



The Governance of the Domain Name System

by

[Timothy Denton](#)

This article briefly reviews a number of developments in the governance of domain names within the ICANN¹ structure. It is a story of conflict, compromise, and the development of institutions and interests in real time. For the political scientist, the interest in ICANN lies in the fact that it is a new thing in the world: a system of governance of some of the technical fundamentals of the Internet that relies neither on a treaty between states nor on a statute of a particular country, but on the consensus of the groups that comprise the supporting organizations of ICANN. For the Internet enthusiast, it a story of how, despite much controversy, ICANN was summoned into being by the consensus of Internet players that such an institution was necessary and appropriate.

Doctoral these might be written about some issues which this article deals with in a paragraph or two, or which must be passed over in silence. These issues are being fought

¹ Internet Corporation for Assigned Names and Numbers

over as I write, so that between now and the time this paper is delivered, some of these issues will have been laid to rest, while others will be gathering strength.

In this paper we will review four subject matters:

1. A brief explanation and history of the domain name system
2. A brief review of the decisions that have led to the creation of ICANN
3. The structure of ICANN, with particular attention to who pays for what
4. A tour of some of the current and settled controversies within the ICANN world, which at the time of writing concerned principally:
 - a. The role of an electorate in electing Board members to ICANN, and the proportion of Board seats allotted to this general electorate;
 - b. The relationships among country code managers, the governments on whose behalf they assign names, and that of ICANN itself, to each other; and
 - c. Various commercial disputes among the membership of the Domain Name Supporting Organizations, which have concerned the role of Intellectual Property protections in the creation of new top-level domains, and second, what to do about the market power of the former monopolist, Verisign, in the dot com space.

The purpose of this *tour d'horizon* is to provide an introduction to what I consider to be the fundamental features of the world of domain name regulation.

1. The Briefest Possible Explanation and History of the Domain Name System

1.1 The Explanation

Domain names are *mnemonics* –tools that help human beings remember Internet Protocol addresses by disguising them as comprehensible words and character sets. Resources on the Internet are located by an IP address. The orthodox view of the function of the domain name system (DNS) is to provide a single, authoritative system whereby users can locate resources on the Internet. As Stuart Lynn, the current Chairman of ICANN describes it²:

The DNS is intended to provide a convenient means of referring to sites available on the Internet. By offering users an easy-to-use and reliable means of unambiguously referring to web sites, e-mail servers, and the Internet's many other services, the DNS has helped the Internet achieve its promise as a global communications medium for commerce, research, education, and cultural and other expressive activities.

The DNS is a globally distributed database of domain name (and other) information. One of its core design goals is that it reliably provides the same answers to the same queries from any source on the public Internet, thereby supporting predictable routing of Internet communications. Achievement of that design goal requires a globally unique public name space derived from a single, globally unique DNS root.

The critics of ICANN and of its vision of the Domain Name System would deny the truth of the last sentence: they would say that we do not have to give “a globally unique public name space derived from a single, globally unique DNS root.” One of the issues we will try to examine is the need for a “globally unique DNS root”.

² “A Unique, Authoritative Root for the DNS” at <http://www.icann.org/icp/icp-3.htm>

As Stuart Lynn explains, the DNS is a distributed database that holds mapping information (as well as various other types of technical information regarding computers on the Internet) in "resource records." The DNS provides these resource records in response to queries it receives from programs called "resolvers" on individual computers throughout the Internet. The resolvers translate domain names into the corresponding IP addresses.

The DNS is hierarchical. By design, the hierarchy begins with a group of root nameservers (often called simply "root servers"), which are specially-designated computers operated under common coordination that provide information about which other computers are authoritative regarding the top-level domains in the DNS naming structure. This set of root servers house the "authoritative root". Thus, a resolver seeking information concerning a domain name such as "www.ptc.org" obtains one of the root servers' resource records about .org, which tells the resolver which computers have authoritative information about names within the .org top-level domain. The resolver then queries one of those authoritative .org nameservers about ptc.org, to locate the nameservers for "ptc.org." A query is then made to one of those nameservers to obtain the IP address of the computer designated by the name "www.ptc.org."

There are now some 13 of these authoritative root servers, all but one of which is located in the United States, and the other in Sweden. It is evident that each domain name look-up may involve consultations among several computers thousands of miles apart, from the originator to a root server, back to the originator and out to the most local authoritative

source of domain name information. The vast reduction of costs of signal traffic in recent decades, as well as the increase of computer power, lie at the heart of the DNS.

There are now some 30 million domain names registered in the .com, .net and .org Top-level Domains (TLDs), with a net increase of over 260,000 registrations in the month of July 2001.³ The recent additions of new TLDs will likely increase the number of new registrations.

The DNS is a result of consensus. It is not sufficiently understood how vulnerable the entire system is to consumer choice. To avoid ICANN's root servers, any computer user can log onto a site and obtain rapid instructions in how to point his computer to resolve on a set of computers outside the ICANN structure.⁴ Alternative root servers are easily available, though they may be less useful than the official DNS. The strength of the DNS lies in its support from the mass of users, and more importantly, in the support from the infrastructure. It is calculated that if the ISPs serving 40% of the Internet decided to go outside the ICANN DNS, the system would shortly be irrelevant.

1.2 The History⁵

Domain names emerged when the power to remember all the IP (Internet Protocol) addresses on the then fledgling IP packet-switched network exceeded the capacity to remember them conveniently. In 1971, when Peggy Karp published the first Request for

³ "State of the Domain", July 2001, published August 17, 2001 by SnapNames ©, Portland Oregon

⁴ see <http://www.pacificroot.com/updatedns.shtml> for example

⁵ The author is grateful to the work of Ross Rader, Director of Innovation and Research, for his "One History of the DNS", found at <<http://www.byte.org>>

Comment (RFP 226) on the subject⁶, the World Wide Web was then nearly twenty years into the future. Web browsers were a thing of the future. Karp created a look-up table that mapped all of the network resources in one text-formatted file, labeled HOSTS.TXT. This file would be distributed to the users on the Internet, and periodically updated on a globally available FTP server. Every operator would file an email template when a new machine was added to the list, and the people at Stanford research Institute would update HOSTS.TXT.

The Domain Name System properly so-called was conceived in RFC 799 by Dr. David Mills⁷. His concepts and proposals had the virtue of being able to scale to “thousands of hosts”. Essentially, some method of remembering host addresses had to be found that did not require the address book to be stored within one’s own computer. Building on the work of Mills, Jon Postel and Zaw-Sing Su gave the first general outline of the DNS structure in RFC 819⁸, published in 1982. Their work was completed by Dr. Paul Mockapetris of the Information Sciences Institute (ISI) of the University of Southern California in two papers RFC 882 and RFC 883. These two papers contain the two concepts by which the DNS runs: delegation and authority. Authority is conceived the ability to name all computer addresses in any of the formats (www, ftp, usenet) that are in one’s *zone*. A zone consists of all the sub-domains beneath any given domain. Thus the PTC has authority over mail.ptc.org, www.ptc.org, ftp.ptc.org and usenet.ptc.org, and so forth.

⁶ The Request for Comment, or RFC, is a standard form of document within the Internet Engineering Task Force and Internet Architecture Board. Usually by the time the RFC has been issued, however, it has already been subjected to intense scrutiny within the Internet engineering community.

⁷ Internet Name Domains, by D.L.Mills, <<http://www.rfc-editor.org/rfc/rfc799.txt>>

⁸The Domain Naming Convention for Internet User Applications, by Zaw-Sing Su and John Postel, August 1982, < <http://www.rfc-editor.org/rfc/rfc819.txt>>

Delegation describes the process by which one gains authority over one's zone. All power and conflict in the DNS today derive from the authority of Jon Postel and his successor, ICANN, to delegate.

In RFC 920⁹, the authors Jon Postel and Joyce Reynolds outlined the initial top-level domains that would be added to the DNS when it was fully deployed, including the now-famous .com, .net and .org, and set out plans for country codes based on the two-letter ISO codes. This RFC was updated in 1994 as RFC 1591¹⁰, which is considered a foundational document of the modern domain name system.

In RFC 1591 Postel wrote

“The Internet Assigned Numbers Authority (IANA) is responsible for the overall coordination and management of the Domain Name System (DNS), and especially the delegation of portions of the name space called top-level domains.”

At that time, IANA was essentially Jon Postel.

The selection of the persons to manage the Internet registries of various countries were made at Postel's discretion. Postel insisted that they had a duty to serve their communities, and that they had to be fair and equitable among all applicants.

“Significantly interested parties in the domain should agree that the designated manager is the appropriate party.

The IANA tries to have any contending parties reach agreement among themselves, and generally takes no action to change things unless all the contending parties agree; only in cases where the designated manager has substantially mis-behaved would the IANA step in.”

⁹ Domain Requirements, by John Postel and Joyce Reynolds, October 1984,
<http://www.rfc-editor.org/rfc/rfc920.txt>

¹⁰ Domain Name System Structure and Delegation, by John Postel, March 1994,
<http://www.rfc-editor.org/rfc/rfc1591.txt>

It will be seen that the early management of the domain names system rested on the foundational authority of the engineers who devised it, and who had contributed untold hours of voluntary time to its management. The culture of the system was derived from the community of academic researchers who composed the Internet in those days.

The US Defense Communications Agency chose Stanford Research Institute to manage the registration of all domain names in 1993, on the theory that those who invented it were best able to manage it. The same agency chose ISI to manage the root servers of the ARPAnet, the precursor to the Internet. In March 1985 the first domain names were registered. By the time the ARPAnet was retired in 1990, the network of networks had grown to 100,000 host computers.

In 1991, the Defense Information Systems Agency (DISA) began the process of commercialization of the DNS by assigning a contract for the management of the root servers to a private sector company, which sub-contracted it to Network Solutions Inc (NSI). In October 1992, NSI won a contract from the National Science Foundation (NSF) for domain name registration, domain name server registration, network number assignment, and autonomous system number assignment.¹¹ The import of this development was two-fold. First, the academics who had designed the Internet and the DNS were no longer involved. Second, the essential functions of the Internet had been assigned to the private sector.

¹¹ Computer hosts on the Internet are designated by autonomous system numbers, which have no reference to states or territorial boundaries.

2. The Decisions that led to the Creation of ICANN

By 1994, the World Wide Web had been launched by Tim Berners-Lee, browsers were being developed, and everyone began to hear about the Internet. The demand for domain names soared. The National Science Foundation began to allow NSI to charge for domain names, which had theretofore been given away for free. Trouble was, the NSF had no statutory authority to collect money from Americans, let alone foreigners, for this purpose.

Solving this problem of authority has been the underlying theme in all attempts to create an institution capable of governing the essential technical functions of the Internet. The ambit of this paper cannot adequately review all the maneuvering that went on among the parties between 1996 and the creation of ICANN in 1998. The problem for the Internet old-timers, such as Postel, and the members of the Internet Society (ISOC), which was the pre-eminent organization of Internet old-timers, was that they were faced with a problem of authority that they knew not how to solve. The naming system had no statutory authority; indeed in their minds concepts like statutes were as alien as Requests for Comment in the Internet Engineering Task Force (IETF) were to lawyers. The foundational authority of its designers, as personified in Jon Postel, was more similar to that of King Arthur pulling the sword from the stone than any modern conception of political legitimacy. When the functions of Jon Postel were passed to NSI, the crisis became acute.

On July 1, 1997, as part of the Administration's Framework for Global Electronic Commerce, the President directed the Secretary of Commerce to privatize the management of the domain name system (DNS) in a manner that increased competition and facilitated international participation in its management.¹² At the instigation of President Clinton, his senior advisor Ira Magaziner released a discussion paper (the Green Paper¹³) that provided for the creation of a not-for profit corporation that would assume the responsibilities for the management of the technical functions of the Internet. The Memorandum of Understanding between the US Department of Commerce and the Internet Corporation for Assigned names and Numbers (ICANN) tells the history thus:

On June 5, 1998, the DOC published its Statement of Policy, *Management of Internet Names and Addresses*, 63 *Fed. Reg.* 31741(1998) (Statement of Policy). The Statement of Policy addressed the privatization of the technical management of the DNS in a manner that allows for the development of robust competition in the management of Internet names and addresses. In the Statement of Policy, the DOC stated its intent to enter an agreement with a not-for-profit entity to establish a process to transition current U.S. Government management of the DNS to such an entity based on the principles of stability, competition, bottom-up coordination, and representation.

Reflecting the dissatisfaction that prevailed with the monopoly of domain name registration functions held by Network Solutions, the Green Paper proposed that name and number functions be divided into those that could be provided competitively and those that should be coordinated. The domain registration market was made competitive, while the functions of domain name governance, IP addresses, and protocols were assigned to a not-for-profit corporation based in California named ICANN.

¹² <http://www.icann.org/general/icann-mou-25nov98.htm>

¹³ <http://www.ntia.doc.gov/ntiahome/domainname/022098fedreg.htm>

The rationale was that ICANN should be accountable to the Internet community; that its policies should be established on community deliberation and input; and that its structure be representative of the geographical and functional diversity of the Internet, and to the extent possible that it rely on private-sector, bottom-up methods..

It is beyond the scope of this paper to review the manoeuvrings of various groups around the creation of ICANN and its subsequent recognition by the Department of Commerce. As with all issues having to do with Internet governance, factions abounded. Following the publication of the White Paper¹⁴ in June 1998, in which Magaziner adapted the previous Green Paper to some of the critiques made of it, proposals were invited for a structure to manage the technical coordination functions of the Internet. ICANN claims to have been selected from among a number of proposals submitted “precisely because it was open, consensus-based, and rooted in the Internet community”.¹⁵ Jon Postel was a leader in the development of the ICANN proposal.¹⁶ A Memorandum of Understanding between the US Department of Commerce and ICANN sets forth the rules and purposes of the relationship.¹⁷

3. The Structure of ICANN

The structure of ICANN is presented in a graph on the ICANN website, and readers will want to refer to it: http://www.icann.org/general/icann-org-chart_frame.htm.

¹⁴ <http://www.icann.org/general/white-paper-05jun98.htm>

¹⁵ Stuart Lynn, “A unique, authoritative root for the DNS”, 9 July 2001, <http://www.icann.org/icp/icp-3.htm>, at page 13

¹⁶ <http://www.icann.org/announcements/icann-pr13oct98.htm>

¹⁷ <http://www.icann.org/general/icann-mou-25nov98.htm>

ICANN is a non-profit corporation based in the law of the State of California, intended to operate for the benefit of the Internet as a whole¹⁸. It has a Board, composed of 19 members, which has all the usual powers of supervision over the activities of the corporation. ICANN also is composed in part of three supporting organizations, the Address Supporting Organization, the Protocol Supporting Organization, and the Domain Name Supporting Organization.

1. The [Address Supporting Organization](#) (ASO) is concerned with the system of IP addresses, such as 128.9.128.127, that uniquely identify the Internet's networked computers.
2. The [Domain Name Supporting Organization](#) (DNSO) is concerned with the domain name system (DNS), the system of names commonly used to identify Internet locations and resources. The DNS translates heirarchically- structured, easy-to-remember names (like www.icann.org) into IP addresses that have been assigned to specific computers.
3. The [Protocol Supporting Organization](#) (PSO) is concerned with the assignment of unique parameters for Internet protocols, the technical standards that let computers exchange information and manage communications over the Internet.

ICANN is advised, on matters relating to country codes, by a Government Advisory Committee, composed of government representatives from various national governments. The GAC, as it is called, seeks to protect the interests of national governments in the delegation of authority over national domain names, the ccTLD's.¹⁹

The by-laws of ICANN provide for an At-large membership, essentially the general electorate of the ICANN. The Address and Protocol Supporting Organizations have been

¹⁸ Articles of Incorporation of ICANN, November 21, 1998, section 4, <http://www.icann.org/general/articles.htm>

¹⁹ country code Top Level Domains

relatively uncontroversial because their mandates are so exclusively technical, whereas the composition and electoral rights of the At-Large membership, and the economic disputes in the Domain Name Supporting Organization, have provided no end of things to write about.

The first area of controversy concerns the how many of ICANN's Board members are to be elected by the at-large membership, and more generally, what role the At-large membership should play in the organization. While ICANN speaks of having 76,000 "activated members" worldwide, ICANN is not a member-owned organization, on which point the by-laws are quite explicit.

The Corporation shall not have members as defined in the California Nonprofit Public Benefit Corporation Law ("CNPBCL"), notwithstanding the use of the term "Member" in these bylaws...

The by-laws foresaw that there would be an election of five At-Large members to the Board, to sit from November of 2000 until the Annual General Meeting in November 2002

At the time of writing the three supporting organizations elected 9 of the Board members, and in principle, the other nine were to be elected from ICANN's at-large membership. In fact, elections have been held for only five of the nine-at-large seats, while the remaining four are held by the original Directors, whose terms expire after the Annual General Meeting in 2002.

The Board of ICANN was originally selected from among groups who had the background and credibility to serve. Precisely how they were selected is not known to me, but of the two of whom I have some knowledge, both were intimately associated with the development of computer networking and protocols in their respective countries.²⁰ It was anticipated that half the Board of ICANN would eventually be elected from a world-wide electorate of domain names holders, from the category of “at large” members of the corporation. How many seats the at-large membership would elect to the ICANN board, and how those elections could be managed without fraud, are subjects for entire papers. There is an ongoing controversy within the organization as to how the at-large membership should be qualified and composed, how the Board of ICANN should be organized and what role its supporting organizations should play. At stake are the following: the composition of the Board and the constituencies from which they would be drawn, the means for electing or selecting Board members, and the role of component organizations and bodies within the ICANN structure²¹.

The At-Large Study committee recommended that the membership be composed of domain name holders:

“We have thus decided to recommend a system with voting rights based on domain names, and we have proposed the creation of a system in which those domain name holders wishing to be part of the process also become part of the process of setting up an At-Large Supporting Organization (ALSO).”

²⁰ Vinton Cerf and Ken Fockler in the United States and Canada, respectively.

²¹ Several reports have been written about the structure of ICANN. See, for instance, the Report of the At-Large Study Committee, at http://www.atlargestudy.org/draft_final.shtml and some of the commentary thereon, by the Academic and NGO Study Group at <http://www.naisproject.org/>

It recommended that the At-Large membership elect one-third, rather than one-half of the Directors of ICANN, and that the three seats thus remaining be given over to a group of producers and developers.

The idea of an At-large supporting organization, which would be added to the other three supporting organizations, is intended to provide a means whereby the vast world-wide electorate of domain name holders could be turned into a useful force.

The drive to limit the number of directly elected Board members is based, in my opinion, in the apprehension that voting blocks will emerge to produce national champions who do not have the necessary technical understanding of the Internet, or share its culture, and that the electoral process will produce Board members who use it for the advance of private piques and quarrels, rather than the limited goals of technical management of the Internet.

On the other hand, the limitation of the democratic element will be seen by many as a betrayal of the original intent to have half the directors popularly elected. Limiting the electorate to domain name holders is a kind of property qualification to which many will object. Practically, if the person known as the administrative contact for a domain name has the vote, then some tens of thousands of votes are held by a very few people who manage domain names at large Internet service providers.

Based on the experience to date with ICANN controversies, it is absolutely certain that the battle over the size of the At-large contingent on the Board of ICANN, and the nature of its electorate, will be fought hard, with voices crying doom.

One could write at much greater length about the political battles about the structure of ICANN. I will limit myself to noting their existence, and observing that they bear a strong resemblance to the struggles between aristocrats, oligarchs and democrats for the soul of a constitution. The aristocrats, the Internet founders and insiders, many of whom are network managers, are concerned that the democrats will debauch the constitution. The oligarchs, the money powers, want to ensure the maintenance of their commercial interests, even as they jostle for commercial advantage among themselves, while the democrats tend to treat the whole institution as corrupt, secretive, to be cured by further opening of the process of ICANN government to greater democratic pressure. Others see ICANN as hopelessly in the grip of large corporations and no longer worth fighting about.²²

The state of the debate is summarized well in the Staff Recommendation on the At-Large Study Implementation.²³

ICANN is a consensus development body. Its Supporting Organizations are charged with the development of policy recommendations in their respective areas of expertise. ICANN's mission is narrowly (and properly) circumscribed, but even within those boundaries its actions can affect in various ways the whole community of Internet users. Thus, it has been assumed from the time of ICANN's creation that there must be some mechanism for the Internet community as a whole to provide input and accountability to ICANN -- and to help to more broadly legitimize the decisions and actions of what is a unique non-governmental organization.

The method by which this participation should take place has been the subject of quite contentious debate since even before the creation of

²² The Boston Working Group is a list serve of those concerned with ICANN issues. Several of its members maintain the darkest view of ICANN's motives, powers, and objectives.

²³ <http://www.icann.org/committees/at-large/staff-recommendation-study-15nov00.htm>

ICANN. Notwithstanding very considerable discussion and analysis inside and outside ICANN over the two years since ICANN was created, it is apparent that there is still today no general consensus on this issue among the broad Internet community.

The strange flavour of a consensus -based polity

My last observation on this debate applies to all other ICANN issues as well. Participants in a consensus-based organization such as ICANN constitute ICANN. Though it is riven into factions, parties, cabals, chapels, principalities, and baronies, in some deep sense ICANN is constituted by the effort of all these people to reach consensus. There is no part of it which stands over and against the people who compose it, like some Hegelian idea of the State. There is no interest wishing to participate in ICANN forums that will be rejected. ICANN is not some thing existing apart from its participants. Some of the more paranoid discussions of ICANN completely miss this aspect, and I confess it took me a while to understand this was a characteristic of a consensus-based organization²⁴.

4. Some Current and Settled Disputes within the DNSO

I am focusing on the “Domain Name Supporting Organization” or DNSO, one of three supporting organizations of ICANN, where virtually all the controversy resides. It is composed of seven constituencies: business, non-commercial, Intellectual Property, country-code registries, top-level registries, registrars²⁵, and Internet service providers. The country-codes, the registrars and the Intellectual Property constituencies were the first and fastest to organize, reflecting the immediacy of their interests.

There are three broad classes of issue here:

- The relationship of country code operators to ICANN and their own governments;

²⁴ A view that will be dismissed as hopelessly naïve by those who see ICANN as a cosmic conspiracy of very large corporate interests.

²⁵ <http://www.icann-registrars.org>

- The money question: registrars pay for ICANN courtesy of the revenues from registrants. Inevitably, those who pay the piper will want to call the tune. So far the monied interests have not protested, but they will exert pressure continuously to make sure ICANN understands their needs.
- The transition from a monopoly to a competitive market, where the product is highly software driven and the competitive conditions are set by ambiguous contracts which can only be changed by consensus to do so.

Country codes

The country-code registries have had a strained relationship to ICANN. Country codes are in principle supposed to receive a double delegation of authority. One comes from IANA, the institutional facade of the late Jon Postel, which has now been passed on to ICANN.²⁶ The other is supposed to come from the government of the country for which the code is operated. Owing to the happenstance of early delegations, which occurred long before governments knew or cared about the Internet, the managers of country codes have in some cases been unknown to the governments on whose behalf ostensibly they provided domain names, and in many cases the regularization of their status has yet to occur. The Government Advisory Committee (GAC) is a body that advises the ICANN Board on the interests of national governments in the management of country codes.²⁷ It issued a set of principles describing the measures it believed were appropriate to secure

²⁶ See RFC 1591 which sets out the terms for delegations to countries. See also "[Canadian Domain Governance, the Twice Delegated CIRA](#)", at www.tmdenton.com for a longer discussion of the double delegation issue.

²⁷ The GAC's homepage is hosted by the Australian National Office of the Information Economy at <http://www.noie.gov.au/projects/international/DNS/gac/index.htm>

the recognition of country code operators by both their host governments and by ICANN.²⁸

The basic thrust of the GAC principles was to say that there should be a communication from the host government to the delegee, the national domain name operator, authorizing its existence, and that ICANN should act promptly to recognize and delegate its authority to the national domain name operator. The delegee is the recipient of a public trust, and should act accordingly. ICANN, says the statement of principles,

...should, upon the tendering of evidence by such government or public authority that the administrator does not have the support of the relevant local community and of the relevant government or public authority, or has breached and failed to remedy other material provisions of RFC 1591, act with the utmost promptness to reassign the delegation in coordination with the relevant government or public authority.²⁹

At the time of writing, only Australia had effected a new delegation both from the Australian government and ICANN. Canada's national domain name operator, CIRA³⁰, is still negotiating the terms of its contract with ICANN, and it is significant that Australia has included a most favoured nation clause in its contract with ICANN, so that it will benefit from any arrangements subsequently made between ICANN and other national country code administrations.

²⁸ <http://www.icann.org/committees/gac/gac-cctldprinciples-23feb00.htm>

²⁹ paragraph 7.2 of the Principles

³⁰ <http://www.cira.ca>

The country code constituency within the DNSO is proposing to leave the DNSO and become an independent Supporting Organization within ICANN. The country code operators feel that they have very little in common with the issues affecting the other top-level domains, which have generated most of the controversies. Second, they have already received their delegations from IANA, and feel no particular rush to negotiate new arrangements with IANA's successor organization, particularly as ICANN has no real authority over the root servers which control the domain name system. This authority is still vested in the United States of Commerce. The country code constituency feels it has no real interest in coming to agreement with ICANN about the terms of the delegations. ICANN and the ccTLD constituency will issue anathemas against each other, one claiming authority, the other claiming the right to depart.

Money

The Budget of ICANN³¹ indicates the expenditures in the year 2001-2002 of just over US\$5.03M, of which some \$3.15 million, or 63% is projected to be paid by registrars. Country code registrars have been tasked with paying \$1.3M, which they steadfastly refuse to pay because they are not satisfied with their relationship to ICANN.

The imbalance between the official status of those who are carrying the cost of the organization, and their status of being one among many in the DNSO, is leading to organizational changes in the Board of ICANN that will, in all likelihood, lead to an expanded number of seats available to top-level and country-code registrars, at the expense of the At-large representation.

³¹ <http://www.icann.org/financials/proposed-budget-14may01.htm>

Expansion of toplevel domains

This is one of the few issues that may have been settled. Despite strong opposition from the IP constituency, ICANN has selected 7 new TLDs, most of which have made special efforts to grant trademark holders special registration periods in what are being called sunrise periods.³² Now that the principle has been demonstrated, further expansion of tld suffixes seems assured.

The IP constituency was chiefly concerned that the rights of trade-mark holders would be adversely affected by new TLDs and that the policing of the infringements would be made more difficult. It was eventually found expedient for several of the new TLDs to offer what came to be called “sunrise periods”, special periods before the launching of new TLDs in which trade mark and other IP holders would have special privileges to register new domain names ahead of those who could not claim equivalent trade mark and other rights. The new TLDs have been launched and the major ones, such as dot biz and dot info, are now showing significant registrations.

Transfers

The former monopolist, Verisign-NSI, was bleeding registrations at over 100,000 in the month of July 2001³³. Alarmed, Verisign instituted procedures for transfers of domain names – which is the method by which market share is changed – that other registrars considered unreasonable and vexatious. Methods to work out a valid transfer process that

³² <http://www.icann.org/tlds/>

³³ State of the Domain, July 2001, published by SnapNames, at page 5

respected the rights of the gaining and losing registrars, and which maintained the principle of automatic change of registration when a registrant asks for it, were being worked at the time of writing.

The transfers issue is at the heart of changes of market share, and therefore of competition in the registration market. As an issue it left the Registrars Constituency and became something that the Names Council, the parliament of the DNSO, began to take an interest in, in the period before the November ICANN meeting in 2001. If the issue goes up the chain from the Names Council to the Board, it will be the first policy after the domain names dispute resolution policy to be a “consensus policy”, one that is imposed on all the players and which, if implemented, would see a change in the contractual relations between the former monopolist, Verisign, and the other registrars concerning a matter vital to effective competition.

Organization of the secondary market

The evolution of the market follows the path of fixed prices moving towards market prices. The original price of \$6 charged to registrars for an original registration was set by negotiation between the Department of Commerce and Verisign-NSI. However, a secondary market is being organized so that speculators, who drive the domain name market, can find willing buyers at prices determined by supply and demand. The market issue here is whether the expansion of TLDs is more important than “lexical exhaustion” – the idea that the important limitation lies in the number of meaningful prefixes, such as

“ptc”, “bobsmith”, “yale” etcetera. If registrars are really selling off a notional continent, then a time must come when buyers link to sellers through an elaborate market maintained by trusted third parties akin to real estate. The issue here is whether the market will be organized in such a way that there is one global “real-estate” company, which acts as the broker for all resales of lapsed and deleted domain names. Inside the registrar business this issue comes up under the title of “Deletions”. When names are “deleted”, that is, not renewed, then will the registry – the land titles office – be required to provide equal access to the information, or will the market be organized so that only certain registrars obtain this information?

Conclusions

Several themes emerge:

1. the struggle for legitimacy – the need to transfer the foundational authority of Jon Postel to a consensus-based ICANN;
2. Marketization – as the domain name system evolves, it moves away from prices derived by political authority to prices and market arrangements that are fully set by supply and demand.
3. Regulatory Gaming – registrations are a low-margin, high-volume electronic business. Changes and re-interpretations of the rules have been used by registrars to shore up share prices that have been adversely affected by loss of registrations under their management.

4. Consensus – despite severe criticisms of ICANN, the domain name system rests on the consensus of the parties with a stake in the system. ICANN is a parliament in continuous session.

ICANN has no treaty-based powers. It regulates through contracts negotiated with registries, which in turn are imposed on registrars and to registrants, to the degree required to secure compliance. These contracts are subject to interpretation by courts throughout the world, and to the effects of legislation in many jurisdictions.

ICANN is a genuinely new thing in the world, not yet fully formed, and certainly far from being understood. We are at the foundation of something authentically new, and there are times when one wants to refer to the Federalist papers or Alexis de Tocquville's *Democracy in America* to understand what is going on. The decision-making processes that engineers first tried out in the Internet Engineering Task Force, which were based on "rough consensus and running code", have been transposed to a larger, more explicitly political forum. Again, even as I conclude, I can see another doctoral thesis for someone.

Speaking as a participant, I find that no person or interest is excluded from ICANN's processes; the claims of property, expertise, and democracy vie for attention. The professionals understand that on any given day, their allies on one issue can be their opponents on another, and behave according to the rule that friends come and go, while enemies accumulate. ICANN may be blown away by technical developments that obviate the domain name system. Yet as an experiment in dealing with genuinely commercial and technical conflicts without the need, benefit or hindrance of state-based authority, it is a model of how such conflicts can be worked out peacefully and rapidly. I would be remiss

if I did not add one concluding observation, which is how much fun it is to participate with all the clever people in this political sandbox.

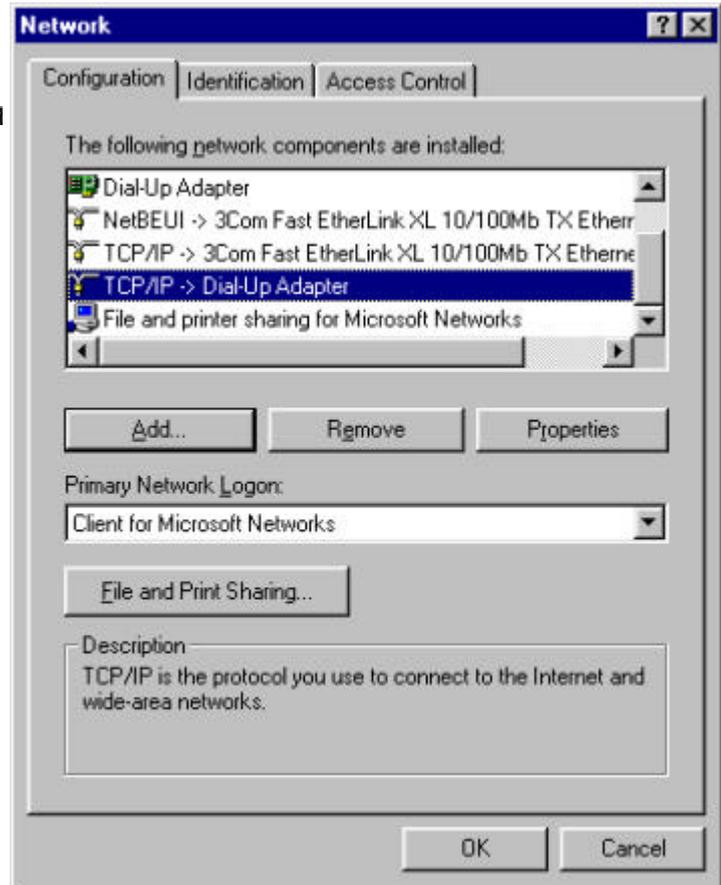
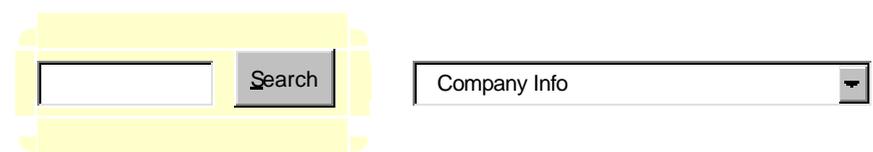
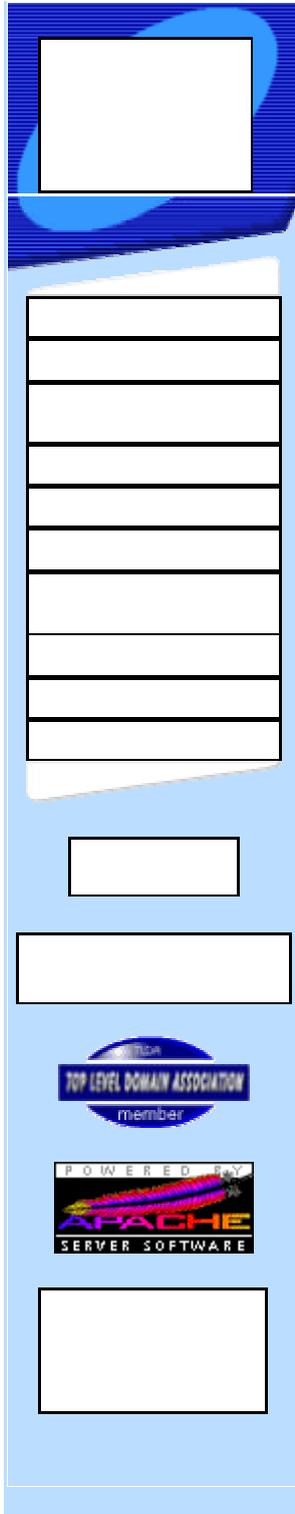
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Appendix One

Internet Corporation for Assigned Names and Numbers FY01-02 Proposed Budget - Schedule A Please See Accompanying Notes All Amounts in Thousands of U.S. Dollars						
Description	FY00-01 Budget Approved 4 Jun 00	FY00-01 Budget Projected Actual as of 31 Mar 2001	FY01-02 Proposed Budget as of 14 May 2001	FY01-02 Proposed Budget – Changes as of 14 May 2001	%	Notes
Base Expenditures						
Staff - full time equivalent	15.3	15.3	21.0	5.7		(a)
Personnel	\$1,611	\$1,220	\$1,692	\$81	5.0%	(a)
Personnel – Add'l staff	na	na	525	525		(a)
Professional & Technical Services	984	1,020	734	-250	-25.4%	(b)
Board & Public Meetings	600	525	450	-150	-25.0%	(c)
Other Travel & Meetings	420	320	425	5	1.2%	(d)
Admin & Systems	504	680	704	200	39.7%	(e)
Subtotal – Base Expenditures	\$4,119	\$3,765	\$4,530	\$411	10.0%	
Other Expenditures						
Public Meetings – sponsored events	na	225	250	250		(c)
At Large Membership Proj & Study	100	450	250	150		(f)
Subtotal - Other Expenditures	\$100	\$675	\$500	\$400		
Total Expense	\$4,219	\$4,440	\$5,030	\$811	19.2%	

Base Revenue						
TLD Name Registries & Registrars						
Un-sponsored (7)	\$2,390	\$2,390	\$3,000	\$619	25.9%	(g)
Sponsored (3)	na	na	150	150		(g)
Country Code (246)	1,496	1,277	1,300	-196	-13.1%	(g)
Subtotal - DN Registries/Registrars	\$3,886	\$3,667	\$4,450	\$573	14.7%	
IP Address Registries	428	428	496	68	15.9%	(h)
Registrar Accreditation Fees – annual	500	525	500	0	0.0%	(i)
Subtotal - Base Revenue	\$4,814	\$4,620	\$5,455	\$641	13.3%	
Other Revenues						
Registrar Accred. Application Fees	60	70	25	-35	-58.3%	
Public Meetings – sponsored events	na	225	250	250		
At Large – from grants & reserves	100	450	250	150	150.0%	
Contributions & Other	50	50	50	0	0.0%	
Subtotal - Other Revenues	\$210	\$795	\$575	\$365	173.8%	
Total Income	\$5,024	\$5,415	\$6,030	\$1,006	20.0%	
Budgeted Contribution to Operating Reserve	\$805	\$975	\$1,000	\$195	24.2%	(j)
Special Reserve for New TLDs						
Expense	na	\$1,500	tbc			(k)
Application Fees	na	\$2,200	tbc			

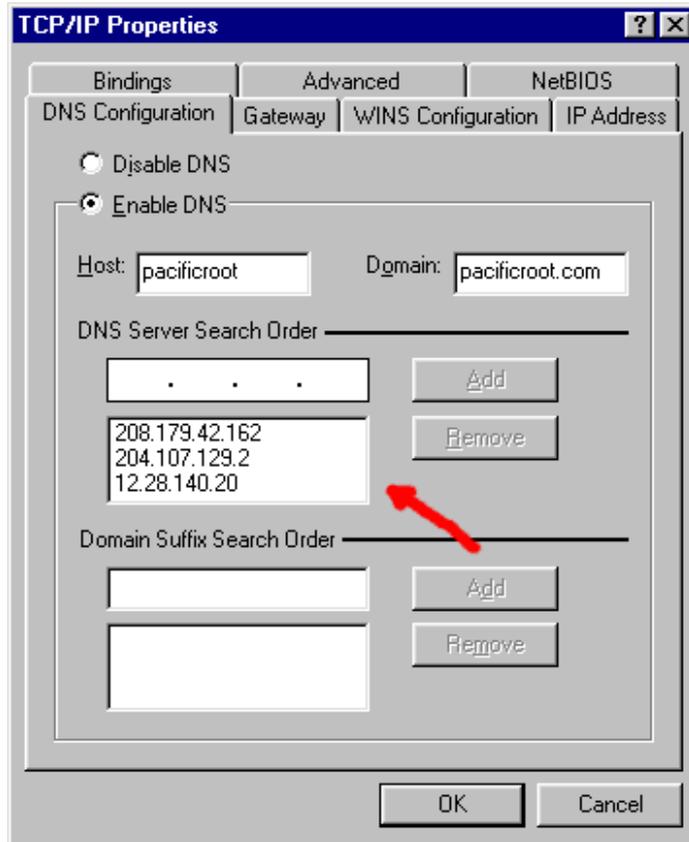
Appendix Two: Escaping the Official DNS



D
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S

Configuration for Windows 9x/Me

1. On your Desktop you will find an icon called Network Neighborhood. Point to it with your mouse and click the right mouse button and select "Properties" from the menu that pops up. This will bring up your Network Control Panel.
2. In the Configu



ethernet card) and click on Properties.

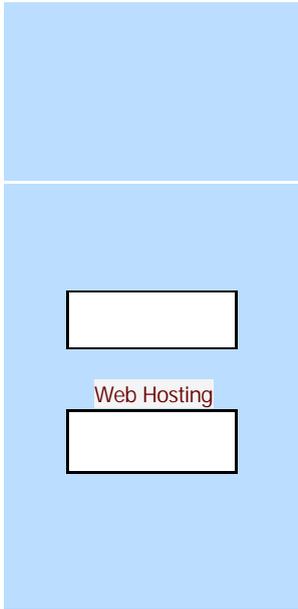
3. If you use more than one TCP/IP to connect - you can go back later and upgrade those after you finish testing your computer

with your new configuration. Then choose the DNS Configuration tab. If the "DNS Server Search Order" fields contain any information - please record the details in case you want to later restore your original configuration.

4. Click on the Enable DNS radio button. If the Host and Domain fields contain values, leave them alone. If they are empty enter the name of your computer in the Host field (this can probably be anything you like). Enter your domain name in the Domain field. If you don't have a domain you can enter your ISP's domain name - or you can be really creative and enter whatever you like. Like the Host name, it can be anything you like.
5. In the "DNS Server Search Order" field type in the following IP addresses, clicking the "Add" button after each one:

208.179.42.162
204.107.129.2
12.28.140.20

6. Click "OK" the changes and follow the prompts to reboot your computer. If it asks for the Windows CD/disks, click "OK", then the "Skip File" button. When you're back online, [click here](#) to test your configuration



Link Summary: [Test Configuration](#)

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