



THE COMMITTEE ON ENERGY AND COMMERCE

MEMORANDUM

March 31, 2014

To: Members, Subcommittee on Communications and Technology

From: Majority Committee Staff

Re: Hearing on "Ensuring the Security, Stability, Resilience and Freedom of the Global Internet"

The Subcommittee will hold a hearing Wednesday, April 2, 2014, at 10:30 a.m. in 2322 Rayburn House Office Building on "Ensuring the Security, Stability, Resilience and Freedom of the Global Internet."

I. WITNESSES

Two panels of witnesses will testify:

Panel 1:

- Mr. Lawrence Strickling, Assistant Secretary for Communications and Information, and Administrator, National Telecommunications and Information Administration;
- Mr. Fadi Chehade, President and CEO, Internet Corporation for Assigned Names and Numbers; and,
- Ambassador David Gross, Partner, Wiley Rein, LLP

Panel 2:

- Mr. Steve DelBianco, Executive Director, NetChoice; and
- Ms. Carolina Rossini, Project Director, New America Foundation Open Technology Institute

II. BACKGROUND

The Internet is organized using Internet Protocol (IP) addresses: a series of numbers separated by dots that identify the computers on which resources are located. Because IP addresses are not intuitive, the domain name system provides Internet users with an addressing system that associates user-friendly words rather than numeric Internet Protocol addresses. A series of computer databases "resolve," or link, Internet Protocol addresses with "domain names": strings of alphanumeric "words," separated by dots. The domain name system is a hierarchical system, with the root domain at the top. The root domain contains all of the top-level domains of the Internet, including generic top-level domains (gTLDs), such as ".gov," ".com," ".org," and ".net," and country code top-level domains (ccTLDs), such as ".us," ".ca," and ".mx."

For example, to access the U.S. House of Representatives website, an Internet user would type in “www.house.gov.” The suffix “.gov” is the top-level domain, and “house” is the second-level domain. The domain name system “resolves” www.house.gov to the proper Internet Protocol address (143.228.181.132). As part of resolving a domain name, the process is done in pieces, winnowing the search until the resource is located. The first portion, the far right top-level domain (“.gov” in this example), is queried using the root server to begin narrowing down servers. The root zone file contains information about the domain name servers for each TLD, and is used to ensure that requests made to the servers are directed to the correct destination. The content of the root zone file is controlled and coordinated by the Internet Assigned Numbers Authority (IANA) with oversight and approval of any changes conducted by National Telecommunications and Information Administration (NTIA).

The Functioning of the Domain Name System

The Internet finds its roots in ARPANET, launched in 1969 by the Defense Advanced Research Projects Agency to connect universities and research laboratories working on Department of Defense projects. Over the next two decades, ARPANET transitioned from a government network to include civilian users under the auspices of the National Science Foundation and became NSFNET. As the NSFNET grew and standards evolved to connect computer networks, a larger “network of networks” emerged. Then, in 1992, the Scientific and Advanced-Technology Act allowed the NSFNET to interconnect with other non-governmental networks and opened the door to commercial participation. It was at this point that the network began to grow exponentially and the modern Internet was born.

When network use was limited to U.S. government purposes, the Department of Defense managed the network. By the 1990s, however, most of the growth was coming from non-military users, and the NSF created the Internet Network Information Center (InterNIC) to manage both numeric addressing on the networks, as well as the databases of sites. As the number of commercial users grew, Internet addressing and domain name management became exceedingly complex.

Although it began as a government program, in the 1990s, the U.S. government sought to reduce its involvement in both addressing and the governance of the domain name system. In addressing, the American Registry for Internet Numbers (ARIN), a not-for profit and non-governmental organization, succeeded the U.S. government. Today ARIN continues to issue Internet Protocol (IP) number resources in the North American service region, which includes the United States, Canada, and most Caribbean nations.

In 1998, the Department of Commerce approved the Internet Corporation for Assigned Names and Numbers (ICANN), a California non-profit corporation, to manage a number of Internet-related tasks, including the allocation and designation of Internet domain names and addresses. Under this arrangement, ICANN manages the number and type of TLDs, the designation of registry operators that operate TLDs, the accreditation of registrars that offer second level domain registration, and the operation of the domain name dispute resolution process.

Additionally, through a separate contract with the Department of Commerce, ICANN operates the Internet Assigned Numbers Authority (IANA) to manage the domain name system “root zone” files — the master files of top-level domain names — as well as to coordinate the allocation of IP addresses. NTIA contracts with ICANN to perform the IANA functions, an arrangement that has existed since 1998. NTIA’s primary role is a procedural and largely non-operational one, administering changes to the root zone, and began as a way to transition the coordination of the Domain Name System (DNS) away from DARPA. NTIA has periodically renewed its contract with ICANN, most recently in 2012 to extend through 2015, with options to renew for several additional years.

The Multistakeholder Community

ICANN, as well as the groups that oversee the creation of voluntary Internet standards under the auspices of the Internet Society, receive input from governments, Internet users, corporations investing in the Internet, academics, and engineers that develop the technology that makes the Internet possible. In addition to the corporations and governments that participate in the process, a series of ad hoc groups form the engineering corps of the Internet. The Internet Engineering Task Force (IETF), the Internet Architecture Board (IAB), the Internet Engineering Steering Group, and the Internet Research Task Force, now collectively organized under the international non-profit Internet Society (ISOC), are run by volunteers and all work to create voluntary standards for Internet users to make interconnection of all networks easier. The flexibility of this governance structure, referred to as the “multistakeholder model,” is what has enabled the explosive growth of the Internet as a driver of jobs, commerce, social discourse, and innovation.

The international community, both governments and stakeholders, convenes multiple times each year at several forums to discuss communications issues. One such forum, organized by the International Telecommunications Union, an agency of the United Nations, was the 2012 World Conference on International Telecommunications (WCIT-12). WCIT-12 was attended by many nations, with the intent of renegotiating and updating the International Telecommunications Regulations (ITR) treaty. The ITRs originally were drafted to regulate international calling. The regulations were not applicable or well suited to the Internet, and organizers of the conference assured participants that the renegotiated ITRs would not address the Internet. Despite these assurances, some attending countries attempted to incorporate Internet-related issues, using cybersecurity and broadband deployment as hooks, to impose economic regulation and potentially censorship.

Leading up to WCIT-12 and in response to the growing concerns about governments seeking to gain control of the Internet, H. Con. Res. 127 and S. Con. Res. 50 were passed unanimously in both the House and Senate, making it a sense of Congress to support the multi-stakeholder model and oppose any international attempts to regulate the Internet. Following WCIT-12, in May 2013, the House of Representatives unanimously passed a bill declaring it the policy of the United States to preserve and advance the multistakeholder model that governs the Internet. H.R. 1580 condemned attempts by other governments to gain control over content, and emphasized the importance of maintaining the existing open and decentralized structure of Internet governance.

While the proposed changes that generated such concern did not come to fruition at WCIT-12, the threat of governments reaching for greater control still exists. In the coming months, the international stakeholders will gather again at multiple meetings to discuss the future of Internet governance, including NETMundial in São Paulo, Brazil; ICANN-50 in London, England; Internet Governance Forum in Istanbul, Turkey; and the ITU Plenipotentiary in Busan, South Korea.

NTIA's March 2014 Announcement

On March 14, 2014, NTIA announced its intention to transition the IANA functions to the global multi-stakeholder community. The existing IANA contract between the U.S. government and ICANN expires in September 2015, although the contract provides for additional renewal periods. NTIA characterized the move as a step to “support and enhance the multi-stakeholder model,” asking ICANN to convene global stakeholders to develop a transition proposal.

In asking the multi-stakeholder community to generate a transition proposal, NTIA did not give the world a blank slate. In addition to a requirement that any acceptable proposal must garner wide community support, NTIA also set forth the following criteria that any acceptable proposal must satisfy:

- It must support and enhance the multi-stakeholder model;
- It must maintain the security, stability, and resiliency of the Internet DNS;
- It must meet the needs and expectations of the global customers and partners of the IANA services; and,
- It must maintain the openness of the Internet.

NTIA also has stated that they will not accept any proposal that would replace their role with a government-led or inter-governmental organization solution. While the current practical role of NTIA largely is procedural, the functions performed by IANA are critical to the domain name system and the Internet as a whole.

ICANN has been directed to work with the parties that are affected directly by the transition, as well as those who are familiar with the architecture of the Internet, including IETF, IAB, and ISOC. Adhering to these criteria will be essential to ensuring that the Internet continues to be an open and dynamic platform, free from government intervention. In addition, the process and any resulting changeover of power must be seamless, so as not to interrupt the operations of the global Internet and the commercial activity that relies on a well-functioning network.

III. DISCUSSION

As the process of transitioning the IANA functions away from NTIA begins, questions remain. Below are of some of the questions that may arise during the hearing:

- How will NTIA collect and assess proposals? Has a process been determined? Is there a timeline in place for a decision?
- Does transition of the IANA functions out of NTIA have implications for national security?
- How will NTIA ensure that any transition is smooth and does not affect the daily functioning of the Internet?
- What will be the result if NTIA does not receive a proposal that satisfies the criteria it set forth? Does NTIA plan to exercise the automatic option for renewal on the IANA contract if a satisfactory proposal is not received?
- What sort of multi-stakeholder community would be the ideal replacement for NTIA's role in the IANA functions?
- What safeguards will be in place to prevent a future change that would allow for governments to seize control?
- What oversight role should Congress play to ensure a successful outcome?
- What will be the practical impact of this transition on Internet users and businesses that utilize the Internet for commerce?

If you need more information, please call David Redl or Kelsey Guyselman at 5-2927.