

ICANN and “Internet Governance”

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The volume you are holding (or reading online!) contains a broad range of views on the subject of information technology, networks and systems on the world stage. In particular, it explores the question of how a relatively new system of global communication is to be treated. Is it to be a regulated service with substantial national controls? Is it a commercial system that is largely up to the private sector to operate and manage? Are there public policy issues that need to be addressed on domestic and international fronts? How will its resources be allocated and to whom? These and many other questions can be found in this volume along with a variety of responses. While I do not agree with some of the positions taken in these essays, it is important that answers to such questions are found.

As the WSIS discussion has unfolded, the Internet has become a kind of poster child for the more ethereal sounding “Information Society,” although it is fair to say that mankind has always lived in an information society. The information has varied in content and quantity and access to it has not been uniform, but it is arguable that the global society in which we live has followed a path of increasing knowledge, much of it propagated by new technologies (inventions of writing, paper, movable type printing, libraries, telegraph, telephone, radio, television, satellite communication, computers, networks and most recently, the Internet.) Where computers and computer-based systems go, networking is not far behind. This is especially so as wireless technologies make it less and less expensive to provide connectivity for voice communications (mobiles) and for data communication (“hot spots” using wireless local area networks).

As a technologist, and a person who has spent the last 35 years deeply involved in various aspects of the Internet’s evolution, I feel compelled to express concern that the debates surrounding many of the questions about the Internet are not often well-informed about the nature of the technology, its flexibility and its limitations, nor of the actual way in which its

mechanisms are designed, standardized, and operated. Frequently missing is an awareness of the vital role of collaboration and distributed way in which responsibility is taken for all the details of day-to-day operation of the Internet. The same made be said for policy development and the role of the private sector.

It is entirely understandable that representatives of the governments of the world appreciate the growing influence of the Internet on global and national socio-economics. However, a common reaction to this realization is an urge to “get control over this phenomenon.” The power of the Internet comes in large measure from its openness and accessibility. The “end-to-end principle” which has driven the Internet’s layered architecture has been a key source of open innovation through which a seemingly endless array of new applications have been designed, implemented and put to use. This global phenomenon has caught the attention of industry, government and citizens around the world, so it is no surprise that a proposal for a World Summit on the Information Society (WSIS) evolved and led to a two-summit plan (2003 and 2005) to involve the governments of the world and many other non-governmental organizations and civil society. The basic idea of this summit was to explore what steps could be taken on a global basis to create a world in which everyone has access to all the knowledge accumulated by our collective societies and to the extent that it is online, to assure that all citizens everywhere have assurances that they will have fair access to all of it through the network.

While traditional telephony, broadcast radio, and television and cable television, as well as satellite communication have tended to evolve in a regulated setting, the Internet has been a “grass-roots” phenomenon, operating essentially above the traditional regulated environment. Internet runs on top of the telephone network, or its underlying dedicated circuitry. It works on broadcast and point-to-point radio, point-to-point satellite, optical transmission links and virtually any other communications medium. It was designed to work that way. As a consequence, it has had the advantage of rapid innovation by users at the “edge” of the network, largely without much or any regulatory interference. Indeed, because much of the flexibility of the Internet is a consequence of its dependence on software running in devices at the edge of the network, rather than in systems embedded in the net, virtually anyone is free to invent new applications and to put them up for use. The World Wide Web, which entered the Internet picture around 1992, though it was invented a few years earlier, provided a gigantic opportunity for virtually anyone to share information with everyone else on the Internet.

These aspects of the Internet have stimulated considerable attention, especially in the government sector in recent years. Moreover, as the Internet becomes increasingly accessible around the world, its applications and uses begin to reflect the interests of the general

population. In its earlier years, the Internet was simply a tool for the research and education community to explore new ways of sharing computing power, software, and information by way of electronic mail (which became a popular application around 1971 on one of the Internet's predecessors, the ARPANET). The approximately one billion users of the Internet today have the same range of interests as the general population in most countries. The side-effect of this wide spread use is that abuses have arisen that are not unlike the kinds of abuses one finds in other societal settings. Fraud, misinformation, harassment, illegal transactions, theft of resources, breaking and entering (hacking into computers), copyright infringement, and many other exact or approximate electronic analogs of improper behavior can be found on the Internet. Such problems plainly raise public policy concerns among governments and stimulated much interest during the many talks associated with the WSIS.

The term "Internet governance" became an area of particular attention in part as a consequence of widespread recognition that the Internet represents an important area of national interest for all countries seeking to participate in the benefits of global electronic commerce, distance learning, and access to the encyclopedic wealth of information on the Internet, and in the social dimension that the Internet is creating. From the perspective of governments, the Internet is simultaneously a technology that promises high economic value for parties making use of it and a challenge in that it is unlike all other telecommunications media previously invented.

Delegates to the first WSIS in December 2003 found themselves wrestling with the definition of "Internet governance" and ultimately concluded that this was so hard to define that they asked United Nations Secretary-General Kofi Annan to create a working group charged with developing a definition of Internet governance, identifying the associated public policy issues, and developing a common understanding of the roles and responsibilities of governments, inter-governmental organizations and other forums, the private sector, and civil society as they relate to the operation of the Internet.

In my opinion, one of the most striking aspects of the WSIS discussions is the clear indication that developing countries are concerned that they are becoming dependent on the Internet for world commerce, for example, but that many felt they have not had a seat at the policy table in a substantive way. ICANN has benefited greatly from the participation of the ICANN Governmental Advisory Committee (GAC) in the development of ICANN policies and this seems a good venue in which all governments have been invited to participate.

The Internet itself, though essentially a highly distributed system without central control, is able to function in part because of the technical standards to which its components adhere. The principal body charged with developing these technical standards is the Internet

Engineering Task Force (IETF) that operates under the auspices of the Internet Society. IETF was created around 1986, and the Internet Society, founded in 1992, became its institutional home shortly thereafter. There are several key, hierarchical mechanisms that are critical to the operation of the Internet, namely the Domain Name System, the allocation and assignment of Internet Protocol (IP) Addresses, and the maintenance of other unique parameters associated with the Internet protocols. The task of managing these key mechanisms had been the responsibility of one of the Internet's pioneers, Jonathan Postel.

He had undertaken this stewardship in the context of the Internet's predecessor, ARPANET, in 1969 and continued to serve the community as the Internet Assigned Numbers Authority (IANA) until his death in 1998. In the mid-1990s it became increasingly apparent to Jon and others serving the Internet community that institutionalization of these stewardship functions was an important objective and, after a considerable degree of debate and time, the Internet Corporation for Assigned Names and Numbers (ICANN) was established, in October 1998, to carry out the oversight and information management functions needed to assure unique allocation of domain names, IP addresses and other protocol identifiers.

In a sense, ICANN became the only visible body charged with any kind of oversight for the Internet. The scope of this oversight was deliberately and intentionally limited. But as the Internet continued to grow, as domain names became increasingly visible in the context of the World Wide Web, and as the so-called "dot.com" bubble expanded between 1998 and early 2000 and then burst, many people with concerns or complaints about problems associated with the Internet or its use (and abuse) turned to ICANN expecting it to address many of these issues. Not surprisingly, ICANN's intentionally limited mandate and limited resources did not outfit it with the ability to deal with such complaints as spam (unsolicited commercial electronic mail), fraud, theft, pornography, and the long list of other abuses that creative human beings have invented for the Internet. Though the intense discussions about Internet policy (or "governance") frequently referenced ICANN, it became apparent that the topic of governance was far more expansive than the limited role that ICANN plays in the operation of the Internet.

ICANN was formed to undertake the development of policy for the operation of the Domain Name System (DNS), and for the allocation and assignment of Internet address space. In its role as the operator of the Internet Assigned Numbers Authority, ICANN is responsible, *inter alia*, for accurate recording of tables of unique parameters needed for the successful operation of the wide range of protocols that make up the TCP/IP suite. There are hundreds of such protocols and many of them have defined parameters whose values must be known to implementers of the protocols if their implementations are to interwork

successfully. ICANN is responsible for overseeing the domain name system, dealing with the assignment of operational responsibility for top level domain names (TLDs) such as .com, .net, .aero, .coop, .org, and the so-called "country code" domain names such as .fr (France), .de (Germany), .br (Brazil), .cn (China), and so on. It also maintains the database, called the "root zone file" that identifies the Internet addresses of each top level domain name server system.

ICANN allocates IP address space to the Regional Internet Registries (RIRs) who further allocate IP addresses to Internet service providers (ISPs) and other qualifying organizations. Together with the RIRs individually and the Number Resource Organization (NRO) made up of all the RIRs, ICANN's Board is responsible for the adoption of global address allocation policies, developed through bottom-up mechanisms undertaken by the RIRs and consolidated by the NRO into recommendations to ICANN.

The responsibilities of ICANN are often carried out through the cooperative efforts of other groups such as the system of voluntary root servers and the work of the Regional Internet address Registries, and domain name registries and registrars around the world. While these functions appear on the surface to be quite straightforward, they have policy ramifications that make them more complex. Who should be assigned the responsibility for operating a top level domain name service? Which addresses should be placed in the root zone file? Who should be allowed to register any particular domain name in a top level domain? Are there any restrictions on registrations? How can character sets other than simple Latin characters be introduced into domain names? Where should the root servers be located? What should be the policy for allocation and assignment of Internet address space?

To facilitate the use of the Internet for global electronic commerce, it would be beneficial to develop international procedures for the use of digital signatures, mechanisms to resolve disputes associated with international electronic transactions, treatment of various transaction taxes in an international setting and the protection of intellectual property held in digital formats and distributed globally through the Internet medium. These are not new problems; rather, they are old problems emerging in a new medium.

It is because these questions are not simple that ICANN has adopted a rich system of supporting organizations and forums in which to air such policy issues and seek to develop consensus around them. However, in the course of the WSIS discussions, the full breadth of the term "Internet governance" was sometimes confused with the narrower scope of ICANN responsibility. During the next phase of WSIS, culminating in late 2005 in Tunisia, it is vital that a full range of Internet governance questions are addressed encompassing a broader system of practices, agreements and policies than solely those that fall under

ICANN's charter. Dealing with the many public policy interests arising from the rapid growth of the Internet requires that many of the issues lying outside ICANN's responsibility find venues in which they can be addressed. Intellectual property protection concerns might be addressed in the World Intellectual Property Organization and perhaps the World Trade Organization. Concerns for criminal use of the Internet may be taken up in organizations such as Interpol, among others. Many of the concerns may be addressed domestically but because of the Internet's global nature and relative insensitivity to national boundaries, these issues may require selective cooperation among governments or international non-governmental organizations for their solution.

Many observers and participants in the ICANN process have raised important criticisms for which responses and solutions are needed. The participants in the ICANN process would be among the first to agree that there are improvements still to be made to ICANN. But at the same time, the very broadly based ICANN community spent 18 months revising the ICANN bylaws and operational procedures to make improvements based on several years of operational experience. In my opinion, if we were to begin again to re-create a body to carry out the ICANN functions, we would find the same participants making pretty much the same arguments and ending up with pretty much the same structure as we have today.

Some critics complain about the slow pace of introduction of Internationalized Domain Names (IDNS) into the domain name system. The technical documents of the Internet Engineering Task Force show how difficult it is to introduce these character sets into regular DNS use. No one disputes the intense and understandable desire among many Internet users to interact with the Internet in their native languages, alphabets or ideographic systems, but getting all of the appropriate parts of Internet software to work in an intuitive and reliable fashion is not so easy.

Much of the debate about ICANN may stem from misunderstanding of its origin and modus operandi. While it is correct to say that ICANN is a non-profit entity with a charter to operate for public benefit, and that it is incorporated in the State of California, and that it operates under the auspices of the US Department of Commerce, it would be incorrect to conclude that these facts somehow inhibit ICANN's operation or impair its ability to function with a global perspective.

The Directors of and Liaisons to the Board of ICANN have been drawn from around the world from twenty-two countries so far (Chile, China, Senegal, Brazil, Germany, Japan, Bulgaria, Mexico, Kenya, New Zealand, Australia, Switzerland, Malaysia, France, Spain, The Netherlands, Canada, United Kingdom, South Korea, Ghana, Portugal and the United States). Over the period of its operation since 1998, ICANN has had 42 directors. It has 15

current directors and seven current liaisons. An even wider range of national participation is found in the Governmental Advisory Committee which has on the order of 100 countries represented. Within ICANN, there are support and consultative organizations and liaisons drawn from the technical community (e.g. IETF, IAB, ITU), the domain name operators, the root server operators, registry and registrar operators, the Internet service providers, the intellectual property protection professionals, non-profit and for-profit business sector and from the at-large general public. As of mid-2005, ICANN has staff from about a dozen countries split between the US west coast and Brussels.

No matter how the WSIS discussions turn out, it seems inescapable that the evolving Internet and related information and communication technologies will continue to challenge global policy development for their use and will continue to rely on the cooperation, collaboration and coordination of a great many distinct organizations to achieve the ultimate goal: a real worldwide Information Society in which everyone can participate and from which everyone can benefit.