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Internet Domain Names: Background and Policy Issues

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Summary

To navigate the Internet requires using addresses (and corresponding names) that identify the location of individual computers. As the Internet grew, the method for allocating and designating those *domain names* became controversial. The Administration issued a White Paper in June 1998 endorsing the creation of a new not-for-profit corporation of private sector Internet stakeholders to administer policy for the Internet name and address system. On November 25, 1998, the Department of Commerce (DOC) formally approved a new corporation, called the Internet Corporation for Assigned Names and Numbers (ICANN). A Memorandum of Understanding (MOU) between ICANN and DOC has been extended through September 2006. During this transition period, government obligations will be terminated as most DNS responsibilities are transferred to the private sector. The 109th Congress will likely conduct oversight on how the Administration manages and oversees ICANN's activities and policies as ICANN strives to meet the conditions of the Department of Commerce MOU. The 109th Congress is also likely to assess the role of the federal government in Internet governance, the nature and implications of the transition of the DNS to private sector ownership, and the role that the international community might play in that transition.

Background

The Internet is often described as a "network of networks" because it is not a single physical entity but, in fact, hundreds of thousands of interconnected networks linking millions of computers around the world. Computers connected to the Internet are identified by a unique *Internet Protocol (IP)* number that designates their specific location, thereby making it possible to send and receive messages and to access information from computers anywhere on the Internet. Domain names were created to provide users with a simple location name, rather than requiring them to use a long list of numbers. For example, the IP number for the location of the THOMAS legislative system at the Library of Congress is 140.147.248.9; the corresponding domain name is

"thomas.loc.gov". *Top Level Domains (TLDs)* appear at the end of an address and are either a given country code, such as .jp or .uk, or are *generic* designations *(gTLDs)*, such as .com, .org, .net, .edu, or .gov. The *Domain Name System (DNS)* is the distributed set of databases residing in computers around the world that contain the address numbers, mapped to corresponding domain names. Those computers, called *root servers*, must be coordinated to ensure connectivity across the Internet.

The Internet originated with research funding provided by the Department of Defense Advanced Research Projects Agency (DARPA) to establish a military network. As its use expanded, a civilian segment evolved with support from the National Science Foundation (NSF) and other science agencies. While there are no formal statutory authorities or international agreements governing the management and operation of the Internet and the DNS, several entities have played key roles in the DNS. The Internet Assigned Numbers Authority (IANA) makes technical decisions concerning root servers, determines qualifications for applicants to manage country code TLDs, assigns unique protocol parameters, and manages the IP address space, including delegating blocks of addresses to registries around the world to assign to users in their geographic area. IANA operates out of the University of Southern California's Information Sciences Institute and has been funded primarily by the Department of Defense.

NSF was responsible for registration of nonmilitary domain names, and in 1992 put out a solicitation for managing network services, including domain name registration. In 1993, NSF signed a five-year cooperative agreement with a consortium of companies called InterNic. Under this agreement, Network Solutions Inc. (NSI), a Herndon, Virginia engineering and management consulting firm, became the sole Internet domain name registration service for registering the .com, .net., and .org. gTLDs.

Recent History

Since the imposition of registration fees in 1995, criticism of NSI's sole control over registration of the gTLDs grew. In addition, there was an increase in trademark disputes arising out of the enormous growth of registrations in the .com domain. There also was concern that the role played by IANA lacked a legal foundation and required more permanence to ensure the stability of the Internet and the domain name system. These concerns prompted actions both in the United States and internationally.

An International Ad Hoc Committee (IAHC), a coalition of individuals representing various constituencies, released a proposal for the administration and management of gTLDs on February 4, 1997. The proposal recommended that seven new gTLDs be created and that additional registrars be selected to compete with each other in the granting of registration services for all new second level domain names. To assess whether the IAHC proposal should be supported by the U.S. government, the executive branch created an interagency group to address the domain name issue and assigned lead responsibility to the National Telecommunications and Information Administration (NTIA) of the Department of Commerce (DOC). On June 5, 1998, DOC issued a final statement of policy, "Management of Internet Names and Addresses." Called the White Paper, the statement indicated that the U.S. government was prepared to recognize and enter into agreement with "a new not-for-profit corporation formed by private sector

Internet stakeholders to administer policy for the Internet name and address system."[1] In deciding upon an entity with which to enter such an agreement, the U.S. government would assess whether the new system ensured stability, competition, private and bottom-up coordination, and fair representation of the Internet community as a whole.

In effect, the White Paper endorsed a process whereby the divergent interests of the Internet community would come together and decide how Internet names and addresses would be managed and administered. Accordingly, Internet constituencies from around the world held a series of meetings during the summer of 1998 to discuss how the New Corporation (NewCo) might be constituted and structured. Meanwhile, IANA, in collaboration with NSI, released a proposed set of bylaws and articles of incorporation. The proposed new corporation was called the Internet Corporation for Assigned Names and Numbers (ICANN). After five iterations, the final version of ICANN's bylaws and articles of incorporation were submitted to the Department of Commerce on October 2, 1998. Additionally, nine members of ICANN's interim board were chosen (four Americans, three Europeans, one from Japan, and one from Australia). On November 25, 1998, DOC and ICANN signed an official Memorandum of Understanding (MOU), whereby DOC and ICANN agreed to jointly design, develop, and test the mechanisms, methods, and procedures necessary to transition management responsibility for DNS functions to a private-sector not-for-profit entity.

The White Paper also signaled DOC's intention to ramp down the government's Cooperative Agreement with NSI, with the objective of introducing competition into the domain name space while maintaining stability and ensuring an orderly transition. During this transition period, government obligations were to be terminated as DNS responsibilities transferred to ICANN. Specifically, NSI committed to the development of a Shared Registration System that permits all accredited registrars to provide registration services within the .com, .net., and .org gTLDs. NSI (now VeriSign) continues to administer the root server system until receiving further instruction from the government.

Significant disagreements between NSI and ICANN & DOC arose over how a successful and equitable transition would be made from NSI's previous status as exclusive registrar of .com, org. and net. domain names, to a system that allows multiple and competing registrars. Of particular controversy was NSI's refusal to sign ICANN's accreditation agreement. On September 28, 1999, after nearly a year of negotiations, DOC, NSI, and ICANN announced a series of formal agreements. NSI agreed to sign an accreditation agreement with ICANN, but with certain limits and conditions placed on ICANN decisions that could affect NSI's business. The agreement stated that NSI retains control of the .com registry for at least four years; if ownership of NSI's registry and registrar operations is fully separated within 18 months (via spinoff or sale to a third party for example), the term would be extended for four additional years. NSI and all accredited registrars provide public access to the full database of registered domain names (the "WhoIs" database). NSI agreed to pay ICANN $1.25 million upon signing the

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[1] Management of Internet Names and Addresses, National Telecommunications and Information Administration, Department of Commerce, *Federal Register*, Vol. 63, No. 111, June 10, 1998, 31741.

agreement, and agreed to approve an ICANN registrar fee policy as long as NSI's share does not exceed $2 million.

On November 10, 1999, ICANN, NSI, and DOC formally signed the agreements, which provided that NSI (now VeriSign) was required to sell its registrar operation by May 10, 2001 in order to retain control of the dot-com registry until 2007. In April 2001, arguing that the registrar business was by then highly competitive, VeriSign reached a new agreement with ICANN whereby its registry and registrar businesses would not have to be separated. With DOC approval, ICANN and VeriSign signed the formal agreement on May 25, 2001. The agreement provided that VeriSign would continue to operate the .org registry until 2002; the .net registry until June 30, 2005, which prior to that time will be opened for recompetition unless market measurements indicate that an earlier expiration date is necessary for competitive reasons; and the .com registry until at least the expiration date of the current agreement in 2007, and possibly beyond. VeriSign agreed to enhanced measures (including annual audits arranged by ICANN and made available to the U.S. government) to ensure that its registry-operation unit gives equal treatment to all domain name registrars, including VeriSign's registrar business.

On September 17, 2003, ICANN and the Department of Commerce agreed to extend their MOU until September 30, 2006. The MOU specifies transition tasks which ICANN has agreed to address. ICANN will implement an objective process for selecting new Top Level Domains; implement an effective strategy for multi-lingual communications and international outreach; and develop a contingency plan, consistent with the international nature of the Internet, to ensure continuity of operations in the event of a severe disruption of operations.

Issues

The Department of Commerce (through the National Telecommunications and Information Administration) remains responsible for monitoring the extent to which ICANN satisfies the principles of the White Paper as it makes critical DNS decisions. In the 109th Congress, the Senate Committee on Commerce, Science and Transportation and the House Committee on Energy and Commerce will likely conduct oversight on how the Administration manages and oversees ICANN's activities and policies as it strives to meet the conditions of the Department of Commerce MOU. The 109th Congress is also likely to assess the role of the federal government in Internet governance, the nature and implications of the transition of the DNS to private sector ownership, and the role that the international community might play in that transition.

Governance. On June 22, 2002, ICANN released a "Blueprint for Reform," which calls for a significant restructuring of ICANN. Specifically, the Board of Directors would be composed of fifteen members: the ICANN President, eight members appointed by a nominating committee, and six selected by three Supporting Organizations. The reform blueprint also recommends that ICANN collect a fee of 25 cents per registered domain name. New bylaws based on the reform proposal were formally adopted by the ICANN Board at the October 2002 Board meeting in Shanghai. Some in the Internet community have spoken against the ICANN reforms, asserting that its elimination of elected At-Large board members precludes effective representation of unaffiliated Internet users. In a related development, the United Nations, at the December 2003 World Summit on the Information Society (WSIS), debated and agreed to study the issue of how to achieve

greater international involvement in the governance of the Internet and the domain name system. The study is being conducted by the UN's Working Group on Internet Governance (WGIG). The United Nations will revisit the issue in November 2005, after the WGIG study is complete. On December 22, 2004, ICANN announced that it will contribute $100,000 to help support the WGIG study.

On March 31, 2005, the National Research Council (NRC) released a report entitled, *Signposts in Cyberspace: The Domain Name System and Internet Navigation*.[2] The report was mandated by Congress in 1998 (P.L. 105-305) and sponsored by the Department of Commerce and the National Science Foundation. Among its recommendations, the NRC concluded that the domain name system should continue to be administered by a nongovernmental body and not be turned over to an intergovernmental organization. The report also recommended that before turning over control of the DNS, the Department of Commerce should seek ways to protect ICANN from undue commercial and political pressures, and to provide oversight of ICANN's performance.

Top Level Domains. At its July 16, 2000 meeting in Yokohama, the ICANN Board of Directors adopted a policy for the introduction of new top-level domains (TLDs), which could expand the number of domain names available for registration by the public. After considering a total of 47 applications, the ICANN Board selected seven companies or organizations each to operate a registry for one of seven new TLDs, as follows: .biz, .aero, .name, .pro, .museum, .info, and .coop. Subsequently, ICANN considered eleven applications for operating .org after the agreement with VeriSign expired on December 31, 2002. On October 14, 2002, the ICANN Board selected the Internet Society's Public Interest Registry as .org operator. On December 15, 2003, ICANN formally invited applications from all parties for new TLDs. The application period closed on March 15, 2004; ten applications were received. ICANN has entered into negotiations on approving four of the candidate TLDs. Meanwhile, in December 2004, ICANN issued a request for proposals for operating the .net registry. On March 28, 2005, ICANN published an evaluation report identifying Verisign as the highest ranked applicant for operating the .net registry. ICANN says it will now enter into negotiations with Versign for operating the .net registry.

Protecting Children on the Internet. In the 107th Congress, legislation sought to create a "kids-friendly top level domain name" that would contain only age-appropriate content. The Dot Kids Implementation and Efficiency Act of 2002 was signed into law on December 4, 2002 (P.L. 107-317) and authorizes the National Telecommunications and Information Administration (NTIA) to require the .us registry operator (currently NeuStar) to establish, operate, and maintain a second level domain within the .us TLD that is restricted to material suitable for minors.

In the 108th Congress, P.L. 108-21/S. 151 (PROTECT Act), contains a provision (Sec. 108: Misleading Domain Names on the Internet) which would make it a punishable crime to knowingly use a misleading domain name with the intent to deceive a person into viewing obscenity on the Internet. Increased penalties are provided for deceiving minors into viewing harmful material.

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[2] Available at [http://books.nap.edu/catalog/11258.html?onpi_newsdoc03312005]

Trademark Disputes. The increase in conflicts over property rights to certain trademarked names has resulted in a number of lawsuits. The White Paper called upon the World Intellectual Property Organization (WIPO) to develop a set of recommendations for trademark/domain name dispute resolutions, and to submit those recommendations to ICANN. At ICANN's August 1999 meeting in Santiago, the board of directors adopted a dispute resolution policy to be applied uniformly by all ICANN-accredited registrars. Under this policy, registrars receiving complaints will take no action until receiving instructions from the domain-name holder or an order of a court or arbitrator. An exception is made for "abusive registrations" (i.e. cybersquatting and cyberpiracy), whereby a special administrative procedure (conducted largely online by a neutral panel, lasting 45 days or less, and costing about $1000) will resolve the dispute. Implementation of ICANN's Domain Name Dispute Resolution Policy commenced on December 9, 1999. Meanwhile, the 106th Congress passed the Anticybersquatting Consumer Protection Act (incorporated into P.L. 106-113, the FY2000 Consolidated Appropriations Act). The act gives courts the authority to order the forfeiture, cancellation, and/or transfer of domain names registered in "bad faith" that are identical or similar to trademarks, and provides for statutory civil damages of at least $1,000, but not more than $100,000, per domain name identifier.

WIPO initiated a second study which produced recommendations on how to resolve disputes over bad faith, abusive, misleading or unfair use of other types of domain names such as personal names, geographical terms, names of international organizations, and others. WIPO released its second report on September 3, 2001, recommending that generic drug names be canceled upon complaint and that international intergovernmental organization names be subject to a dispute resolution process. WIPO did not recommend new rules regarding personal, geographical, or trade names.

Privacy. Any entity who registers a domain name is required to provide contact information (phone number, address, email) which is entered into a public online database (the "WHOIS" database). Over the past several years, registrants who wish to maintain their privacy have been able to register anonymously using a proxy service offered by some registrars. In February 2005, the National Telecommunications and Information Administration (NTIA) – which has authority over the .us domain name – notified Neustar (the company that administers .us) that proxy or private domain registrations will no longer be allowed for .us domain name registrations, and that registrars must provide correct WHOIS information for all existing customers by January 26, 2006. According to NTIA, this action will provide an assurance of accuracy to the American public and to law enforcement officials. The NTIA policy is opposed by privacy groups and registrars (such as Go Daddy) who argue that the privacy, anonymity, and safety of people registering .us domain names will be needlessly compromised.

In a related development, during the 108th Congress, the Fraudulent Online Identity Sanctions Act was incorporated as Title II of H.R. 3632, the Intellectual Property Protection and Courts Amendments Act of 2004, signed by the President on December 23, 2004 (P.L. 108-482). The act increases criminal penalties for those who submit false contact information when registering a domain name that is subsequently used to commit a crime or engage in copyright or trademark infringement.