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Domain Name Registries: locating Internet Governance between the national and the global

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The Internet works according to protocols: standards that ensure the homogeneous functioning of the Internet around the world. Most of these protocols are developed by institutions that need to encompass different stakeholders involved in the Internet management - be them States, private companies, civil society groups, academics, experts and international organizations. This ongoing study aims to analyze the global governance of the Domain Name System (DNS), focusing on the interaction of different stakeholders in the management of country code top-level domains.

Internet protocols should be standardized and adopted globally to properly function. Still, even if these resources are global and operate independently of national boundaries, there is a point of contact between territory and Internet protocols: the country code domain names (ccTLDs). The Domain Name System (DNS) translates alpha numeric domains to numerical Internet Protocol (IP) addresses that especifically locate and identify computer services and devices in the underlying network. Among other things, the DNS is responsible for addressing websites. Apart from generic domains, like “.net”, ".com" and ".edu", there are more than 250 top-level domains for countries, like .nz for New Zealand and .ar for Argentina. These are the country code top-level domains (ccTLDs).

ccTLDs represent an enclave regarding the governance of resource that refers to the national sphere in the intrinsically global and deterritorialized space of the Internet. Overall, each entity responsible for the ccTLDs is free to define how it will manage its domain, and may delegate that administration to universities, private companies, governmental bodies or even individuals. The entity in charge of administering the domain name of a country is called a ccTLD operator or a ccTLD registry. Registries in each country work in coordination with the

central institution responsible for overseeing all domain names, the Internet Corporation for Assigned Names and Numbers (ICANN), a nonprofit private entity based in the United States.

The ongoing research focus on how some countries in Latin America coordinate the management of country domains names. To do so, the study is based on a comparative analysis between four ccTLD registries in the region (the Brazilian, Argentinian, Colombian and Mexican ones), each one following a different governance model - .br has a multistakeholder institution designed to managed the ccTLD, .ar is managed by the Presidency of the Republic, .mx is managed by a private university and .co is operated by the private sector.

The comparative analysis is based on semi-structured interviews with key-actors working in and with the ccTLDs. It is also based on a documental and bibliographic review, which helps set the basis for the DNS and the Internet Governance in both Latin America and the world. Firstly, the article briefly introduces what is the Domain Name System and the Latin American context for ccTLds. It then analyzes how the multistakeholder model is manifested in the governance of these domains. Subsequently, it compares each country and drives conclusions on how different stakeholders engage in the Internet ecosystem.

1. The Domain Name System

ccTLDs are part of the Domain Name System (DNS), a management system that has central authority on the Internet (KLEIN, 2002, p.196). Each computer or other electronic device connected to the Internet has a unique Internet Protocol (IP) address for locating and addressing purposes. In the case of sites, the same thing happens: each site has one or several IP addresses, which may change over time. To facilitate the understanding for humans, domain names correspond to alphanumeric alternatives to the IP address numbers. If domain names did not exist, we would need to decorate all IP addresses to access a website.

For example, to access the site of the Institute of Political Science of the University of Brasilia, you must enter the address "http://www.ipol.unb.br/".However, a computer, when processing this information, does not work with the alphanumeric version of the address, but

with the IP address, which in this case is "189.6.0.132". Like IP addresses, alphanumeric addresses must be unique. It is the DNS, the Domain Name System, which maintains the distribution of domain names and which updates the match list between IP addresses and their domain names, functioning as a phone book that aliases the number dialed to the desired telephone number.

Using technical language, DNS refers to a central database (the Internet root) stored in a set of specific computers (the root zone) responsible for name resolution of IP addresses. The database, root servers and the translation of IP address to domain name are some of the Internet critical resources. In the website "www.ipol.unb.br", for example, "ipol.unb" is what makes the page unique and is the domain that the address holder chose. The final part of the address, ".br", is the *top-level domain* (TLD).

In general, there are three types of top-level domains (TLDs) [1]. Country-codes, ccTLDs - like .br in the example, Generic Top-level Domains (gTLDs), like .edu, .com, and .org, and internationalized domain names (IDNs), domains that use non-ASCII characters, apart from the Latin alphabet (e.g. تونس).

What are Country Code Top-Level Domains (ccTLDs)?

In 2012, ICANN has accepted applications for new generic top-level domains (gTLDs). In addition to the usual 22 domains, such as .com, .org, .edu, it is now possible to claim more variations, such as .hotel, .viage and more. There is a strong financial potential to own a domain. As a result, around 2000 applications for the creation of new domains were made in the first round of the competition started in 2012.

After internal processes of analysis of the required domains involving criteria related to intellectual property, trademark and geographical issues[1] around 1300 new generic domains have been granted and a new round of applications will be launched shortly. For example, in

[1] One of the most striking cases involving a geographical dispute is the ".amazon". Amazon has filed an application with ICANN for its domain name. The Brazilian and Peruvian governments, however, questioned the existence of the domain due to the reference to the Amazon region. After strong discussions, ICANN finally denied the ".amazon" to the US company and the dispute has not been resolved until now.

Brazil ".rio" domain was created under the administration of the city of Rio de Janeiro, and ".globo" under the Globo Group.

However, only 24 of the accepted applications came from Latin America and the Caribbean, compared with 911 from North America and 675 from Europe. In addition to geopolitical and economic issues, part of the explanation for such low adherence to the new gTLDs in the region concerns the domain market in Latin America. Many domains in the region choose to use ccTLDs, country codes, a trend not so common in other parts of the world that give higher preference to domains like .com, .net (ICANN, 2015, ICANN, 2016).

ccTLDs have a great marketing potential. They represent a country in the Internet by its initials. However, they might represent much more then the connection with a territory. As an example, the island of Tuvalu has one of the largest ccTLDs in the world, since the ".tv" code is valuable for sites associated with the television industry (MERRIL, 2016, p.91). Yet, beyond the potential profitability of ccTLDs, the preference for country code domains is also related to the country's own view of the domain, which can often be understood as a matter of pride and national identification. This seems to be the case with .br, which has high penetration in the market and tends to be seen as a more reliable domain, secure against fake sites and virus perpetrators and as a clear identification that a website has content made for Brazilians.

2. Multistakeholderism in Internet Governance

CcTLD operators, who are responsible for administering a country's name domains, are a key part of the Internet in that they mark local aspects of the global functioning of the Internet[2] . In general, each country has only one ccTLD operator, which can set local currency rates for domain registration and usually has the financial resources to maintain it. CcTLD operators may have their own policies that apply only to their members and their locality, but such policies should not conflict with ICANN's centralized regional and global standards. In addition, although

[2] A contrapartida monetária é dispensável. Nem todo país permite o uso comercial do seu domínio e há até mesmo casos de domínios gratuitos como o ".tk", da ilha de Tokelau.

there is no single format for the management of ccTLDs - its administration can be carried out by universities, private companies, by the government itself - there are often entities created specifically to deal with the issue. Local government endorsement is generally required to establish a ccTLD operator, but this is not a requirement historically followed by ICANN.

Yet, while operators may adopt distinct structural configurations depending on the reality of each situation, the link to the national government or Internet history in the country, ICANN demands that these operators serve the global and local Internet community minimally - even without establishing Parameters to measure this minimum (ICANN, RFC 1591, 1999). It also demands that the operator be nominally recognized by some "relevant government authority" of the country in question (ICANN, GAC Principles, 2000). This means that ICANN, by delegating ccTLD management to an operator, expects it to have a minimum of contact with the stakeholders involved with local Internet governance and that the country's government agrees with its Without the need for a written law or standard to do so).

From these requirements, there are two key aspects of ccTLD management: the indispensable involvement of the State and the "Internet community", a term used to refer to the stakeholders involved in the topic. The importance given to the inclusion of the different stakeholders is the basis of multistakeholderism, a model adopted in many ccTLD operators and other entities related to Internet governance. This model is presented as an ideal format by international organizations such as ICANN and the UN itself, through documents such as the Tunis Agenda for the Information Society (2005), which highlights the importance of the interference of the various *stakeholders* affected and / or interested by the Internet Ecosystem[3] .

Holmes (2014) points out that, instead of a democracy founded on the state, the world could be moving toward the emergence of a disaggregated democracy, in which a series of stakeholders control each other's regulatory power without the existence of an ultimate center capable of serving as the decision-making body of last resort (HOLMES, 2014, p.1152). As far as

[3] Entende-se por Ecossistema da Internet o conjunto de organizações e processos que dão forma ao endereçamento, à gestão de serviços, às operações globais compartilhadas e ao desenvolvimento de padrões para o funcionamento da Internet conforme apresentado pela Internet Society (2010).

the Internet is concerned, decisions tend to have a constant degree of reciprocity between actors and regions, since a local decision hardly affects only a specific region, given the shared and technically dispersed nature of the Internet. Similarly, institutions that manage the Internet tend to adopt configurations open to the various stakeholders (DENARDIS; RAYMOND, 2015), and are often supported by an international community heavily influenced by private actors, such as ICANN.

New forms of regulation arise on the Internet, involving conflicting decisions that greatly interfere with countries' policies on cybersecurity, copyright, the flow of personal data, the taxation of networked goods and services, and so many others (KLEINWACHTER, 2003, 19). The abundance of geographically dispersed actors and transnational institutions by nature coordinating the workings of the Internet consolidates the idea that there must be a global multistakeholder governance model for the Internet.

At the time of the embryonic Internet, its technical coordination already occurred in a decentralized way, through the voluntary implementation of *soft law* instruments[4] with the establishment of standards and protocols for global operation. These common protocols were developed by consensus for technical efficiency. That is, several actors (academics, technical users, governments and private companies) created solutions for the Internet that were consolidated, after debate and refutation between groups, as patterns of use and functioning in a time when everything was very new and able to change.

Combining this diversity of actors, Internet governance is defined, according to the Tunis Agenda, created in 2005 at the World Summit on the Information Society (WSIS) proposed by the United Nations, as:

> The development and implementation by governments, the private sector and civil society in their respective roles of principles, norms, rules, decision-making procedures and common programs that shape the evolution and use of the Internet (Tunis Agenda, 2005, paragraph 34).

[4] Soft law is understood as "cognitive and adaptive forms that exclude the use of force for its effectiveness and rely on the force of functional imperatives" (Holmes, 2015, p.247).They are norms without the coercive power of national law, but are largely implemented by their force, especially in the international law arena.

This governance is intrinsically tied to the notion of multistakeholderism. According to Raymond and DeNardis (2015), the multistakeholder model is the union of two or more classes of actors engaged in subjects considered public by nature within a common governance environment characterized by polyarchical relations of authority established through procedural norms (DENARDIS; RAYMOND, 2015, p. 2), a fairly harmonious definition of the concept of global governance.

The multistakeholder model adopted by ICANN in its early days in 1998 was shaped by the pressure exerted by interest groups, mostly private from the United States (MUELLER, 2004), on how the technical system for names should work. Considering the importance of ICANN and its national counterparts - national operators - in the establishment and management of protocols for domains, it is necessary to analyze the emergence of a global governance regime for the Internet that lacks any formal treaty or agreement of nations, But still operates across the globe in a coordinated way from the premise of technical uniformity.

Yet, just as in global governance there is room for questioning North-South inequality and the influence of private actors, there is room for questioning within the Internet governance the capacity of multistakeholderism to effectively provide a space in which stakeholders from different sectors and different countries interact on an equal footing. More than that, there is a risk that private institutions, and some public institutions, may also co-opt Internet infrastructure to serve their own social, political and economic interests based on the technicality of the decisions made and the nature of the Internet (LEVINSON; COGBURN, 2016, p.220).

This is the risk of global Internet governance by standardization (Goran & Brunson 2006, p.82). Sassen (2004) already pointed out something similar in relation to global governance, stating that denationalization consists of several specific processes, including the reorientation of national agendas to global agendas and the circulation of private agendas embedded in public policies within states. The author stresses the concern about the presence of private agendas within the state to the detriment of the more common focus on changing the central role of the state to the private sector (SASSEN, 2004, p.1141).

This ongoing study demonstrates that States are not the only actors heavily involved with country-code domain names. Actually, non-state actors affect this arena through their technical skills and agenda setting, especially given the high capital invested. The State itself can delegate to these actors specific points of governance because they consider that a more distributed type of configuration is more beneficial. However, the conditions under which non-state actors exert their influence, specifically in the case of domain names, are closely related to the view that a specific country has on its ccTLD.

3. ccTLDs in Latin America: diversity within Internet Governance

The roles that the different actors assume in Internet governance varies in each context, generating specific approaches at a national level. Policies that are most effective for Internet governance, especially regarding critical Internet resources (e.g IP addresses and domain names) not only respond to the immediate needs of the technical management, but also allow the development of institutional capacities that generate a better articulation of the policy with all the stakeholders involved (AGUERRE, 2015, p.271).

In the specific case of ccTLDs, there is no single pre-defined ICANN model for the management of this resource, and each country has a history that makes it unique both in its governance model and in the business model. In order to understand the nuances between the different ccTLDs, this paper analyzes ccTLD operators according to three main points: the domain delegation history, the governance model adopted, the business model of the operator and its relationship with ICANN.

Delegation history: unpredictable paths

> "The first IP addresses that were handled in Brazil were assigned to Demi. Demi always acted in good faith, and Brazil was lucky to find a person like that, because Postel did not care who you were when he gave the ccTLD to you" (Sebastián Bellagamba, personal interview in AGUERRE, 2015).

In the world of critical Internet resources, there has been a tendency for a number of relevant and global issues to move through elites - including the political elites of the countries

- without necessarily involving the Ministries of Foreign Affairs or a specific governmental body. Thus, global Internet schemas such as ICANN's creation and delegation of ccTLDs occurred without the direct knowledge and involvement of most States (AGUERRE, 2015, p.242), especially in the global South.

As DNS began to impose itself as a preeminent protocol, especially with the rise of the World Wide Web, the delegation of ccTLDs was almost casual. This delegation occurred "at the discretion of governments, through the application of criteria formulated by the technical community, in the context of a strictly North American governance regime" (LUCERO, 2011, p.96). This has entailed a considerable variety of trajectories for ccTLDs. From the outset, Jon Postel delegated country domains to key players who could represent a government, a university, a private association or even a company. The necessity of approval of the governments only came later.

The .ar was the first ccTLD to be delegated among the analyzed. In 1987, the IT department of the country's chancellery acquired control over the domain in a process that was more by chance than a strategic government policy. The engineers of the Foreign Ministry were in constant contact with the communication department of the University of Buenos Aires for the development of the national Internet infrastructure and made the interlocution between the country and Jon Postel.

In 2011, a presidential decree changed the responsibility for the .ar from the chancellery to the National Agency of Domain Names, a body created within the Legal and Technical Secretariat of the Presidency of the Nation, where the ccTLD remains until now.

The .br and the .mx were delegated in 1989. In both the Mexican and the Brazilian cases, the trend was the same in most latin american countries: ccTLDs were delegated to universities. In Brazil, Jon Postel delegated the .br to the team that worked in academic networks in the context of the Foundation for Research Support of the State of São Paulo (FAPESP).

In 1995, the government published a decree creating the Internet Steering Committee. By that time, the Ministers of Science and Technology and Communications had close personal relations with the main stakeholders of the National Research Network, which

was actively involved with the development of the Internet in the country (CARVALHO, 2006). Thus, since the beginning, CGI was thought to adopt a multistakeholder model given that the context in which it was created was of effervescence and strong interlocution between stakeholders .

Considering the importance of the services associated to the .br management and its monetization, an institutionalization for the function then exercised by FAPESP became necessary. At the same time, the idea was strengthened that it would be necessary to formalize elections for non-governmental CGI chairs in an effort to reduce the Committee's dependence on government policies. Thus, in 2003, a presidential decree was issued implementing CGI elections and increasing the number of seats for non-governmental representatives.

It is also in this context that NIC.br was created, a private non-profit organization that acts as the coordinator of the Internet Steering Committee, supporting and executing the technical, administrative and operational decisions and recommendations made by CGI.br. It is NIC.ar that takes care of the effective management of .br, having full "administrative, patrimonial and financial" autonomy (NIC.br, 2005, statute).

The .mx was created in 1989 within the Monterrey Institute of Technology and Higher Studies (ITESM), a department of a private university responsible for Mexico's first connection to the Internet. However, other universities in the country were involved in the process of connecting the country to the Internet. In 1995, parallel to the commercial expansion in the use of .mx and the commercial Internet in the country, ITESM was officially indicated as NIC.mx (Network Information Center for Mexico) (GAYOSSOS, 2003, p.7). The Mexican government, while minimally involved in efforts to advance the Internet into the country, did not actively participate in the construction of .mx. Thus, for many years, .mx was independently coordinated within ITESM, which occasionally and informally informed the government of its decisions.

Colombia was the last of the countries analyzed to establish its ccTLD operator. In 1991, the Computing Center of the University of the Andes, a private entity based in Bogotá, first connected Colombia using the TCP/IP protocol with the help of other stakeholders.. With this, the University began to administer the ccTLD. Initially, the engineers of the University

requested the .cl domain but were informed that these two letters had already been delegated to Chile and did not match the ISO code for Colombia.

Ten years after the delegation, in 2001, Uniandes began considering the possibility of marketing the domain as an alternative to generic top-level domains, because of the proximity to .com and its connection with the English terms “company” and “corporation”. However, the Colombian government opposed this initiative, arguing that the university, a private entity, had no regulatory competence over the TLD. Public debates then started to happen in the country until July 2006, when the Government of Colombia issued Law 1065 of 2006, regulating the administration of the service of registration of domain names for the .CO.

According to the law, this activity is the responsibility of the Ministry of Information Technologies and Communications, which could delegate the administration of the .co to third parties in a contract of up to 10 years, open to renewal on a single occasion (IANA, .co report, 2009).

In May 2009, a public bidding process was initiated and the winning company was .CO Internet SAS, created specifically for the purpose of potentially managing .co (IANA, .co report, 2009). Uniandes then ceased to provide ccTLD management services and ICANN redelegated .co to the Ministry of Information Technology and Communications, placing the .CO Internet SAS concessionaire as a sponsoring organization. In 2014, .CO Internet SAS was acquired by Neustar for US $ 109 million and became a wholly owned subsidiary of the US company. Neustar already operated .CO as a backend, giving infrastructure support for the registry, and is the owner of other domains such as .us and .biz.

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The trajectory of each country in the construction of its ccTLD demonstrates similarities and differences between them. Notably, the close relationship between academia and the emergence of the first Internet connection is present in all cases, even in Argentina, where part of the engineers and technicians who leverage the network nationally worked within a governmental body. Intranet pioneers (mostly academics) in each country overcome the technical and regulatory challenges involved in the incipient Internet in attempts that have progressed in parallel with the evolution of the Internet itself.

The history of the Internet in each country - and the stakeholders involved in each case - defined the trajectories that operators have adopted up to the present. Jon Postel delegated domains based on personal trust and standards collectively agreed by technical bodies on mailing lists. There was no fundamental concern regarding the national sovereignty of each country or the use of domains as public goods.

Thus, the legitimacy of the delegation of ccTLDs did not depend on the endorsement of the countries, even if this resource was clearly linked to the national identity. The ccTLD delegation depended on who came first to Jon Postel, requesting the domain for themselves. This delegation process generated quite different results from the generic domains (gTLDs). ICANN has a strong responsibility for all gTLDs, thus creating policies for its administration. All companies for which the generics have been delegated are contractually submitted to ICANN and to the policies that the Corporation defines. In the case of ccTLDs, however, the role of ICANN initiated in Jon Postel was simply to hand over the domain to a representative of the national community who would then define rules on its own and would not be contractually submitted to ICANN.

The ccTLDs freedom has historically generated distinct paths, but is always marked by a strong connection to the growth of the Internet itself in the local context. Generic domains, such as .net, although technically operated in the same way as a ccTLD, are not at the center of the Internet development of any country, and the companies to which they are delegated operate according to a free-market North American logic that aims at profit as its final objective. ccTLDs, on the other hand, are the resources that have actively been at the center of the Internet development in Latin American countries.

Many models, one basis: ccTLD's governance

> "The whole ccTLD thing is historical. The ccTLDs were just given to the countries (...) and pre-date the ICANN model. That's the prime thing that differentiates them: they sit outside the gTLD structure, they have full autonomy to set their own policies" (interview, 2017)

The process of delegation of ccTLDs, in which ICANN only delegates the resource without being responsible for the policies for its operation, generates a large autonomy for ccTLD operators that freely decide internally how they will work. Of the cases analyzed, the Brazilian ccTLD is the one that presents a governance model with more nuances. Spanning distinct stakeholders in both the Brazilian Internet Steering Committee and its administrative arm, NIC.br, the .br model predates ICANN itself - being one of the earliest entities in the Internet ecosystem to formally adopt multistakeholderism as a best practice.

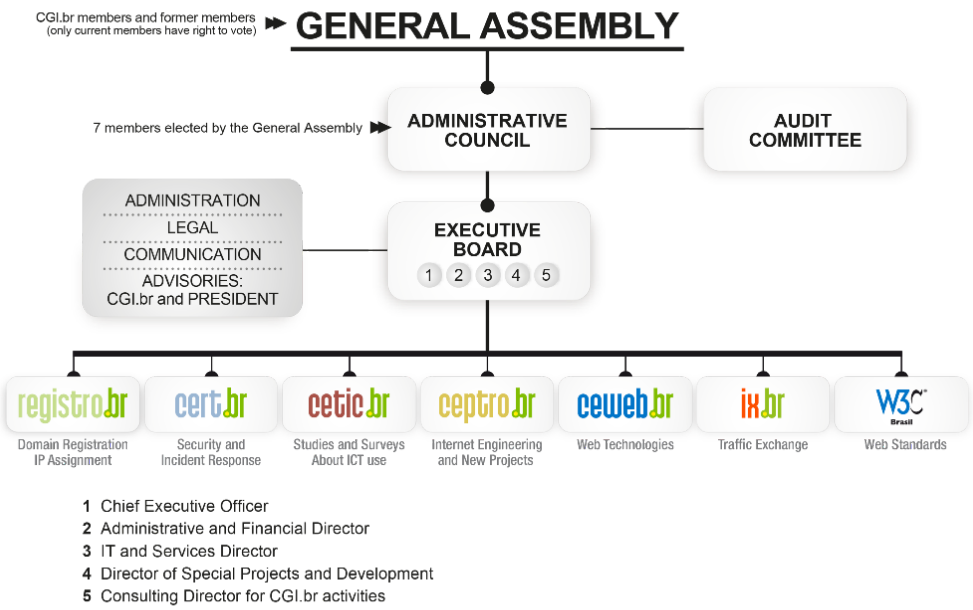
The distribution of seats within CGI.br provides nine vacancies for the government and eleven vacancies for non-governmental stakeholders. The government appoints nine representatives and their alternates from within the Ministries. The other eleven non-governmental seats are defined through a three-year electoral process. The elections take place, first, with the formation of the electoral college. Entities subscribe to CGI.br according to their category. The Third Sector has the right to four vacancies; the Scientific and Technological Community to three and the business sector to four (divided into four categories: a) Internet access and content providers; b) Providers of telecommunications infrastructure; c) Industry of computer goods, telecommunications goods and software; d) Business sector of Internet users). Entities that prove that they have all the requisites for registration in the electoral process (such as a minimum of two years' existence and proof of legal personality) have the right to nominate representatives and to vote on those nominees who agree to participate in the electoral process.

On August 8, 2017, the Ministry of Science, Technology, Innovation and Communications (MCTIC) opened a "Public Consultation on the Modernization of the Brazilian Internet Governance Structure." The consultation surprised CGI.br itself, which was not consulted or informed in advance (Coalizão Direitos na Rede, 2017). After clashes between the government, members of the Committee and civil society entities, also supported by an international pressure that showed concern for the Brazilian multistakeholder model, a new public consultation was scheduled (Resolution 031 of 2017, CGI.br). Therefore, the addition of a new decree and potential changes in the composition of the CGI are expected for the year 2018, although it can not be stated which decision will be taken by the government based on

the public consultation.

Moreover, NIC.br coordinates the activity of the following bodies attached to CGI.br, each one functioning as a part of NIC.br, like CERT.br, the central of notifications of security incidents in Brazil and CETIC.br, a center that conducts research on Internet access and usage:

Image 1: NIC.br structure



Retrieved from "nic.br"

The Mexican case is marked by two specific years: 1997 and 2001. NIC.mx had only a administrative board until 1997, when the entity promoted its first "Information and Feedback Meeting of NIC Mexico", gathering clients to inform them about the Internet environment in the country and to gather suggestions and criticism about the service provided. Then, in 2001, NIC.mx formally established an External Advisory Committee with the objective of being a multistakeholder consultation body oriented to discuss strategic issues and recommendations for NIC.mx, also boosting the development of the Internet in the country.

The Committee is composed of up to 15 members representing the national Internet community from three sectors: industry, academia and government. The members participate in their personal capacity and are selected by the Board of Directors of the entity. It should be noted that, similarly to CGI.br, the NIC.mx is divided into other entities that operate below the

umbrella of the entity, such as Akky.mx, a domain name company created to compete with registrars like GoDaddy.

The Argentine case is emblematic because NIC.ar is part of the state bureaucracy. The operator works as a division of the Office of the Presidency of the Republic and as such is managed according to the standards of the country's public service. In 2014, the Argentine Internet Policy Commission (CAPI) was created. CAPI was established as a formal space for intra-governmental coordination on Internet issues. The Commission articulates the work of eight agencies that are involved with the different layers of the country's Internet policy (AGUERRE; GALPERIN, 2015, p.11).

CAPI was created to foster multistakeholder initiatives into policy making. However, expectations that CAPI could function as a multistakeholder entity for Internet affairs were not met as the Commission currently works only as an institutional arena for coordination only within the government. Thus, CAPI could not become a space similar to CGI.br, nor a space as the one promoted by NIC.mx.

.co has an outsourced governance model: the ccTLD is delegated to the Ministry of Communications but executed by a private concessionaire. Changes in the domain policies, therefore, need to be published by MINTIC, even if based on decisions from the company's board of directors and subsequently debated by the public administration. In addition, the contracted company pays a fee in accordance with its profit to a national development fund. Still, Colombia also tried to insert some multistakeholder control mechanism for .co. .CO Internet SAS has an Advisory Committee to assist ccTLD policies, serving as a forum for dialogue between the Ministry and some guests from other sectors to discuss general directions for the domain.

In all cases, it is important to note that each ccTLD at least tried to create a multistakeholder supporting entity to increase the legitimacy of the operator. Moreover, each ccTLD undertakes activities related to the development of the local Internet community.

What does a ccTLD mean? Business Models and Sales Strategies

In addition to governance models, each ccTLD also adopts different business strategies. This happens because "while ccTLDs might be local, alternatives are global" (OECD, 2016, p. 5), which causes some ccTLDs to take advantage of their acronym in a different direction than the country's national identity. Thus, while some ccTLDs maintain a strategy of functioning as a global identifier for content from a specific country, others choose to capitalize on potential acronyms- such as .tv (Tuvalu) for television companies and .nu (Niue), which is popular in Sweden where "nu" means "now". These are ccTLDs that work as quasi-generics or open ccTLDs - domains that are two-letter codes for countries and as so are not subject to specific ICANN policies but which are sold in the same way as gTLDs (OECD, 2016, p.21).

This is the case, in a certain extent, of .co. The redelegation process of .co had as its main motivation the possibility of exploiting the commercial potential of the ccTLD, especially aiming at the foreign market. With the decision of the Colombian government to exploit .co as a public good through outsourcing the domain and selling to the national and global markets, there was greater freedom to do marketing, especially focusing on other countries and the number of purchased domains increased dramatically. There was more than 2000% growth, with a total of more than 500,000 domains purchased in the first months of operation (.CO data). It should be noted that the use of .co at the national level has increased, reaching 10% of the total domains.

This expansion was due precisely to the commercial strategy of the outsourced company. .CO Internet SAS was founded by people who already had experience in the world of domain names and who had close relationships with Neustar, a US company that is a great leader of the DNS market. Therefore, the similarity of .co with the abbreviation "company" and "corporation" was capitalized and nowadays .co is sold via registrars freely for whoever wants to buy it.

Mexico for many years faced direct competition with generics, especially with .com. Given the proximity to the US, the local population was able to easily purchase a .com domain and not only register their domain, but also purchase products such as a secure website and hosting certificate, which placed at a disadvantage those who sold or offered .mx-only products

(personal interview). Even so, the ccTLD represents 60% of the national market and also seeks to sell .mx among the immigrant population within the United States (personal interview).

NIC.mx works via registrars, without directly selling the domains under the ".mx", only centralizing the registration of domains that are sold. In addition, a recent strategy of NIC.mx was to take advantage of the creation of new gTLDs to request the generic ".lat" to refer to Latin America. .lat was created and is currently operated and sold by NIC.lat, an entity that brings together NIC.mx with the Latin American and Caribbean Federation for Internet and eCommerce (eCOM-LAC). The decision to create the .lat domain is an example of a commercially oriented institution that predicts the potential of a Latin American market (AGUERRE, 2010, p.13) and chooses to create a generic, geographic domain for this purpose.

In addition, NIC.mx performs a vital activity for the functioning of the Internet in the country and that few ccTLDs do: the entity is a National Internet Registry (NIR). In other words, besides administering .mx, it is also responsible for allocating the IP address blocks in the country, which only happens as well in Brazil within Latin America and the Caribbean. While Internet operators from other countries in the region must request blocks to the regional IP address registry, LACNIC, both countries obtain them directly from NIC.br and NIC.mx (AGUERRE, 2015, p.219).

The Brazilian case is more restricted than the Colombian and Mexican ones. In Brazil, the sale of domains is available to individuals and entities legally represented or established in Brazil. This implies that for a foreign company to be able to register a .br domain, it must have an attorney legally established in the country. In addition, the domain is a monopoly of NIC.br - that is, the Brazilian model does not have the figure of registrars. NIC.br also requested some new domains from ICANN during the creation new generics and received the Corporation's endorsement to operate the .final and the .bom(brazilian words for “end” and “good”), although it has not yet established policies for the effective sale of these domains.

The Argentine model experienced moments of institutional inertia regarding the implementation of a tariff system for the registration of domain names. The ccTLD operates without the presence of registrars and, for a long time, was free. The idea behind the free domain was that the broad availability of .ar would make it easier for Argentines to access the

Information Society (a practice not adopted by 95% of the world's ccTLDs - which charge some fee even if only to ensure technical efficiency). In practice, the gratuity favored cybersquatting, generating a large volume of domains that were registered but never active. For example, until 2007, only 26% of the .com.ar domains were in operation (AGUERRE, 2015, p.214).

In 2014, the domain was began to be charged and the number of .ar domains fell from 2.5 million to 1.5 (LACTLD, 2014). In order to institutionalize the registration process, from 2014 onwards, NIC.ar began to demand tax numbers provided by the government for a person to buy a .ar. In the case of legal entities (companies or organizations), it became necessary to appoint an individual to act as Legal Representative of the company. In addition, foreign users and companies can acquire .ar domains, but only by completing forms and proving its identity. Thus, the .ar registry was heavily bureaucratized.

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The commercialization of a domain name vary among the different ccTLDs. ccTLDs are mainly relevant to domestic markets but may occasionally become very relevant to the international market, like the .co. On the other hand, generic domains may be more relevant to the international market, but still have a massive penetration in a specific country. In the cases analyzed, all ccTLDs are tied to the national market, either because of their restrictions on sales to foreigners (.br and .ar), their penetration and focus in the national market (.mx) or the contribution to the local Internet community (.co).

.co, although essentially delegated to the Colombian State, is the closest to a model of free market and free competition (MUELLER; BADIEI, 2014), while .br and .ar are more focused on the national identity. However, .mx and .br have strategies for expanding the ccTLDs market according to a logic of competition well, as seen in their strategic acquisition of new gTLDs like .lat and .bom. When ccTLDs act in a similar way as gTLD's business model, domains tend to be seen as unrelated to sovereignty issues, especially as they are subject to a global authority that is not an organization based on intergovernmental treaties around principles of sovereignty, but a private not-for-profit corporation organized under the law of California (ICANN).

However, it is possible for a ccTLD to maintain national penetration (taking advantage of the domestic market) and exploit its two-letter code in some other marketable meaning

(MUELLER; BADIEI, 2014, p. 2, 27). After all, in the case of Colombia, the ccTLD still contributes financially to a governmental fund aimed at Internet issues, seeking the external market with the support and encouragement of the local government itself.

International insertion: a stakeholder within a stakeholder

> "It was computer scientists, non-state stakeholders , who introduced the concept of ccTLDs to represent nation states on the Internet" (PARK, 2008, p.14).

ccTLDs are not contractually submitted to ICANN and its DNS policies. Thus, not all ccTLDs have formal agreements with ICANN, although larger operators have sewn regular technical arrangements and informal agreements with the Corporation. The Framework of Accountability was designed precisely to meet the ccTLDs' desire to have a link with ICANN without signing a full agreement. It constitutes mutual recognition and commitment from both parties (ICANN and the registry) and even involves the establishment of a financial contribution to be paid to ICANN annually.

In addition, some ccTLDs desirous of simpler statements of commitment, formalized their relationship with ICANN through an exchange of letters (PARK, 2009, p.37). In the analyzed cases, both .co and .ar have no formal relationship with ICANN signed through the Accountability Framework or an exchange of letters.

Table 1 - ccTLDs relationship with ICANN

ccTLD	**.br**	**.ar**	**.mx**	**.co**
Formal relationship with ICANN	Exchange of letters in 2007 (CGI.br-ICANN)	Does not have	Accountability Framework signed in 2008	Does not have

Source: author's elaboration

Because ccTLDs have the liberty to define their own rules, not all ccTLDs adopt similar points of views. As mentioned earlier, it is possible that ccTLD behaves more like a generic

name, like .com, having very different opinions on DNS themes than a ccTLD more related to the national identity. This means that ccTLDs are, at the same time, one single stakeholder (the two-letter domains related to countries) and many stakeholders (those more attached with a sovereignty worldview or market oriented one).

4. ccTLDs in Latin America: diversity within Internet Governance

Because ccTLDs have the liberty to define their own rules, not all ccTLDs adopt similar points of views. As mentioned earlier, it is possible that ccTLD behaves more like a generic name, like .com, having very different opinions on DNS themes than a ccTLD more related to the national identity. This means that ccTLDs are, at the same time, one single stakeholder (the two-letter domains related to countries) and many stakeholders (those more attached with a sovereignty worldview or market oriented one).

The diversity of interests inside the ccTLD universe resembles Belli's (2015) suggestion of a "heterostakeholder" model instead of a multistakeholder one in order to ensure diversity of opinions rather than relying on a "quantitative approach" that categorizes those inside the Internet Governance arena into Civil Society, Private Sector, Technical Community and so on without clarifying what are the interests being portrayed (Belli 2015:7). In this model, stakeholders would be identified for both their stakeholder's hat but also their specific statements of interests.

As perceived by the three main axes analyzed in each ccTLD (its history, governance and business model), each country-code domain has a specific path and model and it is not possible to homogenize them into a common ground besides their semantic connexion to a territory and their lack of dependence to the Internet Corporation of Assigned Names and Numbers. Thus, this ongoing research is currently on the stage of uniting all the data collected and analyzing what are the implications of such diversity to the Internet environment of Latin America in a broader way and its relationship with the ascendence and establishment of non-State actors in the Internet Governance overall at the expense of the dissemination of the multistakeholder idea.

REFERENCES

AGUERRE, C. La gobernanza de Internet: Argentina y Brasil en el contexto global. PhD Thesis, University of Buenos Aires. 2015.

_____. Internet communities in Argentina and Brazil: origins, networks and institutional development. 2010. VI ANNUAL GIGANET SYMPOSIUM, p.1–16.

_____. ccTLDs and the local dimension of Internet Governance. DOCUMENTO DE TRABAJO N°8, University of San Andres, p.0–25. 2016. Retrieved from: https://www.researchgate.net/publication/228680412

AGUERRE, C.; GALPERIN, Hernan. Internet Policy Formation in Latin America: Understanding the links between the National, the Regional, and the Global. 2015. (November), 1–45.

BELLI, Luca. A heterostakeholder cooperation for sustainable internet policy making. Internet Policy Review, v.4, n.2. 2015. Retrieved from: http://policyreview.info/articles/analysis/heterostakeholder-cooperation-sustainable-internet-policymaking

CARVALHO, M. A trajetória da Internet no Brasil: do surgimento das redes de computadores à instituição dos mecanismos de governança. Rio de Janeiro, 2006. Master thesis from the State University of Rio de Janeiro.

CGI.br. 15 anos do CGI.br: A Evolução da Internet no Brasil. 2010. Revista .br, 02(03).

CGI.br Resolution 031 of 2017. Retrieved from: https://www.cgi.br/resolucoes/documento/2017/031

CGI.br. Interministerial Ordinance 147, of May 31st, 1995. Retrieved from: https://www.cgi.br/portarias/numero/147

CGI.br. Presidential Decree 4,829 of September 3rd, 2003. Retrieved from: https://www.cgi.br/pagina/decretos/108

CHENOU, Jean-Marie. Classic Elite Theory, Global Democratic Governance and the Emergence of Global Elites. Is Internet governance a democratic process? Multistakeholderism and transnational elites. IEPI – CRII Université de Lausanne. ECPR General Conference 2011 Seção 35, Painel 4.

Coalizão Direitos na Rede. On the attacks of the Temer government on the Internet Steering Committee in Brazil. 2017. Retrieved from: https://direitosnarede.org.br/p/temers-government-attacks-cgi-br/

DENARDIS, Laura; RAYMOND, Mark. T. Multistakeholderism: Anatomy of an Inchoate Global Institution. International Theory, 2015. Avaiable at: http://journals.cambridge.org/action/displayAbstract?fromPage=online&aid=9970835&fileId=S1752971915000081

DJELIC, Marie-Laure; SAHLIN-ANDERSSON, Kerstin. Introduction: A world of governance: The rise of transnational regulation. In: Transnational Governance: Institutional Dynamics of Regulation. Cambridge University Press, 2006.

GASSER, Urs; BUDISH, Ryan e WEST, Sarah Myers, Multistakeholder as Governance Groups: Observations from Case Studies (Janeiro, 2015). Berkman Center Research Publication No. 2015- 1.

GAYOSSO, Blanca. Cómo se Conectó México a Internet? Retrieved from: http://www.ru.tic.unam.mx/bitstream/handle/123456789/664/102.pdf?sequence=1&isAllowed=y

GORAN, Ahrne; Brunsson, Nils. Organizing the world. In: Transnational Governance: Institutional Dynamics of Regulation. Journal of Chemical Information and Modeling (Vol. 53), pp.74-94.

HOLMES, Pablo. Deslocamentos transnacionais da soberania popular: império e multidão como distinção pós-democrática? Tempo Social. Revista de sociologia da USP, v. 27, n.1, 2015, p.239-260.

ICANN, 1999. Request for Comments: 1591 - Domain Name System Structure and Delegation. Disponível em: https://tools.ietf.org/html/rfc1591

ICANN, 2000. (GAC Principles) Principles for Delegation and Administration of ccTLDs. Governmental Advisory Committee. Retrieved from: https://archive.icann.org/en/committees/gac/gac-cctldprinciples-23feb00.htm

ICANN, 2015. The commercial development of ccTLDs in the LAC Region. Retrieved from: https://community.icann.org/display/lacstrtgy/Project+4.6.1+-+Supporting+the+Commercial+Development+of+ccTLD+Registries+in+the+LAC+Region

ICANN, 2016. Latin American and Caribbean DNS Marketplace Study. Retrieved from: https://www.icann.org/news/announcement-2016-09-22-en

KLEIN, H. 2002. ICANN and Internet Governance: Leveraging Technical Coordination to Realize Global Public Policy. The Information Society, 18(3), pp. 193–207. Disponível em: http://doi.org/10.1080/01972240290074959

KLEINWÄTCHER, Wolfgang. Internet Co-governance: towards a multilayer multiplayer mechanism of consultation, coordination and cooperation (M3C3). E-Learning. Vol 3, Nº 3, 2006.

_____. Global Governance in the Information Age. Development, 46(1), 2003, pp. 17–25.

LACTLD. Report 2016. Year 5, 9th Edition. Retrieved from: https://www.lactld.org/reports/lactld-report-9-2016/

LEVINSON, Nanette; COGBURN, Derrick. Conclusion In: The turn to Infrastructure in Internet Governance. Information Technology and Global Governance Series - Palgrave Macmillan, pp.219-224, 2016.

LUCERO, E. Governança da internet: aspectos da formação de um regime global e oportunidades para a ação diplomática. Brasília: Fundação Alexandre de Gusmão. 2011.

MALCOM, J. (2015). Criteria of meaningful stakeholder inclusion in internet governance. Internet Policy Review, 4(4).

MERRIL, Kenneth. Domains of Control: Governance of and by the Domain Name System. In: The turn to Infrastructure in Internet Governance. Information Technology and Global Governance Series - Palgrave Macmillan, pp.89-106, 2016.

MUELLER, Milton. Networks and States: The Global Politics of Internet Governance. Information Revolution and Global Politics Series, Ed. MIT Press, 2010.

_____. Internet domain names: Property rights and institutional innovation. Entrepreneurship and economic growth in the American economy, vol.12, 2000, 93-131. Disponível em: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1512337

_____. Ruling the root: internet governance and the taming of cyberspace. Ed. MIT Press, Cambridge, Massachussets, 2004.

MUELLER, M. L; BADIEI, F. Sovereignty and Property Rights: Conceptualizing the Relationship between ICANN, ccTLDs and National Governments, p. 1–28, 2014.

NIC.br. Statute. 2005. Retrieved from: http://www.nic.br/estatuto/index.htm

OECD. Evolution in the management of Country Code Top-level Domain Names (ccTLDs). Working Party on Telecommunication and Information Services Policies. 2016. OECD's Directorate for Science, Technology and Industry.

PARK, Y. J. The national ccTLD disputes: between State actors and non-state actors. International Journal of Communications Law & Policy, Issue 13, p.185–206, 2009.

PARK, Y. J. The Political Economy of Country Code Top Level Domains. Dissertation, School of Information Studies of Syracuse University, p.1–231, 2008.

SASSEN, Saskia. Territory and Territoriality in the Global Economy', International Sociology, 15(2), 2000, S. 372-393.

SLAUGHTER, Anne-Marie. Global Government Networks, global Information Agencies, and Disaggregated Democracy', in Harvard Law School Public Law, Working Paper 018.

TUNIS. Tunis Agenda for the Information Society, 18 nov. 2015. DocumentWSIS-05/TUNIS/DOC/6(Rev. 1).