## Perspectives on the IANA Stewardship Transition Principles

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## **Executive Summary**

Key Internet principles – such as reliance on participatory bottom-up processes, emphasis on the stability and integrity of systems, and maintaining the open nature of the Internet – have enabled the Internet to serve as a platform for seemingly limitless innovation around the globe. These principles have been embedded in the way the critical technical coordinating functions of Internet identifiers – names, numbers, and protocol parameters, also known as the "IANA functions" – have been administered since the Internet's inception.

In 2014, the U.S. Government announced its intent to transition away from its legacy stewardship role in the administration of the IANA functions. It asked the Internet community to develop a plan to ensure oversights of the IANA functions continues to adhere to fundamental Internet principles after the transition.

In this document we discuss the origin and operational relevance of these principles to the IANA functions and show how they are reflective of broader Internet principles, which have been adopted and embedded through years of international consensus.

The purpose of this document is twofold: first, it is to provide a global context for these principles and to demonstrate that they are products of international consensus. Second, and perhaps more importantly, is to demonstrate that these are principles that are ingrained in the network's architecture. The Internet is a network of networks and, as such, there needs to be a structure that allows these networks to communicate and "talk" to one another. Historically, these principles have ensured this need is met, and have allowed for the seamless operation of the Internet. Specifically,

- The **Multistakeholder model** is a long-standing approach to the Internet's operations and governance that is at the heart of the Internet's global and operational growth;
- Accuracy, availability, and transparency in the administration of the IANA functions
  provides for the security, stability, and resilience of the overall Internet;
- The performance of the IANA functions should continue to be performed in a predictable, reliable, and responsive way in line with customer needs and expectations so that the system has the flexibility to respond and adapt to the Internet's rapidly evolving technology;
- Values like transparency, access and participation— all characteristics of a
  multistakeholder environment— are met and sustained via the open processes by which
  policies are set by the operational communities that interact with IANA.



## Introduction

On 14 March 2014, the U.S. Government's National Telecommunications and Information Administration (NTIA) announced<sup>1</sup> its intent to transition stewardship responsibility for the Internet Assigned Numbers Authority (IANA) functions<sup>2</sup> to the global, multistakeholder community. The Internet Society (ISOC), along with other key Internet technical organizations, welcomed the announcement and committed to engaging in the open, community-driven processes aimed at developing a stewardship transition plan.<sup>3</sup>

The formal start of the transition process represents many years of work and reflects the overall intentions of stakeholders around the world to globalize the IANA functions – and to do so in a manner consistent with fundamental Internet principles. While the 2014 NTIA announcement received widespread attention, NTIA's original intent to transition key domain name system (DNS) and technical coordination functions away from the U.S. Government was outlined in the 1998 Statement of Policy "Management of Internet Names and Addresses". The development of this policy statement was guided by consultations and public input, including over 430 written comments (amounting to some 1,500 pages) from public and private sector stakeholders around the world.

IANA, or the Internet Assigned Numbers Authority, is the name used to refer to the technical team that performs the administration, coordination, and publication of Internet identifiers. Some of these identifiers are *parameters*, such as those used by Internet protocols like HTTP; some of them represent *numbering resources*, like Internet addresses; and, others represent *domain names* in the DNS root zone. Regardless of the type of identifier, the IANA function ensures that values are managed for uniqueness and made available in publicly-accessible registries so there can be no confusion. IANA does not set policy; it is a "bookkeeping" function.

Key Internet principles, such as reliance on participatory bottom-up processes, emphasis on the stability and integrity of systems, and maintaining the open, multistakeholder nature of the Internet are not just important for the domain name system or the IANA functions. Nor are they specific to any one jurisdiction or regional context. They are fundamental characteristics that have enabled the Internet to serve as a platform for seemingly limitless innovation around the globe. It is important that the administration of the IANA functions continues to adhere to those principles, which are grounded in the history and origins of the Internet itself.

<sup>6 &</sup>quot;Overview and History of the IANA Functions," https://www.icann.org/en/system/files/files/sac-067-en.pdf



<sup>&</sup>lt;sup>1</sup> "NTIA Announces Intent to Transition Key Internet Domain Name Functions", 14 March 2014, http://www.ntia.doc.gov/press-release/2014/ntia-announces-intent-transition-key-internet-domain-name-functions
<sup>2</sup> For more information on the specifics of the IANA functions see http://www.internetsociety.org/doc/iana-functions-0 and

For more information on the specifics of the IANA functions see <a href="http://www.internetsociety.org/doc/iana-functions-0">http://www.internetsociety.org/doc/iana-functions-0</a> and the IANA official website at: <a href="https://www.iana.org">https://www.iana.org</a>

<sup>&</sup>lt;sup>3</sup> "Internet Technical Leaders Welcome IANA Globalization Process", 14 March 2014 <a href="http://www.internetsociety.org/news/internet-technical-leaders-welcome-iana-globalization-progress">http://www.internetsociety.org/news/internet-technical-leaders-welcome-iana-globalization-progress</a>

<sup>&</sup>lt;sup>4</sup> "Management of Internet Names and Addresses", http://www.ntia.doc.gov/legacy/ntiahome/domainname/6\_5\_98dns.htm

Specifically, the management of the DNS and global Internet registries during the early days of the commercial Internet embodied an institutional model based on bottom-up coordination and representation. This structure was premised on a decentralized, community-driven approach, as well as the early design choices of the technical community in the adoption and implementation of Internet standards. While some Internet coordination functions were overseen by entities funded by government research programmes, it was mainly individuals from universities, companies, and other private-sector organizations that led the efforts of the Internet's development.

The IANA stewardship transition reflects a continuation of processes that have remained true to these core principles, while evolving over time in an increasingly global Internet environment. The 2014 IANA transition announcement specified five evaluation principles that the IANA transition plan must meet:

- Support and enhance the multistakeholder model;
- Maintain the security, stability and resiliency of the Internet DNS;
- Meet the needs and expectations of the global customers and partners of the IANA services;
- Maintain the openness of the Internet; and,
- The transition proposal must not replace NTIA's role with a government-led or intergovernmental organization solution.

These requirements are grounded in principles that have proven their value in the operation of the Internet in the period since it emerged from its academic research roots and developed into the global network infrastructure we know today. Furthermore, these Internet principles have over time also become embedded though international consensus. For each of the NTIA's evaluation principles, we provide some background to explain how the concepts are rooted in the Internet's past, and how they apply specifically to a successful IANA stewardship transition.

In this context, the purpose of this document is twofold: first, it is to provide some (international) context for these principles. Our hope is to demonstrate that these principles are not tied to any specific jurisdiction or culture; rather they are products of international consensus. Second, and perhaps more importantly, these are principles that are ingrained in the Internet's architecture. The Internet is a network of networks and, as such, there needs to be a structure that allows these networks to communicate and "talk" to one another. Historically, these principles have ensured this need is met, and have allowed for the seamless operation of the Internet.



### **Evaluation Principle 1**

## Support and Enhance the Multistakeholder Model

Collaboration and inclusive participation have been a foundation of the success of the Internet since its inception. The underlying technical philosophy of the Internet rests on the notion of participation of separate and independent entities working together in a way that is flexible enough to meet evolving individual requirements, while also creating a system that benefits the broader whole.7

This philosophy was embedded early into the processes used for coordination and management of key Internet technical resources (such as regional Internet number resources coordination) and the development of Internet standards (particularly through the Internet Engineering Task Force), where any interested party could participate and collaborate in making the Internet work better.8 Indeed, the model of technical and stakeholder "collaboration" is one of the fundamental "invariants" of the Internet that has guided its successful evolution.

NTIA recognized and adopted this approach as part of its 1998 Statement of Policy which spoke of the need "to guide the evolution of the domain name system" by a reliance on "private, bottom-up coordination." 10 Over time, the guiding concept of inclusive participation and collaboration among all relevant stakeholders has come to be known as the "multistakeholder model."

The health of the Internet depends on inclusive and meaningful participation. With respect to the IANA functions specifically, the operational communities that establish policy for identifiers in IANA registries — the regional Internet address registries for IP number coordination, the IETF for the assignment of protocol parameters, and the Internet Corporation for Assigned Names and Numbers (ICANN) community for naming issues—all rely on participatory and open processes as their working methods. Anyone from anywhere who wishes to participate in the work of establishing policy for the coordination of Internet number resources, protocol parameters, and domain names may do so. This ensures that stakeholders wishing to be heard and to contribute their views have an opportunity to collaborate in finding solutions.<sup>11</sup>

In a public policy context, the benefits of the multistakeholder model have also come to be broadly recognized and supported internationally, regionally and locally. For example:

Op Cit, "Management of Internet Names and Addresses" <sup>11</sup> The RIRs (e.g. https://www.ripe.net/participate/meetings/ripe-meetings/ripe-63/information-for-newcomers), IETF (e.g. https://www.ietf.org/newcomers.html), and ICANN (e.g. https://www.icann.org/resources/pages/newcomers-2012-06-18en) also have programmes to help newcomers understand and participate in their processes.



<sup>&</sup>lt;sup>7</sup> For example, the open architecture networking principle on which the Internet is based was premised on the idea that there would be multiple independent networks connected with each other, rather than a single design mandate or a system that required centralized operational control. Each of the independent networks could be designed and operated in accordance with local requirements, while interconnecting with each other so information and resources could be shared. See "Brief History of the Internet" for a lengthier discussion (http://www.internetsociety.org/internet/whatinternet/history-internet/brief-history-internet)

8 See, for instance, RFC 3935, https://www.ietf.org/rfc/rfc3935.txt

<sup>&</sup>lt;sup>9</sup> Internet Society. "Internet Invariants: What Really Matters", http://www.internetsociety.org/sites/default/files/Internet%20Invariants-%20What%20Really%20Matters.pdf

- During both phases of the World Summit on the Information Society (WSIS) (Geneva, 2003 and Tunis, 2005) inclusiveness and consensus emerged at the global policy making level. The Tunis Agenda recognized the positive impact the diversity of actors can have in the evolution and growth of the Internet. Similarly, the outcome documents of the 2014 WSIS+10 High-Level Event noted that, "Since the WSIS process started, emphasis has been given to the multi-stakeholder approach and its vital importance in the WSIS implementation at the national, regional, and international levels..." 13
- The 2013 World Telecommunications/ICT Policy Forum (WTPF-13) adopted Opinion 5 that underscored the importance of "further implement[ing] multi-stakeholder practices" and invited Member States and other stakeholders to "explore means for greater participation in multistakeholder processes."
- Other key organizations, including the OECD<sup>15</sup>, UNESCO,<sup>16</sup> and the Council of Europe<sup>17</sup> have all committed to preserving and working towards enhancing an inclusive, multistakeholder method of working.
- In addition, the international NETmundial meeting in Sao Paulo concluded that "[...] a set of common principles and important values [can] contribute for an inclusive, multistakeholder, effective, legitimate, and evolving Internet governance framework and [...] that the Internet is a global resource which should be managed in the public interest."<sup>18</sup>
- At a regional level, the Inter-American Telecommunication Commission (CITEL) recognizes
  the multistakeholder model to encourage the coordination, planning and consensus among
  Member States "with respect to the defense and dissemination of the rights of users and
  consumers of telecommunication services" and "with respect to international public policy
  issues related to the Internet, including maintaining an open Internet".<sup>19</sup>

<sup>&</sup>lt;sup>19</sup> Inter-American Telecommunication Commission. "Annex to Resolution CITEL RES. 74 (VI-14), Permanent Consultative Committee I: Telecommunications/ICT (PCC.I)", Paragraph h, <a href="https://www.citel.oas.org/en/Pages/PCCI/Mandates.aspx">https://www.citel.oas.org/en/Pages/PCCI/Mandates.aspx</a>; also, in the Asia Pacific region, a synthesis document is currently on its comments' state that discusses multistakeholder participation (<a href="https://comment.rigf.asia/title-page/synthesis-document-1/">https://comment.rigf.asia/title-page/synthesis-document-1/</a>);



<sup>&</sup>lt;sup>12</sup> "Tunis Agenda for the Information Society", 18 November 2005, <a href="https://www.itu.int/wsis/docs2/tunis/off/6rev1.html">https://www.itu.int/wsis/docs2/tunis/off/6rev1.html</a> "WSIS+10 Statement on the Implementation of WSIS Outcomes", 2014,

https://www.itu.int/wsis/review/inc/docs/final/wsis10.statement.docx

14 The Fifth World Telecommunication/ICT Policy Forum. "Opinion 5: Supporting Multi-Stakeholderism in Internet Governance", May 2013, http://www.itu.int/en/wtpf-13/Documents/WTPF-13-Opinion5.pdf

Governance", May 2013, <a href="http://www.itu.int/en/wtpf-13/Documents/WTPF-13-Opinion5.p">http://www.itu.int/en/wtpf-13/Documents/WTPF-13-Opinion5.p</a>
"Declaration on Policy Coherence for Development", 4 June 2008,

http://acts.oecd.org/Instruments/ShowInstrumentView.aspx?InstrumentID=134&Lang=en&Book=False; "OECD Council Recommendation on Principles for Internet Policy Making", 13 December 2011, http://www.oecd.org/internet/ieconomy/49258588.pdf

<sup>&</sup>lt;sup>16</sup> UNESCO. "Towards Knowledge Societies for Peace and Sustainable Development: First WSIS+10 Review Event", February 2013,

http://www.unesco.org/new/fileadmin/MULTIMEDIA/HQ/CI/CI/pdf/wsis/WSIS\_10\_Event/wsis10\_outcomes\_en.pdf

17 Council of Europe. "Declaration by the Committee of Ministers on Internet governance principles", 21 September 2011, 
https://wcd.coe.int/ViewDoc.jsp?id=1835773

18 NETmundial, "NETmundial Multistakeholer Statement", 24 April 2014, 
http://netmundial.br/netmundial-

<sup>&</sup>lt;sup>18</sup> NETmundial, "NETmundial Multistakeholer Statement", 24 April 2014, <a href="http://netmundial.br/netmundial.br/netmundial.br/netmundial.br/netmundial.br/netmundial.br/netmundial.br/netmundial.br/netmundial.br/netmundial.br/netmundial.br/netmundial.br/netmundial.br/netmundial.br/netmundial.br/netmundial.br/netmundial.br/netmundial.br/netmundial.br/netmundial.br/netmundial.br/netmundial.br/netmundial.br/netmundial.br/netmundial.br/netmundial.br/netmundial.br/netmundial.br/netmundial.br/netmundial.br/netmundial.br/netmundial.br/netmundial.br/netmundial.br/netmundial.br/netmundial.br/netmundial.br/netmundial.br/netmundial.br/netmundial.br/netmundial.br/netmundial.br/netmundial.br/netmundial.br/netmundial.br/netmundial.br/netmundial.br/netmundial.br/netmundial.br/netmundial.br/netmundial.br/netmundial.br/netmundial.br/netmundial.br/netmundial.br/netmundial.br/netmundial.br/netmundial.br/netmundial.br/netmundial.br/netmundial.br/netmundial.br/netmundial.br/netmundial.br/netmundial.br/netmundial.br/netmundial.br/netmundial.br/netmundial.br/netmundial.br/netmundial.br/netmundial.br/netmundial.br/netmundial.br/netmundial.br/netmundial.br/netmundial.br/netmundial.br/netmundial.br/netmundial.br/netmundial.br/netmundial.br/netmundial.br/netmundial.br/netmundial.br/netmundial.br/netmundial.br/netmundial.br/netmundial.br/netmundial.br/netmundial.br/netmundial.br/netmundial.br/netmundial.br/netmundial.br/netmundial.br/netmundial.br/netmundial.br/netmundial.br/netmundial.br/netmundial.br/netmundial.br/netmundial.br/netmundial.br/netmundial.br/netmundial.br/netmundial.br/netmundial.br/netmundial.br/netmundial.br/netmundial.br/netmundial.br/netmundial.br/netmundial.br/netmundial.br/netmundial.br/netmundial.br/netmundial.br/netmundial.br/netmundial.br/netmundial.br/netmundial.br/netmundial.br/netmundial.br/netmundial.br/netmundial.br/netmundial.br/netmundial.br/netmundial.br/netmundial.br/netmundial.br/netmundial.br/netmundial.br/netmundial.br/netmundial.br/netmundial.br/netmundial.br/netmundial.br/netmundial.br/netmundial.b

- Also, at a regional level, various initiatives in Africa have started adopting and recognizing the multistakeholder model. For instance, the Africa Internet Summit "was launched in 2012 as a pinnacle multistakeholder event combining workshops, conferences and networking for the Internet industry".<sup>20</sup>
- At a national level, the multistakeholder model of policy making is enshrined in Kenya's 2010 Constitution where article 10 provides for the participation of citizens as one of the national values and principles of governance.<sup>21</sup>

In sum, the principle that any acceptable IANA stewardship transition proposal must "Support and Enhance the Multistakeholder Model" reflects:

- Fundamental Internet principles that have made the Internet one of the most successful technologies in history;
- Work methods that are consistent with the traditional, consensual "bottom-up" approach
  used by the Internet's operational communities regarding global management of the IANA
  functions;
- The recognition of an approach that has been working for many decades; and
- International consensus regarding the use of the multistakeholder process.

Finally, upholding the multistakeholder approach requires that the IANA functions must not be subject to capture by a single set of stakeholders, government or otherwise. Multistakeholder collaboration is fundamentally predicated on the notion that no single set of interests automatically hold sway, but rather that all stakeholders have an opportunity to contribute to the discussion and to collaborate in finding solutions. Just as the IANA stewardship transition must not replace NTIA's role with a government-led or inter-governmental solution, undue capture or influence by governments or another stakeholder group<sup>22</sup> would be also be an unacceptable violation of the multistakeholder principle.<sup>23</sup> Robust and enforceable procedures must be in place to prevent any single group from becoming dominant or controlling.

<sup>&</sup>lt;sup>23</sup> In the context of comments to ICANN regarding proposed changes to the by-laws regarding consideration of GAC advice, we cautioned about upsetting the balance of influence of stakeholders. http://forum.icann.org/lists/comments-bylaws-amend-gac-advice-15aug14/pdfYE5ggrXBvS.pdf



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<sup>&</sup>lt;sup>20</sup> For more information, see "Internet Development and Internet Governance in Africa", http://www.internetsociety.org/doc/internet-development-and-internet-governance-africa;

<sup>21 &</sup>quot;The Constitution of Kenya", 2010, https://www.kenyaembassy.com/pdfs/The Constitution of Kenya.pdf

<sup>&</sup>lt;sup>22</sup> Including, for example, ICANN by-laws changes that would mandate acceptance of advice or recommendations from any single stakeholder group.

### **Evaluation Principle 2**

## Maintain the Security, Stability, and Resiliency of the Internet DNS

Since the early days of the Internet, the "sustainability" and "survivability" of the Internet have been an essential goal of its network architecture.<sup>24</sup> Resiliency and stability of the system, particularly in its ability to function in the face of attacks and outages, was a driving design principle from the outset of the ARPANET, the precursor of today's Internet.<sup>25</sup> This resulted in the development of a distributed rather than centralized architecture for the system and has remained a fundamental design principle of the Internet throughout its successful growth and evolution.

Global stakeholder comments received by NTIA in response to its various requests for comments regarding the DNS and IANA functions have consistently supported and underscored the need for security and stability of the system.<sup>26</sup>

A key purpose of the IANA functions is to ensure *global uniqueness* in the allocation of Internet names, numbers, and protocol identifiers. That allows the various independent networks that make up the Internet to work together without directly coordinating their actions with one another; it is this interoperation that makes up the Internet itself. Ensuring that the content contained in the registries is accurate, available, and transparently administered according to established policies provides for the security, stability, and resilience of the overall system. Ensuring that the operation of the registries is stable and secure similarly contributes to the overall security, stability, and resiliency of the DNS root and other IANA functions.

ICANN created the Security and Stability Advisory Committee (SSAC)<sup>27</sup> in 2001 to advise the ICANN community on matters relating to the security and integrity of the Internet's naming and allocation system. It plays an important role in considering and developing recommendations regarding security and stability matters pertaining to the IANA functions and DNS. In 2014, the SSAC provided a set of recommendations that points to how security, stability, and resiliency of the IANA functions are maintained in practice and invited the operational communities to determine the requirements and deliverables for the IANA functions. It stated that:

"DNS and Internet security, stability and resiliency [are assured though the] accuracy, clarity, and predictability with which IANA Functions are operated. Clients of the IANA Functions, and their users, know that the documented activities will be performed [...],

<sup>&</sup>lt;sup>27</sup> The charter for the ICANN Security and Stability Advisory Committee is available at www.icann.org/groups/ssac/charter



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Clark, David. "The Design Philosophy of the DARPA Internet Protocols", 1988,
 <a href="http://groups.csail.mit.edu/ana/Publications/PubPDFs/The design philosophy of the DARPA internet protocols.pdf">http://groups.csail.mit.edu/ana/Publications/PubPDFs/The design philosophy of the DARPA internet protocols.pdf</a>
 Rand Corporation. "Paul Baran and the Origins of the Internet", <a href="http://www.rand.org/about/history/baran.html">http://www.rand.org/about/history/baran.html</a>

<sup>&</sup>lt;sup>26</sup> NTIA. "Request for Comments on the Internet Assigned Numbers Authority (IANA) Functions", 25 February 2011, Docket Number: 110207099-1099-01, <a href="http://www.ntia.doc.gov/federal-register-notices/2011/request-comments-internet-assigned-numbers-authority-iana-functions">http://www.ntia.doc.gov/federal-register-notices/2011/request-comments-internet-assigned-numbers-authority-iana-functions</a>

including those pertaining to the overall quality of the operation, resources to be maintained by the contractor, and other defined standards."<sup>28</sup>

The SSAC recommendations provide key guidance into how the NTIA's focus on security, stability, and resiliency can be implemented as part of the IANA stewardship transition plan.

The importance of maintaining the security, stability, and resiliency of all aspects of the Internet has emerged as a key priority for governments and multistakeholder policy groups since as early as 2003 and it continues to be one of the most important issues in international, regional and national fora.<sup>29</sup>

### **Evaluation Principle 3**

# Meet the needs and expectations of the global customers and partners of the IANA services

The IANA functions are a critical component of the global Internet. The unique names, numbers, and identifiers managed by this service are relied upon by all Internet users to make the Internet function. When it comes to certain operational parts of the Internet, however, some entities are more directly involved with and affected by IANA services than others.

Each of the IANA functions is associated with a community that has a direct operational or service relationship with the IANA functions operator—specifically, the Internet Engineering Task Force (IETF) for protocol parameters, the Regional Internet Registries (RIRs) for number allocations, and ICANN communities for names. These communities have often been referred to as the "operational communities" or "directly affected parties." 31

Under the distributed and decentralized system for the policy development related to the individual IANA functions, these entities focus on ensuring that the policies are defined principally by those who require them for their operations. They do so by making use of well-established mechanisms, including open, public meetings; mailing lists; and bottom-up policy development processes that enable direct participation by any interested party. This gives the system the flexibility to respond and adapt to the Internet's rapidly evolving technology and to the changing needs of the Internet community, while also being responsive to the overall needs and expectations of "downstream" Internet users.

<sup>&</sup>lt;sup>31</sup> The "directly affected communities" are referenced in the NTIA announcement regarding the IANA transition: http://www.ntia.doc.gov/press-release/2014/ntia-announces-intent-transition-key-internet-domain-name-functions



<sup>&</sup>lt;sup>28</sup> ICANN. "SSAC Advisory on Maintaining the Security and Stability of the IANA Functions Through the Stewardship Transition", 10 December 2014, https://www.icann.org/en/system/files/files/sac-069-en.pdf

<sup>&</sup>lt;sup>29</sup> See, for example, the first phase of the WSIS process in Geneva (2003); see also, NetMundial Multistakeholder Statement.

<sup>&</sup>lt;sup>30</sup> IANA Coordination Group (ICG). "Request for Proposals (RFP)", 8 September 2014, https://www.icann.org/en/system/files/files/rfp-iana-stewardship-08sep14-en.pdf

In a more general context, this system of decentralized decision-making is similar to the "principle of subsidiarity" in which issues are best handled at the most immediate level consistent with the solution that will be most directly applied. As such, it is critical that the IANA service and post-transition arrangements meet the needs and expectations of the directly affected communities in order that they may meet the needs and expectations of the distributed Internet as a whole.

Accordingly, the inclusion of this evaluation principle in the NTIA IANA stewardship transition announcement was prudent and important. Like any good service, the post-transition IANA arrangements should continue to support the performance of the IANA functions in a predictable, reliable, and responsive way, consistent with operational excellence. Additionally, they should continue to be performed in a neutral and transparent manner in line with customer needs and expectations.

### **Evaluation Principle 4**

## Maintain the Openness of the Internet

The idea that the Internet is an "open" system is not new, and certainly did not arrive because of the current debate about the organizational processes of Internet governance, or the IANA stewardship transition. Internet engineers and policymakers began to refer to the Internet as "open" in the early 1990s, after it had begun the transition from a government-sponsored network to the global, voluntary federation of users and providers that prevails today.<sup>32</sup>

Openness has been a core value across many aspects of the Internet system:

- As a tangible network infrastructure composed of hosts, routers, service providers, protocols, and many other technical components, each operated independently, the Internet is optimized for interoperability—peer components interact with each other without extensive prior configuration because information is shared openly, and every developer and operator has open access to the externally visible behaviour of each element of the Internet system.
- As an operational infrastructure that relies on the voluntary participation of many different parties to manage its independent parts, the Internet is an open society of individuals and organizations that fulfil their separate local missions by collaborating to make the global Internet work.
- As an innovation engine that supports the development of new technical standards, products, applications, and even policy initiatives, the Internet succeeds because openness allows everyone to bring their best ideas to the table, distribute them widely, and to turn

<sup>&</sup>lt;sup>32</sup> Internet Society. "Open Internet: What it is and how to avoid mistaking it for something else", 3 September 2014, http://www.internetsociety.org/doc/open-internet-what-it-and-how-avoid-mistaking-it-something-else



them into new services and applications that enhance the quality of life in all corners of the world.

 As the way and means by which the Internet community has operated, through open, transparent, and inclusive processes, open to all stakeholders.

Openness and multistakeholder participation have consistently worked hand-in-hand and they should continue to do so. Openness can ensure that values like transparency, access and participation—all characteristics of a multistakeholder environment—are met and sustained. At the same time, diverse participation strengthens the idea of openness by encouraging a diversity of competing ideas and opinions, helping to ensure that the solutions which result will best serve the Internet. Furthermore, the openness of the Internet ensures that even those who aren't using the Internet now will have the opportunity to participate in the future and that everyone has the ability to create new services and applications.

The openness of the Internet as a fundamental principle has also come to be recognized as an essential property and characteristic of both the technology and processes surrounding it. For example. James Mwangi, in the Foreword to the March 2014 Dalberg Global Development Advisors report "Open for Business? The Economic Impact of Internet Openness," noted that:

"We take the capabilities of today's Internet for granted, as though it was inevitable it would evolve in this way. But in the early days of the Internet, few people knew how profoundly this technology could transform our lives. We've witnessed growth that would have been impossible to predict, growth that can only be understood in the context of one essential attribute of the system: the openness of the network. Since its emergence, the Internet has remained an open platform, allowing any of us to innovate, create new services and tools, share freely and widely, and access all of the products and services that others have made available... Without openness, many of the services and tools we rely on in our daily lives would not be possible."<sup>33</sup>

Here again, the idea of openness incorporated in the evaluation criteria is grounded in a fundamental Internet success factor that predates the IANA stewardship transition, and which has also come to be recognized and accepted globally.

In the historic and current context of the IANA functions, openness is a fundamental value and characteristic that has underpinned its success. For example, and as noted previously, the processes by which policies are set by the IANA operational communities are open to anyone wishing to contribute. Documentation and discussions related to IANA functions' policy development, such as drafting proposals and email discussion lists, are also openly available. Furthermore, information on the identifier allocations made by the IANA function itself is freely available on the Internet – there are no membership requirements or fees associated with accessing or using it. Similarly, registries related to IANA are open and in the public domain and it

<sup>&</sup>lt;sup>33</sup> Dalberg. "Open for Business? The Economic Impact of Internet Openness", March 2014, <a href="http://www.dalberg.com/documents/Open\_for\_Business\_Dalberg.pdf">http://www.dalberg.com/documents/Open\_for\_Business\_Dalberg.pdf</a>



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is the expectation of the IANA directly affected parties that will remain so. In addition to fostering useful and practical outcomes, the openness of related policy processes and the availability of information promote trust and confidence in the system.

Ultimately the use of the IANA functions is a choice by the global community because of the value it brings to the Internet. There will undoubtedly be advances in technology, changes to the underlying infrastructure, and the development of new ways to navigate on the Internet that will mean that the role today's DNS and IANA functions plays will change over time. The principle of openness also means being open to changes and evolution in architecture and systems - on the Internet there are no permanent favourites.

### **Evaluation Principle 5**

## The transition proposal must not replace NTIA's role with a government-led or inter-governmental organization solution

As discussed above, the intent of the U.S. Government to privatize and globalize DNS and Internet technical coordinating was originally set forth in a 1998 Statement of Policy. In that policy statement, which was developed through extensive consultations and comments from stakeholders, it was noted that that NTIA's stewardship of DNS functions would be temporary and phased out.<sup>34</sup> It also recognized that given the growing global and commercial nature of the Internet it was neither tenable nor appropriate for the U.S. Government to continue in this role or for other governments to assume it. 35

NTIA's role as temporary steward of the IANA functions gave stakeholders the opportunity to develop and test new structures that would ensure the non-governmental management of the broader DNS. These structures have emerged through bottom-up, multistakeholder collaboration, consistent with the traditions of the Internet.

To replace NTIA's role with a government-led or inter-governmental solution would, quite simply, represent a step backwards for the Internet. Furthermore, implementing excessive governmental influence or capture through other means would be equally unacceptable. The fundamental Internet principles as reflected in the evaluation criteria must endure in any post-transition environment—including principles of multistakeholder collaboration and openness.

As NTIA steps back from its temporary role ensuring accountability and transparency will be necessary to successfully implement the Internet principles in the performance of the IANA



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<sup>&</sup>lt;sup>34</sup> NTIA. "Management of Internet Names and Addresses", 5 June 1998, Section 4 "Creation of the New Corporation and Management of the DNS", http://www.ntia.doc.gov/federal-register-notice/1998/statement-policy-management-internetnames-and-addresses
35 Ibid, Section 11. "A Global Perspective"

functions. As noted by the ISOC Board of Trustees in February 2015<sup>36</sup>, this includes that robust measures are in place for ensuring that no single group captures the IANA functions, and that a multistakeholder, bottom-up framework is the driving model for the operation of the IANA functions going forward.

## Conclusion

The smooth and efficient transition of stewardship of the IANA functions to the global Internet community is important for the on-going operational integrity and vitality of the global Internet. Not only is this process important to ensure consistency for today's Internet users, but also to provide the foundation for those currently unconnected around the world to benefit from the Internet's opportunities in future. Examining the NTIA evaluation principles, which are rooted in the origins and characteristics of the Internet itself, is a reminder of what they are trying to achieve—namely, a dynamic yet reliable platform for seemingly limitless opportunity and innovation around the globe.

What is remarkable is the enduring appeal of these principles and their resonance internationally with virtually all Internet stakeholders. We should be reassured by this fact. We should also be confident that if the IANA stewardship transition plan and its implementation lives up to these principles, the Internet will continue to rest on a foundation that serves its continuity as the extraordinary medium that we have come to expect and upon which we rely.

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<sup>&</sup>lt;sup>36</sup> Internet Society. "Internet Society Board of Trustees Encourages Continued Trust in the Multistakeholder process for IANA Transition", 15 February 2015, <a href="http://www.internetsociety.org/news/internet-society-board-trustees-encourages-continued-trust-multistakeholder-process-iana">http://www.internetsociety.org/news/internet-society-board-trustees-encourages-continued-trust-multistakeholder-process-iana</a>

