

Do not mess with (Im)perfection

By

Ismail Serageldin^{1*}

“Democracy is the worst form of government, except for all those other forms that have been tried from time to time.”

-- Winston Churchill,

House of Commons speech, 11 November 1947²

“The current Internet governance System may be messy, but it is better than any other alternative we can devise at present”.

-- Ismail Serageldin

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Introduction:

The phenomenal success of the Internet has prompted a number of voices to question how it is governed, and who makes the decisions and who benefits. Some see the US Government pulling the strings behind a system that remains mostly dominated by American firms and whose most important installations have largely remained on US soil. Politics entered the argument, many simply saying that in this day and age of globalization and multilateralism, and the relatively reduced economic power of the USA in the global economy, others must have an equal say in how the Internet is run. And the governance debate was on. It became a part of

^{1*} Panelist on ICANN’s Strategy Panel on the Role in the Internet Governance Ecosystem. The author’s bio is available here: <http://www.serageldin.com/ShortBio.htm>. The full Report is available on ICANN’s website: <https://www.icann.org/en/about/planning/strategic-engagement/governance-ecosystem>. This is an independent observation and does not reflect the official view of ICANN.

² Source: [http://wais.stanford.edu/Democracy/democracy_DemocracyAndChurchill\(090503\).html](http://wais.stanford.edu/Democracy/democracy_DemocracyAndChurchill(090503).html). (Accessed 30 01 2014)

the central debates launched at The World Summit for the Information Society (WSIS) held in 2003 in Geneva and in 2005 in Tunis. An Annual Internet Governance Forum (IGF) ensued, meeting yearly in different parts of the World. Further fueled by the political controversies surrounding the NSA and US Government snooping, the increasing invasion of privacy that is part of the rapidly changing contexts created by social media and even commercial services being provided through the Internet, more voices were raised demanding to break up the “US monopoly” on running the internet. As we approach the ten-year mark for IGF 2015, a number of committees and Panels have been convened to reflect on the substance of the issues and produce recommendations on the topic of how the Internet should be governed. This small note is one contribution to one of these distinguished panels, devoted to the future role of The Internet Corporation for Assigned Names and Numbers (ICANN).

The Unbelievable Success of the Internet:

The internet has been one of the most transformative inventions in human history. There is hardly any aspect of our lives that has not been touched and transformed by the Internet, from communications, to commerce, to science, to social networking, to making all the world’s information available at everyone’s fingertips. As the locus of interaction with the internet shifts from desktop PCs to personalized hand-held devices, the magic of an ever-present service that makes all that possible is taken for granted by billions of human beings.

Yet, it is a unique achievement in terms of engineering and management. In engineering terms, with the possible exception of the mobile phone, there is no other case of an engineering design having been robust enough and flexible enough to be able to handle an expansion in scale of operations of more than one million fold. The internet design, the TCP/IP system has proved capable of handling a million times more machines, to manage a volume of information transfer that is more than a million times larger and at speeds faster than the original design handled. All those billions of machines and devices that make this possible have addresses unique to their point of attachment to the Internet, and the system allows anyone anywhere to be connected and to receive audio and visual information at the speed of light!

The fact that a largely self-appointed group of people have actually managed to create and launch this unique system and to guide it through its explosive growth may be almost unbelievable. But it did happen, and the Internet worked and still

works and is today among the most reliable means of communication we have. Thus it behooves us to ask (i) what are the key features of the Internet that we want to preserve, those features that serve humanity so well and that almost all of us are unwilling to see compromised; and (ii) how the current system has been able to guarantee them; and then (iii) to measure the desirability or appropriateness of any suggested change in the governance system against the extent to which it would protect the current achievements or improve the efficiency of the operation without endangering this or that feature that we value.

Desirable Features of the Internet System:

The Internet's amazing performance is due to several key features, most notable among these is its unitary structure and the designed net neutrality, i.e. it is open to all traffic from anywhere to anywhere and will allow all types of information and content to be so transferred or accessed, sent to storage devices or retrieved therefrom.

That this was achieved largely from a base physically in the USA is an accident of history that has not impeded a fair development of the Internet involving many international partners or the provision of its services to one and all. Thus while the initial project began with the ARPANET in 1968 the Internet project quickly involved non-US partners as early as 1972 when the International Network Working Group (INWG) was created and when a number of non-US research teams cooperated to implement the experimental TCP/IP protocols of the Internet. Notably there were participants from Japan, Norway, United Kingdom, France, Italy and Germany who were formally part of the program while others participated in internetworking research in parallel or through the INWG. Indeed the World Wide Web was developed in CERN in Switzerland and has rapidly become a fundamental component of the Internet and is administered by the World Wide Web Consortium (W3C), which works with other parts of the governance of the internet system through its multiple layers to preserve and protect the desirable features of the Internet system as billions of people have come to know it and to rely on it. **All this may be imperfect, but it works well.**

That the Internet has scaled up so incredibly despite its brief existence has inevitably meant that the system has confronted the frictions and tensions that come from increasing complexity. Many actors from all over the world are today involved in making the Internet work, and accommodating them all while ensuring the continuing effective management of the service has been a challenge. That

challenge has been met by expanding the realm of the internet (e.g. the move to IPv6 expansion of the Top Level Domain space) and by systematically involving as many of the relevant stakeholders as possible in as transparent a way as possible in the decision-making that accompanied the huge expansion of the Internet.

Problems on the Internet:

The fact that the US government is using its access to invade the privacy of Internet users is not due to the special position of the US government in relation to the Internet; it is due to inadequate curbs on the behavior of the US government and its agents. This massive recording of communications of Americans and non-Americans is certainly ethically dubious even if it turns out to be technically legal. Splitting up the Internet into several national or regional Internets (e.g. North America, Europe, China, Latin America, Africa and Asia) would not prevent the Chinese Government from snooping on the Chinese people or the French Government from surveillance of the French people. But the move to such “Splinternets” would certainly bring about the balkanization of the Internet and the development of further complexities of coordination at the boundary interchanges of these Internet realms. Over time, it would inevitably lead to problems of inter-operability and coordination, further complexities and no gains in terms of the protection of the privacy of the internet users.

This is not to say that the Internet is free of problems. There are significant issues of misbehavior of governments, private sector firms and individuals or groups of individuals.

Examples of such misbehavior by Governments may include suppressing the availability of the service, spying on the users, spying on the content of the messages and the data bases accessed by the internet, censorship of content, pursuit of political dissidents who use the Internet to express their views, etc.

Examples of misbehavior of Private Sector companies includes classical cases of monopoly or oligopoly behavior, invasion of privacy and misuse of data acquired during transactions with customers, not to mention outright fraud, as well as negligence for not securing their customer's private data from cyber-attackers.

Examples of misbehavior of Individuals or groups of individuals include all

forms of criminality and abuse from pedophilia to fraud and racketeering, bullying and stalking.

All these examples of undesirable outcomes are potentially present in any system that one designs and are not susceptible to be curbed by changes in the technical management of the Internet. They existed before the Internet and continue to exist in other realms such as the post office or the telephone system. They require curbing the behavior of the culprit, not changing the management of the system of service and delivery.

So, one must emphasize the difference between: (i) management of the medium, or the platform or the infrastructure that allows the service to be provided; and (ii) what people do when using the service in question, i.e. the behavior of governments, companies and individuals. Rules and curbs on the latter must not impede the smooth functioning of the former.

How the Internet is Managed:

There is an eco-system for the denizens of the Internet. The management of that ecosystem involves many institutions and many actors and they are constantly interacting in many ways to ensure that the Internet functions smoothly and continuously. ICANN³ is an essential piece of that ecosystem, as its success guarantees the uniqueness of each device's identifiers and it enforces the rules that

³ As defined in Wikipedia (<http://en.wikipedia.org/wiki/ICANN>, accessed on 31 January 2014) The Internet Corporation for Assigned Names and Numbers is a nonprofit private organization headquartered in Los Angeles, California, United States, that was created on September 18, 1998, and incorporated on September 30, 1998 to oversee a number of Internet-related tasks previously performed directly on behalf of the U.S. government by other organizations, notably the Internet Assigned Numbers Authority (IANA), which ICANN now operates.

ICANN is responsible for the coordination of the global Internet's systems of unique identifiers and, in particular, ensuring its stable and secure operation. This work includes coordination of the Internet Protocol address spaces (IPv4 and IPv6) and assignment of address blocks to regional Internet registries, for maintaining registries of Internet protocol identifiers, and for the management of the top-level Domain Name Space (DNS root zone), which includes the operation of root name servers. Most visibly, much of its work has concerned the DNS policy development for internationalization of the DNS system and introduction of new generic top-level domains (TLDs). ICANN performs the actual technical maintenance work of the central Internet address pools and DNS root registries pursuant to the "IANA function" contract.

On September 29, 2006, ICANN signed a new agreement with the United States Department of Commerce (DOC) that moves the private organization towards full management of the Internet's system of centrally coordinated identifiers through the Multi-stakeholder Model of consultation that ICANN represents.

lie within its scope to ensure the fairness and the smooth functioning of the Internet ICANN is dedicated to primary principles of operation to help preserve the operational stability of the Internet; to achieve broad representation of the global Internet community; and to promote competition. ICANN develops policies appropriate to its mission through processes that reach out to multiple stakeholders in a bottom-up fashion to reach a consensus-based decision. This is not perfect, but it works quite well (more on that later).

Perhaps the key consideration in understanding how the Internet is managed is that “Form follows function”. The internet is best understood as a layered creation.

Various scholars have looked at the technical architecture of the Internet as a layered model that starts with an infrastructure layer at the bottom, the highway that enables the traffic, and immediately above it is a logical layer that encompasses the standards and protocols for the transfer of data packets, including the TCP/IP suite of protocols, and the management of the Domain Name System. Together, the infrastructure layer and the logical layer form a “Technical Layer”.

Most people in the world interact with the internet within layers above that. Starting with a “Content Layer”, where the technical operations are more or less taken for granted, and other policies like Intellectual Property Rights (IPR) and free expression are most relevant.

The Distinguished members of the ICANN Strategy Panel, however, have added:

“As questions of trust, identity and human rights gain the spotlight in Internet policy, we support the view of an additional “Social Layer” that provides an additional lens to identify and stratify the relevant institutions that have a mandate to deal with the ongoing steering of practices and continuous assessment and handling of emerging policy issues. [...] this new layer would deal with practices that define paramount rights and principles associated with “social conduct” online”⁴.

The internet is a layered creation as can be seen in the following diagram.

⁴ The ICANN Strategy Panel specifically said: “We provide this conceptualization in order to trigger discussion about which institutions and stakeholder groups should legitimately be involved in which Internet policy issues”. See: ICANN’s Role in the Internet Governance Ecosystem, the Report of the Strategy Panel (work in Progress).

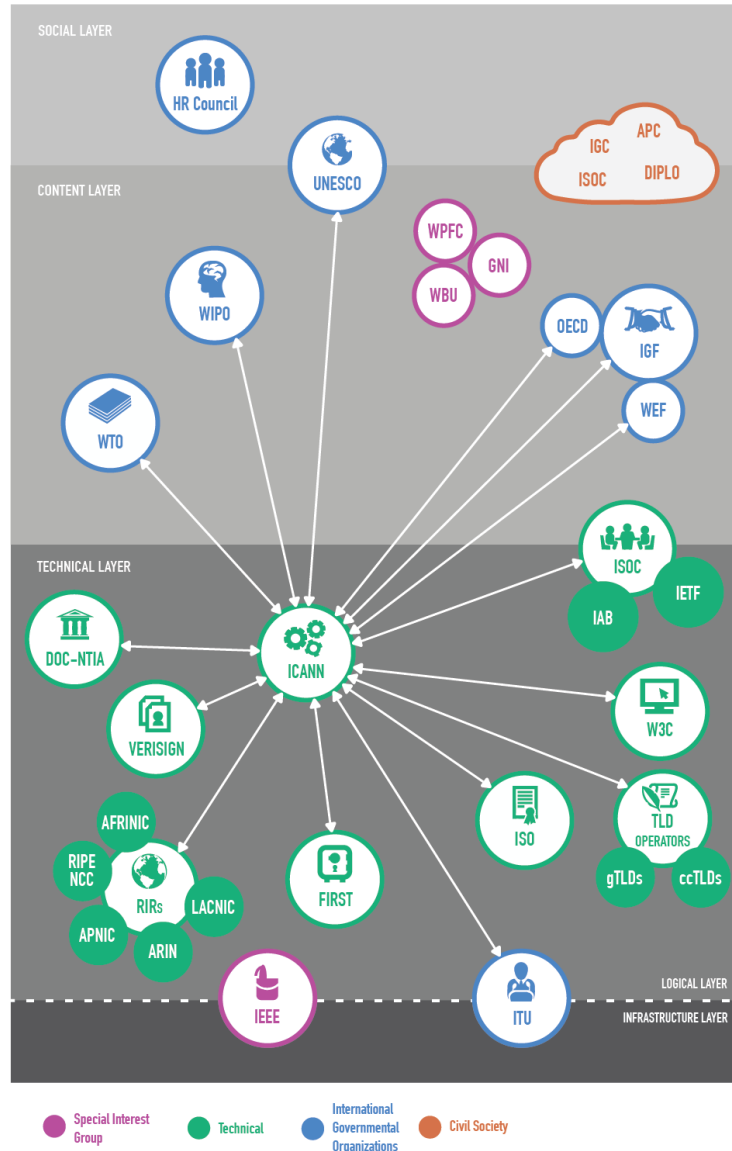


Figure 7: Layered Model of the Internet – Organizations

In each of the layers, a number of key institutions play important roles and ICANN interacts with each of them. The above diagram shows that convincingly, even though it is much simplified. However, it must be emphasized that this does not mean that these actors' activities are limited to that particular layer. In fact there is a daily interaction between ICANN with each of them on many topics, but the diagram underlines the layers where their input is specifically relevant and effectively sought, while they may still make important contributions in debates and discussions in other layers.

That layered architecture is the framework, but the guiding ideas that have allowed

so many diverse systems, software constructs and institutions to co-exist and interact in the Internet is because of its design philosophy, which has maintained an unshakeable commitment to open standards, inter-operability among all its components and across all borders.

Thanks to the layered approach to its architecture couple with open standards protocols developed by rough consensus , anyone can build applications, and even pieces of Internet infrastructure, that have reasonable expectation for global inter-operability.

On Stewardship and Constituencies:

The Internet Governance System involves a number of institutions and structures such as ICANN, IETF, and others, each of which has to deal with a multitude of interested parties that are involved in the decision making process through elaborate multi-stakeholder consultations. Who are these stakeholders and exactly who represents them in the consultations?

The definition of the stakeholders has been given in the Tunis declaration of 2005 as follows:

“Internet governance is the development and application by Governments, the private sector and civil society, in their respective roles, of shared principles, norms, rules, decision-making procedures, and programmes that shape the evolution and use of the Internet.”⁵

This definition, already endorsed by more than 180 governments, was adopted by the members of the Panel to which this note is presented. The panel members noted that it clarified many important issues, including that Internet governance:

- Requires the involvement of all different types of stakeholders, even if significant ambiguity remains regarding their “respective roles”;
- Covers both policy-making and implementation (“development and

⁵(ICANN’s Role in the Internet Governance Ecosystem -- work in Progress—Report of the Strategy Panel Report)

- application”), which may or not include dedicated institutions;
- Is organized around the production of various regimes (“principles, norms, rules, decision-making procedures and programs” which is the classical definition of international regimes); and
- Covers both the Internet as system (its “evolution”) and the behavior of users (the “use of the Internet”).

While it was noted that at the upcoming WSIS+10 review and other meetings leading up to the ITU Plenipotentiary, it is possible that governments may move to unilaterally modify the definition of Internet governance. However, this note is trying to forcefully argue against the politicization of Internet governance and the adoption of changes that would undermine the very aspects of consultations, speed and openness that have made the success of the Internet possible.

Governments, as well as literally millions of individuals and institutions, are involved in creating, developing, operating, evolving, standardizing and marketing extremely diverse products, applications and services on the Internet. They are actively using millions of products and services that rely on the Internet and the World Wide Web to enable their use. These many actors have different motivations and incentives, not all of which are aligned.

There is no difficulty in accepting that all these actors should have a role in policy development. The difficult part is in recognizing how they should be represented and how they should participate. Whatever system is selected, it must be transparent to all, and the process of participation and decision making must be understood by all. If ICANN holds the responsibility for the final decision, it must seek to develop a consensual position rather than reaching a decision through a mechanism such as voting, which is more suitable in cases of zero-sum decisions on allocation of resources that would benefit some at the expense of others. While some would suggest that voting is more “democratic”, in fact it would not be because of the large and heterogeneous community which makes up the Internet ecosystem. Voting requires that each stakeholder group be properly identified and that all its members be adequately informed and involved in the selection and election process of the representatives, that the mandate of the representatives be understood, and that the relative number of representatives or votes be attributed based on a formula that all agree is fair. That is almost impossible to do, since many participants in the internet ecosystem have multiple interests and therefore would participate in more than one stakeholder group. Google for example is a commercial enterprise, but it provides services and is also a researcher. Its

employees may have different perspectives than its shareholders. Yet the idea of defining multi-stakeholder groups implies that each stakeholder group is distinct in its interests and its representation. Then there is the additional problem of defining who the participant representative of that group of stakeholders would be and how the group in question would select them.

Thus the Internet ecosystem, global in scope and transnational in character, allows this enormous diversity of participants to co-exist and collaborate, and even more to contribute to the enormous growth of the Internet. How? That miracle is achieved by:

- Having a flexible form of governance, where consultations lead to a broad consensus in a transparent system of decision making;
- Focusing on the technical aspects and not on the political agendas of participants; and
- Enforcing certain principles of stewardship.

So let us turn to Stewardship and the principles that underlie the actions of the stewards.

Stewardship: Governance of the Commons for the Benefit of All

Stewardship as key concept

ICANN and others responsible for the governance of the internet, its operation and evolution, have effectively considered themselves as stewards of the internet and not as representatives of particular interests. Stewardship⁶ is an ethic that embodies the responsible planning and management of resources that are commonly shared by many others, whose actions can affect that resource. That ethic must be enforced by the entire community of participants and users adhering to certain principles or codes of conduct as regards this common resource. That is what is happening now. The Internet is being run by a group of stewards in accordance with a number of principles that have become well known and widely accepted by the participants in the Internet ecosystem. We can identify a number of these principles as follows.

⁶ See also the definition in international standard ISO 20121 - Event sustainability management system - Requirements with guidance for use; par. 3.20: “responsibility for sustainable development shared by all those whose actions affect environmental performance, economic activity, and social progress, reflected as both a value and a practice by individuals, organizations, communities, and competent authorities.”

Principles of Internet Governance:

- Maintaining the features responsible for the success of the Internet (open access, simplicity, inter-operability, net neutrality, etc.) and giving them precedence over all other considerations;
- Allowing for the participation of all in a transparent system of reciprocity and to ensure that such openness and reciprocity are maintained;
- Allowing for the development and adoption of new features deemed to be desirable, through a transparent inclusionary process of consultation;
- Adopting subsidiarity, here meaning that the decisions affecting a layer of the Internet should be resolved as much as possible within that layer, and as close as possible to where the problem lies, involving the relevant participants on an equal basis. In the case of user-centric problems, in particular, the solutions should be addressed as close to the user as possible.

ICANN's decisions are concerned with the central coordination of the Domain Name System (DNS) and the Internet Protocol (IP) address allocation system, and the repository of IETF protocol parameters. For the purposes of subsidiarity, "policy" in ICANN means the removal or reduction in possible arbitrariness (or perception thereof) in its work relating to the DNS.

Loose Coupling for Strength and Resilience:

Adopting "loose coupling", which means that interactions among the components of the Internet governance ecosystem exchange relevant information to ensure that there is prior attention to the potential impact of a decision by one on the work of others, but not in accordance with a strictly mandated bureaucratic coordination system which we could refer to as "tight coupling". While some may consider that loose coupling engenders complexity, it also provides a better framework for response to complexity and for adaptation to changes. This means that those who adopt tight coupling as a means for obtaining efficiency are also adopting brittleness in the system which would be much better served by the resilience that loose coupling brings. Strength and resilience are fundamental features of the Internet system.

More Globalization for ICANN and its Operations

While no one can challenge these aspects of internet governance, there remains among many an uneasy feeling concerning the historical and apparent primacy of the United States in the entire operation and management of the Internet. We have tried to argue that dividing the Internet vertically is contrary to its layered structure, and to divide it geographically will lead to its balkanization and inevitably add to coordination and inter-operability problems over time, without any gains in performance.

Nevertheless, there are some things that could be done to increase the globalization of ICANN and its operations.

First, it is important to remember that although ICANN is an American institution it works through Regional Internet Registries (RIRs) for IP address administration and through top level domain operators for domain name management. Its functions are based on a consensus formulated by consultations of all stakeholders or participants in keeping with the principles enunciated above.

Second, ICANN has exchanged letters of “Affirmation of Commitments” with the US government, and it may be appropriate to do the same with other entities and possibly other governments as well.

Third, in its contracts with other entities, it may be appropriate to consider putting in international arbitration clauses referring to the UN-sponsored and US-accepted UNICTRAL regulations.

Conclusions:

In this very brief presentation covering an immense field and covered much better in the technical report of the distinguished panel in question, we have tried to make the case, as set out in the epigraph at the start of the essay, the current system may not be perfect but it works well, and no other alternative offers a demonstrable improvement over the current system of governance of ICANN, of the Internet or any of its related parts.

It is important to recognize that this does not mean adopting this position forever. It behooves us to keep this situation under constant review, but we should not allow

the technical functions of the Internet to become politicized, nor should we allow them to become bureaucratized in pursuit of some “politically correct” demand for greater political representation of governments. The current stewards of the Internet have done a great job and should be allowed to continue to build on their successes. Indeed, all of humanity is better off for it.

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