BRAZIL'S EMERGING ROADMAP FOR INTERNET GOVERNANCE

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Abstract

Brazil's Emerging Roadmap for Internet Governance

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This thesis is an examination of the roadmap Brazil is drawing to govern the Internet domestically, and potentially extend to other countries and the international system as a whole. This map includes the development of institutions and regulations to govern the infrastructure and information communications technology (ICT) used collectively and individually by Brazilian citizens. The principal means of depicting this roadmap are an exploration of the Marco Civil da Internet, a Bill of Rights for the Internet, and the Comitê Gestor da Internet, an Internet Steering Committee that governs and administers aspects of the country's national network. Through this examination of two principal examples and a number of secondary ones, Brazil's shows how to connect technical codes with political ideals to govern the new realities of the information age. To explain how this coexistence of political and technical ideals translates to policy objectives, this thesis will examine the legal code and history of the Marco Civil, the membership and objectives of the CGI, and the tenets created by the CGI instilled in the bill that now governs Brazil's Internet today.

It also integrates the work of scholars that have developed theories to explain how governments collaborate with citizens through democratic, multistakeholder models that manage these new systems through technical means, such as the coordination and assignment of root level domains or the changeover to IPv6. The Internet is a revolutionary new mechanism to achieve objectives such as to innovate and develop economies, ensure security, network neutrality, freedom of expression, privacy and human rights. By constructing and administering ICT infrastructure through a revolutionary democratic model enabled by the strongest network possible, the Marco Civil contains both technical and political elements to build and maintain a stronger civil society, democratic system and economy simultaneously. This is what makes these new Brazilian regulations and institutions revolutionary, pioneering examples of how to approach our new reality.

1. Introduction

Much as political revolutions brought on communist and democratic systems of governance and industrial revolutions changed economic ones in past, a new kind of information revolution is shaping the way we govern the Internet today. There have been technological precedents, such as the changes started by Gutenberg's printing press, but the Internet is changing the way that we govern, produce capital or interact with each other, businesses, and governments much more rapidly and comprehensively than ever before. In many ways, Brazil is providing models for new institutions and regulations that take on this unparalleled evolution in our existence.

After a decade of growth, Brazil is emerging as a global power. Its booming economy has been growing steadily since the troubled, inflationary 1990s; it is home to the largest technology sector in Latin America and is a rising player in international debates over trade, security, technology, and development. A World Cup in 2014 and an Olympics in 2016 will shine an international spotlight on the country's progress, and both events drive improvements in infrastructure and public services from Manaus, deep in the Amazon jungle, to coastal cities like Rio de Janeiro and the sprawling megalopolis of São Paulo. The Internet is playing a crucial role in this development, providing networks for citizens to demand accountability from their government and organize while supporting health, education, transportation and public utilities, and allowing the government to implement its policies, bolster security and organize financial systems.

Even in the past year, Brazil has encountered tremendous challenges to its economy and political system, a slowdown in its economic growth combined with high expenditures to prepare for the games pushed citizens into the streets to protest the government during the

Confederations Cup in the summer of 2013.[1] A hike in bus fares provided the catalyst for the protests, but protestors related personal and collective grievances to the global events and they soon extended to other criticisms of government corruption, increasing crime and violence, and a lack of quality healthcare and education, amongst myriad other issues that seemed to have taken a back seat to the games. Protesters used the Internet to spread information, organize and document violence by police[2], but at the same time the government has a vested interest in developing its national network to enable commerce, support industry and increase its systems of command and control, especially in cases of unrest.

The release of U.S. National Security Agency (NSA) documents by a former contractor, Edward Snowden, showed how the Internet's central infrastructure could be used as a tool for global surveillance, and how the NSA had especially targeted Brazil's networks because of their scale and centrality to the global Internet.[3] President Dilma Rousseff cancelled an official U.S. state dinner in October 2013 and gave a harshly critical speech at the United Nations on U.S. intelligence programs that targeted her government, Brazilian industry and individual citizens.[4]

From the beginning of its existence, the federal government purposefully nurtured and managed the country's network. Brazil's political system is federal but driven by a strong tendency towards centrally controlled, technocratic programs of development, and its national Internet governance system and infrastructure reflects this organizing principle. Beginning in the 1990s, the country moved rapidly to develop institutions, regulations and infrastructure to manage its growing National Research Network [Rede Nacional de Pesquisa, RNP] that became the commercialized system used by millions of Brazilians today.[5]

In 1995, the Ministry of Communication and the Ministry of Science and Technology announced the formation of an Internet Steering Committee [Comitê Gestor da Internet, CGI],

which would include representatives from all sectors of society to manage and develop the newly commercialized network.[6] Ever since, this body has played a central role in coordinating policy, building and maintaining information infrastructure and ensuring the security of the network, amongst myriad other activities. It provides a centralized, institutionalized forum for various stakeholders in the Brazilian Internet to formulate, debate and manage both regulations and infrastructure that pertain to the Internet throughout the country. In addition, the CGI manages several other organizations that administer the Brazilian Internet, such as the national domain name system, information technology for development programs, and Computer Emergency Readiness Teams (CERTs) for cybersecurity defense and response.

As the network developed, so did the need for stronger regulations, and in recognition of this fact the government began work on legislation covering myriad related topics such as cybersecurity, intellectual property and telecommunications policy. The CGI played a role in formulating these laws but its members also recognized a growing need for a more comprehensive, holistic approach to policymaking for this new virtual reality, which it helped foster through what has become known as the "Bill of Rights for the Internet" or the Marco Civil da Internet in Portuguese. This bill, the work of many stakeholders in the public, private and civil society sectors, describes many of the central Internet governance issues that exist in Brazil and internationally.

First drafted in 2009, the bill evolved through a multistakeholder process that passed through an online, open source, public system of criticism and editing before President Dilma Rousseff forwarded it to Congress, which added further amendments and eventually passed it in April 2014. On April 23, President Rousseff signed the Marco Civil at an international conference where she called on governments and other stakeholders throughout the world to

adopt many of its tenets, as well as the model it provided in their deliberations about global Internet governance reform.[7]

My central thesis is to explain the Internet governance field Brazil through a description of the public and civil society stakeholders and private sector fields represented through the CGI, as well as the Internet regulations and infrastructure that the CGI and others are looking to effect with the Marco Civil through an analysis of its history, code and central tenets. What are the goals of the legislation, and how do stakeholder translate these goals to create policy objectives and law? How are these goals linked to the various stakeholders in Brazilian society, either within the CGI or in private sector fields, public agencies and civil society that are not represented? What is the infrastructure that they are trying to manage, develop and use in diverse ways? This paper will attempt to answer these questions by cataloguing the members of Brazilian society that play a role in the CGI or in the infrastructure's use, development and management, the interconnected history and tenets of the Marco Civil, and the related regulations it is intended to affect.

2. Internet Governance Literature Review

Many Internet governance scholars take an interdisciplinary approach in an attempt to analyze the interaction between political, social, financial and technical networks. Works such as those by Yochai Benkler[8], Manuel Castells[9], Lawrence Lessig[10], and Barbara Van Schewick[11] approach similar, related questions from interconnected perspectives, ranging from communications, law, sociology, as well as computer and information science. The first author, Benkler, is a legal scholar who is also the co-director of the Berkman Center for Internet and Society in Harvard University's School of Law, one of the leading centers of scholarship in the field of Internet governance.

He writes about the ways that laws can shape the Internet to encourage social, economic and political development, and vice versa. He is interested in what he calls "The wealth of networks", which create market as well as nonmarket goods through decentralized, interoperable, and open transnational telecommunications systems. He defines this system as a networked information economy, which can produce less tangible goods such as norms and ideals through mediums such as Wikipedia or online social movements like Anonymous, and what he calls the "networked fourth estate", a component of the media that now exists on the Internet in the form of blogs, Wikileaks and other online forums.[12]

Benkler uses transaction cost theory as he attempts to describe the structure of the new network based model of social and economic production. Scholars such as Oliver Williamson[13], Ronald Coase[14] and Elinor Ostrom[15] developed transaction cost theory to describe the management structure of vertically integrated corporations and larger economic systems can produce and manage capital. Later scholars, such as Douglass North, Darren Acemoglu and James Robinson apply the behavioral assumptions inherent in economic transaction cost theory to the question of political action through a theory of the state -- an exercise in the logic of self-interested parties that are in control of public and private institutions. In North's theory, specialization and the division of labor bring about economic growth, but also transaction costs. Ideological consensus reduces the transaction cost of maintaining power.[16] The Internet lowers the cost of information, and thus transaction costs, for the public to create alternatives to the status quo. Conversely, governments have more methods of command and control, censorship and surveillance. These information systems can also encourage economic growth for all, generally in concert with a more diverse and dynamic pace of cultural, socio-economic and ideological change.[17]

The costs of information, which play a significant role in holding back the economic growth of nations, are a type of transaction cost that Benkler uses to frame the social products, nonmarket values and political systems that modern networks create. Williamson's transaction cost system, further developed by North, conceptualizes all socio-economic activity – even exchanges between the state and the public, or the nonmarket transactions discussed in *The Wealth of Networks* – as contractual, economic exchanges. Benkler extends the understanding of these costs beyond traditional self-interest and proposes the idea that these networks can produce not only market goods, but also social ones. Echoing Ostrom and others, he refers to the network as the "commons" and is interested in how "the presence of a substantial nonmarket, commons-based sector in the information production system is desirable from the perspective of various aspects of freedom and justice."[18]

To do this, he describes how two scarce resources, first, "human creativity, time and attention…second, the computation and communication resources used in information production and exchange"[19] produce non-rival, public goods such as knowledge and culture. The power of the network lies in its ability to produce these outputs, as well as foster nebulous ideals such as development, security, freedom and justice. While building on transaction cost theories of the political economists, he is also explicitly critical of their approach, saying; "most of economics internally has been ignoring the social transactional framework as an alternative whose relative efficiency can be accounted for and considered in much the same way as the relative cost advantages of simple markets…"[20] These theories actually explain the hierarchically organized, market driven firms that ran the world economy during the 20th century well, but the economists stopped expanding their model as 21st century networks of power began creating

value in a decentralized, open source, nonmarket based system. Benkler criticizes transaction cost scholars who have been generally confounded, or simply ignore these new realities.

A law professor at Stanford, Barbara Van Schewick's *Internet Architecture and Innovation* is perhaps the most interdisciplinary and diverse work in its scope and also takes an explicitly transaction cost approach. Van Schewick, a lawyer with a fair amount of technical knowledge, catalogues the various interests involved in the debate over the course of the internet's development. Further, she investigates how the architecture of the Internet should be structured to encourage innovation, and what kind of policies should be put in place to both create and maintain this ideal network. The root of her theory is that the principle of "end to end" networking, or respect for the principle of non-discrimination against content, must underlie any sound information architecture. Network neutrality is her organizing principle, and she argues that this should be at the center of Internet's architecture to encourage innovation and other civic ideals.

Her book examines the technical, political and economic transactions that are inherent in the debates surrounding network neutrality, freedom of speech online, intellectual property, network design and economic development. She synthesizes many of the different fields that come into play when discussing these subjects, particularly law, computer science, economics and policy studies. She shows that Internet Service Providers (ISPs), governments and other stakeholders should not discriminate against content because of economic or political interests, which will encourage innovation and development as well as the strongest possible global network infrastructure.

Benkler's *The Wealth of Networks* echoes her argument that the design of the Internet and the laws governing it can have profound implications for the economic and social development

of countries, and so his theories are fundamental to this thesis. Additionally, there are many other important Internet governance scholars at Benkler's Berkman Center for Internet and Society at Harvard including Jonathan Zittrain[21], Urs Gasser[22], Jon Palfrey[23] and Lessig.[24] Lessig's book *Code* is similar to Benkler's and Van Schewick's in that he explores traditional legal issues such as the right to privacy, freedom of speech and governmental transparency through the lens of the information age and posits similar theories about the effects of intellectual property and telecommunications laws on democratic and economic development. His central thesis, which scholars including Benkler, Zittrain and Van Schewick have integrated into their own work, is that technical and legal codes are in a symbiotic relationship, and as a result can influence each other and shape the societies and politico-economic systems in which they exist.

Milton Mueller examines a number of concepts that explain the way that technical infrastructure influences political systems and vice versa, particularly when he examines the domain name and internet protocol systems in *Ruling the Root*. His more recent work is on Internet governance on an international level[25], the use of deep packet inspection as a tool of political or economic control[26] and the linkages between telecommunications policy and Internet governance.[27] Another important scholar on this subject is American University's Laura DeNardis, who analyzes *The Global War for Internet Governance*[28], and who has defined what she calls critical information resources (CIRs) as aspects of political and economic control. These include "as Internet protocol (IP) addresses, domain names, and autonomous system numbers (ASNs); the Internet's domain name system (DNS); and network-layer systems such as Internet access, Internet exchange points, and Internet security intermediaries."[29] My analysis of the CGI and Brazil's infrastructure will focus on aspects of the country's CIRs and its governance systems for them. Tim Wu, a legal expert at Columbia who has also produced an

incredible range of scholarship on these issues, helping to define net neutrality in 2004[30]. He also penned a comprehensive, well-reviewed history of information communications technology (ICT) and media policy in 2010.[31]

Communications policy scholarship connects with these theories, particularly in the effort to link older studies of telegraphic and telephonic[32], often nationally[33] or monopolistically[34] controlled systems to modern Internet governance questions. Others have covered the transfer of national telecommunications networks from public to private control in various countries, including Brazil, particularly during the 1990s[35] when the public was also first connecting to the commercial Internet. Many of these studies focus particularly on Latin American states, which were also becoming democracies after periods of dictatorship or one party rule.[36] Other studies focus on the question of how the control of national communications networks has been central to questions ranging from economic development [37], to national security policy[38] to the promotion of democratic ideals and freedom and expression. [39] These are not new questions, but scholars are only beginning to apply them to the completely new technology of the Internet as it is evolving in real time, just beginning to realize its potential.

This thesis seeks also explain how interactions between stakeholders in the Internet governance field occur through the CGI and other networks that negotiate its structure, and the forms of capital, or goods it can produce. Besides authors such as Benkler, Lessig and Mueller, this thesis concerns what communications scholars alternatively call power networks or fields that work in competition through networks. Manuel Castells and Pierre Bourdieu theorize that technical networks comprise only one part of an entire relationship between actors, or stakeholders in the processes that function in relation to other social, political and economic ones.

3. Methodology: Castell's Power in Networks and Bourdieu's Field Theory

Castells has many networks. Technical networks, social networks, business networks, theoretical networks. At times, it seems like he is simply building his theories out of networks of different networking descriptions. In particular, he describes how the state has the challenge of coordinating diverse networks within its purview, including organizing agencies that are fighting for turf, the political importance of online networking (as the Obama administration's election campaign and recent healthcare.gov screw-ups show) as well as political networking with the opposition and within parties. It also has an ideological problem to coordinate common policy, and internationally a geopolitical problem to coordinate domestic, unilateral interests with global, multilateral solutions. Especially with transnational systems such as the Internet, this last problem becomes critical.[40]

He is in agreement with Benkler when he cites global financial markets as the "dominant layer…the mother of all valuations."[41] However, beneath these markets are "the computer networks that constitute the nerve system of the global, informational capitalist economy." These underlying networks are destroying our conceptions of time and rearranging our relationship with space, creating what he calls "timeless time" and "space of flows". The former describes the way that networks have destroyed the traditional concept of sequential time that developed during the industrial age, either by compressing the horizon in which we do things or by making the sequence impossible to decipher, for instance by multitasking. The latter describes the way that these networks have allowed us to organize actions that can be simultaneous without being contiguous, as well as create asynchronous communications systems. This is important for both technical means of communications, such as FTP or HTTP, as well as human communications,

such as email and forums. The Internet has created completely new forms of networking both between humans, and for them to interact through.

However, where are the principle places where power constitutes itself in these networks, at least in Castells definition? He has defined the ways in which the networks are changing the ways that we interact, but not the sources of power itself, which he does go onto identify as having four principle sources:

1. Networking Power, specifically over the individuals and institutions outside of the networks. This form of power underlies issues such as the digital divide or political competition through the system. He also cites Kareen Nahon's theory of gatekeeping to describe the methods that keep these networks closed to outside participants.[42] Nahon's gates are points that exist between networks, for instance political opposition to a government contract, and those that control the gates, the "gatekeepers" who can approve the contract in this case, have significant networking power.

2. Network Power is the ability to define global coordinating standards and eliminate alternatives. Here the U.S. has traditionally been in the driver's seat, both in terms of technical networks as politically defined through coordinating bodies that it controlled such as the International Corporation of Assigned Names and Numbers, the Internet Engineering Task Force and the World Wide Web Consortium, all historically American institutions. These are transforming themselves rapidly to multilateral organizations and in the wake of the National Security Administration (NSA) scandal this summer, the pace of change is quickly increasing.

3. Networked Power is the "relational capacity to impose an actor's will on another actor's on the basis of structural capacity of domination embedded in social institutions."[43] This

builds on Michel Foucault's concept that the structure of social systems defines the ability of different institutions to discipline and punish, and create norms that individuals internalize and follow.[44] Castells gives the example of the International Monetary Fund possessing the power of a financial network that gives it the ability to define the conditions of aid and debt relief amongst nations, or the U.S. government's ability to project military power. In the case of Internet governance, this power comes through the ability to create laws that provide disciplinary code online, such as legislation covering cybersecurity.

4. Network Making Power has two mechanisms:

    a. The ability to constitute or program networks;

    b. Ability to connect and ensure operation through common goals, shared resources, and the elimination of competition.

He points out that "in many instances power holders are networks," [45] or people organized around projects and interests. This is specifically relates to Bruno Latour's Actor Network Theory, which describes a complex set of joint action in which both individuals and physical or virtual objects have agency in creating networks and power.[46] Latour's theory is relevant to this thesis because it describes the various ways that power manifests in networks that can be physical, virtual, and socio-economic, and how they interrelate.

This last point leads into Castell's critical discussion of programmers versus switchers. The former program the network in the process of communication, with aims generated from places and goals outside the networks but processed in the realm of communication. Nahon's theory of gatekeeping related specifically to switchers, i.e. they control the connection points, or gates, from which they derive power. These points can be physical or ideological, and are not

people but "made of them"[47] With the help of these switches, parties can change the overlying program of the systems that they are trying to promote, or attempt to reprogram the networks of others. The abilities to make these changes depends on each party's relative power through these networks, and the potential counterpower opposition can muster against those with the authoritative program.

Brazil's Internet Steering Committee (CGI) is an idealized representation of the network of actors that govern the Internet, a kind of organization that is truly unique in the world. Those who represent various institutions that sit on the CGI, consult with the group and manage the infrastructure all have serious financial and socio-political stakes in the Brazilian Internet. The body is not necessarily representative of how Internet governance is operates in Brazil, but shows how the different sectors or fields are interacting within the constructs of the organizations that the government and its partners have developed.

Pierre Bourdieu's field theory also provides analytical methods of explaining how Internet governance is operating in reality today, and potentially provides some clues as to how it will operate in future. With this theory, Bourdieu provides a framework to explore what he calls the "rules of the game". The challenge is to define how the Internet governance field is developing in relation to others, the agents within it, which are involved in defining these rules, what "habitus", or common practices they are forming, and how they are using different forms of economic, social, cultural and symbolic capital. The CGI is a representation of how these fields are interacting to govern the Internet, and this paper will explore how this multistakeholder organization can operate to develop, build and administer the network.

Bourdieu, in an interview with his colleague Lois Wacquant, describes three analytical methods that he uses to define a field:

> First, one must analyze the position of the field vis-à-vis the field of power...Second, one must map out the objective structure of the relations between the positions occupied by the agents or institutions who compete for the legitimate form of specific authority of which this field in the site. And, third, one must analyze the habitus of agents, the different systems of dispositions they have acquired by internalizing a determinate type of social and economic condition, and which find in a definite trajectory within the field under consideration a more or less favorable opportunity to become actualized. [48]

Using Bourdieu's model, this paper will define the Internet governance field in Brazil more specifically to understand not only about the shape of the relations of the country's political and economic system regarding the Internet, but also the relationships of institutions and individual citizens within the field in a relatively early stage in its development. Secondly, it will explore other fields related to it, as well as the global networks that increasingly bind them all together. In his terms, various agents are working to do establish the rules of the game and assert their primacy in a field that is increasingly central to all of their objectives. They are competing to control economic, social and cultural forms of capital, a concept that is analogous to Castell's definition of power, or Benkler's social and market goods.

Brazil is actually one of the most developed democracies in terms of the size and complexity of its Internet governance field, if not always its efficacy. It has constructed credible governance institutions and electronic infrastructure that dwarfs its neighbors, and is on par with some of the most advanced economies internationally.[49] Commercially, it has a moderate but growing technology sector, the interest of every major I.T. multinational firm and large domestic telecommunications and Internet Service Providers (ISPs) with relationally large IT and media companies. Government agencies including the national telecommunications commission (ANATEL) the executive, ministries such as Communications, Defense and Science and Technology also play roles in the field's game. Within civil society and the broader research and

technology community (also known as the third sector in Brazil) individuals and institutions such as the National Research Network (RNP), universities and NGOs represent further institutional agents.

They are all interacting within a legal framework of existing laws and norms through institutions such as Congress and the CGI. Laws include existing ones, such as new cyber security amendments to the country's criminal code passed in 2013, the National Telecommunications Act, and legislation such as the Marco Civil. By examining these agents and the laws that they are debating in the CGI and other forums, this paper will explore aspects of these related fields in the country, as well its nascent internet governance field itself. These agents are operating through networks, which Bourdieu also defines as a key analytical concept, saying; "a field may be defined as a network, or a configuration of objective relations between positions."[50] Networks can be political, financial, or social but represent relationships between agents in a playing field where they pursue their objectives in a "game" for control of the power structure and the resulting political, social and economic capital.

Other conceptions of networking theory as applied to Internet governance debates includes Benkler's transaction cost approach to defining the process of creating market and social goods (or a form of capital, in Bourdieu's terms) and Castell's conception of network power structures. As the quote reveals, Bourdieu's theory focuses on the relationships that these groups have created, as well as their relationship to power, but all theorists are getting at similar objectives, to describe the how they accumulate power in the networks they form. There is a tension inherent in these theories, but the goal of this thesis is to describe how these networks are operating from these different perspectives, while presenting the data at root of these theoretical conflicts.

This thesis will link these diverse sources of scholarship together into hypothesis of the way both the Internet governance field is forming and how the Marco Civil provides an example of how comprehensive regulations can implement the diverse goals of this field. It will attempt to apply the theories developed by these scholars to the case study of Brazil, its evolving infrastructure, political and economic systems, and broader civil society. How does the function of the Internet and its regulations relate to diverse goals such as economic innovation, greater security and development? To answer this question, it will first look at the case of Brazil and ask, what is the makeup of its Internet governance systems and infrastructure, and what are the stakeholders involved in both?

The central method to answer this question is to examine the members of the CGI and the role it has plays in Internet governance, and the role that the Marco Civil will play in future through a review of its central tenets. This review will explain how the democratic process translated these tenets into law, how they manifested in the legal code of the bill, and how they relate to other Internet stakeholders, infrastructure and regulation in Brazil. In this way, it is an exploration of the case of Brazil's roadmap for Internet governance, and the theoretical constructs of these scholars are a means of explaining how it is implementing infrastructure and regulations.

The CGI and the Marco Civil both represent ideals, but are important in practice because they define the kind of Internet governance regulations and institutions the country has created through democratic political processes to manage its national network. They are starting points in building a roadmap for Internet governance, not only in Brazil, but also potentially throughout the world. What follows first is an examination of the stakeholders involved in this legislative

and regulatory process, and the management of the infrastructure through the CGI, which results in a description of an idealized Brazilian Internet governance system.

4. The Comitê Gestor da Internet: A Representation of the Internet Governance Field

The goals of the CGI are numerous. It must coordinate security, set standards and ensure interoperability of network infrastructure within the country and to external interconnections. The central administrative body of all these functions contains representatives from government, the private sector, the scientific and technology community, and civil society. Nine government representatives form almost half of the membership of the CGI and give a very clear picture of the institutions that the government sees as critical members of the Internet governance field. Those that are members of the committee have significant social and symbolic capital, and depending on their positions possess economic and cultural capital as well. They are not the only members of the field, but they represent the interests of various agents that the government, as well as the administrators of Brazil's Internet that are considered important. Agents that are particularly important in this group because they possess significant amounts of capital include the Ministry of Science and Technology, the Ministry of Communications,

Table 1: Brazilian Internet Steering Committee Membership

9 Government Representatives
- Ministry of Science and Technology;
- Ministry of Communication;
- Presidential Cabinet;
- Ministry of Defense;
- Ministry of Development, Industry and Foreign Trade;
- Ministry of Planning, Budget and Management;
- National Telecommunication Agency;
- National Council for Scientific and Technological Development;
- National Council of State Secretariats for Science, Technology and Information Issues - CONSECTI.

4 Private Sector Representatives
- Internet access and content providers;
- Telecommunication infrastructure providers;
- Hardware, telecommunication and software industries;
- Enterprises that use the Internet.

Four "Third" Sector Civil Society Representatives

Three Scientific and Technological Community Representatives

One Internet expert

http://www.cgi.br/membros/

ANATEL, the President's Cabinet and the Ministry of Defense. The first created the network and the CGI, and coordinates research into technical standards for the national Internet, with the support of ANATEL. As a result, the MST controls a significant amount of institutional as well as objectified cultural capital, in that it has historically controlled, funded and managed the National Research Network (Rede Nacional de Pesquisa or RNP), the backbone of the country's Internet and a critical coordinating institution for the country's universities and research centers.

The Ministry of Communications is responsible for the development, implementation and administration of telecommunications technology and policy in the country. It is the source of directives regarding Internet governance that the President can endorse, as well as legislation and advice that can become law, and directs ANATEL in the implementation of regulations regarding telecommunications, media and Internet governance policy. Their website states that they "are responsible for formulating and proposing national policies in these areas, such as the national politics of digital inclusion. "[51] In Bourdieu's terms, they possess significant amounts of cultural and social capital, with power over economic capital at the command of the executive. The presidential cabinet represents the head of the government in the CGI, while the Ministry of Defense presents the perspective of the military, specifically regarding national security issues online such as cybersecurity and the defense of critical infrastructure. The military has historically controlled a significant amount of economic capital as the Ministry with the greatest budgetary resources in the CGI, as well as cultural and social capital it as accumulated in its position as the country's guarantor of security.

The private sector is broadly represented by companies that have a direct stake in the management and governance of the Internet, those who administer the hardware and software

that make it work, or provide services that are dependent upon its use. Current incumbents include:

- The owner of Durand, an Internet hosting and registration services company, similar to GoDaddy or Network Solutions in the United States.
- A representative from the NEC Corporation, a Japanese owned multinational company operating in Brazil, as a telecommunications infrastructure provider.
- The Director of Calandra Soluções, a large information management services company based in Rio.
- The Director of Security for the Business Association of the state of Sao Paulo, by far the largest population and business center in the country.

This list gives a general picture of the range of private industry fields represented in the CGI; each position also has at least one alternate. It is also important to note that it takes into account the perspectives of domestic as well as international institutions, particularly in the field of telecommunications infrastructure, where foreign technology plays a critical role. The alternate for this section is also foreign, a Vice President for Citigroup, a major multinational banking and investment firm. These groups all possess significant economic capital; the goal of maximizing profits is the primary driver of private sector interests.

The "Third Sector" group represents Brazil's civil society a group which has goals that are more complex, partly because it also represents a more diverse and differentiated field. This includes members of three NGOs, Instituto NUPEF (focusing on ICT development in Brazil), the Brazilian Institute for Consumer Defense (IDEC) and the National Association for Digital Inclusion (ANID) as well as a political scientist from ABC Federal University in Sao Paulo.

These members, along with the scientific and technology community and the security expert, fall into a broader category of representatives from civil society that has vested them with significant institutional cultural and social capital.

The science and technology field contains members from the RNP, which is itself an important organization that has developed and maintains many key nodes in the national research network and components of critical infrastructure. Like its original backer and key patron, the Ministry of Science and Technology, it possesses significant social capital, in its control of the central networking object in the country, and embodied in the engineers, computer scientists and other IT experts that make it work. It has been a key institutional authority since its founding in 1988, before the Internet had developed commercially in the 1990s, and before the CGI had formed in 1995. The security expert is an interesting position, held by a cyber-law specialist, Demi Getschko, who has consulted with RNP, taught science and technology law at major universities around the country, and continues works closely with government.

Members of the Internet Governance Field Outside of the CGI

So all of the major elements are here, at least in the view of the CGI and through it the government, but what is missing? On the government side, Ministry of Justice is certainly a critical stakeholder, but the federal structure of the committee also overlooks state and local stakeholders, which can have important effects on the law and the management of critical Internet infrastructure. In 2012, a state government charged the head of Google Brazil with libel and had him arrested for leaving election videos online that allegedly slandered a candidate for mayor. They prosecuted him under Brazilian electoral law, which has very strong provisions against libel and slander, but does not fit neatly into a category of laws that pertain to the Internet.[52]

This illustrates three points: 1. Brazilian electoral law is a mess if it cannot distinguish between a YouTube posting by an anonymous individual and a newspaper printing an editorial, there are not clear definitions in the law regarding new online media, it is a system designed to regulate print journalism. 2. Both federal and state agents have serious responsibilities with regard to enforcing the law and the Internet. 3. Google is itself an important agent in the process that emerges. The final two points are important because they identify key elements of the governance field that are not well represented in the CGI. One group falls below the level of a federalized management structure, another has policies that will obviously diverge from those that represent the private sector at present, given that companies such as Google offer radically different the Internet services from any company in Brazil or indeed most internationally.

Other companies in this subset include Google's American competitors such as Amazon, Facebook, Microsoft and Apple. The relations of these multinationals with the Brazilian Government will be crucial to the development of particular habitus of each group, and the broader actualization of the field in the coming years. [53] Other technology companies play a critical role, both from a hardware as well as software perspective. Multinationals such as previously mentioned NEC, IBM and Cisco are providing much of the equipment that powers the country's backbone networking infrastructure. IBM is implementing a "Smarter Cities" program, which represents a serious investment of economic capital in Brazil to help manage its transportation, power and other national utility systems with better IT. It is a particularly important program because of its size and centrality to Brazil's critical municipal infrastructure, and the company is going to continue to play a major role in defining the shape of the country's future as a result.[54]

The media is another key overlooked field by the CGI; its agents have a huge stake in the process both from the point of view of traditional mediums such as film, music and television as well as news journalism, now online. Globo is the number one media company in the country by several indicators. It controls many of the media markets in the country, from the major television stations to newspapers, and certainly has a level of control over the process given the economic capital it has at its disposal, its stake in the regulations and as its ability to control debates about these subjects through its coverage backed by its cultural and social capital as the number one source of news and entertainment in Brazil. Myriad newspapers and media companies throughout the country play similar roles, but Globo is by far the largest network of television stations, newspapers, magazines, radio stations and websites in Brazil, and the 17th largest media firm in the world by revenue.[55] Its television networks control three quarters of the advertising revenues and more than 50% market share, its newspaper have the number two circulation and its online portal is the number two visited media site in Brazil.[56]

The UOL group is number one in many of these indicators, and is an increasingly important ISP as well, illustrating the close and important relationship between those who provide content and those who create it. These interconnected, often conflicting roles are is similar in many other international contexts such as the United States, where Comcast owns the National Broadcasting Company (NBC) and a number of other media properties.[57] UOL's corporate parent is the Folha de São Paulo group, the owner of the highest circulation newspaper in Brazil of the same name, as well as television networks that compete against Globo, radio stations and online content.[58] There are deep conflicts inherent in the role that traditional media play in opposition to the new kind of social networks that are developing, and in cooperation or competition to political systems as described by Castells and others in the communications

field.[59] This tension is an underlying element of any study of Internet governance, as the older systems of mass communication compete with the new and create novel formulations of power networks across fields.

5. The Code, Process and Tenets of the Marco Civil da Internet

The Marco Civil is a kind of nexus that describes both what an important regulation and stakeholder is for Brazilian Internet governance, and as a result, it is very useful to describe its history, the essential concepts it is trying to promote and the process involved in its creation before examining its central tenets in turn. In 2007, an academic from the Fundação Getúlio Vargas (FGV) School of Law, Ronaldo Lemos, called for the creation of a civil code addressing Internet issues. He specifically called out a cybercrime law that had been gestating in the Brazilian Parliament since 1999, saying that before any legal definitions of crime on the Internet were to be laid out, there should be laws outlining the specific rules and responsibilities of users, service and content providers, regulators and government enforcement agencies. In other words, national regulations to address the various needs of various stakeholders in the Internet.[60]

This article set the wheels in motion, and Lemos' Center for Technology and Society at FGV began drafting a version of the bill in collaboration with the Ministry of Justice and the support of the CGI.[61] In 2009, shortly before they released this initial version of the bill, CGI published a resolution naming its "Principles for Governance and Use of the Internet" which were reflected in the draft that emerged from the FGV and MoJ collaborations. They include:

Table 2: Principles for Governance and Use of the Internet
1. Freedom, privacy and human rights
2. Democratic and collaborative governance

3. Universality
4. Diversity
5. Innovation
6. Neutrality of the network
7. Unaccountability of the network
8. Functionality, security and stability
9. Standardization and interoperability
10. Legal and regulatory environments
Resolution CGI.br/RES/2009/003/P

"1. Freedom, privacy and human rights 2. Democratic and collaborative governance 3. Universality 4. Diversity 5. Innovation 6. Neutrality of the network 7. Unaccountability of the network 8. Functionality, security and stability 9. Standardization and interoperability 10. Legal and regulatory environments". These are the broad goals of the Marco Civil, which its creators incorporated into its articles, and the resolution itself became an annex to the final bill that President Rousseff submitted to Congress.[62]

This thesis will examine each of these tenets, how stakeholders integrated them into the code of the bill because they represent important concepts, not only for Brazilian society but also for other nations, and potentially the global society in its collective management of the Internet. This analysis will examine each element of the Marco Civil in relation to the informational infrastructure that it is attempting to build, reform and maintain, other regulations it will affect, and various stakeholders involved in the management of either the legal or technological networks and systems. How do they propose to control these systems and encourage them to develop? How do they design and manage physical infrastructure with these goals in mind? In what ways do they plan to implement the legal codes they have promulgated?

The Code

The process of identifying how the ideals of this resolution map to the Marco Civil's articles shows how these ideals connect with legal code, and how the code links with the design of the Brazilian Internet's architecture and infrastructure. The bill includes five chapters that

each contain articles. The chapters include a preliminary section restating central principles (articles 1-6), the rights of users (7-8), the provision of connection and internet applications (9-23), the role of public authorities (24-28), and final additional provisions (28-32). The three central sections address each of the three central groups of Internet governance stakeholders; businesses, the government and citizens, and assigns them rights and responsibilities related to its use and provision.

Article 1 states that the law applies to users and of the Internet throughout Brazil and to the administrative structure of all levels of government, federal, state, and municipal. The second and third articles are a restatement of many of the principles elaborated in the original CGI resolution with additions that ensure consumer protection, free enterprise and competition, and the network's "social purposes".

Table 3: Articles 2 and 3 of the Marco Civil

Article 2. The discipline of Internet use in Brazil has as fundamentals the respect for freedom of expression, as well as:
I – acknowledgment of the global scale of the network;
II – human rights, personality development and citizenship exercise in digital media
III – pluralism and diversity;
IV – openness and collaboration;
V – free enterprise, free competition and consumer protection, and
VI – the network's social purposes.
Article 3. The discipline of Internet use in Brazil has the following principles:
I – guarantee of freedom of expression, communication and expression of thoughts, under the terms of the Federal Constitution;
II – protecting privacy;

III – protecting personal data, as provided by law; IV – preserving and safeguarding network neutrality; V – ensuring stability, security and network functionality, through technical measures consistent with international standards and by encouraging the implementation of best practices; VI – ensuring that players/agents are accountable according to their activities, as foreseen by law, and VII – ensuring the participatory/collaborative purpose of the network. VII - ensuring free business models promoted on the Internet, provided they do not conflict with the other principles established in this Law

These articles, particularly 3, contain a restatement of guiding principles, including provisions to protect free expression, user privacy and human rights, as well as ensuring functionality and net neutrality. Article 4 covers diversity, universality and standardization, and interoperability in particular saying that the Brazilian Internet should "promote compliance with the open technological standards that allow communication, accessibility and interoperability between applications and databases."[63] Article 5 covers standardization and interoperability, especially in the equitable distribution and administration of Internet Protocol (IP) addresses. The central aims of Article 6 are human, social, cultural, and economic development, which broadly coincide with the ideals of universality, innovation and diversity. Article 7 again stresses privacy and "unaccountability of the network", which the CGI states means that actions shall only be taken against users proven to have undertaken in illicit activity, and not against the means of data access and transmission themselves. Accordingly, the first and second provisions of this article states that users have the right "1. To the inviolability of intimacy and private life, guaranteed the right to its protection and compensation for material or moral damages resulting from its violation 2. To the inviolability and confidentiality of communications over the Internet, except when this right is waived by court order, under the terms of the law;"[64] As a result, the security of data is as much a concern as the privacy of the users, and these two tenets are continually linked throughout the document.

Article 8 guarantees the right to Internet access with its provisions on privacy and freedom of expression. The first of a number of articles that cover the role of ISPs is contained in a section that is focused on net neutrality, Article 9 outlines explicit technical guidelines for providers to ensure non-discrimination against kinds of content for political or economic reasons, asserting that the ISPs should prioritize traffic in cases of emergency management condoned by the government. The next section "The Protection of Records, Personal and Private Data Communications" includes Articles 10, 11 and 12. The first two cover the use of log files and user data, which concerns privacy, unaccountability of the network, security and legal and regulatory environments in particular. Article 12, added later in the process, includes penalties for not properly safeguarding user data and ensuring privacy, giving the government the power to fine them up to ten percent of their gross revenues or even shut them down. Article 13 specifically requires ISPs store connection logs for one year while 14 prohibits them from storing application connection data.

Congress added one of the most controversial articles, 15, later in the process. This mandates that Internet "applications" providers, those who provide online services like Google or Microsoft but not ISPs, should store data about user access for at least 6 months for police investigations. This does not cover content, but rather "metadata", such as information about when and where users accessed services, and could potentially lead to further court orders. Again, the focus of the articles in this section is on security and privacy.

Articles 19-21 cover the liability of application providers in the case of crimes by a third party, for instance this section covers the responsibilities of Google when a user or a company posts illegal content on Youtube. It clarifies that the application provider has certain responsibilities to respond to judicial orders in timely manner, but is not liable for damages

unless they fail to respond. Article 22-23 cover the role of the judiciary in ensuring the privacy of plaintiffs in such cases and ensuring that the regulations are followed in investigations.

Moving to the responsibilities of the government in the next section, the bill restates the central objectives elaborated in articles 2 and 3 from the perspective of the government in article 24. It must work to ensure collaborative and democratic multistakeholder governance mechanisms over the Internet, interoperability of technical systems, and encourage innovation, diversity, and universality through the adoption of open source systems. Article 25 enshrines democratic, universal governance systems through the provision of e-government services and access for all "regardless of their physical, motor, perceptual, cultural and social abilities". The final articles of the section are mostly concerned with the innovation, diversity and universality tenets, mandating public initiatives to promote digital literacy, online education and regular government reviews of its national plans to promote what it calls "digital inclusion", education about the Internet and how the population can get online

The final four articles are mostly administrative, although article 29 focuses online education for children, the rest specify when the bill will come into force after the president's signature (60 days) and also that it can be enforced either "individually or collectively" (article 30) which means that stakeholders can be either individual or institutional. This highlights the structure of the Marco Civil as a bill of rights and responsibilities not only for citizens but also for companies and government agencies, and the essentially tripartite structure of sections for individual citizens, businesses and government agencies where tenets repeat throughout the articles reflects this principal. In addition, the articles are simultaneously technical and political, reflecting the interconnection of technological and legal codes that scholars such as Benkler, Lessig, Van Schewick and others describe. Ultimately, the Marco Civil is providing for new

forms of governing principles that range across the tenets of the original resolution, and can apply to various stakeholders throughout the world.

The Process

As previously stated, before the bill entered Congress, the Fundação Getulio Vargas' Center for Technology and Society (FGV-CTS) and the Ministry of Justice developed the draft based on the CGI's tenets, which submitted for public debate. Through this debate, stakeholders modified the bill over a yearlong process that began in October 2009 and ended in May 2010. This period is important to examine both to understand how the resolution became a law but also as an example of how democratic and collaborative online governance can operate in the 21st century.

In the first phase, members of the public commented, edited, deleted and added their own contributions on general principles through an open source system created by the Ministry of Culture's "Digital Culture" project.[65] The Ministry of Culture became known for such initiatives under this banner to foster open source, online collaboration and access under the stewardship of the musician Gilberto Gil from 2003-2008 and continued under his executive secretary and immediate successor, Juca Ferreira.[66] In the second phase, the government invited the public to a series of discussions and debates around the country, as well as to submit comments online via email, Twitter or through the traditional media on various provisions of the draft itself. A number of other government agencies, businesses and civil society groups played roles throughout its development.

In many ways, the Digital Culture product is itself a product of open source, copyright free information projects that Gil and others have supported in opposition to the traditional

holders of media rights, such as the International Federation of the Phonographic Industry, which placed comments on the Marco Civil from the United States and Chile. The bill deliberately skirts the issue intellectual property, and many view it as the next major challenge to Internet governance reform in Brazil, especially in relation to the privacy and net neutrality clauses inherent in the bill.[67] Gil and his successor championed these components, while the Marco Civil's originator Lemos has suggested that the Ministers of Culture of that followed have opposed open source, nontraditional copyright policies. Ana de Hollanda went so far as to remove open copyright designations from the Ministry's website.[68]

Both phases represented a review process of 45 days each that allowed stakeholders from any part of civil society to make a contribution, resulting in over 2000 suggestions.[69] The list of groups that made suggestions are on the Marco Civil website and include ISPs like Claro and Embratel, Internet rights groups such as Transparência HackDay and Proteste, cyber law experts LegalTech, and media companies such as Globo, Abril Digital and Bandeirantes. [70] The Federal Police and Agricultural Ministry also submitted comments, showing that the process was open to public, private and third sector comments at this stage, representative stakeholders from diverse sectors and fields. Even the governments of other countries and international organizations such as IFIP could submit comments, and over thirty did so, including the United States, Japan, and many South American and European governments. FGV-CTS and the Ministry of Justice mediated the process and integrated the comments into the text at the conclusion of the open comment period.[71] In August 2011, Brazil's President Dilma Rousseff, introduced the bill in Congress as law 2126/2011. [72]

At this point, legislators were able to make their own edits to the bill, which they did, including articles covering net neutrality and copyrighted content. They edited article 15 in July

2012, which then specified that ISPs would only be responsible for taking down content under judicial order. The new provision stated that this would not apply to content that is specifically copyright infringing. Commentators at the time speculated that legislators had inserted this provision at the behest of the representatives of the content industries, such as the Brazilian Association of Reprographic Rights (ABDR), the Brazilian Association of Phonographic Producers (ABPD) and the Motion Picture Association of America (MPAA).[73] The Marco Civil's originator Lemos and others speculated that the Ministry of Culture had played a role in getting the language inserted. As mentioned, the ministry's new chief is a defender and enforcer of media industry copyrights.[74] [75]

Civil society groups protested both the changes and the additional legislative process. The fact that members of the legislature were editing a bill that the public had created over the four-year review process, and now edited in private, incensed many. [76] The resulting uproar led to the government repeatedly place the bill on hold. The rapporteur in the Congressional committee responsible for it, Alessandro Molon, tabled and withdrew the bill four times in 2011 and 2012. In an interview, he said that he regretted he had not been able to get a vote in the full Congress on it before the end of the 2012, when nations gathered in Dubai for the World Conference on International Telecommunications (WCIT). In this forum, representatives from governments around the world debated regulations under the International Telecommunications Union (ITU), and specifically how to integrate global Internet governance mechanisms into the existing set of regulations for older mediums of information and communications exchange. He regretted that he had not been able to pass the Marco Civil at the time because it hurt Brazil's ability to form a coherent position at the conference. [77] Ultimately, their delegation sided with a

group of countries led by China, Russia and a number of authoritarian regimes that called for greater governmental control over the Internet's management. [78]

Internet governance is an international field more than almost any other because of the interconnected nature of the network and technology that agents are trying to use to relate to others and gain capital and power. In Bourdieu's terms, there is a homologous relationship between the domestic field of Internet governance in one country and another, and overall within an international network that includes institutions such as the ITU that represent the interests of all nations.[79] Laws that apply within Brazil could increasingly apply to citizens of other countries, and other nations or international organizations could copy them when creating their own models.

Highlighting this fact, the Marco Civil did not stall for long, largely because of an international event that shook governments and affected Internet governance debates around the world. In June 2013, a former U.S. NSA contractor, Edward Snowden, revealed that U.S. surveillance systems targeted Brazilian networks, citizens, as well as the government itself.[80] Snowden's revelations spurred global indignation, but in Brazil, this opposition was both vehement and more coherent partly because of this focus and history. An enraged President Rousseff led calls for stronger domestic technical and legal controls, and production of services, technology and broader infrastructure by institutions within country as well as better international governance mechanisms.[81] She gave an angry speech at the United Nations in September criticizing the U.S. surveillance systems and calling for an internationalization of Internet governance institutions and new global regulations.[82] The next month, at a meeting in Uruguay attended by the heads of institutions that run the Internet such as the International Corporation of Assigned Names and Numbers (ICANN) and Regional Internet Registries (RIRs),

she proposed an Internet governance conference, a "Net Mundial" in São Paulo and invited the world.[83]

After months of delays, President Rousseff had forced the Marco Civil to the top of the agenda for 2014, partly to respond to the NSA scandal and partly to present a concrete policy solution both to the protests that formed in the summer and the broader challenges of Internet governance before the Net Mundial.[84] Net neutrality remained a central concern of stakeholders throughout the Marco Civil's passage through Congress, and both the bill's sponsor Rep. Molon and President Rousseff herself defended the wording created through the democratic, open source process against the lobbying efforts of the members of various fields of private industry and opposition parties. At a committee meeting to discuss the bill before it passed to a full vote in Congress, 28 technology experts gave their opinion on it, and all but three supported the principles of net neutrality.[85] Castells would say that these individuals possess significant network power, embodied in their presence on a technical commission discussing the maintenance and governance of the Internet. In Bourdieu's terms, they hold significant social and cultural capital. Molon highlighted this support and suggested the ISPs were fighting a losing battle against the will of the people:

> "For over a year we have tried to vote on the Marco Civil, without success, due to the pressure of just one sector, the telecommunications companies. With the strong support received this week, not only from civil society but parliamentarians from various parties, we show that the Marco Civil is not a government project or opposition. Rather, it is a project for 100 million users of the Brazilian Internet. Anyone who votes against it will not be opposing only my position, but that of web users throughout Brazil."[86]

In Bourdieu's terms, he is defining the position of civil society within the field of Internet governance. Alternatively, Castell's would say that Molon is defining the power of these groups

to program the network by playing a role in the creation of the governance system. In any event, as Molon highlighted, this position is in direct opposition to ISPs.

Telecom companies and ISPs such as Vivo, Tim and Claro fought to gain the ability to prioritize certain kinds of Internet traffic, and they have found a number of allies in their traditional strongholds in the government, ANATEL and the Ministry of Communications as well as their supporters in Congress. The ISPs argued that they should have control of the systems they administer for the health of the network[87], but many academics, technical experts and theorists continued to argue against this principle. These included Demi Getschko[88], a cyber-lawyer and the "security expert" member of the CGI, the bill's principle architect Lemos, Molon, and many other civil society representatives that played a major part in its drafting and passage up to this point.[89] Eventually the ISPs came to an agreement not to oppose net neutrality once legislators inserted language that explicitly allowed them to offer user access at different speeds, which they claimed had been their central concern.[90]

Another key point of contention came in the form an additional article developed in response to the NSA scandal that mandated that multinational Internet applications providers (i.e. Google, Amazon, Facebook etc.) store Brazilian data domestically. The new provision left it at the discretion of the executive to decide this matter based on further review. Technically, these goals would have been very difficult to implement, because the strength of the services that these companies provide rests in their ability to use data centers to store, process, save and retrieve data anywhere in the world. The country's store of financial or technological capital to build up an internationally competitive IT sector present serious limitations, at least in the short term.[91]

The goal of forcing businesses to build more domestic services and technology is a questionable proposition and found many opponents in Congress and in the private sector,

particularly international tech firms such as Google and Microsoft that opposed localization. Technology such as the servers, software, and other networking equipment that these companies possess is not easily developed and accumulated. If the goal was to force these international firms to invest in and build more networks and online infrastructure in Brazil, it could very well have the opposite effect, and drive multinationals in the IT field away from the country.

It may simply be impossible to implement such an ideal because of the design of the Internet's architecture itself. In Bourdieu's terms, it represents an investment of economic capital that would require a significant reinvestment of time and resources to change. The network's design does not recognize borders, and the cloud services that these companies promote are moving it further in this direction. Placing territorial limits on personal content is not in the cloud apparatus' fundamentally decentralized design. Much as the NSA, one of the most powerful intelligence collecting agencies in the world, was unable to distinguish Americans from foreigners in its operations, the Brazilians would have a hard time marking and verifying domestic content owners and forcing Internet companies to play by new, socially and culturally constructed rules. Reacting to these concerns, legislators stripped the bill of this provision shortly before they passed it almost unanimously in March 2014.[92]

President Rousseff's goal had always been to finalize the bill ahead of the international conference planned for April, and the Senate obliged her by passing it the day before the "NetMundial" forum started. There, with the creator of the Web Tim Berners-Lee, Google VP and Chief Internet Evangelist Vin Cerf, her Minister of Communication, the head of ICANN and a UN Deputy Secretary watching, she signed the Marco Civil and offered Brazil's new law as a model for a "Marco Civil Mundial", an Internet bill of rights for the world.[93]

Her speech represented a kind of victory lap, she followed Berners-Lee and Cerf, who both discussed the law, and offered their support. She focused especially on the concept of multilateral and "multisectoral" governance that takes the views of other sectors of society into account, particularly business, academia and technologists who work with the network. Again, the CGI, a sponsor of the conference, provided a model for this mode of collaboration and network governance.

She criticized the NSA but also allowed that the revelations about surveillance had also provided the impetus for the conference and forced her to fast track the Marco Civil. Objectives in both the law and her speech included ensuring universality, diversity and innovation, the neutrality of the network, its democratic and transparent governance, which she asserted would all encourage the creation of a stronger Internet and society globally. She concluded by asserting that a stronger network would come with greater access that will increase the socio-cultural, religious and ethnic diversity, "transforming our reality".[94]

The history, process of creation and content of the Marco Civil illustrates a number of stakeholders, ideals and infrastructure that Brazil is trying to manage through regulation and how it is attempting to promote its system of Internet governance as a model for the world. There are other important regulations, but in many ways, the bill provides a unique window into confluence of policy, socio economic interests and technical specifications that are involved in any discussion of Internet governance. With the history and content of this bill described, it is now possible to move onto examine its tenets individually and how they relate to other regulations and infrastructure related to the Internet. A number of other laws have been proposed

and enacted to govern the Internet in the past five years, including the one that inspired the Marco Civil.

6. The Tenets

Functionality, security and stability

As mentioned previously, the cybercrime bill colloquially called "Azeredo's Law" actually formed the basis of the movement to develop and enact a bill of rights, with proponents and authors of the Marco Civil reasoning that there should not be a system of punishment for crimes online without a preexisting declaration of the rights and responsibilities of various stakeholders. Eduardo Azeredo, a Federal Deputy from Minas Gerais, originally proposed the legislation when he was a Senator in 1999.[95] Since then, he has been pushing for its passage in both houses, and achieved this objective in November 2012 when Congress passed the law on the heels of another cybercrime bill, known as "Carolina Dieckmann's law", named for a television star whose nude photos were leaked online caused a large scandal in the press.[96] Its passage highlighted its continuing close relationship with the Marco Civil. At the same time that they Congress passed the new laws, they also hastily tabled the bill again in March 2013.

Azeredo's Law focused on defining crimes against hackers and others who attack other users systems online. It covered a litany of cybercrimes that it had not before explicitly defined under the Brazilian criminal code, including exploiting vulnerabilities, breaking into systems against the will of a user or using social engineering techniques to induce others to produce financial information. Congress wrote the law broadly enough so that it covers a wide variety of online crimes, and links them to the existing criminal code for physical reality. It specifies the penalties for these kinds of crimes and in what situations authorities can augment or decrease them.

The transmission of stolen data to a third party will lead to longer jail times, while crimes that result in provable economic losses will lead to increased penalties by one sixth to one third. Provision 5 is one of the most interesting and controversial articles, stating that in the cases of crimes against agents of the state, from lawmakers to members of the executive on all levels of government, judges can increase the penalties by factor of one third to a half. [97] It also defines where and how citizens can make complaints about to the governments, establishing a number of centers for cybercriminal investigations in the major cities.

Dieckmann's Law is much more narrowly focused on the invasion of privacy, making it an explicit crime in the same penal code to install devices that will "obtain, tamper with or destroy data or information without the expressed or tacit authorization of the owner of the device, or install vulnerabilities" to enact these ends. It inserts similar language that compounds crimes to private electronic communications, commercial, industrial or governmentally defined secrets, by a factor of one to two thirds.[98] Interrupting or disturbing telecommunications of any kind is also a crime made punishable through the law.

Both of these laws establish the ability of the government to go after cybercriminals in various forms. However, when President Rousseff signed them both into law on March 2013, the government precipitated a situation that is exactly what the authors of the Marco Civil had hoped to prevent, with punishments in place but no established rights or responsibilities for parties operating online.[99]

The protests also tested the government's ability to provide security, as well as the Military Police's new Cyber Defense Center, which played a critical role in managing and responding to social disturbances, but citizens have criticized the center for its surveillance practices, especially during the protests. The inclusion of the provisions in the bill such as Article

that requires providers store user data, securely, for police investigations and compounded these fears.

Technologists, civil rights groups and individual citizens protested under the hashtag #16igualNSA[100] that certain provisions, particularly article 16, would put data and tools in the hands of the government's intelligence services, police and military that will allow them to mimic the abilities of the NSA. A large group of NGOs including the original drafters of the bill, FGV-CTS, consumer rights groups and Brazil's Pirate Party protested this provision and others in an open letter to Alessandro Molon, the rapporteur of the bill.[101] While broadly backing the legislation's progress, they called on Molon and others to fight changes that widened the amount of data that providers should keep from simple information about connections to more specific metadata and content from applications. They are also concerned about changes to article 22 that would allow any citizen to request immediate takedowns of lewd or offensive photographs, which they claim could be misused.

At these points in the legislation, tension with the human rights, privacy and free speech goals of the bill comes to the fore, as the concerns about the need for security conflicting with civil rights are the same as they are in physical space. The NSA scandal spurred by the leaks of Edward Snowden pushed the government to revise components of the Marco Civil, while also inspiring similar legal and technical revisions in other countries around the world, including the United States. There, legal scholars have contested that the NSA's use of metadata without a warrant in criminal and national security investigations may infringe on the Constitution's fourth amendment prohibition of unreasonable searches and seizures, and the Marco Civil addresses this possibility directly by extending the protections of the civil code in physical space into the virtual.

Democratic and Collaborative Governance:
21st Century Information Economies and Power

Before explaining how democratic governance works in relation to the Internet in Brazil, it is helpful to review Benkler's theory of what he calls a "networked information economy". The networks powered by the most advanced telecommunication system we have been able to conceive can produce social goods in ways that we have never seen before. "Radical decentralization of intelligence in our communications network and the centrality of information, knowledge, culture, and ideas to advanced economic activity are leading to a new stage of the information economy – the networked information economy."[102] His central concern is how to harness this new mode of organization and new possibilities for different forms of social production, in addition to market production, to produce a "liberal networked sphere".

Both Benkler and Castells rely on Jürgen Habermas' definition of the public sphere, which is in the former's reading: "'…a network for communicating information and points of view (i.e. opinions expressing affirmative or negative attitudes)' which, in the process of communicating this information and these points of view, filters and synthesizes them 'in such a way that they coalesce into bundles of topically specified public opinions.'" [103] Castells refers to this work as well, and its suggestion that a "post national constellation" is forming, and creating a conflict between the legitimate power of nation states and the increasing power of sources outside of their control, on a supranational level.[104] Just as the international networks are superimposing themselves over the national ones, the liberal networked sphere has the potential to superimpose itself over other networks and forms of control. However, this can only take place if governments such as Brazil's draw up laws and encourage the development of technical systems that promote the sphere through the architecture of the Internet, while implementing and maintaining these technical and legal codes correctly.

Using Habermas' definition, Benkler sets out five characteristics that he considers critical to the formation of such as network; universal intake, filtering for political relevance, filtering for accreditation, synthesis of "public opinion" and independence from government control. In all of these points, it is important to consider the role of the state. There are parallels in this theory to the tenets of the Marco Civil. In Benkler's estimation, a truly liberal, democratic government should be committed to ideal of universal intake, that the citizenry should have a right to make their voices heard by those in power, regardless of their background. When filtering information, both the state and its citizens should have access to politically relevant information so that they may form credible opinions about those in power, and it should come from accredited sources that they can trust to develop these opinions. These networks, technical, media and political, should be designed in such a way that the public can synthesize the information into coherent, credible positions so that they can consider them when they are participating in the democratic process by voting and other means, and above all these networks should be free from direct, monopolistic corporate or government control.

Power Law and Network Topologies in Cyberspace vs. Mass Media

Benkler links the human networks with computer versions when he focuses on how other scholars have attempted to describe how nodes gain power inside of a virtual network, such as through the work of Albert-Lázló Barabási and Reka Albert, who showed that computer networks have a predictable topology when links are counted in relation to other websites.[105] Here we face another difference in the use of terms; the power he is describing in this case only applies to a case where scholars can actually demonstrate links between virtual websites and pages, unlike Latour´s Actor Network Theory or Castells' network power permutations. However, Benkler is also trying to extend this theory of power law into more human, physical

domains, such as the creation of social networks between political blogs that can fuel protest movements as occurred in Brazil in 2013 and could again appear in years to come to counter a government, or mass media narrative.

Both Benkler and Castells take a special focus on this last type of network, the media, which plays a crucial role in Castell's model as a switcher between other networks of power (financial, political, social), as well as having the ability to program large numbers of people, and even prevent reprogramming. The Globo media network played the role of gatekeeper and monopolist in past, especially during the Brazil's dictatorship and early in its democracy leading up to today, but the group has seen its position in society repeatedly challenged, first by competition such as UOL and later by the increasingly strong and dynamic democratic institutions. Now online media that can also counter the traditional media narrative and contest these companies technologically.[106] Social media networks mobilized citizens and NGOs to edit the Marco Civil during its open source creation process, and throughout the debate in Congress these networks came into play again, for instance to protest article 16 mandating data storage.

The debates within the CGI and elsewhere show how there are ongoing, fundamental conflicts between multiple stakeholders involved in the use, regulation and management of critical information infrastructure, and the CGI provides one model of democratic and collaborative governance that is being simultaneously challenged domestically and promoted internationally. In addition, there are a number of different kinds of pending legislation, for instance over intellectual property reform (purposefully left out of the bill), which these stakeholders will debate in future. The CGI is a potential means for Benkler and Castells' "liberal networked sphere" to manifest real power deciding the shape of the legal and technical codes that will govern these issues.

Diversity and Universality through the National Broadband Plan

The Ministry of Communications has been developing a National Broadband Plan since 2010, when it released "Um plano nacional para banda larga: o Brasil em alta velocidade" [A National Plan for Broadband: Brazil at a Higher Speed] [107]. This plan outlines the key goals of the government in bringing "broadband 2.0" to a much wider segment of the population by the start of the World Cup in 2014, with the secondary objective of continued expansion through the Olympics in 2016 up until 2018. The report defines broadband as which it defines as users having the ability download material at an average speed of over 2 Mbps. The government estimated that mobile connections would quickly outstrip fixed connections, and while this is happening, reality has not been matching the plan precisely. The government's central objectives for 2014 include:

- Bring fixed broadband connections to 30 million users
- Wire 100% of government agencies with broadband, including:
    - All government "units" or buildings
    - All public schools, including over 77,000 rural schools
    - All 177,000 centers of health
    - All 14,000 police stations and places of public security
- Add 100,000 federal "telecenters" for public access
- Bring mobile broadband to 60 million users[108]

The plan is to work with private industry and incentivize the development of Internet infrastructure through subsidies and tax breaks, largely coordinated through ANATEL. There has been significant progress made towards realizing this plan, with a special focus on the cities that are hosting the World Cup such as Rio, Sao Paulo, Brasilia, and Belo Horizante by the start of

the Confederations Cup in June 2013. A broader goal is to connect all of Brazil's major municipalities (over 5,500) including smaller cities, within the plan's larger time horizon of 2017.[109]

Rural areas may get mobile or other kinds of wireless connections, but the government does not expect the same kind of rapid interconnections that it is focusing on in the cities in the short term. The roughly 20% of the population living in rural areas will receive support through a separate project, called "Programa Nacional de Telecomunicações Rurais", that is especially focused on bringing access to the 77,000 rural schools by 2014, many of which are still unconnected. The government has freed up space in the electromagnetic spectrum at 450 Mhz specifically to enable the development of wideband systems that can project wireless networks over miles as opposed to feet.[110]

Cisco, a major U.S. based network hardware company, has been releasing its "Barometer" of Brazil's broadband infrastructure since 2006, and its most recent report, released in May 2013, shows that there has been a major expansion of broadband in Brazil. The number of high-speed connections grew 18.6% from 2011 to 2012 to connect over 10 million citizens via fixed lines and over 6 million mobile users, or over 10% of the population.[111] This shows progress, but compared with the original plan's projections, there is a lot of work left before the country will see the kind of rapid growth in mobile connections that the government expected in

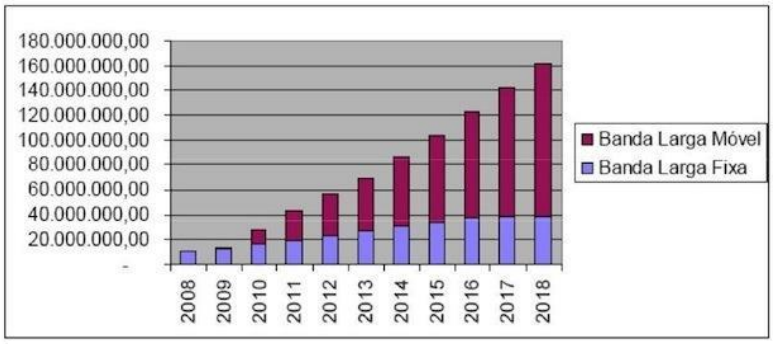

Figure 1: Projected mobile and fixed Brazilian Internet connections 2008-2018. Souto et. al. A National Plan for Broadband: Brazil at a Higher Speed,44.

its original report. As Figure 1 shows, the Ministry of Communications projected that there would be over 40 million mobile and fixed users by the end of 2012.

The National Broadband Plan outlines the country's objectives and methods of augmenting and creating much of Brazil's infrastructure and wiring the population within the next 10 years to create a more diverse, universal network that President Rousseff and other stakeholders endorsed through the Marco Civil. The National Research Network is an equally important element of both the backbone of the country's infrastructure and a key to its policies of innovation.

Innovation through the National Research Network

The Ministry of Science and Technology created the *Rede Nacional de Pesquisa [RNP]*, in 1988. Much as the Defense Department's ARPANET formed the backbone of the original, American network, the RNP formed the initial links of the Brazilian version and also created the original interconnections with the global Internet in 1992 during Rio's Earth Summit.[112] As the commercial Internet came to Brazil in the 1990s and the CGI developed as an independent entity, the RNP played a crucial role in its formation, while the CGI increasingly managed and developed the advanced research network that the RNP represented.

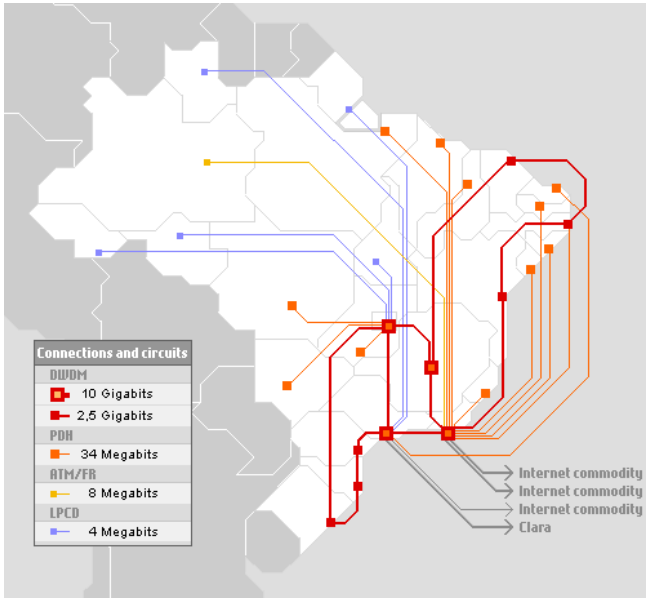

Figure 2: The National Research Network
© Rede Nacional de Ensino e Pesquisa (RNP)
http://www.rnp.br/en/backbone/index.php

Today, the RNP connects over 300 organizations nationwide, including 130 universities, 30 public and private research centers and 600 overall sites. It is increasingly a source of advanced interconnections, teleconferencing and advice on technical networking management procedures. Its goals include increasing bandwidth and availability of the network to more citizens and institutions throughout the country, reducing network latency, securing communications, and adding high performance and high capacity data management services. Overall, it is also looking for more interconnections not only with its traditional partners in research and academia, but also with commercial and with civil society stakeholders.

NGOs such as the National Association of Digital Inclusion (Associação Nacional de Inclusão Digital or ANID) work with the RNP to construct telecenters, points of presence and other network infrastructure to allow more Brazilians to access digital services. These kinds of collaborations and truly national initiatives represent the kind of innovative, diverse and universal objectives that the government would like to promote.

Commercial partners are key to any understanding of how innovation will happen, because they control the infrastructure, receive money for its up keep, must implement the laws in technical form, as well as provide the content.

There is an understanding that there is an ongoing symbiotic relationship between these different parties, across sectors, that contributes to the health of the network and the online society that it creates. As we have seen, ISPs and the media companies that control them in many cases, have vested interests in outcomes that only encourage the kind of innovation that is linked to their enterprises. This includes intellectual property such as music, video and text, sectors that are all in their interest to control.

Together, these groups also foster the technical objectives within the Marco Civil, such as the standards and interoperability process that are critical for sound network administration. The RNP and CGI are both vehicles for these projects, the latter a forum for debate and policy, the former a place of research and development, training and testing of these standards and models of interoperability. These two organizations are representations of the social forces that can build and maintain a better network, and continue to maintain a strong relationship to manage it. NGOs such as the ANID, a member of the CGI itself, work to foster interconnections in the same way. The CGI's design foster these interactions and interconnection between research groups, corporations and NGOs, and are a key component of multistakeholder Internet governance, the fabric of the groups that the committee is trying to represent.

Legal and Regulatory Environments: The Role of ANATEL

Brazil's national telecommunications agency ANATEL is central to the enforcement of laws and regulations relating to the Internet. It is a member of CGI, but ANATEL has been seeking to become more dominant in the field of Internet governance, especially over the question of net neutrality. Early in the construction of the Internet, in 1995, ANATEL created a regulatory framework that separated the burgeoning online media services and traditional telecommunications providers with the advent of a commercialized Internet. The Ministry of Communications sought to create a similar distinction in Brazil between regular telecommunications and what they called value added services through an ordinance known as "Norm 4"[113] that defined both. The root problem with many legal systems internationally is that they have had a hard time distinguishing between different types of information services. In 2001, Brazil's executive created the concept of Multimedia Communications Services (or the

acronym SCM in Portuguese), building on the concept of value added services, a definition ANATEL has been trying to challenge, off and on, ever since.

ANATEL has moved to bring SCMs, which had become almost any kind of broadband service, within its legal framework, declaring that it had the power to regulate these providers and unilaterally asserted its authority over other groups that want a say in the governance of Brazilian networks, especially the CGI. The committee has protested ANATEL's move to abrogate Norm 4, and potentially the technical framework established since the inception of the Internet. The struggle of fields has changed so that it pits CGI's cooperative, consensus based multi stakeholder model against the interests of one of its members and traditional patrons, the Ministry of Communications and ANATEL. In Bourdieu's terms, various agents or stakeholders are still defining the rules of the game cooperating as a coalition, or individually as ANATEL, the executive or even the military, fight to define laws central the field.

In May 2013, ANATEL's board met and made a new resolution to the country's National Telecommunications Act, asserting the right to manage SCMs more directly, further reserving the right to take power away from the country's ISPs and control the rules of Internet service provision.[114] Specifically, Resolution 614/2013 makes the change to Article 3 of the Telecom Act, and inserts the provision of Internet service itself into the system: "SCM is a service of fixed telecommunications of collective interest, provided nationally and internationally, in a private regime, that makes possible the provision of capabilities for transmission, emission and reception of multimedia information, allowing, inclusively, the service of connection to the internet, by any means, as Signatories within a Service Provided Area."[115] ANATEL is asserting that SCMs include both the provision of specific content as well as connections, and looks to increase the

amount of power it holds through different types of cultural and economic capital in the form of regulations it defines and the services that it is able to regulate.

This mirrors the move that the Brazilian government made at the ITU meeting in Dubai when it voted in consensus with China and other authoritarian states to assert that the public sector has the right to take direct managerial and operational control of the network systems.[116] In an interview with the ITU during the Dubai summit, ANATEL's head of international affairs, and a key representative in Brazil's delegation, commented that Brazil would be pushing hard for an agreement to revise the International Telecom Regulations (ITRs). He was vague about the intentions of the revisions, but he voiced the government's determination to be proactive and work with as many parties as possible.[117] The conference ended with a final set of acts that endorsed exactly this kind of power structure, unilateral assertions of control over the infrastructure without regard to other established stakeholders, most notably represented in Brazil through CGI. With this resolution, ANATEL is essentially asserting its power over the CGI to define the rules of the game regarding net neutrality and potentially a number of other concepts within its regulatory ambit.

Standards and Interoperability: The Central Role of CGI

The Marco Civil is a technical, as well as political document, and as a result contain tenets and other aspects that reflect informational and technological concerns. The CGI has always taken a central role in the technical infrastructure's coordination, and many of the data points in this section come directly from its host of informational websites, themselves a representation of the depth and scale of Brazil's Internet infrastructure. The group will continue to manage it through projects such as the Point Traffic Exchange (PTTMetro), which manages ASNs and Internet Exchange Points, sets protocols for addressing and otherwise monitors network traffic throughout the country.[118] The Center of Studies on Information and Communication Technology provides a national forum for stakeholder to develop research and interact with the RNP, CGI and others (CETIC.br). It also coordinates security through the Brazilian Computer Emergency Response team (CERT.br) which breaks up security into regional zones (see figure 3), and monitors and manages threats through regional response teams and specialized other groups representing the army, major universities and service providers.[119] As reviewed in the other sections, the CGI plays a fundamental role in the infrastructure's operation and governance throughout the country.

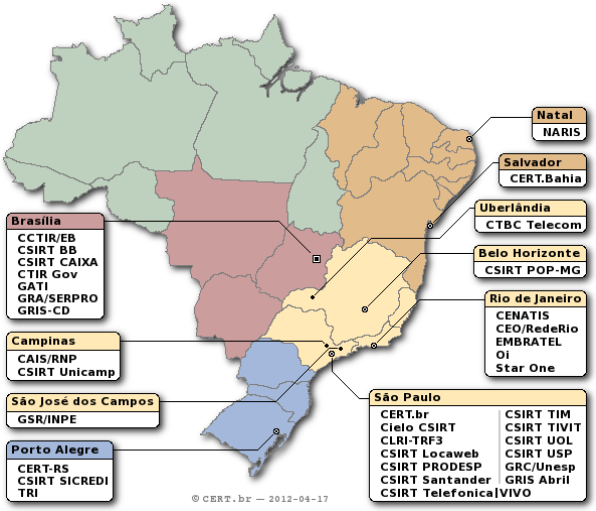

Figure 3: National Computer Emergency Readiness Team (CERT) Zones. http://www.cert.br/images/map-csirts-br.png

This extends to coordination of international efforts, coordinating with the Regional Internet Registry, the Latin American and Caribbean Network Information Center (LACNIC) and through it the other RIRs and the world. It also coordinates Brazil's parts in global efforts

such as the migration to IPv6, another kind of critical information resource management that is becoming a fundamental part of the Internet's development. As the network moves from a majority of computers to containing simply things, the provision of systems with longer, hexadecimal IP addresses will be crucial to adding, securing and managing the new devices coming online.

Virtual Infrastructure

Besides the physical infrastructure, the online protocols and systems such as IP addresses, domain name servers (DNS), and autonomous system numbers (ASN) that make up the country's virtual infrastructure. These include nineteen root level DNS servers that authenticate and serve domain name requests throughout the country that are controlled by groups such as the Internet Corporation for Assigned Names and Numbers (ICANN), Verisign (an Internet security and certification service) and the Internet Systems Consortium (ISC). CGI coorindates systems and best practices with these groups alongside standards making bodies like the World Wide Web Consortium, the Internet Engineering Task Force and the International Telecommunications Union. Top-level domain names registered with the prefix .br totaled over 3 million in March 2013, with almost half of these concentrated in Sao Paulo state. [120] Another metric, a Google search, found 890 million .br web pages, compared to 214 million .mx (Mexico), 220 million for, (Argentina) or 155 million for .cl (Chile).[121]

ASNs represent larger networks that the Regional Internet Registry (RIR) for Latin America (the Latin American and Caribbean Internet Addresses Registry or LACNIC) assigns to larger commercial, industrial, governmental or other large enterprises that request them.[122] There are around 1600 ASNs assigned to Brazil, compared with around 250 in Argentina, 175 in Mexico or 87 for Chile, according to LACNIC, suggesting similarly large set of online systems

relative to their Latin American neighbors, but in proportion with the disparities in population size, economy and number of enterprises operating in each respective country. Overall, the scale and complexity of the infrastructure, in both physical and virtual terms, maps to Brazil's role a technological pioneer for the region.

Physical Infrastructure

In terms of physical infrastructure, the Brazilian Internet represents the largest network in Latin America, measured by the number of users, IXPs, IP addresses and a number of other indicators. There are 27 Internet Exchange Points (IXPs) nationally, compared with the usual one or two that most nations support, and Sao Paulo's "Ponto de Troca de Tráfego Metro" alone directs 54.6G of bandwidth from roughly 100 participants on a daily basis. Internationally, the country connects through 13 transatlantic fiber optic cables; with another five other direct connections to New York[123] and Africa under construction as of this writing.[124]

On the data services side, eleven Tier 3 or 4 certified data centers provide services for a number of larger financial, media or technical institutions, such as the backbone provider Embratel, the Banco Santander Brasil, Itau Bank and Globo.[125] The Uptime Institute, an international organization that grades data centers from tier 1-4 based on metrics such as security, reliability and design, certifies these centers. These high-level centers are mostly located in Rio and Sao Paulo, but less developed data centers proliferate rapidly to provide services throughout the country.

The CGI and the physical and virtual infrastructure it maintains explain how stakeholders who are responsible for creating strong technical networks rely on good standards and interoperability to promote the other ideals embodied in the Marco Civil. The centralized

institutional management structure combined with robust technical codes enable the political rights such as privacy, security or innovation enunciated in the bill.

The Neutrality and Unaccountability of the Network

As described in the analysis of the articles in the net neutrality section of the bill and history, the concept is a key component of the Marco Civil. Tim Wu, the originator of the term and a legal scholar mentioned in the literature review, has endorsed the law,[126] and others such as Lessig and Van Schewick have described how a system that does not discriminate against either users (unaccountability) or the content providers (neutrality) enables the internet to function and grow in three central aspects.[127] By allowing citizens to access content equally and equitably, without censorship, monitoring or selective intervention in their connections, the online ecosystem becomes stronger technically, politically and economically. Technically, it is the most efficient system that we can devise, as evidenced by the strength and consistency of its expansion historically. By allowing for all packets of information to be distributed equitably, net neutrality ensures not only that there is no discrimination against users, but also decreases the amount of technical resources that are committed to processing, storing and transmitting the data for analysis and potential rejection.

Economically this system would not develop with the ferocity that it has in past, or in a micromanaged environment (think of the economy of the Soviet Union, or the Chinese Internet today) and would prove equally costly. Politically, as shown by the debate over the Marco Civil, various actors within the government, in the media content industries and the ISPs have selfish motives for managing access that do not necessarily align with the interests of individuals and could limit the architecture of the overall network.

Freedom, Privacy and Human Rights

These three concepts are some of the most important not only to the entire project of the Marco Civil but also to the systems of democratic governance that various actors worked to ensure through law. Throughout the articles enshrined new bill of rights, the Brazilians have repeatedly threaded these themes into the fabric of cyberspace. These three concepts are central to many of the tenets previously discussed, one cannot have security without privacy, human rights in the context of the Internet can only be ensured with universal access, diversity enables freedom of expression for all, while technical precepts such as net neutrality have the potential to become like these basic rights.

During the protests that shook the country during the 2013 Confederations Cup, the government faced citizens who were angry about the way that the government had spent their taxes on international games for the world where it could have been be used for domestic needs such as better healthcare, transport or infrastructure improvements. These protests represent freedom of expression in a democratic society, but the government's often violent response suggested to many that their human rights were not respected. The Internet enabled these protests and provided a very real example of the kind of power that the new online social networks could create, but also of how the power inherent in these networks must be safeguarded by strong privacy protections for those who are organizing and attempting to create a new ideological consensus, a counter program in Castell's terms.

The NSA scandal highlighted how important privacy protections are for individual citizens and institutions, both private and public, but shows that even the most powerful nation on Earth is still struggling to balance the need for security through intelligence with privacy

safeguards for all members of its society. The Marco Civil represents a concrete attempt to transpose the civil rights that Brazilian citizens possess in physical reality online.

7. Conclusion

The way that the debate over the Marco Civil moved from domestic to international contexts highlights that the kinds of Internet governance problems it is addressing, and suggest that the solutions Brazil's institutions created are truly unprecedented and unique. President Rousseff and others have suggested that the roadmap that the Brazil's Internet regulations and institutions such as the CGI provides could also become a model for others throughout the world, specifically a bridge between opposing positions such as those held by Western democracies and Eastern dictatorships, or between developed and developing nations.

Brazil is a member of the BRICs, but also of the Global South, a nation that is at once developed and developing, and so uniquely positioned to provide not only a roadmap but also the kind of bridge that many, including its president, hope it represents. The Internet's infrastructure, in our world and online, provides a technical means for cooperation across a broad range of issues expressed in the Marco Civil. If there is to be a way to cooperate through networks to build better governance systems, they will be developed and managed through laws and technological structures that follow these basic patterns. In the context of revolutions in past, however, even with the speed of socio political and technical development rapidly increasing, these models represent only drafts in a process that will proceed over the course of many years. Ultimately, it is essential to begin to understand the role that these new networks play in the existing ones as rapidly as they develop. Technical networks have become components of the economy, just as political networks are reflections of the economic ones, and the strength of all three depends on the others.

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