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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 between ICANN and DOC has been extended through September 2002. During this transition period, government obligations will be terminated as DNS responsibilities are transferred to the private sector. Issues in the 107th Congress include the appropriate federal role in overseeing the DNS, the creation of new top level domains (TLDs), how ICANN will be governed and funded, and the resolution of trademark disputes. This report will be updated periodically as events warrant.

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 5-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

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[1] Management of Internet Names and Addresses, National Telecommunications and Information (continued...)

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 provides public access to the full database of registered domain names (the "WhoIs" database). Competing registrars pay NSI a wholesale price of $6 per registered name per year. Finally, NSI agreed to pay ICANN $1.25 million upon signing the

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[1] (...continued)
Administration, Department of Commerce, *Federal Register*, Vol. 63, No. 111, 10 June 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 is now 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 provides that VeriSign will 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.

Meanwhile, on September 4, 2000, ICANN and the Department of Commerce agreed to extend their MOU until September 30, 2001 or sooner, if both parties agree that the work set under the MOU has been completed. The MOU has subsequently been extended to September 30, 2002. Remaining tasks, many of which are underway, include: creating new Internet top-level domains, completing selection of the ICANN Board of Directors, enhancing the architecture of the root-name server system, formalizing contractual relationships between ICANN and the regional Internet Protocol address registries, and establishing stable arrangements between ICANN and the organizations responsible for the operation of country-code TLDs.

Issues

The Department of Commerce remains responsible for monitoring the extent to which ICANN satisfies the principles of the White Paper as it makes critical DNS decisions. Congress remains keenly interested in how the Administration manages and oversees the transition to private sector ownership of the DNS. Meanwhile, criticism of ICANN has grown, with some pointing to the recent ICANN-VeriSign agreement as an example of how ICANN remains more responsive to corporate interests than to Internet users.

Governance. ICANN bylaws call for an international and geographically diverse 19-member board of directors, composed of a president, nine at-large members, and nine members nominated by three Supporting Organizations representing Domain Name, Address, Internet Protocol constituencies. During October 1999, the three Supporting Organization each selected three directors for the permanent board. The nine new directors joined the ten sitting interim directors, who were to serve until an additional nine directors were elected to the permanent board by ICANN's At-Large membership. At ICANN's March 2000 meeting in Cairo, the sitting board agreed to a plan whereby five At-Large board members, one from each of five geographic regions of the world, would be directly elected by Internet users. On October 10, 2000 ICANN announced the five new At-Large board members elected by over 34,000 Internet users. At the November 2000 annual meeting, ICANN initiated a study to determine how to select the remaining At-Large board members. Meanwhile, the sitting board has extended the terms of four of

its interim members until 2002 to serve with the five newly elected At-Large board members. The At Large Membership Study Committee (ALSC) released its report and recommendations on November 5, 2001. The ALSC is recommending that only domain name holders be eligible to vote for at large board members, and that the number of large members on the board be reduced from nine to six. The ALSC recommendations will likely be considered by the board at ICANN's March 2002 meeting in Ghana. In the wake of the September 11 terrorist attack, ICANN's November 2001 meeting (in Marina del Rey, California) has been redirected to focus almost entirely on the security of the DNS.

New TLDs. 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). Additional TLDs could significantly expand the number of domain names available for registration by the public. The policy involves a process in which those interested in operating or sponsoring new TLDs may apply to ICANN. During September 2000, a total of 47 applications were received. Each applicant was required to pay a $50,000 application fee. At its November 16, 2000 annual meeting, after a brief period of public comment and a staff report, 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. ICANN's selections are subject to approval by the Department of Commerce. Both .info and .biz became operational on October 1 and November 6, 2001, respectively, while the five other chosen TLDs are in various stages of the process toward becoming operational.

ICANN's selection of new TLDs has proven controversial. Critics assert that the TLD selection process was inappropriately subjective, insufficiently transparent, and lacking in adequate due process procedures. In its defense, ICANN argues that the selection process was sufficient to meet its goal of expeditiously selecting a limited number of diverse TLDs, and that these will serve as an initial and experimental "proof of concept" phase in order to ensure that new TLDs can be introduced in the future without undermining the stability of the Internet. Both the House Energy and Commerce and the Senate Commerce, Science, and Transportation Committees held hearings in February 2001 to scrutinize ICANN and its TLD selection process. In August 2001, the Chairmen and Ranking Members of the Energy and Commerce Committee and the Telecommunications Subcommittee sent a letter to the Secretary of Commerce urging DOC to encourage ICANN to speed its process for selecting additional TLDs. Meanwhile, legislation introduced by Rep. Shimkus on June 28, 2001 (H.R. 2417) would direct DOC to compel ICANN to create a "kids-friendly top level domain name." On November 1, the House Energy and Commerce Committee held a hearing on H.R. 2417 and considered proposed substitute language that would direct DOC to create a second level .kids domain within the .us country code TLD. The .us domain is controlled by the DOC, which recently contracted its operation to a private company, NeuStar, which has also proposed the creation of a .kids domain as part of its contract with DOC. At the hearing, the DOC expressed some reservations about the revised H.R. 2417, namely that DOC would be required to develop and enforce content standards, and that the legislation alters the existing contractual obligations between DOC and NeuStar.

Trademark Disputes. A great deal of controversy surrounds trademark rights vis-a-vis domain names. In the early years of the Internet, when the primary users were academic institutions and government agencies, little concern existed over trademarks

and domain names. As the Internet grew, however, the fastest growing number of requests for domain names were in the .com domain because of the explosion of businesses offering products and services on the Internet. Since domain names have been available from NSI on a first-come, first-serve basis, some companies discovered that their name had already been registered. The situation was aggravated by some people (dubbed "cybersquatters") registering domain names in the hope that they might be able to sell them to companies that place a high value on them.

The increase in conflicts over property rights to certain trademarked names has resulted in a number of lawsuits. Under previous policy, NSI did not determine the legality of registrations, but when trademark ownership was demonstrated, placed the use of a name on hold until the parties involved could resolve the domain name dispute. 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 took action, passing 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. The bill would also provide for statutory civil damages of at least $1,000, but not more than $100,000, per domain name identifier.[2]

WIPO has initiated a second study which will produce 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. However, WIPO did not recommend new rules regarding personal, geographical, or trade names. WIPO has decided to subject its second report to a comprehensive analysis by its Standing Committee on the Law of Trademarks, Industrial Designs and Geographical Indications. The analysis is expected to be completed by mid-2002.

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[2] See CRS Report RS20367, *Legislation to Prevent Cybersquatting/Cyberpiracy*, by Henry Cohen.