Finding Yourself on the Internet: Proposing a Fair and Reliable System

Abstract : Communication over the Internet is via resources identified by an IP address. Because it is complicated to memorize it, a domain name system was invented. Reading from right to left, domain names are used to identify a computer resource. Originally conceived as a unique identifier allows the link-trust, the domain name system was quickly misappropriated and given place to intense speculation. So, anyone can be anyone on the Internet. Registering a domain name in .COM, .FR or .DOCTOR is easy and does not require any documents. This domain name sales system has created a lucrative marketplace with ICANN, the regulator of domain names. Similarly, it is not possible today to identify with certainty the truth of the information on the Internet according to the domain name used. Thus, a teenager wishing to obtain information on voluntary termination of pregnancy will not be able to identify with certainty a source regarded as neutral.In France, the offense of digital obstruction was thus created. We will first see the system of domain names and their usefulness in the identification of a resource on the Internet. We will define in a second step the lucrative market of domain names and the consequences detrimental to the user. Finally, we propose a fair and reliable identification system, based on the tree of Diderot and d'Alembert

Keywords : Domain Name, Finding Informations and Internet

Introduction

1957. The Americans are taken by surprise on the occasion of the launch of the Soviet satellite Sputnik. By reaction and also by ego, they created the ARPA[1], an agency specialized in the technological development of the United States of America. In order to communicate between sites, a US academic, J.C.R. Lickider, imagine a wired network and destined for the army. The project will become ARPANet, for ARPA Network. Access to information on the network that will become the Internet is done through IP addresses that had to be retained. In addition, each change of server entailed a modification of its corresponding address and it was thus necessary to be informed of these: a file 'host.txt', similar to the yellow pages, transited between the participants of the network.

In 1985, an alphanumeric cache system was set up for IP addresses: the *Domain Name System*. In addition to making the paths easy to remember, it was possible to change the IP address without the end-user having to worry about it. Divided into two categories, domain names are *generic* (.COM, .NET, .ORG, ...) or *country-code* (.FR, .UK, .DE, ...) [Postel, 1994].

Based on a standard naming two-character territories, country domain names were the subject of delegation problems imputed to the goodwill of the person in charge of an entity that did not have a name and who depended on only one employee, Jon Postel.

1Advanced Research Projects Agency

Thus some extensions were and are now delegated by people with no strong links to the country in question: if the .PN was managed for a time by a radio amateur such as .TF by an Englishman, the .NA is still delegated to a German gynecologist. Similarly, many African ccTLDs are managed by an American, unrelated to the countries concerned [Genty et al., 2016].

At the same time, the management of the Domain Name System by ICANN, an American organization and until some months, dependent of the US government, caused some problems. Snowden's revelations will only make things worse. Recently, China proposed a personal root, described in the RFC "DNS extension for autonomous Internet" [MUELLER, 2017]. Russia, through the political sphere, also highlighted this need for digital sovereignty.

The alternatives of the Domain Name System by ICANN must describe their functioning according to three main points:

- **Internet Governance**
- **Economic model**
- **Naming charter**

Initiatives exist and still exist: Net4D, invented and developed by Dr. Francis Muguet knew its hour of glory from its presentation in 2007 to the death of the author in 2009. The use of the 'classes' to designate servers was an innovation carried out by Africa, adept at co-development, but criticized by some specialists of the DNS [BORTZMEYER, 2009]. Net4D governance was one of the many benefits of this proposal, with countries around the world managing the proposed organization.

An alternative root to that of ICANN was proposed by a company called Openroot, founded by Louis Pouzin, a famous engineer, creator of the *datagram* and the origin of the *Cyclades* network. This company still exists but can not develop until browsers and end users can switch between roots.

In addition to the American domination of domain name management, the fact that anyone could record anything was a problem. Indeed, anyone can file unitedstates.com or Trump.com without being worried. The opening of the new extensions, known as gTLDs, received many crises, including that of the first ICANN president, Esther Dyson in 1998, or DNS engineers.

The monetization of domain names makes it a real intangible asset while the cost of this digital tool was zero in the 1980s. Registration was free. Generated costs and the *first come, only served* rule created an important speculative market. Brands, administrative entities and individuals are the main victims. The example of cybersquatting with the business of *BLOOMBERG.MARKET* and *VINCI.GROUP* are two examples: 30 € and a little ingenuity are enough to waver these two companies worldwide by creating false rumors, causing a decrease of their Stocks.

The life and reign of Mathias Corvin, king of Hungary, saw several turnovers occur during his 32 years of sovereignty [CEVINS, 2016]. The DNS celebrates this year its 32 candles. A reversal is always possible.

Thus, we can cite Eircode, an Irish alternative to the system of streets and numbers for the grid of space. A unique identifier allows the location of each building. Although thrusting in its development, Eircode is now accepted by all.

Similarly, blockchain technology, so promising with the *cryptocurrency* (Bitcoin, Dodgecoin, Litecoin, ...) can play an important role tomorrow as a DNS infrastructure.

Proposal

In this paper, we propose the introduction of a new TLD, presented at ICANN58, the .FX

Representing metropolitan France according to the *ISO 3166-1 alpha 2* code, it will thus serve to create a trusted space, where each holder of any right will be entitled to his space, according to a well-defined naming charter . Thus, an airport will be identified according to the sub-domain .AEROPORT.FX, a tourism office by TOURISME.FX, a brand by TM.FX,…

Each individual will also receive an e-mail address corresponding to this naming charter: *firstname.name@france.fx*
In the case of homonymy, an automatic system for selecting the address from a drop-down list will be used. Any user can use this address, which will be the reference for the French state. A two-times every ten year update will ensure the continuity of management between those deceased and those who have renounced French nationality.

References

- BORTZMEYER, S. 2009. Le projet Net4D d'utilisation des classes DNS. Available on <http://www.bortzmeyer.org/net4d.html>

- CEVINS, MM. 2016. Mathias Corvin, Un roi pour l'Europe Centrale (1458-1490). ISBN : 978-2-84654-436-8

- GENTY, C, SAMIER, H & RICHIR, S. 2016. Nomde domaine et marques d'entreprise : de la disruption des politiques de nommage à celle des usages. In CONFERE 16, 7/8 july 2016, Prague

- MUELLER, M. 2017. Will the Internet Fragment ? Politybooks. ISBN : 978-1-5095-0121-2

- POSTEL, J. 1994. RFC1591, Domain Name System Structure and Delegation.