ICANN, Internet governance and Africa

Public briefing on the current status and key points of the debate
Essential background for the second phase of the World Summit
on Information Society

Collaboration on International ICT Policy for East and Southern Africa (CIPESA)
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INTRODUCTION

During the last few years the relationship of African stakeholders with the Internet Corporation for Assigned Names and Numbers (ICANN) has received greater attention. Driven by a few key individuals within African governments, the technical community, and civil society organizations, the increased scrutiny has highlighted the importance of Internet governance issues for Africa. A relatively new organization on the international policy scene, ICANN is a technical coordinating body that has had mixed success in executing on its crucial mission while at the same time meeting its mandate to work in an open, consensus-based, and bottom-up manner. Since its inception, ICANN has been the subject of much criticism (some of it deserved), including its failure to include African stakeholders in its work in a real way. However, ICANN has recently made a concerted effort to elevate African participation in its work, in particular at its annual meeting in Cape Town last year. But the real question may be: "Why should Africans care about ICANN?"

Meanwhile, the broader topic of Internet governance has been put on the public agenda in the context of the World Summit on Information Society (WSIS). Launched in the wake of the initial 2003 phase of the WSIS, the United Nations-sponsored Working Group on Internet Governance (WGIG) has spent the last year reviewing the many issues within that broad rubric, including the responsibilities currently under the purview of ICANN. In preparation for the second phase of the WSIS (to occur in Tunis in November 2005), workshops and discussions on Internet governance have been held across the continent to stimulate interest and to gain wider input from African stakeholders. The WGIG deliberations -- and its June 2005 report -- provide a useful foundation for the discussion about ICANN. Among other things, the WGIG has raised divisive questions such as (1) whether global "governance" of the Internet is desirable, or even possible, and (2) whether ICANN or the UN (or even another new body) is the best institution to undertake the much narrower task of technical coordination of the Internet's system of unique identifiers. Decisions taken in Tunis are likely to have a profound impact on ICANN and the field of Internet governance more generally. The question of what is meant by the term "Internet governance" underlies everything in this debate. Beyond allocation of Internet names and numbers, the rest is about what people using the Internet may or may not do.

If African stakeholders are to have a real say in the discussion -- whether in the short term through the WSIS process, or in the longer term through ICANN and/or whatever new structures emerge -- they need a basic understanding of ICANN's role and functions and how it fits within the Internet governance area more broadly. Being generally informed on the issues may be as relevant to a ground-level NGO as it is to a government official -- even if the conclusion is that governments should leave Internet technical management to the technical community and devote scarce resources to more pressing demands, like healthcare, clean water, and education.

While the issues at stake have the potential to affect all current and future Internet users, the Internet governance field tends to be dominated by a handful of experts and interested parties, many of whom have dedicated their careers to understanding the political and technical minutiae involved. In Africa, only a few are in the position to dedicate fulltime attention to the dialogue, which occurs both online and in numerous face-to-face meetings around the world. For those who are interested in the issues but do not have the resources to follow the details, this brief explains the current status and key points of the discussion on ICANN and Internet governance as relevant to Africa. It sets out basic facts and describes opinions about the main issues for African stakeholders. It provides an overview of ICANN, noting what it does and does not do. And it describes the main points of the WGIG report, considering what the findings could mean for ICANN's future role in the management of Internet resources, and where the debate will play out leading up to, and beyond, the second phase of WSIS. Finally, it looks at views on why Africa should care about ICANN -- and why not.

Contents

Overview of ICANN

ICANN is a private, non-profit corporation based in the United States, charged with the oversight of key centrally-coordinated components of the Internet's underlying architecture. It is responsible for the management of the Domain Name System (DNS)[1], the allocation of Internet Protocol (IP) addresses[2], and the operation of the DNS Root Server System[3].

Back before the Internet was commercialized (when it was still relatively small, and primarily devoted to educational and military connections), the administration of Internet names and numbers was managed by a number of volunteers, and supported by funding from the US National Science Foundation and the US government. As more and more computers around the world got connected to it, the Internet grew into the global network we know today. By the mid-1990s, it became clear that more robust, stable, and inclusive management mechanisms were needed. ICANN was created in 1998 to operate as a decentralized, pluralistic institution to manage the DNS on behalf of the global Internet community, and independent of direct US government control.

ICANN was originally empowered through a Memorandum of Understanding (MOU) with the US Department of Commerce. More recently, it has taken steps to privatize and distance itself from the US government, but with limited success (see "points of debate", below). It executes on its mission by contracting with a number of companies and organizations that operate different parts of the DNS system[4].

ICANN's main decisions are made by an international Board of Directors, elected through a mixed process of selection from a set of function-specific Supporting Organizations and a nominating committee[5]. The Board's decisions are guided by the Supporting Organizations and a number of Advisory Committees, which themselves have a defined nomination process for membership[6]. National government representatives play a role in ICANN through participation in the Government Advisory Committee (GAC)[7]. Since 2003, the formation of an "At-Large" committee with regional sub-groups has been underway, to facilitate structured involvement of the Internet user community in ICANN activities and decision-making processes[8]. Public ICANN meetings are held three times per year in different regions; they are generally attended by members of the technical community, industry representatives, civil society organizations, active Internet users, and government delegates from a variety of ministries and departments. An idea for a new policy can come from anywhere in the Internet community, entering the ICANN system through the Supporting Organizations and Committees. Policy development processes are governed by a set of By-Laws and overseen by the Board. There are opportunities for public input through the At-Large groups, via government participation in GAC, and directly at meetings. ICANN staff members facilitate the process.

What ICANN does

- ICANN manages and coordinates the work of the companies and organizations that actually operate the DNS.
- It selects and authorizes Generic Top-Level Domains (gTLDs) and sets policies regarding their use[9]. Within the gTLD space, ICANN accredits and contracts with registrars (the organizations that sell domain name registrations to individuals, organizations, and companies), and sets standards and rules for uniform registration processes, wholesale prices, services, and the resolution of disputes[10].
- It designates who operates a particular Country-Code Top-Level Domain (ccTLD) and sets general technical policies regarding ccTLDs.
- It formally recognizes and oversees the Regional Internet Registries (RIRs), the five independent non-profit organizations that distribute IP addresses at the regional level.[11]
- ICANN also has some role in the development and deployment of new technical protocols for naming and addressing.
- ICANN implemented a uniform dispute resolution policy that standardized the way disputes are handled between parties claiming rights to a certain gTLD domain name.

What ICANN does not do

- ICANN does not have authority over the local policies or distribution of domain names within the ccTLD space.
- It does not create technical standards, or provide technical oversight to the Internet's physical architecture, or give technical advice to technicians dealing with infrastructure matters. Technical design and management of Internet architecture are handled by standards making bodies like the Internet Engineering Task Force (IETF) and the World Wide Web Consortium (W3C).
- ICANN lacks the power to resolve individual customer complaints or claims of entitlement to a particular domain name.
- Contrary to popular belief that ICANN "governs" the Internet, the body is not responsible for -- and indeed lacks any power to affect -- the broad range of public policy issues associated with the Internet, such as cybercrime,malicious hacking, cross-border financial transactions, censorship, child

pornography, spam (unsolicited commercial email), spyware, Internet gambling, and privacy.
- ICANN does not control ISP interconnection agreements.

ICANN:
Key points of the debate

From questions about its legitimacy as an authority in Internet governance, to concerns about the influence of governments and businesses on its processes, ICANN has been the subject of much controversy since its outset. Following are the current points of debate with the greatest relevance to the African Internet community.

⇨Lack of African capacity and resources to participate effectively in technical and political processes

The last few years have seen a growing consensus that international institutions need to be more transparent and inclusive, and they must engage with stakeholders as part of their policy-making processes. Several organizations -- ICANN among them -- have responded by opening their doors to civil society groups and disseminating their work more openly to reach a wider audience. Websites, online discussion lists and other ICT tools are ushering in this new era, and raising the bar for the kind of stakeholder engagement that is possible. And many funders have stepped up with financial resources to support stakeholder groups to send representatives to international meetings. But getting stakeholders to show up at a meeting or sign up to an online discussion is not enough. For international institutions to succeed in involving stakeholders in their processes, it requires that groups and individuals be in a position to participate effectively. Effective participation requires that they be familiar with policy-setting institutions and how they work, and they have at least a basic understanding of the issues and how they are affected by them.

The lack of capacity and resources to participate in technical and political policy-making processes is arguably the most critical issue for Africa in the discussion of ICANN and Internet governance more generally. ICANN tends to be dominated by big companies and powerful governments that are represented at the meetings by leading experts in the field who know how to lobby effectively for their interests and views. In order for African countries to influence policies concerning the management of DNS and its related functions, their representatives need to be better prepared on the issues, with depth of knowledge about how the Internet works, how the DNS is structured, who the main players

are, and where the political tensions lie. And African representatives must participate consistently, so they can build their expertise along with their network of contacts. Initiatives like CIPESA and others are aimed at helping to give stakeholders the information they need to take advantage of the increasing opportunities to participate. At the same time, some question whether devoting scarce resources to building capacity in the area of Internet technical coordination is a worthwhile investment for countries facing more pressing matters.

How can African countries increase their meaningful participation in international ICT policy-making processes?

Because of new technologies there is an unprecedented opportunity for widespread stakeholder participation, but two conditions are necessary: (1) stakeholders must be informed and interested, and (2) they must be able to use the technology to participate. These pre-conditions do not currently exist in most developing countries. This issue has been under discussion for a long time, and was perhaps best articulated by the *Louder Voices* report in 2002, which looked at strengthening developing country participation in international ICT decision-making.[12] Practical limitations make it difficult for African stakeholders to participate in meaningful ways in existing policy-making systems: from a lack of technical expertise, time, and the financial resources needed to participate in policy-making processes, to the fact that so much international policy-making takes place in Northern-based institutions. There is no quick fix for these issues. Improving African participation is something that needs to be accomplished across all sectors (government, business, civil society, academic institutions, and technical community), through education and awareness-raising on the one hand, and better funding mechanisms on the other. These are systemic issues that require a long-term view in solutions. Initiatives like the Catalyzing Access to ICTs in Africa (CATIA) program have taken up this issue, including through support to efforts like the Collaboration on International ICT Policy-Making that has produced this briefing.

⇨Control of ccTLDs and registries

Some experts point out that building an effective Country Code Top-Level Domain (ccTLD) registry should be a high priority for African countries that want to grow their Internet industry. If implemented effectively, a ccTLD is a valuable national resource that can give a local identity to websites on the Internet. And a well-run ccTLD institution that is sustained as part of a local market can also bring

other benefits, such as providing a home for the local technical community to get trained and build businesses. ICANN (or its predecessors in the early years of the DNS) has assigned the responsibility to administer a particular ccTLD to a company, university, government agency or individual in the country that is technically competent to manage the system. However, beyond the act of recognition, the ICANN role ends and decisions are made at the country level. There are a number of questions around the selection of the ccTLD managers, what should happen if things go wrong at the country level, and who decides when something has "gone wrong" that requires intervention. The bottom line is that ICANN must pick good institutions to run the ccTLDs, and it needs mechanisms for dealing with disputes when they arise. That requires ICANN to have institutional competence to handle these kinds of issues, with sensible policies that can be followed to a decision; this in turn requires effective local representation be present on the ICANN staff and committees to develop and review such policies and processes. Some agreed principles could also help harmonize the system across countries. Many governments have no rules about the management of the ccTLD resource; where they do, some argue that divergent national agendas could fracture the global network. In Africa, the management of ccTLDs varies widely, from the highly-structured .za system in South Africa, to the .so domain of Somalia that at present is not operational.

⇨ Management of gTLDs

Domain names within a Generic Top-Level Domain (gTLD) must be registered through ICANN-accredited registrars or their resellers, which charge an annual fee for registration and related services. In the largest gTLDs (.com, .net, .org, .info), fierce competition at the retail level has resulted in annual registration fees dropping to around US$8 per year. Most gTLD registries are operated by US corporations.[13] As new gTLDs are added, organizations can submit proposals and compete for accreditation; selection criteria focus on experience, security and scale. Currently no African organizations are in a position to meet these requirements; however, competition in the market has succeeded in making gTLDs widely available around the globe at relatively low cost.

⇨ GAC influence on the ICANN Board

Originally envisioned as taking an advisory role, national governments have increasingly gained influence on ICANN's decisions through the Government Advisory Committee. The GAC itself has been criticized as poorly-defined, closed, and inaccessible, and its role in ICANN

is the subject of much controversy. The issues discussed here include: whether the government agencies involved in the process are sufficiently well-informed on the issues to participate effectively; the appropriate role for national governments in managing Internet architecture; the balance of power among the national governments that are most actively involved; whether GAC involvement unduly subjects ICANN processes to political vagaries of national governments; and the risk of involving governments whose motives are inconsistent with the core values of the Internet community. Many feel the national government role should be supervisory only, while others argue it should be further formalized within ICANN processes.

⇨ US domination of ICANN processes through contract law and oversight functions

At the moment, the US government still has a high but diminishing degree of authority over ICANN's work, through terms set out in the original MOU that give it a final say in certain decisions, and linked to ICANN's US legal status. An important aspect of this authority is US oversight of the root zone file.

Controversy over the root zone file

The DNS Root Server System lies at the heart of the domain name system, distributing to the world the DNS root zone file. The root server system consists of 13 computers that are operated by uncompensated volunteer organizations that assumed those responsibilities in the pre-commercial days of the Internet. Some of the root server operators are directly within the effective or contractual control of the US government, but most are not. Currently the root server operators accept the special role of the US Department of Commerce to approve changes to the root zone file, and therefore, as a practical matter, any additions or deletions to it require its permission. Thus, the US government may have effective power to trump ICANN and act unilaterally to change the list of registries comprising the Internet's DNS. However, to date, the US government has respected the decision-making processes of ICANN and its predecessors, so there has never been a crisis that would test whether the US government has the practical ability to exercise control over the DNS root zone file.

Many experts argue that fears about US control are groundless, because any attempt by the US government to exercise unilateral control requires the consent of the DNS root server operators to be effective. If the US government abused its authority, the argument goes, the fragile consensus at the heart of the DNS would shatter, leading to a divided Internet and, to the

detriment of everyone, technical chaos. In addition, the power of the non-US root server operators has been strengthened in recent years, due to a set of new technical solutions that help to balance the situation. Specifically, these DNS root server operators have deployed 103 clones of the root servers operating around the world (including in Kenya and South Africa). Like their parents, these clones are beyond US control (and their numbers are growing rapidly). Installed as an initiative of the DNS root server operators to increase the overall stability and speed of DNS resolution, these clones effectively increase the ability of the non-US-controlled root server operators to refuse arbitrary and unilateral decisions by the US government. Should ICANN or the US do something too radical, the root server operators could ignore it, though that the potential price of dividing the globally unified Internet.

The US government's previously-stated intentions to internationalize and privatize ICANN were expected to result in full independence for the organization when the current MOU is slated to end in 2006. But recently, the US has made conflicting statements that have raised uncertainties about its willingness to relinquish power. The US Department of Commerce cited concerns about security and the stability of the network as reasons that it must continue in its current supervisory role. But some argue that the only way to ensure security and stability is through internationalization, where everyone treats the Internet as a global resource. If the US government behaves as if the Internet is a US asset, other governments can be expected to take similar positions with their own national sovereignty interests in mind, which is likely to lead to fragmentation of the Internet. Recently, concerns about US domination of ICANN have been in the spotlight. In the 11th hour of approval for the pending .xxx TLD, the US government stepped in and requested that ICANN delay its decision. While some conservative governments (who had also voiced concerns through the GAC) agreed with this US move, it was a clear demonstration of US clout that made many uncomfortable.

Almost anyone who follows the discussion agrees that the US government needs to back away from ICANN control. And most agree that ICANN and the DNS need some kind of oversight, but correct shape of that and proper allocation of responsibilities are highly debated. There are many questions about how to set limits on oversight responsibility and how to enforce those limits. Some suggest that internationalization means involving more governments (for example, through the GAC), while others argue that an international agreement which sets out basic rules and judicial processes for oversight is the more appropriate way to internationalize. And while technical solutions are a crucial element of the solution, there is recognition that they must be backed by policy and law. Some experts feel that the real problem is not ICANN itself, but the concentration of power that could result if its decentralized structure is not maintained; they feel that the current situation -- where ICANN's ultimate authority and control is ambiguous -- is preferable to a structure with more stability through government controls, but without accountability or competition.

⇨ Internationalized Domain Names (IDN) that support other languages and character sets

Most top-level domains and domain names are based on words that use the ASCII [14] character set, which is based on the Roman alphabet. Work on internationalizing the Domain Name System requires deployment of technical standards that allow users to type a domain name using a different language or character set. The technical solution for internationalized domain names or (IDNs) allows any character in any language to be used as a domain name. However, in the Internet's global environment, spanning many countries and regions where users will seamlessly switch between an ASCII/Roman-alphabet-based language and a non-Roman-alphabet/non-ASCII-based language, the technical solutions require sensible and consistent resolution of a vast range of policy problems. For example, same-looking characters appear in many languages, making it easy to "spoof" (or fake) domain names using characters that are different but look alike. So, for example, a user will have no way of knowing whether the "A" in aol.com is the original ASCII name registered to American Online, or a domain using a Greek A or a Cyrillic A that may be registered to someone else. Building a system to fully support IDNs will require registration rules and regulations, as well as the deployment of updated browser and email software among users that is capable of recognizing IDNs. Some question whether the costs of implementing such a system are worth the benefits, arguing that the world is moving toward the widespread adoption of a few main languages, making IDNs are unnecessary. Others point out that the Internet gives unprecedented opportunities for diversification and an environment where even the smallest languages can now thrive, and without IDN the potential for the network to fulfill its potential will be lost.

The need for acceptance and promotion of African languages is an issue getting wide attention today. So it is no surprise that the development of IDNs gets considerable attention in Africa, where some 2,035 languages and numerous non-Roman character sets are in use. African governments are under pressure to

ensure that the linguistic needs of the continent are met, and its heritage protected for the future. Many argue that if the Internet is ever to be truly extended to reach the majority of the African population, Internet standards must be implemented in a way that allows diverse languages and cultures to flourish. An African Union program, the Académie Africaine des Langues [African Language Academy] (ACALAN), is driving work in the context of WSIS to encourage the use of African languages and raise the profile of linguistic policy.

⇨ Allocation of IPv4 and IPv6 addresses

There are debates around the policies that govern the allocation of IP addresses. [15] In the early days of the Internet, the majority of IPv4 addresses were allocated to a small number of academic, governmental, and commercial organizations in the US, where most Internet activity was based. During this era, these organizations received large blocks of addresses, whether or not they were ready to use them. This has resulted in many IPv4 addresses being held by organizations that are not using them and a legacy of imbalance in the distribution of IPv4 addresses. Current policies do not encourage corrections in the imbalance, because secondary trading in IP address allocations is not allowed, and there are no incentives for those who have unused addresses to return them to the system for re-allocation. However, now IP addresses are assigned to ISPs by regional Internet registries, such as AfriNIC in Africa. These registries follow policies by which any ISP can get any amount of IP addresses that it needs, provided that it can document that its needs are real. Any African ISP can get IP allocations from AfriNic on the same terms that any other ISPs can get IP allocations.

IP address allocation is important for other reasons. Perhaps most important is that if too many addresses are added to the system before routing capabilities (around the world) are ready to handle it, there is a risk that the Internet could reach a point where it can no longer effectively handle the routing. This would affect the Internet's performance dramatically. And it is a potentially crucial matter for Africa, because if the routing system starts to break down, the first places to feel the pinch will be remote networks and users that may not be using the latest router technologies and which are likely to be lower priority for the major service providers. This is why IP address allocation is currently performed according to the principle of aggregation - meaning that IP addresses are grouped together as they are assigned, which massively simplifies the task of Internet routers. Thus, Africa has an interest in both (1) slow, incremental growth of the Internet's IP address space; and (2) sensible allocation policies based on aggregation, which

together will allow local infrastructure development to keep pace with the growth of the global Internet.

Government control of IP allocations

The current system allows ISPs in all countries to get whatever IP addresses they need, independent of national boundaries. The International Telecommunications Union (ITU) has proposed a new method for IP address allocation that would involve national authorities and spread block IPv6 allocations across nations. This is relevant to Africa, where nations that are not ready to use the allocations now could nonetheless hold them for later use. However, many commentators point out the risks that such a system would erect national boundaries onto the global network, and they highlight the problems that could entail. For example, putting address allocations into the hands of national governments would give them the power to unfairly allocate addresses only to an incumbent telecommunications provider and squeeze out competition (as South Korea has done). Government control over IPv6 allocation ultimately means government control over who can get access to the Internet, and would strengthen governments' abilities to engage in censorship and surveillance.

Taking the Internet governance discussion beyond ICANN

International discussions on Internet public policy beyond ICANN's purview have been percolating for years on issues such as the control of illegal and harmful content, privacy and data protection, security and identity theft, intellectual property rights, spam, cybercrime and others, in bodies like the Organization for Economic Cooperation and Development (OECD), the European Union, the Council of Europe, and the World Intellectual Property Organization (WIPO). And talk about the need for an overarching international agreement to deal with some or all of these issues under one umbrella has been heard before. However, the first phase of the World Summit on Internet Society in Geneva in 2003 put the discussion of broadening the field of Internet governance -- and taking it beyond ICANN -- firmly on the table.

The Working Group on Internet Governance (WGIG) was set up by the UN Secretary-General in October 2004 following instructions from the first phase of WSIS to "investigate and make proposals for action, as appropriate, on the governance of the Internet by 2005". The WGIG was comprised of 40 members, acting in their individual capacity, from several countries and sectors (business, government, civil society and academia).

Numerous papers drafted around this time aimed at offering the penultimate word on Internet governance to frame the work of the WGIG. There are too many to highlight them all here (although a Google search on "Internet governance" and "policy" will elicit a long list). However, one worth mentioning is *Internet Governance: The State of Play*, published by the Internet Governance Project in September 2004. [16] The paper looks at the area with a matrix-based approach, examining different definitions, traits of the Internet, governance functions, and actors involved. The paper reminds readers about two points that make achieving consensus on a global approach to the Internet tricky. First, the global nature of the Internet challenges concepts of traditional national boundaries and makes application of national jurisdictions difficult. Second is the question of whether the focus of policy -- and, effectively, government control -- should be on the senders and receivers of information who use the network, or on the network infrastructure itself as a channel for information. The current system is founded on the notion of end-to-end connectivity, meaning that the Internet is a highly decentralized network that allows every computer on the network to talk to every other computer directly, worldwide. This makes the network unsuited to act as a control mecha-nism, and leaves governments to deal with the behavior of Internet users themselves. Many experts feel that this "neutral channel" approach to Internet governance has allowed the Internet to grow into the successful world-wide network we know today, and that this aspect should be preserved. A move toward government control of the channel itself would dramatically change the Internet, allowing for the possibility of stronger and more comprehensive controls of the network. The paper urged the WGIG to address this issue by formalizing an agreement on the appropriate focus for Internet policies (i.e., whether to focus on individuals' behavior or on the infrastructure of the Internet).

The Working Group on Internet Governance report

The WGIG met four times and released its report in June 2005 as part of preparations for negotiations at the second phase of the WSIS. The report looks at definitions of Internet governance, identifies relevant public policy issues, and assesses the adequacy of existing governance mechanisms. It outlines roles and responsibilities of various stakeholder groups (governments, the private sector, civil society, the technical and academic communities, and existing international organizations). It makes recommendations on Internet governance mechanisms, considering the need for stakeholder dialogue, global oversight, institutional coordination, and regional and national coordination. Finally, the report makes recommendations on specific steps needed to address the public policy issues it has identified.

The most important conclusions that can be drawn from the report are:

- *Internet governance is not just about ICANN.* The WGIG drafted a working definition that broadened the concept: "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." The report goes on to say, "...for the avoidance of doubt, Internet governance is not just Internet names and addresses, issues dealt with by ...ICANN, but also includes other significant public policy issues, such as critical Internet resources, the security and safety of the Internet, developmental aspects and issues pertaining to the use of the Internet."
- *Internet governance can be divided into four key public policy areas:*
  1. Issues relating to infrastructure and the management of critical Internet

resources;

2. Issues relating to the use of the Internet including spam, network security and cyber crime.

3. Issues relevant to the Internet but with a wider impact than the Internet and existing organizations such as intellectual property rights.

4. Issues relating to the development aspects of Internet governance in particular capacity-building in developing countries.

- *Issues now under the purview of ICANN are among the highest priorities for the WSIS.* The report iden- tified allocation of domain names, IP addressing, and administration of the root zone files and system as issues for immediate attention.

- *A number of issues that fall within the broader definition of Internet governance (and beyond the purview of ICANN) are also high priorities for the WSIS.* The report listed interconnection costs; Internet stability; security and cyber-crime; spam; intellectual property rights; data protection and privacy rights; consumer rights; and multilingualism among the other issues for consideration by the WSIS.

- *Freedom of expression is important.* The report underlined the importance of any Internet governance mechanisms preserving freedom of expression as outlined in the Universal Declaration of Human Rights and in the WSIS Declaration of Principles.

- *Involving developing countries is crucial.* The "development dimension" was highlighted repeatedly in the report, including the need for "meaningful participation" of developing counties and the problem of their overall lack of capacity to participate effectively in international ICT policy-making processes.

- *Stakeholders must be involved, but the best way to involve them is unclear.* The roles and responsibilities of different stakeholder groups were outlined in some detail, and the report called for stakeholders to be put on "equal footing on all Internet governance-related issues". But the report did not clarify the actual mechanisms that should be used to make it possible for the various groups to participate in international policy-making processes.

- *Internet governance mechanisms should be more transparent, accountable, and multilateral than those currently available, but more dialogue and debate is needed to decide upon a specific way forward.* The WGIG called for a new "forum" for stakeholder dialogue, and suggested some possible parameters for its functions. It also proposed four possible organizational models that could

provide governance and oversight structure, which give variations on the UN role, the ICANN role, and mechanisms for including stakeholder views.[17] But it called for more discussion of the issues in order to map concrete next steps.

WGIG report: key point of the debate

Even though the WGIG report paints a cohesive picture of the Internet governance landscape, the Group admits in its report that there are diverse opinions on the topics covered and that even within its ranks there was disagreement on many points.[18] The key point of the debate may boil down to one question: "ICANN or UN?"

⇨Decentralized v. centralized control of Internet architecture

Questions around whether ICANN or the UN is the best place to house "Internet governance" forms the heart of the debate about the WGIG report and the future of ICANN. What should happen to ICANN? Will changing ICANN solve the problem? Should the UN play a role? At this point pretty much everyone agrees that it is important for Internet governance to be conducted in a transparent, pluralistic and democratic way, but there are differing views on what this means, how it can be achieved, and which actors are to be trusted to take it forward. Even though ICANN's mandate is narrow (the technical coordination of the domain name system), its role is best understood as a metaphor for decentralized control. In other words, when we say "ICANN vs. UN" in the context of Internet governance, what we mean is "decentralized control where authority is shared by many and dominated by none vs. centralized control by governments acting through a treaty organization."

This debate turns on how "Internet governance" is defined. The WGIG report has taken the concept of Internet governance beyond the original mandate of ICANN and gives attention to a wider array of issues; but nonetheless the WGIG recommendations focus in large part on reform in areas currently covered by ICANN. So the question of what to do about ICANN hangs in the air. Even the mildest model proposed would involve changes to the ICANN system. But it is not clear that the changes suggested so far would fix the problems with ICANN without creating new, and bigger, problems. For example, many commentators believe that the creation of a new oversight body linked with the UN would make the GAC unnecessary, and should therefore replace it. However, others wonder why a new, more formal body could be

expected to be any more open, reasonable, or representative than the current GAC structure.

⇨Achieving transparency, pluralism and democracy with legitimacy

The questions here focus on whether the current ICANN-based system of decentralized self-regulation is sufficient and legitimate for managing the basic Internet architecture, or do concerns about national sovereignty justify a move to a UN-linked or UN-led body to take control. ICANN has claimed to be a bottom-up democratic organization (and there is clearly evidence that the good intentions were there for that to happen); however, it has failed in many respects. Due to lobbying and business involvement, and uneven representation of developing countries, it is unrealistic to say that ICANN is transparent, pluralistic or democratic either. However, UN bodies have not generally been characterized by transparency, pluralism, or democratic decision-making either, and there are fears that the involvement of the UN in ICANN matters will make the decision-making process slower and less flexible than it was before the WGIG. Moreover, transforming an inter-governmental body like UN into a multi-stakeholder body, as the WGIG is calling for, is unlikely. Even with its deficiencies, ICANN may stand a better chance on this point, even though most agree that further reform is needed for it to achieve the acceptable level of transparency and administrative fairness.

⇨Beyond Internet architecture, it is still a question of control

When you look beyond Internet architecture management, then the discussion shifts. No one is suggesting that the broader public policy issues beyond the purview of ICANN but now identified under the umbrella of Internet governance (such as privacy, security, intellectual property rights, or spam) should be controlled by ICANN. Yet there is still disagreement here about what is needed. Developing nations tend to see Internet governance as a function of national government, so they want to see its global control under a governmental body like the UN. But developed countries prefer the private sector-led approach that exists now, boiling down their position to an "if it ain't broke, don't fix it" attitude. Many fear that more government control will not only involve Big Brother-like control, but also hinder the development of the Internet which up to now has been largely driven by the private sector. (The experience of African countries with monopoly fixed-line telecom operators may be instructive: they typically have far fewer fixed lines than mobile phones or Internet users.) This leads many commentators back to the argument that

the Internet should governed, but in a decentralized way, not as a single entity. Countries have a monopoly on governance of the users who are based within their jurisdictions, so global governance could be achieved through cooperation and treaties at the international level.

⇨Ensuring the continued -- and more active -- involvement of civil society as the definition of Internet governance expands

The active involvement of civil society organizations is new to the international policy-making arena, and even though the door has been opened, their seat at the table can be precarious. Governments frequently exclude civil society organizations, sometimes because what they have to say can be difficult to hear. But the expertise that these organizations have to offer is crucial. And within discussions on public policy issues included as part of the broader definition of Internet governance, there is a critical need for civil society organizations to remain informed, active, and vigilant -- and for governments to legitimize their role and listen to their views. For example, in any decisions on security, there are invariably trade-offs with privacy. Governments may consider solutions that reduce privacy to be "better" for their purposes (such as to protect citizens against security threats), and the private sector cannot be relied upon to protect privacy interests (because their main concerns are making solutions as inexpensive as possible while they incur the least liability risk). Civil society organizations can help keep citizens' rights for privacy and data protection at the forefront of the discussion. The WGIG report is likely to have the effect of expanding the field of Internet governance exponentially over the next few months, and it is important that civil society organizations remain actively engaged.

No agreement on Internet governance reached at PrepCom-3

Internet governance and the WGIG report were discussed at length at the third preparatory meeting for the upcoming WSIS, Prep-Com 3, held 19-30 September 2005 in Geneva.[19] While some broad points were agreed at the meeting, the debate remains largely unchanged. The participants reached consensus on many overview concepts, including the various roles of stakeholders, the wide range of public policy issues, and the importance of supporting development. However, the meeting failed to achieve its intended goal of finalizing the text that will be included in the documents for the Tunis WSIS. Notably, no concrete next steps for reform of the current system were

agreed.[20] Instead, work on Chapter 3 will resume in a further session of PrepCom-3 to be held just prior to the Summit in November. Ten input documents were submitted, which provide a basis for the continued discussion, including an "African common position on Internet governance" submitted by Ghana on behalf of the African Group.[21] The main sticking points still under negotiation are the management of domain names and IP addresses; oversight of the root zone file system; the governance/oversight mechanisms needed to improve the current system; and whether or not to create the proposed forum (including debated points around forum participation, mandate, procedures, funding, links to existing organizations, and ensuring legitimacy).

Should Africa care about ICANN?

The number of Africans using the Internet is increasing every year, but there is debate as to whether ICANN and Internet names and numbers management should be a priority issue for the continent. Many commentators argue that Africa should care about ICANN. Internet infrastructure offers Africa unprecedented access to information, participation, communication, and trade, and Africans are major stakeholders in the information society today and, perhaps more importantly, in the future. The argument follows that, therefore, Africa should have own decision-making responsibility to control its own Internet resources, such as domain names and IP addresses. And this view holds that the continent's participation in ICANN is essential if it is to accelerate the development of its technical communications infrastructure -- something that promises to benefit the poor every bit as much as the wealthy.

Many others disagree. They point out that only a limited number of local technical experts and civil society organizations need to be involved in ICANN and Internet architecture development in order to look after Africa's Internet development. Bolstering their efforts may be useful. But taking the ICANN debate to the general public and getting governments more involved may not only be a distraction from more pressing issues facing Africa, it could backfire and lead to government control of the Internet that is not in the best long-term interests of Africa's development efforts. These commentators point out that people in poor countries need to learn how to use the Internet and to use it to run businesses, share information, support healthcare and education and other important activities. Instead, many of their best-educated, wealthiest citizens are spending time in Geneva and other nice places, glad to have a seat at the table. But what is being accomplished at that table? The creation of additional bodies and working groups and advisory councils to give people a say is not the best use of scarce resources. Africa would do better spending its valuable time discussing issues related to the rampant disease, poverty and food security issues, among other pressing needs.

The answer may be that African Internet architecture development would benefit from the effective participation of a few well-informed and well-resourced people from each African country who have a role in Internet names and numbers management. But ground-level realities in Africa demand that the issue be put in perspective; even given the importance of Internet for the long-term development of the continent, ICANN's relevance to the general public may be small compared to other priorities.

Next steps

The second phase of the World Summit on Information Society will be held in Tunis on 16-18 November 2005. For information on registration, agenda, or background docments, see http://www.itu.int/wsis/tunis/index.html. A number of parallel events open to the public are being organized in conjunction with the Summit during 14-19 November. For further information see http://www.itu.int/wsis/tunis/events/index.html.

ICANN holds meetings approximately three times a year in locations around the world. The next meetings are scheduled for: 30 November-4 December 2005 (Vancouver, Canada), 27-31 March 2006 (Wellington, New Zealand), 26-30 June 2006 (Marrakesh, Morocco) and 30 October-3 November 2006 (Latin America).

African involvement in WSIS processes on Internet governance

A few African groups have been involved stirring stakeholder discussion and contributing input to WSIS processes on Internet governance, including a few at the local and national level.[22] Key regional initiatives include:

- Second African Regional Preparatory Conference for the WSIS, Workshop on Internet governance, Accra, Ghana, 28 January 2005; organized by the UN Economic Commission for Africa (UNECA), the Ghanaian government, and donors. The meeting discussed public policy issues and barriers to access, Internet resource management and technical issues, public and stakeholder participation, economics of Internet governance, intellectual property rights, and challenges and opportunities for Africa's role in the global policy-making process. There has been a call for continuation of this consultation process in Africa. Deliberations highlighted domain name management as a key issue for the continent. There was a call for a registry to manage the .ng ccTLD (which is currently managed in the US).

- African debate on Internet Governance, an online discussion organized by UNECA, 7-28 May 2005. It ran in several African newslists and was moderated by ECA staff and the African members of the WGIG. Using the questionnaire developed by the WGIG secretariat, African stakeholders debated the various issues and came up with positions based on the   needs of the continent.[23]

- African ICT Ministers met in Dakar, Senegal on 5-6 September 2005 to discuss Africa's common position on Internet governance. The   resulting Dakar Resolution of 7 September 2005 called upon African nations to bring a   unified position to the third preparatory meeting for the WSIS (held 19-30 September 2005   in Geneva, see more below). Toward that end, it highlighted several key recommendations intended to shore up Africa's approach to Internet governance.[24] With respect to ICANN issues, it called for a stronger role for the GAC, and internationalization of root server management.

ICANN and Africa

Until recently, DNS and IP addressing on the African continent was largely driven and managed by three technical groups: the African Network Information Centre (AfriNIC),[25] the Africa Network Operators' Group (AfNOG),[26] and AfTLD.[27] Increasingly, African stakeholders are also getting involved ICANN through the participation in the Government Advisory Committee, and the newly-formed Africa At-Large Regional Organization (AFRALO). The current ICANN Board includes two members from Africa: Mouhamet Diop (Senegal) and Njeri Rionge (Kenya).[28] There are 18 African countries currently represented on the GAC: Botswana, Cameroon, Democratic Republic of Congo, Egypt, Gambia, Ghana, Kenya, Malawi, Mauritius, Nigeria, Rwanda, Sénégal, South Africa, Sudan, Tanzania, Tonga, Tunisia, Uganda.

- The Nairobi Declaration (a Statement on ICANN evolution and reform from the East African Internet Forum in August 2002) was an early call for ICANN to give more attention to Africa.[29] It requested technical assistance, training and funding be directed to support   African efforts to administer its own Internet infrastructure.

- After a lengthy process, AfriNIC's was recently approved to become the fifth Regional Internet Registry. AfriNIC has centers of technical and administrative operations in Mauritius, Ghana, South Africa, and Egypt, which share the work and technical responsibilities. AfriNIC represents a major accomplishment for African Internet organizations, which now have local control over a key resource (IP address allocation) within a global framework. The challenge now is for AfriNIC to provide high-quality service to Internet service providers across its region, and to establish itself as responsible actor that reflects the local needs of the African Internet community, and involves stake holders in its decisions in a transparent, pluralistic, and inclusive way.

- Linked to the AfriNIC approval, ICANN has stated an intention to establish an African regional presence that would: support and engage local community members on issues of concern to the region; interact with regional governments; provide support for AfriNIC; and facilitate local input and liaison for ICANN's Supporting Organizations and Advisory Committees.[30]

- ICANN's At-Large Advisory Committee held an outreach workshop in Accra, Ghana on 1 February 2005 in conjunction with the Africa Regional Preparatory Conference for WSIS. With a goal of promoting effective participation in AFRALO, the workshop offered a brie-

fing from African experts on DNS and IP addressing basics, the role of ICANN, and how ICANN works.

- The following ALAC members appointed by the Board will serve until a Regional At-Large Organization (RALO) is established in their respective regions and the RALO elects its own members to the permanent At-Large Advisory Committee: Pierre Dandjinou (Benin) and Clement Dzidonu (Ghana).
- In addition, a term member from Africa holds the position from 16 June 2003 to conclusion of the Annual Meeting 2005: Sunday Folayan (Nigeria), CEO of General Data Engineering Services [31]
- As the Africa At-Large Regional Organization gets underway, there are currently three groups certified as At-Large Structures in Africa, and two applications are pending [32]:
  - Currently certified: Moroccan Internet Society, Anais.AC, Sudan Internet Society, ISOC DRC (Congo)
  - Pending: African Youth Foundation, Nigerian Internet Users Coalition (NIUC)

2004 ICANN Annual Meeting in Cape Town

Anyone interested in ICANN's activities can attend its meetings, but the lack of resources limits African participation. The Cape Town meeting in December 2004 was specifically intended to bring more African stakeholders into ICANN processes. Over 735 participants from 91 countries took part in the gathering, including 25 African countries. Activities at the Cape Town meeting most relevant to Africa include: [33]

- A workshop on the Internationalized Domain Name (IDN) issue focused on the integration of African languages and their character sets for worldwide use in DNS addresses, including consideration of both technical and cultural aspects.
- The At-Large community held a number of sideline meetings to raise awareness and engage African Internet users and participated in workshops on WSIS and the Internationalized Domain Name issue. Concerns were raised that opening the door to the At-Large community is not sufficient to enable African stakeholders to participate effectively in ICANN processes, but more active support and encouragement is needed.
- At a meeting to review WGIG activities, a number of African leaders had an opportunity to highlight Internet issues unique to developing countries.
- African representatives to the GAC from South Africa, Djibouti, Senegal, Sudan, Gambia and Tanzania held a regional forum as part of the general GAC meeting.

- ICANN reaffirmed its previous provisional approval of AfriNIC's application as the Regional Internet Registry for the Africa (which was subsequently finalized in April 2005).

East and Southern Africa ccTLD management

Angola -- .ao
Faculdade de Engenharia da Universidade
Agostinho Neto
Joao S. Teta, jteta@nic.ao
http://www.dns.ao/

Botswana -- .bw
University of Botswana
Gary Northfield, garyn@btc.bw

Djibouti -- .dj
Societe des Telecommunications
Internationales de Djibouti (STID)
Henri Ramirez, brunet@intnet.dj
http://www.intnet.dj/

Ethiopia -- .et
Ethiopian Telecommunications Corporation
Asfaw Hailemariam, asfawhm@telecom.net.et
http://www.telecom.net.et

Kenya -- .ke
Kenya Network Information Center (KeNIC)
KeNIC Admin, admin@kenic.or.ke
http://www.kenic.or.ke

Lesotho -- .ls
National University of Lesotho
Sello Lebeko, ll.sello@nul.ls

Madagascar -- .mg
Network Information Center Madagascar (NIC-MG)
Hajanirina Ramboasalama, ramboa@nic.mg
http://www.nic.mg

Malawi -- .mw
Malawi Sustainable Development Network
Programme
Dr. Paulos B. Nyirenda, paulos@sdnp.org.mw
http://www.registrar.mw

Mauritius -- .mu
Internet Direct Ltd
Administrator, admin@nic.mu
http://www.nic.mu/

Mozambique -- .mz
Centro de Informatica de Universidade
Eduardo Mondlane
David Bila, david@nambu.uem.mz

Namibia -- .na
Namibian Network Information Center
NA Domain Administrators, dns-admin@na-nic.com.na

http://www.na-nic.com.na/

Rwanda -- .rw
NIC Congo - Interpoint SARL
Albert Nsengiyumva, admin@nic.rw
http://www.nic.cd/

Seychelles -- .sc
ATLAS (Seychelles) Ltd.
Muditha Gunatilake, muditha@seychelles.net
http://www.nic.sc/

Somalia -- .so
World Class Domains
Mahamud Hagi Abdulahi Mahamed Beldaje,
somaali@aol.com
http://www.wcd.so/

South Africa -- .za
ZA Domain Name Authority
Chairperson, chair@zadna.org.za
http://www.zadna.org.za

Swaziland -- .sz
University of Swaziland
Ralph Nkambule, dns@sispa.org.sz
http:// www.sispa.org.sz

Tanzania -- .tz
University of Dar Es Salaam
Beda Mutagahywa, bmutag@udsm.ac.tz
http://www.psg.com/dns/tz/

Uganda -- .ug
Uganda Online Ltd.
Charles Musisi, cmusisi@uol.co.ug
http://www.registry.co.ug/

Zambia -- .zm
ZAMNET Communication Systems Ltd.
Daniel Mpolokoso, daniel@zamnet.zm
http://www.zamnet.zm/domain.shtml

Zimbabwe -- zw
Telecommunications Regulatory Authority
(ERT)
Amos Bvudzijena,
amos.bvudzijena@zptc.co.zw

List includes sponsoring organization, administrative contact and URL for registration services (where available). For more information see the source: Internet Assigned Numbers Authority, Root-Zone Whois Information http://www.iana.org/cctld/cctld-whois.htm

African participation in the ICANN Government Advisory Committee

Botswana
Mr Gaositege Michael Kajane,
mkajane@gov.bw
Botswana Government Ministry of
Communication, Science and Technology

Cameroon
Mr Norbert Nkuipou,
norbert.nkuipou@ties.itu.int
Director of the New Information and
Communications Technologies Monitoring Unit

Democratic Republic of Congo
Mr David Mewa Mwanga,
davidmewam@yahoo.fr
Membre du Collège, Autorité de Régulation de
la Poste et des Télécommunications

Egypt
Eng. Manal Ismail (Ms), manal@mcit.gov.eg
Telecom Strategic & Technical Planning
Department
Ministry of Communications and Information
Technology

Gambia
Dr. Saidou S. Jallow, ssjallow@gamtel.gm
Head of Delegation, Department of State for
Communications, Information and Technology

Ghana
Mr Issah Yahaya, issah.yahaya@ties.itu.int
Deputy Director, Policy Planning, Monitoring
and Evaluation, Ministry of Communications

Kenya
Mr Michael Katundu, katundu@cck.go.ke
Principal Officer Information Technology,
Communications Commission Of Kenya

Malawi
Mrs Olive T. Chikankheni,
chikankheniot@malawi.gov.mw
Director, Department of Information Systems
and Technology Management Services

Mauritius
Mr Kemraz Mohee, ncb.intnet.mu
Executive Director National Computer Board
kmohee@ncb.intnet.mu

Nigeria
Dr. Moses Ubaru, MUbaru@nitda.org
Acting Director General, National Information
Technology Development Agency (NITDA)

Rwanda
Professor Clement Dzidonu,
dzidonu@ghana.com
Honorary Consul of Rwanda in Ghana

Sénégal
Mr Mouhamet Tidiane Seck,
tidiane.seck@die.sn
Directeur de l'Informatique de l'Etat

Mrs Diagne Ndeye Maimouna Diop,
mayediop@ucad.sn
Directeur de la coopération panafricaine dans
les NTIC

South Africa
Ms Ingrid Poni, Ingrid.Poni@wandoo.fr
Embassy of South Africa, Paris

Ms Palesa Banda, palesa@doc.gov.za
Manager, Departement of Communications

Sudan
Mr. Abdeldafie Mohamed Elhassan Elkhatib,
dafikhateeb@yahoo.com
Secretary General, Ministry of Information &
Communications

Tanzania
Mr John Andrew Mpapalika,
mpapalika@tcra.go.tz
Tanzania Communications Regulatory Authority
(TCRA)

Mr James Kilaba, kilaba@tcra.go.tz
Tanzania Communications Regulatory Authority
(TCRA)

Tonga
Mr Paula Ma'u, pmau@pmo.gov.to
Deputy Secretary Prime Minister's Office

Tunisia
Professor Faryel Beji (Mrs), faryel.beji@ati.tn
CEO Tunisian Internet Agency (ATI)

Uganda
Mrs Irene Kaggwa, ikargs@ucc.co.ug
Uganda Communications Commission

GAC Observers from Africa

Economic Commission for Africa
Mr Makane Faye, MFaye@uneca.org
Sernior Regional Advisor on ICT Policy
www.uneca.org

African Telecommunications Union
Mr Andrew Kawamara,
akawamara@yahoo.com
Counsellor Expert / Telecoms Operations

* This list includes all representatives of
African countries participating in the ICANN
Government Advisory Committee (GAC).
Source:http://gac.icann.org/web/contact/reps/
index.shtml.

Bibliography and recommended sources for further information

A great deal has been written about ICANN, and its origins, mission, achievements and short-comings. And recently much has been written about the UN WGIG. For further information, readers are encouraged to review the comprehensive work already done by many others, including several organizations and individuals that specialize in this area.

African sources and other essential reading on the topic

- *Africa At-Large Regional Organization (AFRALO)*, http://www.afralo.org/ -- Portal for the At-Large community of the Africa region, providing news, key resources, and interactive features for information sharing for individuals and end-user groups.
- *African Network Information Centre (AfriNIC)*, http://www.afrinic.net -- AfriNIC is a technical organization that manages the allocation of numerical IP addresses to African ISPs and users.
- *Africa Network Operators' Group (AfNOG),* http://www.afnog.org -- A forum for the exchange of technical information in Africa.
- *AfriDNS*, http://www.afridns.org -- This website is an aggregation of essential information on African domain names.
- *AfTld,* http://aftld.org/ -- This is a membership organization for administrators of two-letter ccTLDs   in Africa, such as .za, .gh, .sn, and .ke.
- *CircleID*, http://www.circleid.com -- A community discussion forum on Internet infrastructure and policy issues that publishes comments, articles and interviews by a range of experts and commentators in the field. An excellence source for opinions on the contentious issues, with strong coverage of Internet governance and ICANN.
- *ICANN website*, http://www.icann.org -- This holds the official reports and announcements on ICANN proceedings. A search on "Africa participation" is a good place to start to get the official word on African interaction with ICANN.
- *Internet Governance Project*, http://www.internetgovernance.org/ -- This project is comprised of a group of leading academics in the field who provide critical analysis on Internet governance issues, including formal contributions to WSIS, the WGIG, and debates at the international, regional and national levels. Regardless of whether you agree with everything they say, much of the analysis gives the best overview of the problems and potential solutions that we found.
- *ICANN Watch*, http://www.icannwatch.org/ -- An edited weblog project run by a group of US academics who are among the leading experts in the field. The postings offer commentary and criticism from a wide variety of perspectives. The "ICANN for beginners" section is notably useful as background information.
- *Working Group on Internet Governance*, http://www.wgig.org/, and especially the Report of the Working Group on Internet Governance, http://www.wgig.org/docs/WGIGREPORT.pdf.

Other useful sources that informed this document

- Formal submissions to WSIS from African stakeholders
- African Information and Communication Technologies (ICT) Ministers, Africa's Common position on Internet Governance, http://www.itu.int/wsis/docs2/pc3/contributions/co88.pdf
- Camaroon, http://www.itu.int/wsis/docs2/pc3/contributions/co57-fr.pdf
- Egypt, http://www.itu.int/wsis/docs2/pc3/contributions/co45.pdf
- Ghana on behalf of the African Group, http://www.itu.int/wsis/docs2/pc3/contributions/co16Add1.pdf
- Rwanda, http://www.itu.int/wsis/docs2/pc3/contributions/co47.pdf
- African debate on Internet governance, http://www.wgig.org/docs/Comment-AfricaCS-April.pdf -- Summary of online discussion in May 2005 organized by UNECA.
- African civil society and the WSIS, http://www.wsis-cs.org/africa/ -- This web portal provides background information and news on how African civil society is participating in the WSIS process.
- African ICT Policy Monitor, http://rights.apc.org/africa/ -- A web portal organized by the Association for Progressive Communications and targeted to the needs of African civil society organizations. It disseminates news, reports, and advocacy tools on ICT policy. The section on Internet governance has followed developments in ICANN, the WGIG, and at the national level in African nations.

- African Information Society Initiative - Discussion Forum, http://www.bellanet.org/lyris/helper/index.cfm?fuseaction=Visit&listname=aisi-l -- This online discussion forum hosts dialogue among African stakeholders on information society issues. Internet governance coverage is mainly focused on WSIS processes.
- Bret Fausett's ICANN blog, http://blog.lextext.com/blog/icann//index.html -- A weblog produced by a US attorney who has been actively involved in ICANN since its inception. He provides timely and informative news on, and opinions about, ICANN activities.
- Center for Democracy and Technology, Standards & Governance http://www.cdt.org/dns/ -- This website contains a comprehensive archive of materials related to ICANN issues and processes. A good place to find background materials, albeit frequently with a focus on US government, civil society and business perspectives.
- Dakar Resolution: Africa's Common Position on Internet Governance, 7 September 2005 www.uneca.org/aisi/docs/Dakar%20Ministerial%20Declaration%20rev1.doc.
- Internet Governance: A Grand Collaboration, UN ICT Task Force, edited by Don MacLean, 2004. http://www.unicttaskforce.org/perl/documents.pl?id=1392
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- Public participation in ICANN, A preliminary study, by John Palfrey, Clifford Chen, Sam Hwang, and Noah Eisenkraft, Berkman Center for Internet & Society at Harvard Law School, December 2003. http://cyber.law.harvard.edu/icann/publicparticipation/ -- This report is somewhat dated now, but is useful as a historical analysis of the extent to which ICANN achieved its stated goal of a representative and open decision-making process.
- Reframing Internet Governance Discourse: Fifteen Baseline Propositions, Memo #2 for the Social Science Research Council's Research Network on IT and Governance, William J. Drake, March 2004, http://www.ssrc.org/programs/itic/publications/Drake2.pdf
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- Who rules the internet? Understanding ICANN, Panos Institute, January 2005, http://www.panos.org.uk/files/wsistoolkit1.pdf
- WSIS Civil Society Internet Governance Caucus response to the WGIG Report, http://wsispapers.choike.org/wsis_igcaucus_wgig_final.pdf

End Notes

1 Domain names are human-friendly and easy-to-remember words for email addresses and website locations that the Internet uses as substitutes for numerical "IP addresses." An "Internet Protocol (IP) address" is a string of numbers that identifies computers connected to the Internet, allowing information to be exchanged between computers across the network. The "Domain Name System (DNS)" is the system that translates domain names into IP addresses. So for example, rather than typing an IP address like "192.0.58.58" into a browser to find the computer where a web site is hosted, a domain name like "www.cipesa.org" can be used to locate the website. Every name is registered in one of hundreds of authoritative databases in a decentralized system that links the name to its corresponding IP address; the DNS ensures that every Internet address is unique and that each domain name maps to the correct IP address. The DNS is divided up into a number of "Top-Level Domains" (TLDs), including generic domains like .com, .org, and .edu, and country domains like .za for South Africa, .cm for Cameroon, and .ug for Uganda.

2 IP addresses are allocated by ICANN to end-users through a system of not-for-profit organizations called "registries". The IP address registry for Africa is AfriNIC (see http://www.afrinic.org).

3 The "Root Server System" is a network of 13 powerful servers, synchronized computers that work together to point Internet traffic to the many lower-level TLD servers that direct requests and messages to the right computers. In order for a new Top-Level Domain to be recognized on the Internet, it must be included in the "DNS root zone file", a file that holds information about TLD servers which is mirrored by each of the root servers.

4 A full understanding of ICANN and its relationship to Internet governance must be put in the context of the historical development of the Internet, as it moved from research network to commercial infrastructure to the global communications network of today. In particular, it is important to appreciate the open and decentralized nature of the Internet's architecture and process of technological development. See the bibliography for recommended sources of additional information.

5 For the list of Board members, see http://www.icann.org/general/board.html.

6 These include the Address Supporting Organization (ASO), http://www.aso.icann.org; Country Code Domain Name Supporting Organization (CCNSO), http://www.ccnso.icann.org; Generic Names Supporting Organization (GNSO), http://www.gnso.icann.org; and Governmental Advisory Committee, http://www.gac.icann.org.

7 For a list of African representatives to the GAC, see Annex 1. For a complete list of GAC representatives, see http://194.78.218.67/web/contact/reps/index.shtml.

8 See the ICANN organizational chart for information on the Supporting Organizations and Committees, http://www.icann.org/general/icann-org-chart.htm.

9 The original gTLDs are: .com, .edu, .gov, .int, .mil, .net, and .org. ICANN has introduced these gTLDs: .aero, .biz, .coop, .info, .museum, .name, and .pro, .jobs and .travel. These gTLDs have been proposed: .cat, .post & .mobi, .asia, .mail, .tel, and .xxx.

10 For the full list of accredited registrars, see http://www.icann.org/registrars/accredited-list.html

11 The RIRs are: AfriNIC for the African continent, APNIC for the Asia Pacific, ARIN for North America, LACNIC for Latin America, and RIPE NCC for Europe.

12 Louder Voices, Panos Institute and the Commonwealth Telecommunications Organization (CTO), supported by the UK Department for International Development, Recommendations to the G8 Digital Opportunity Task Force, June 2002, http://www.catia.ws/Documents/database/Policyandregulation/Loudervoices.pdf.

13 For a list of gTLD registry operators see http://www.icann.org/registries/listing.html. For a list of resellers, see http://www.internic.net/alpha.html.

14 American Standard Code for Information Interchange, generally pronounced [_æski], (ASK-ee) is a character set and a character encoding based on the Roman alphabet as used in modern English (i.e the alphabet). ASCII codes represent text in computers, in other communications equipment, and in control devices that work with text. Most often, nowadays, character encoding has an ASCII-like base.

15 There are two kinds of Internet protocol addresses in use today: version 4 (IPv4) and the newer version 6 (IPv6). Remember that Internet Protocol addresses are the numbers that lie behind domain names, allowing each computer on the Internet to be uniquely identified so that it can send and receive information on the network. IPv4 addresses have been in use since the mid-1980s and IPv6 deployment began in 1999. IPv4 use still dominates, yet, there is considerable debate about how long the global pool of IPv4 addresses will last. Some argue that the explosive growth of Internet around the world will lead to early IPv4 exhaustion; others note that a variety of widespread technical techniques (such as network address translation, which allows ISPs to use a single public IP address for all the computers on its network) will allow the current pool of IPv4 addresses to be used indefinitely, even in an environment of rapid growth. Nearly everyone seems to agree, however, that IPv6, the new version of the Internet protocol, will not only solve the exhaustion problem, but incorporates advanced new features that will enable many more devices to be easily connected to the Internet. However, investment is required to upgrade hardware and software systems in order to take advantage of IPv6, and only a few countries and companies are making these changes in order to use IPv6 allocations (notably China and Japan). African ISPs still use IPv4 almost exclusively, and little investment has been made across the continent to update systems to handle IPv6.

16 See http://www.internetgovernance.org/.

17 Since publication of the WGIG report, a number of other models have been proposed by experts and groups actively involved in the process, and submitted to inform the WSIS processes.

18 A Background Report sets out areas of dissent on certain arguments and opinions; see http://www.wgig.org/docs/Background-Report.htm.

19 To find out who attended PrepCom-3 from your country, see the list of participants at http://www.itu.int/wsis/documents/doc_multi.asp?lang=en&id=1910|0.

20 Subcommittee A worked on Chapter 3 of the main document for Tunis, dealing with Internet governance. The curent version of the Draft Interim Report is available at http://www.itu.int/wsis/documents/doc_multi.asp?lang=en&id=2122|0.

21 All of the input documents are available at http://www.itu.int/wsis/documents/doc_multi.asp?lang=en&id=2135|2136|2137|2138|2139|2140|2141|2142|2143. The submission from the African Group is available at http://www.itu.int/wsis/docs2/pc3/working/dt17.pdf.

22 One good example is the Women of Uganda Network (WOUGNET) WSIS 2005 Online Forum: Paving the Way to Tunis, held 11 - 29 July 2005, see http://www.wougnet.org/WSIS/ug/WSIS2005/internetgovernance.html.

23 A summary of the debate can be found at http://www.wgig.org/docs/Comment-AfricaCS-April.pdf.

24 See the Dakar Resolution at www.uneca.org/aisi/docs/Dakar%20Ministerial%20Declaration%20rev1.doc.

25 AfriNIC is a membership organization for network administrators and Internet professionals; see http://www.afrinic.org.

26 AfNOG is a forum for the exchange of technical information; see http://www.afnog.org/.

27 AFtld is a membership organization for TLD administrators; see http://aftld.org.

28 Mouhamet Diop, CEO of NEXT SA, <mouhamet@next.sn>; and Njeri Rionge Co-Founder, Chief Executive Officer of Wananchi Online Limited, <njeri@wananchi.com>.

29 The Nairobi Declaration, August 2002, http://www.icann.org/committees/evol-reform/nairobi-declaration26aug02.htm.

30 See the ICANN announcement at http://www.icann.org/announcements/announcement-16sep04.htm.

30 Pierre Dandjinou, ICT Policy Advisor, SURF/UNDP <Dandjinou.Pierre@undp.org>, Clement Dzidonu, Professor of Computer Science and

31 Chairman, Department of Computer Science, Valley View University <dzidonu@ghana.com>, and Sunday Folayan, CEO of General Data Engineering Services and Chairman, Department of Computer Science, Valley View University <dzidonu@ghana.com>, and Sunday Folayan, CEO of General Data Engineering Services.

32 The application process is underway; for a current list of certified organizations see http://www.afralo.org/.

33 The ICANN newsletter covering the Cape Town meeting gives a summary of meeting discussions; see http://www.icann.org/newsletter/newsletterdec2004.pdf.

About CIPESA

The Collaboration for International ICT Policy for East and Southern Africa (CIPESA) is an initiative to help Africans to better understand the policy-making processes that affect them, especially in the area of information and communications technology (ICT) and development. Our objectives are to raise awareness about key issues, provide useful information to assist African participation in policy-making, and stir debate by sparking discussion and convening productive gatherings. The aim is to enable African interests to be more effectively represented in international policy fora, and international policy decisions to be more effectively translated into positive outcomes in Africa. CIPESA is a program of bridges.org (see www.bridges.org).

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For further information about CIPESA see www.cipesa.org, and contact:
Vincent Waiswa Bagiire, Director of the CIPESA Program
vincent@cipesa.org
Plot 30, Bukoto Street, Kamwokya, P.O. Box 26970 Kampala - Uganda
Tel: +256 31 280073, +256 41 533057, +256 41 533054

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