it should be enlarged. ICANN's response has been to authorize the creation of a number of new sponsored domains for specific communities (e.g. .museum) and a number of unsponsored domains requested by private organizations (e.g. .biz). The domain requests have been coupled to their implementation by the specific organizations requesting them. The number of requests approved has been initially limited to ensure that the technical root server mechanisms continues to function well.

148. While some of the judgments made in this area serve the cause of technical stability, policy issues exist. What should be the balance between private and structured approaches to define which new TLDs serve the cause of Internet users, including the developed countries? Should choices of new TLDs be coupled to specific registries, or should they be independent? Where should the various responsibilities for registry viability lie, and what mechanisms if any should be in place for registry failures? And with respect to governance, who makes these decisions?

149. *Name collision: Intellectual property rights*. While the use of numbers such as IP addresses have little if any semantic content, names have been associated with specific rights for hundreds of years. Given the decentralized nature of the Internet, collisions in the space of domain names are inevitable and many have occurred. Realizing that the speed of judicial review was inconsistent with the rate of growth of the Internet and the felt urgency of implementation, a Uniform Dispute Resolution Process (UDRP) was rapidly established to provide a "fast track" resolution process that did not remove the rights of parties to nevertheless also invoke a standard judicial review process. The UDRP relies substantially upon the services of WIPO on a voluntary basis.

150. While there appears to be consensus regarding the need for such a "fast track" mechanism, the associated policy issue is how is it to be defined, and the associated governance issue is by whom? Both national and international mechanisms, governmental and private, for addressing and resolving intellectual property disputes have existed for a number of years. Is there a better mechanism than the UDRP? What mechanisms and organizations should be in place that have

the authority to make the changes to the DNS that implements the decision? These decisions are independent of the technical coordination of the DNS.

151. *Registry degrees of freedom*. Within the operation of the DNS, registrars provide name service for their community, and have a position of stewardship and trust. To what extent is, or should the actions of registrars be governed by other organizations, and by whom? What criteria should be used for any such limitations, and how should they be determined? How should disagreements regarding such limitations be settled? Two significant disputes exist in this area now: Verisign's Site Finder service and Verisign's Wait List policy.

152. *The single root*. The structure of the DNS consists of a single root server, pointing to second level domain name servers for all TLDs. The accuracy and the security of the root server are crucial to the correct functioning of the Internet. The root server is replicated in a number of places around the world for both efficiency and security reasons. From the point of view of technical architecture, a single logical root server is believed by almost everyone to be essential, although there are a few isolated advocates of alternative architectures. Most Internet experts believe that departing from a single root server model would ultimately fracture the Internet.

153. Several policy and governance issues exist. Who should have administrative control of the root server system? Should there be any central control, including possibly escrow requirements, required of second level DNS registries? Should a different mechanism be used to modify the contents of the root files, or is the existing mechanism optimal, and how and by whom should such decisions be made?

154. *Protection of Internet as critical infrastructure*. In accordance with its goal of preserving the operational stability of the Internet ICANN has, with technical assistance from the broad Internet provider community, initiated a program of hardening the core of the Internet infrastructure. Such actions correspond primarily to conscientious technical administration of a valuable resource. It does raise the question, however, of who should be responsible for the integrity and security of the Internet and, if a different arrangement is preferred, how would the mechanism for ensuring these objectives differ from and improve upon what is currently being done.

155. *International domain names*. A consequence of the historical development of much of computing and networking in the United States was that the base alphabet for much of the standard setting in these fields was the Latin alphabet, without modifiers such as accents and umlauts to any characters. With the evolution and increasing acceptance of a Unicode format for text representation, other alphabets and languages can now be used to compose electronic documents. The internationalization of domain names has posed significantly more difficult technical problems, and the IETF has recently published a proposed standard for International Domain Names (IDNs), which is beginning to be implemented.

156. There is little disagreement regarding the desirability of implementing such a standard, but there may be policy and governance issues relates to its global implementation. If so, in which venues should such issues be discussed, and how should implementation of such decisions be governed?

157. *ccTLD delegation*. Historically, ccTLD responsibilities were delegated to individuals an organizations on a voluntary basis. The delegation was meant to be one of stewardship of the TLD for the good of the country rather than one of ownership. Given the global importance of the Internet, current policy requires, with some exceptions, the registry to be in the country, and a

contractual relationship with the specific organization in order to provide assurance of continued viability and responsibility to the country. Redelegations are possible and may be requested, and are subject to the national government's support of the redelegation request.

158. The administration of such changes is straightforward, but requires vigilance to ensure the integrity of the data base. Some redelegation efforts apparently have been made in the past with a view to hijacking country code domains. Policy and governance issues raised include the issue of whether the current rules for redelegation are appropriate, and who decides.

159. *The WHOIS data base*. The WHOIS data bases contain information regarding ownership and administrative and technical contacts of domain name holders. From the beginning of their existence, in a small and cooperative internetworking environment, these data bases were declared to be publicly accessible for transparency and for administrative convenience. Today's Internet is large, impersonal, and populated by individuals with a variety of motives other than cooperative behavior, and the public availability of these data bases is regarded as an invasion of privacy, with possible unacceptable consequences.

160. This conundrum is interlaced with some of the other policy issues raised in this section. The issue is further complicated by being the subject of various national laws that are not necessarily in agreement. The fundamental question remains: by what process, and with whose involvement, and in what manner, will a resolution to this issue be decided?