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Free Software as Public Service in Brazil: An Assessment of Activism, Policy, and Technology

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Brazil has been one of the more progressive countries in adopting free and open source software as part of broader social and digital inclusion initiatives. Many of these policies and projects have their roots in activism during President Luiz Inácio Lula da Silva's presidency. Since then, free software projects and policies have continued to advance within state institutions, but the effectiveness of these projects and policies remains relatively unexplored. To that end, this article focuses on three recent projects aimed at using free software to expand social and digital inclusion. However, I argue that these projects do not adequately link intention to outcome when assessing the effectiveness of the projects or policies.

Keywords: Brazil, digital inclusion, free software, open source software, social inclusion

In her speech to the United Nations General Assembly on September 24, 2013, Dilma Rousseff, president of the Federative Republic of Brazil, denounced recent revelations concerning a global network of electronic espionage. In particular, Rousseff expressed indignation over the revelations that Brazilian companies as well as her personal communications were directly targeted by these activities. In response, she called for a civilian multilateral framework for Internet governance and outlined five principles that ought to be guaranteed by such a framework. These principles included freedom of expression and privacy, an open and transparent governance model, universality and inclusiveness of nondiscriminatory

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societies, respect for cultural diversity, and net neutrality (Rousseff, 2013). Putting these proposals into practice is certainly an important step for guaranteeing communication rights in an age of interconnected global communications networks. While the scope of this proposal is novel, however, the principles are not. Indeed, even as Brazil is emerging as one of the leaders in the push for securing democratic rights and multilateral governance of the Internet, the country has a long history of activist communities that have consistently fought to guarantee these rights within the country.

To illuminate how technology activists have made inroads into official state institutions and policy initiatives, this article charts the activities of the free software community in Brazil. In addition, I link Brazilian information and communication technology policies within the broader context of international initiatives aimed at granting communication rights through social and digital inclusion programs. From within this context, I focus on how three recent projects related to free software in Brazil have been developed with the goal of advancing social and digital inclusion.

To that end, this article begins with some brief contextual information about Brazil and about free software. Next, I focus on the adoption of policy measures that required the use (or preference) of free software and how a highly active free software community brought about these policies. Having established this historical context, I then discuss three case studies that illustrate the ways in which free software is being used to expand social and digital inclusion. Finally, the article concludes with a critical assessment as to whether these policies and technologies have been effective in meeting their intended goals.

This research is based on semistructured interviews conducted with public officials within the Brazilian government and with free software advocates and activists, including those actively working on the creation and implementation of certain projects, during spring 2014. The purpose of the interviews was to assess the current state of free software projects within the Brazilian government, especially the progress of their implementation, indicators of their overall effectiveness, and future plans for the projects. In addition, the interview data were supplemented with a review of both primary and secondary documents related to official public policy and the specific free software projects that were analyzed.

Positioning Brazil

Brazil has the seventh largest economy in the world as measured by its annual gross domestic product (GDP), which was estimated to be approximately $2.35 trillion in 2014 (World Bank, 2015a). This is second only to China among the so-called BRICS countries—Brazil, Russia, India, China, and South Africa—which are often lumped together as the strongest emerging economies in the world. However, Brazil still suffers from a highly unequal society, in which the top 10% of the population earns roughly 42% of the country's income (World Bank, 2015b). In the last 20 years, this gap has decreased slightly, which is often attributed to progressive social development policies. Former President Luiz Inácio Lula da Silva, popularly known simply as "Lula," introduced and expanded these policies during his presidency from 2003 to 2011, and they continued under his successor, Dilma Rousseff. While these policies were aimed at a wide range of development goals, increasing Internet connectivity was an important component because Brazil continued to lag behind other countries in this area.

Internet connectivity in Brazil was approximately 58% in 2014 (International Telecommunications Union [ITU], 2015). However, there are still marked disparities in connectivity between people living in urban areas and those living in rural areas (Mizukami, Reia, & Varon, 2013). Nonetheless, Internet connectivity in Brazil has steadily risen since 2000, and the percentage of individuals using the Internet has more than doubled since 2005. While this represents a tremendous increase in absolute terms, Brazil still has a lesser percentage of its population connected to the Internet than other, similarly sized, economies. This is, in part, due to the income disparities plaguing the country. Consequently, the Brazilian government made it a specific policy priority to connect its population to the Internet. The resulting policy initiatives focused on building the necessary broadband infrastructure to support the twin goals of social inclusion and digital inclusion. These two goals reflect the assumption that access to information and the right to communicate are necessary components of social and economic development. In the case of Brazil, these two goals are also convenient policy platforms for populist politicians, especially those of the Partido dos Trabalhadores (PT), or "Workers Party," to which both Lula and Dilma belong.

In May 2010, Lula began a program known as the Plano Nacional de Banda Larga (PNBL), or the "National Broadband Plan." The proposed goal of the plan was to provide low-cost access to the Internet by connecting nearly 12 million households before 2014. Although not explicitly stated, the 2014 deadline was not insignificant, for that was when Brazil hosted the FIFA World Cup. Furthermore, the country was scheduled to host the 2016 Summer Olympic Games. In order to facilitate the ambitious broadband project, Brazil resurrected its dormant former state-owned monopoly operator, Telecomunicações Brasileiras (Telebrás), to operate in conjunction with the national regulator, Anatel, and the Ministry of Communications. As Brazil was implementing this experimental strategy, other developing countries monitored the country's progress to determine if a similar strategy could work in their own national context (Jensen, 2011).

Despite its ambitious plans, however, the PNBL is now widely viewed as a failure, as the plan has fallen well short of its intended goals. Only a fraction of the intended broadband connections have actually been established, and these are primarily located in the large urban centers of São Paulo. While many factors are identified as reasons for the plan's failure—including lack of leadership, lack of funding, and overall poor implementation—one of the more striking examples of the plan's failure was a survey showing that nearly 67% of respondents had never even heard of the PNBL (Cardoso, 2015).

The decision to connect the country to the Internet as a part of broader social reforms is reflective of a developmental logic that links access to information and communication technologies (ICTs) to economic development (see Lerner, 1958). By viewing Brazil's measures at increasing connectivity and social inclusion within this framework, the broadband connectivity policies make sense. Increasing connectivity and digital inclusion policies satisfy an important element of economic development, while simultaneously serving the political goals of social inclusion in the governance process. In addition, these social inclusion policies are reflective of Brazil's long history of populist politics, whereby political leaders have been elected on the basis of their ability to garner support from the nation's lower classes, which constitute the majority of the electorate. However, some of the developments occurring within the software industry have unique characteristics and therefore deserve more careful attention. In the past, emerging economies were subjected to the establishment of media systems that mirrored those of the

developed world. This would ensure that ICTs and media programs could be sold to the developing country as a way to boost the corporate profits from companies in the developed world (see Schiller, 1976). What makes some of the developments in the software community unique is the possibility that nonproprietary software can be used as a counterhegemonic alternative to prevailing neoliberal logic and the tendency to extract licensing fees from the use of proprietary software. To a certain degree, then, free and open source software may arguably have greater potential to grant communication rights, although the extent of such potential is always a contested process, as the technical and legal features of free software remain open to a variety of purposes.

A Brief Introduction to Free (Libre) and Open Source Software

Free (Libre) and Open Source Software (FLOSS) is a type of software for which the underlying source code is made freely available to users. As a result, users have the ability to study, modify, adapt, make changes, and improve the software to meet specific needs. As such, the software does not need to be accepted "as is." Rather, the user is granted the right to make use of the software in ways for which it may not have been originally intended. In addition, changes made to the original software can be submitted for inclusion in the original project so that others may use the changes made by a broader community of users. In this sense, free software provides a form of "commons-based peer production," a form of production that is "radically decentralized, collaborative, and nonproprietary; based on sharing resources and outputs among widely distributed, loosely connected individuals who cooperate with each other without relying on either market signals or managerial commands" (Benkler, 2006, p. 60). Most often, the rights guaranteed in FLOSS production are granted under Copyleft or Creative Commons licenses that allow users to copy, modify, and redistribute the software under certain specified conditions. These conditions range from simply providing attribution to limiting the commercial exploitation of the software or allowing redistribution as long as the same type of license protects the modified software.

One of the first to espouse the specific economic benefits of FLOSS was Eric Raymond (2000). Arguing from what he observed within the development of the Linux kernel software, Raymond used the metaphor of the cathedral and the bazaar as a way to illustrate two different approaches to productive activity. The cathedral approach treats productive activity as sacred and intended only for those belonging to the "congregation," or members of the community, corporation, or other productive association. Furthermore, the cathedral approach is associated with strong protection of intellectual property rights as well as secretive (or exclusionary) forms of innovation, whereby anyone not belonging to the group is excluded from accessing the information necessary for development. On the other hand, the bazaar approach represents a productive community in which multiple users and sellers bring unique perspectives, skills, and goods to a wider community of collaborators. In effect, the argument was that the bazaar approach democratizes the productive process. The open source approach to productive activity is an example of the bazaar approach: a community of users contributes to an ongoing productive process, whereby each contributes his or her specialized abilities and relies on others to build on his or her work to accomplish more elaborate tasks. In addition, users contribute immediately after completing any task, no matter how small the accomplishment. The idea is that when hundreds or thousands of volunteer workers make small, incremental changes, innovation and the creative process are sped up. The end result of this

type of collaboration is a more efficient and cost-effective form of productivity because the activity is constantly being reevaluated and improved on by a broader community of users.

Free software, then, offers an example of a technology with the potential to grant communication rights, particularly because of its unique technological features as well as the alternative intellectual property licenses protecting the software. Despite these features, however, the particular technologies developed, the way they are used, and the ends toward which they are directed remain a contested process. Indeed, although free software developer communities in Europe and North American tend to exhibit an apolitical or politically agnostic standpoint, FLOSS has also been deployed across a range of explicitly political projects (Coleman & Hill, 2004; Coleman, 2013). In this sense, FLOSS principles and products are flexible, as they can be translated and adapted to represent diverse ends, whether political, apolitical, capitalist, or anticapitalist. As such, FLOSS principles and products can be reinterpreted within differing international contexts to blend with particular histories, ideologies, and political struggles.

The free software community in Brazil provides an illustrative example of how these dynamics can take shape within a specific national context. The Brazilian free software community continues to be highly active, and some of its activities have received considerable support from politicians. These include the official adoption of its products in local, state, and federal government as well as the adoption of laws and policies that require the use (or preferential treatment) of free software. In what follows, I chart the rise of free software in Brazil and some of the policy initiatives that support its activities by drawing heavily from the work of Brazilian scholars. Where appropriate, I contextualize this literature within other scholarship, which provides additional perspectives on the meaning of free software in Brazil.

Free Software in Brazil

The free software movement in Brazil has its roots in the 1990s when GNU-Linux, a FLOSS operating system, was installed on computers in universities, particularly in computer science departments. According to one account, Marco Dimas Gubitoso (also known as "Gubi"), who was a professor at the Instituto de Matemática e Estatística da Universidade de São Paulo (Institute of Mathematics and Statistics at the University of São Paulo), was the first to install GNU-Linux, in 1993 (Kon, Lago, Mereilles, & Sabino, 2011). This initial installation of GNU-Linux attracted the attention of students and other professors alike and, in the years that followed, the University of São Paulo became a center for the study of free software. In 2008, the university established the Centro de Competência em Software Livre da USP (Free Software Competence Center) (CCSL-USP) to encourage research, education, development, and the use of free software both inside and outside the university.

The free software movement also received considerable support and growth within government agencies. In particular, employees from the information technology agency in the state of Rio Grande do Sul formed the Projeto Software Livre do Rio Grande do Sul (Free Software Project of Rio Grande do Sul) in 1999. This same group of employees founded the Associação Software Livre (Free Software Association) (ASL) in 2003, which was established as a nongovernmental organization (NGO) to promote access to free software within Brazil. Many of the public agency employees who initially led the movement for free software in Rio Grande do Sul were also linked with labor union movements in the state (Kon et

al., 2011). This is reflective of the free software movement's connection with the Workers Party (PT), to which Lula and Dilma belong. Indeed, the major policy initiatives in support of free software in Brazil have come from the PT.

The first laws that encouraged or required the use of free software within government agencies in Brazil occurred at the state level. Between 1999 and 2001, four cities and municipalities passed these types of laws: Amparo, Solonopole, Recife, and Ribeirão Pires (Festa, 2001; Tramontano & Trevisan, 2003). The decision to switch to free software systems was primarily economic, as Brazil reported spending nearly $1 billion on software licensing fees to Microsoft between 1999 and 2004 (Kaste, 2004). By switching to free and open source software, it was estimated that the country could save approximately $120 million per year (Kingstone, 2005). This early period of adoption in states and municipalities, as well as the convincing economic rationale for implementing free software, led the federal government to pass a series of directives, objectives, and action items requiring or encouraging the adoption of free software in federal agencies in 2004.

However, the economic rationale for adopting free software cannot explain why such widespread adoption took place. Shaw (2011) clarified this history by demonstrating how an elite network of "insurgent experts" working within political, technical, and educational institutions were able to mobilize their collective actions to bring about the substantive adoption of free software and the passage of free software policies. These experts used their past experience with leftist activism to specifically frame FLOSS as a counterhegemonic alternative to the prevailing neoliberal logic of international development and, in doing so, explicitly sought to repoliticize the role of informational technology, the state, and informational capitalism. For this reason, the FLOSS movement in Brazil has taken on an identity associated more generally with leftist politics.

By clarifying this history, Shaw (2011) demonstrated why the move toward FLOSS was also contextualized within broader political and ethical terms. Indeed, the rhetoric used by Lula and other government officials to promote free software had been, at times, nationalistic and ideologically driven (Festa, 2001). The rhetoric may have been a way for Lula to take advantage of populist politics, which seems to have been effective. Schoonmaker (2009), however, argued that the Lula administration's strategies of digital inclusion can be contextualized within a broader "politics of consumption," whereby the government sought to democratize consumption by using the apparatus of government purchasing power to shift toward free software and encourage its adoption, particularly among the poor. As evidence of this, the Lula administration implemented tax incentives to subsidize the sale of computers to low-income families during this time. The rationale was that adopting free software would encourage national inclusiveness while simultaneously spurring domestic economic growth by developing an information technology sector that could provide services both nationally and internationally (Amadeu da Silveira, 2001).

After the initial round of the insurgent experts' achievements in framing free software as a counterhegemonic alternative to development, the Brazilian free software movement continued to receive support from the government. Whereas the 2004 resolutions passed by Lula were not particularly binding, the federal government passed Instrução Normativa MP/SLTI Nº04 (Normative Instruction No. 4) in 2010,

which represented the most binding resolution related to free software. Specifically, Article 11, Section 2, items B and C, of the Instrução specified that when government acquisitions agents are conducting feasibility analyses, they should consider the availability of free and open source software in general, and the software existing on the Portal do Software Público Brasileiro (Brazilian Public Software Portal), in particular. Furthermore, these items specify that free software ought to be used when considering budgets, and when free software is not used, the purchase of proprietary software must be justified before the budget is approved. Similar laws have also been adopted at the state level, and one law in the southern state of Rio Grande do Sul survived a legal challenge that claimed it gave unfair preferential treatment to a specific product. However, the country's supreme court, the Supremo Tribunal Federal (STF), upheld the law on the grounds that the law did not give preferential treatment to a single company but rather promoted a particular form of licensing (Supremo Tribunal Federal, 2015).

In sum, the Brazilian free software movement has its roots in academic institutions within the country, but the movement grew quickly because of a strong community of "insurgent experts" who were able to win support from certain key members of local, state, and federal government. From a technological point of view, free software has the potential to encourage the right to communicate because it is open to adaptation, modification, and change in order to meet particular aims. However, the ways in which free software is used often depend on the particular historical, political, institutional, and social contexts within which it is deployed. In Brazil, free software activism blended with leftist activism and gained support within local, state, and federal government, particularly during Lula's time as president.

Whereas the previous section established a general context for how and why the regulatory framework for the Brazilian free software movement was established, the remainder of the article focuses on how the free software community has continued its work from within the Brazilian state. Specifically, I focus on how specific free software projects link with broader policies aimed at social inclusion within the country. Then, I focus on three recent projects aimed at furthering social and digital inclusion within state institutions.

Social Inclusion, E-Government, and E-Citizenship

Aside from its support of free software in particular, Brazil has also made a commitment to policies for social inclusion. The most striking example of this is the Compromisso Nacional pela Participação Social (National Commitment to Social Inclusion) (CNPS), which was adopted in 2013 as a joint action by the General Secretariat of the Presidency and the State Secretaries of Social Participation. In recognizing that social participation in the governance process is identified as a right in the United Nations' Declaration of Human Rights and the 1988 Federal Constitution of Brazil, as well as international treaties and agreements, the CNPS was designed to codify this right into Brazilian policy. The CNPS offers states the opportunity to make a commitment to social inclusion and to specify explicitly how they will do so over a five-year term, although this still remains a voluntary commitment. Nonetheless, the CNPS is aimed at increasing administrative transparency and providing a mechanism for democratizing the decision-making process in the formation of public policy at the city, state, and national levels. As part of the broader movement toward greater social inclusion, access to information and the right to

communicate were viewed as an important component. Sergio Amadeu da Silveira (2001), who remains a key member of the free software movement in Brazil, has argued that "digital inclusion" represents one of the new frontiers in the struggle for freedom of expression and is also an essential part of democracy in the Information Age. To facilitate this type of inclusiveness, Brazil focused on increasing Internet connectivity across the country and moving toward models of e-government and e-citizenship while striving for greater transparency in government. The three free software projects discussed next represent examples of projects designed to further these broader policy initiatives.

Portal do Software Público Brasileiro (Brazilian Public Software Portal)

The Brazilian Public Software Portal is an online platform for users to submit requests for software to meet the needs of their local communities. In addition, software developers and programmers can organize into communities of interest to develop the appropriate software to meet those needs. The portal currently features approximately 65 different types of software that provide services for education, health care, telecommunication, energy, public libraries, sanitation services, invoicing, taxes, information technology, and other types of social services (Softwarepublico.gov.br, 2014). These programs can be downloaded free via the online portal, and all software is protected by the free software license, the GNU General Public License (GPL), version 2, which was officially translated into Portuguese and recognized by the Brazilian federal government.

The idea to create a public software portal has its roots in the Associação Brasileira de Estudos Populacionais (Brazilian Association of Population Studies) (ABEP), where the idea to create a public software portal developed in 2005. ABEP was a partner in a broader initiative that originated within the World Summit on the Information Society (WSIS) in 2005 and is known as the Electronic Government Innovation and Access (eGOIA) initiative. The primary goal of the eGOIA initiative was to implement a single virtual space supporting the interaction of citizens (independent of social status, gender, race, abilities and age) and the public administration in a simple future-oriented and cost-effective way" (United Nations Public Administration Network, 2002, p. 4). Within this context, the Brazilian government issued a grant for the development of the Public Software Portal, which was developed by members of the free software community in collaboration with academic institutions and the government.

In 2013, a series of reforms were initiated for the Public Software Portal. These reforms were aimed at more fully integrating the services provided by the portal while simultaneously allowing for greater flexibility in licensing as well as facilitating more collaborative development. In part, the goal of these reforms was to integrate the portal with other open data initiatives within the government. The open data initiatives were designed to strengthen and support a move toward greater transparency, collaboration, and accessibility within the government in order to foster an environment conducive to "e-government" or "e-democracy," which is characterized by the right to communicate, the right to access of information, and public participation in government (Costa, 2014).

Included in the reforms were specific measures for increasing the range of software licenses available for projects. For example, all software uploaded onto the portal was required to be licensed under the GPL version 2 since it is the only free software license officially recognized by the federal

government. This is primarily because the license was officially translated into Portuguese, but the license requires that any redistribution of the code be protected by the same license. This has the effect, in some cases, of discouraging certain uses of the software. As a part of its attempt to offer more flexibility to developers and users alike, the Public Software Portal reforms offer more options for licensing the software contained on the site.

Aside from the licensing reforms, the portal is also being reformed to make the collaborative development of software within the portal more centralized. The justification for centralizing development within the Public Software Portal is twofold: to protect data sovereignty while also capturing more data on development activities. These two goals may seem contradictory, but most development of public software currently takes place on external sites, like GitHub, after which the completed software is uploaded onto the Public Software Portal. By centralizing this productive activity, the projects and data about their development may be hosted on Brazilian servers rather than routing traffic through foreign services. Given the recent revelations about surveillance, the move to create a sovereign Internet infrastructure and keep Brazilian data stored on Brazilian servers has considerable support. In addition, centralizing development activities on the Public Software Portal would also increase the government's ability to track the development of projects to determine which projects are attracting developers and which are in need of more development.

Finally, the reformation of the Public Software Portal was also undertaken with the goal of making the portal more aesthetically pleasing, accessible, and user friendly. This redesign is seen as an important part of social inclusion, especially for people with little prior experience in interfacing with Web portals. There have even been proposals to "gamify" the portal (Costa, 2013) to make the site user friendly, while also implementing a competitive element into the portal's design. In part, this could provide an incentive for developers to contribute to the portal. However, the government is also assessing other ways of encouraging development. At the time of writing, the office of the Secretary of Logistics and Information Technology in the Ministry of Planning, Budget, and Management was conducting a pilot program with student developers. The pilot program offered 20 small grants to students, who were asked to assist in developing new software and aesthetics for the Web portal. If the project proves successful, the ministry plans to will lobby for a similar program to be implemented within the government but on a much larger scale. The proposed program would allow the government to cooperate with university students, professors, businesses, and public agencies. The parties could collaboratively generate ideas for the type of software to be developed. The students could gain experience working professionally with clients and developing projects,; the professors could conduct studies on the process, and local businesses and governments could benefit from the software that is developed.

The Brazilian Public Software Portal provides one of the most striking examples of collaboration between the government and the free software community. The portal provides unlimited access to free software that has been designed to assist local municipalities address the needs of their constituents. The portal is arguably mutually beneficial for the government as well as the software community because it provides access to tools and information for citizens while providing support for free software development from within the community. Moreover, the software on the portal is aimed at addressing the needs of local communities throughout the country. Beginning in 2013, the portal began a reform process to offer more

flexibility in licensing as well as centralizing the development process within the portal. This move is seen, not only as a way to meet the requirements of social inclusion, but also as a means to reclaim the sovereignty of Brazilian data by shifting development away from external services and toward Brazilian-based services.

Participa.br

While the Brazilian Public Software Portal provides technological solutions to social needs, the government also launched a Web-based platform aimed at increasing public participation in the policymaking process. The project, called Participa.br, aims to bring greater accountability and transparency to government, while also allowing the public to participate in shaping the policymaking process. In this sense, the project aligns with the government's goals for increasing social inclusion and provides a tool for increasing government transparency and responsiveness to citizens. Moreover, the entire new portal has been built using free software, making it yet another instance of cooperation between the government and the free software community.

Visitors to the Participa.br portal are presented with three options. Users can suggest topics for debate, participate in ongoing discussions, or mobilize support for their proposals. When users suggest a topic for debate, these topics are then open for discussion by other members of the Participa.br community and the issues are also included in the queue for determining the salience of particular issues. For example, when users decide to participate in ongoing debates, the he or she is presented with a simple choice between two issues and asked to decide which one is more important. Each time the user indicates a preference, he or she participates in making that issue more salient. The issues presented to users are not prioritized according to the number of votes received or the amount of time included on the site. Consequently, newly proposed issues have the same chance at getting votes as previous issues that may have previously gained considerable support. Finally, when a user decides to mobilize support for a proposal, he or she can discuss the issues with other users on the site and try to attract interest in the cause. In this sense, Participa.br functions similarly to social networks where communities of interest can participate in discussions by using hashtags to contribute to an ongoing discussion.

The data gathered from Particpa.br are used to inform representatives about the issues that are most salient to his or her constituents. Furthermore, representatives have the opportunity to respond to the constituents via Participa.br by holding a virtual meeting with the public. While there is no official requirement for representatives to do so, the administrators of Participa.br have access to the data from the site and can put additional pressure on the representative to respond to the demands of the citizens from within the government. By offering a platform for civic engagement like Participa.br, the goal is to increase accountability of government to the demands of citizens. In effect, the government is trying to provide a platform for citizens to voice their opinions directly to the government and their representatives rather than having these discussions on social networking sites like Facebook or Twitter.

By providing a platform for centralizing public participation online, the developers of Participa.br are seeking a way for citizens to become more directly involved in the policymaking process. Given the recent history of massive protests against increases in public transportation costs, low teachers' salaries,

problems with waste management, and corruption, as well as other numerous other concerns, the government has an interest in quelling the impulse for more widespread social unrest. From the government's perspective, then, Participa.br may seem like an effective way to facilitate communication between citizens and the government, but the project's success is most likely going to be directly related to the willingness of representatives to respond to public demands. In the event that responsiveness breaks down or does not occur at all, Participa.br may serve only to increase public frustration with the political process and the government.

Laboratório Hacker (Hacker Lab)

One of the more intriguing developments in recent years has been the establishment of a permanent Hacker Lab inside the Chamber of Deputies. On December 17, 2013, the Brazilian Chamber of Deputies passed a resolution to create the space. The Hacker Lab was the first in the world to receive a permanent home inside a government building. With the goal of creating a "new model of participatory democracy," the Hacker Lab is open to any citizen, and especially to software developers or programmers who want to work collaboratively with open data from the government to create data-driven solutions for social needs (Brandt, 2014).

The idea for the Hacker Lab stems from a week-long "hackathon" that took place inside the Chamber of Deputies in November 2013. The purpose of that event was to develop technological solutions for increasing transparency in the policymaking process while also increasing citizen understanding of the legislative process. During the event, the resulting project proposals were presented directly to the president of the Chamber of Deputies, Henrique Eduardo Alves. Having been impressed with the presentations, he asked how he could support these types of activities. In response, the organizer of the event, Pedro Markun, responded that he could establish a permanent hacker space inside the Chamber of Deputies. By January 2014, the Hacker Lab was open (A. Gomes, personal communication, April 9, 2014).

The creation of the Hacker Lab similarly serves as an example of cooperation between the government and the software community with the purpose of increasing social participation, access to information, and government transparency. The Hacker Lab also links with the Brazilian government's stated commitment to open data. The federal government provides an online portal called Dados Abertos (Open Data), where it makes a wide range of data publicly available. The data cover topics from health, labor, politics, government, economics, and many types of social services. The provision of this data meets the requirements of Lei de Acesso a Informação Pública (Lei 12.527/2011) (Law of Access to Public Information), passed in 2011, which requires the government to increase citizen access to public information by making it freely available to citizens. The Open Data portal was designed as a way to facilitate the provision of open data to the public. Furthermore, the Open Data portal stems from Brazil's position as one of the cofounders, in 2011, of the Open Government Partnership, an initiative to "promote transparency, empower citizens, fight corruption, and harness new technologies to strengthen governance" (Open Government Partnership, 2014, para. 1). This international initiative inspired the creation of the Law of Access to Public Information, which provides the immediate context for the creation of the Open Data Portal, and the Hacker Lab was established as a space for developing technologies that are informed by the data contained within the Open Data Portal.

The establishment of the Hacker Lab can be viewed within the context of these intersecting initiatives. Brazil's commitment to the Open Government Partnership signaled its willingness to make government more transparent and to grant access to information to its citizens as a part of this process. The Hacker Lab is a space for citizens to make use of that data in order to design technological solutions to problems that are supported by the data. The Hacker Lab also provides an example of another partnership between the government and the broader community of programmers and software developers.

Conclusion

Brazil offers an intriguing case for informational politics within both the international and national contexts. Internationally, Brazil has been a vocal opponent of the surveillance activities of the United States, particularly after it was revealed that President Rousseff's personal emails were monitored by the National Security Agency in the United States. Her speech before the United Nations called for a multilateral framework for Internet governance, open and transparent governance models, and net neutrality, among other requests. A key part this framework would be the establishment of a sovereign Internet infrastructure that does not require data to pass through the United States. In addition, Brazil was also one of the cofounders of the Open Government Partnership, which signaled its willingness to promote transparency and social inclusiveness by harnessing new technologies. In following through on this initiative, Brazil has passed some fairly progressive national policy initiatives.

First, Brazil enacted the Marco Civil da Internet in April 2014, which serves as a bill of rights for the Internet in that it protects the right to communicate, freedom of expression, and the right of privacy online. Second, this recent policy initiative can be contextualized within a longer history of progressive social policies aimed at increasing public participation in the policymaking process. Third, the policies for social inclusion also include specific directives aimed at digital inclusion, or the right to access information. Fourth, free software is viewed as a pragmatic means for meeting the goals of digital inclusion, especially because of the highly active "insurgent experts" who were able to make inroads within state institutions during Lula's presidency (Shaw, 2011). Based on the efforts of these insurgents, the Brazilian government began to implement policies, directives, and action items requiring the use of free software within public agencies and institutions.

Furthermore, these policy initiatives intersected with the particular characteristics of previously existing social movements within Brazil to arrive at a unique blend of progressive politics within the free software community. The three projects discussed in this article are an indication that insurgent free software experts continue to operate within the Brazilian government and have continued lobbying for and achieving the implementation of free software projects. At times, these projects have been discursively linked with broader social and digital inclusion policy initiatives. However, there are still problems associated with determining the overall effectiveness of these projects. These problems are most commonly associated with an imbalance in the types of data gathered about each project.

For example, administrators of the Brazilian Public Software Portal gather data about development activity on the portal (e.g., number of posts, relationships among members of a community,

topics of discussion, etc.), but they do not gather any statistics about how many times a particular software has been downloaded, let alone implemented in any meaningful way within particular communities (J. L. Cardoso Júnior, personal communication, April 6, 2014). Without such data, insurgent free software experts may continue to advocate for an expansion of free software-related policies and projects, but their intentions cannot be directly linked to outcomes. In this sense, the adoption of free software projects and policies within state institutions belies the degree to which these initiatives actually make any meaningful difference in expanding social or digital inclusion. At best, the adoption of free software policies and the creation of free software-based projects may simply signal the Brazilian state's willingness to provide access to information and digital tools as well as encourage greater transparency and participation in the political process to its citizens. At worst, such policies and projects provide the illusion of a benevolent state for those most in need while only benefiting those insurgent experts who continue to secure state funding for the creation of projects that may not actually benefit from such projects.

To arrive at any meaningful conclusions, then, the free software community will need to find measures for determining the effectiveness of their initiatives. However, rather than simply relying on quantitative measures for understanding effectiveness (i.e., number of times a program is downloaded from the Brazilian Public Software portal, amount of data worked with at the Hacker Lab, or number of users signing up for Participa.br), additional qualitative studies could focus on the ways in which users make sense of such projects or policies within their daily lives. In addition, the focus of such research should go beyond those working within official capacities in regional, state, or local governments to include citizens for whom these projects are reportedly being developed. By gathering this data, we can move beyond policy prescriptions aimed at social and digital inclusion to determine their actual effect on those who are the subjects of such policies.

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