

Paul Twomey
Perspective on naming and addressing on the Internet
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Good afternoon. Let me say again how delighted I am to be at this important conference. On this occasion, I'd like to dwell more on some key technologies that are coming on line and helping the Internet to grow and evolve at such a rapid pace.

The Internet is indeed unique in the speed with which it is growing. This growth, which is largely market driven, creates new challenges every day.

Here, I'm happy to say, is where ICANN and its IANA function have assisted with some significant emerging technologies.

I'd like to talk about just a few of them.

As you may know, ICANN is responsible for IANA — the Internet Assigned Numbers Authority. IANA coordinates the world-wide Internet Protocol address space.

Internet Protocol addresses are the unique numerical identities used to identify each device on the Internet.

Although it may be hard to believe, the vast pool of IP addresses will need supplementing over the next decade.

Just three weeks ago, the Board of ICANN ratified a global policy for the allocation of Internet Protocol version 6 (or IPv6). IPv6 is the next-generation IP address scheme.

The introduction of IPv6 greatly expands the number of IP addresses available for use. It's an outcome that provides certainty to Internet registries and their customers, who include Internet service providers and end users.

Another development that improves Internet security is DNSSEC, which stands for DNS security extensions. DNSSEC is aimed at authenticating DNS answers to improve the security of Internet transactions and the transmission of all kinds of data.

Under the aegis of DNSSEC, users will experience greater safety and security for all their Internet transactions.

You can read more about DNSSEC and what it offers at www.DNSSEC.org.

One of the most challenging issues for the Internet's security, stability, and growth is the introduction of internationalized domain names, or IDN's, as they are known.

Historically, Internet domain names were restricted to ASCII characters — that is, a–z, 0–9, and the hyphen).

However, with the increasing use of the Internet in all regions of the world — and by diverse linguistic groups — the need for multilingual content and the capability to support multilingual use of the Internet is still increasing. Of the concerns about multilingualism, some refer to content in numerous languages, alphabets, scripts, and character sets; others to keywords in search and directory systems, and others again refer to domain names.

There is an extensive IDN program under way through ICANN's multi-stakeholder model to internationalise the domain name identifiers . Its purpose is to allow users to register and use domain names based on their local script. This includes users of languages based on right-to-left based scripts, of which the most widespread is Arabic — and also users of languages based on non-alphabetic scripts, of which the largest single contemporary language is Mandarin Chinese.

However, the implementation of IDN's has been complicated by the myriad technology, policy, and cultural issues that surround it.

To help coordinate all the groups working on these internationalisation issues, we have now held IDN workshops around the world and will continue to do so to gather information about the needs and expectations of users and stakeholders, and to inform the Internet community of progress in all aspects of IDN implementation.

As I said earlier, when the Internet was developed it was based on the LDH rule for the domain names. This means that domain names could only contain the letters a–z (L), the digits 0–9 (D), and the hyphen (H).

In 2003, an IETF technical review opened an opportunity for this character set to be expanded at the second level of a domain name.

Standards, protocols, and guidelines have been developed for implementing IDNs in second level domain names. The experience with this implementation is now being reviewed to see whether the same technology can be used with top level domain names.

For Russian speaking users, this means the ability to use domain names that consist entirely of Cyrillic characters. However, the “http://” will remain in Latin characters.

Before all this is possible, technical tests must be performed to ensure that no stability or security issues occur — in other words, we want to make sure that such implementation in the DNS root zone does not adversely affect the way we use the Internet today.

However, I want to remind you that there are still many, many security, ownership, and other issues to be ironed out before we can take advantage of this advance in Internet accessibility.

Some of these relate to online applications that allow the use of these IDN’s. For example, if browsers such as Firefox or Microsoft Internet Explorer are not upgraded, then IDNs cannot be used to access websites. On the plus side, Microsoft Internet Explorer has finally made the second level technology available in its beta-7 version, compared to the registries enabling this in 2003.

All IDN work both inside and outside ICANN is leading to the time when Internet users will be able to access the URLs using their local script, which again will provide an increased use, educational, economical, and many other benefits to the global community

I have dwelt on technical security and stability of the Internet because this is one of ICANN’s core values. However, when it comes to internationalisation we are also facing several policy issues. We are working with our supporting organisations, GNSO and ccNSO as well as the GAC, on these issues.

Now, let me talk for a few minutes about what ICANN has brought to the Internet since its inception in 1998.

They are developing software and investigating protocols to automate the processing of root zone change requests from ccTLD's.

We continue to increase the number of TLD's available to Internet communities. More TLD's means better opportunities for more communities. It also means that communities can exercise their own control over how small or large or specific they want to be. This is directly in line with ICANN's third goal — to achieve broad representation of global Internet communities.

The newest TLD's are —

dot jobs ;

dot travel;

dot mobi;

dot tel;

and dot cat;

with dot asia to come online soon.

We have held regional workshops for registrars and registries around the world, most recently in Barcelona and Soeul to encourage the global participation in ICANN's bottom-up processes, to educate about ongoing operational activities and recently implemented consensus policies.

There are 722 registrars competing for market share today, offering a wide selection of services at a range of prices.

We also signed accountability frameworks with several ccTLD's, including in the United Kingdom and Germany, over the past six months. Accountability frameworks codify the responsibilities, obligations, and working relationships between partners to ensure a secure and stable domain name system.

There is no doubt in my mind, however, that the ICANN model has worked. It has been the subject of enormous scrutiny, whilst it is still evolving — and, like the Internet, will benefit from such continuing scrutiny.

There is also no doubt in my mind that it has delivered for stakeholders who had faith in a multi-stakeholder model of governance.

In summary, ICANN is just one of the organisations involved in making sure that the Internet operates optimally and is available for all users. Although we have a vested interest in the issues affecting continuing global interoperability, governance and accessibility, ICANN has a clear core responsibility — the security, stability, and future of the Internet's system of unique identifiers, especially IP addresses and the domain name system.

It is the stakeholders, communities, and operators who ensure our success, who innovate and who resolve the issues. ICANN's responsibility is to make sure all these entities have a voice in the vitality and longevity of the DNS.