Software Público Brasilerio (SPB): The State in the Commons

Daniel O'Maley

Department of Anthropology – Vanderbilt University
Nashville, USA

daniel.omaley@vanderbilt.edu

Abstract. *This paper offers a brief overview of the Software Público Brasileiro (SPB) initiative launched in 2004 that aims to spread the use of free and open-source software (FOSS) by creating a new legal framework and business model that treats software as a public good. It examines the initiative in terms of government efforts to expand the knowledge commons in the form of FOSS. An analysis of the SPB initiative offers a window on both the current status of FOSS promotion by the Brazilian federal government as well as insights on the potential role of the state in defending the commons.*

The Software Público Brasilero (SPB) initiative that was launched by the Brazilian federal government in 2004 aims to spread the use of free and open-source software (FOSS), particularly in government institutions, by creating a new legal framework and business model that treats software as a public good. It is part of a wider government push within the last decade to promote the use and development of FOSS both within the government and in society at large. Scholars argue that this is part of a commons-based development model, an alternative to neoliberalism, that nations like Brazil have employed to challenge the dominance of the global North (Evans 2005; Schoonmaker 2007). Indeed, it was the FOSS movement that first challenged the increasingly restrictive intellectual property laws that are central to the neoliberal policies that governments worldwide have implemented in the past thirty years (Coleman 2013; Kelty 2008). This movement, in turn, sparked a larger conversation about intellectual property and the way that knowledge can also be conceptualized as a commons (Boyle 2010; Hess and Ostrom 2007). This essay examines the SPB initiative by discussing it in terms of its effort to expand the knowledge commons in the form of FOSS.

The SPB initiative offers an interesting case to examine the potential role of the state in defending the commons because it represents a unique government attempt to expand the knowledge commons by harnessing the creativity of the FOSS development community. While some have argued that direct state intervention and management of the commons is at times necessary in light of the powerful corporate interests that expropriate common resources (Harvey 2011), others argue that government interference can run the risk of disturbing the balance of a communally governed commons and thus be detrimental (Ostrom 1999). A brief overview of the current state of SPB will identify the challenges that face this initiative, which include both difficulties interacting with the FOSS community as well as more hostile threats from those who defend proprietary software models. While currently Brazilian federal

government efforts to expand FOSS have generally stalled, the SPB initiative perseveres and thus may provide insights on the current state of political support of FOSS as well as ideas for more durable FOSS promotion policies.

This essay presents a brief overview of the history and current state of the SPB initiative. The analysis has been augmented by ethnographic research among individuals who are familiar with or who participate in the SPB initiative including software programmers, FOSS advocates, and government policymakers. It relies on key interviews with the current leader of the SPB program, Corinto Meffe, a mid-level official at the Ministério de Ciência, Tecnologia e Inovação (MCTI), and a business executive whose company participates in the SPB initiative.

Brazilian Software Politics

Officially launched in 2004 by the Secretaria de Logística e Tecnologia da Informação (SLTI) of the federal Ministério de Planejamento, Orçamento e Gestão (MPOG), the SPB project falls within the broader framework of Brazilian government initiatives in the past decade to promote the use and development of FOSS (Schoonmaker 2009). This federal level initiative was ushered in with the election of Lula da Silva of the Partido dos Trabalhadores (PT) in 2003, which resulted in a number of FOSS advocates entering into government positions in order to implement the new policy (Shaw 2011). Whereas globally many FOSS advocates eschew entry into formal politics (Coleman 2004), in Brazil a number of FOSS advocates have been actively involved in the political sphere in order to enact public policies that preference the use of FOSS (Evangelista 2010; Murillo 2012; Shaw 2011). The overwhelming majority of the individuals brought into government to implement the administration's FOSS policy were members of the PT or had a history with leftist movements in the country (Shaw 2011). Indeed, the current leader of the SPB initiative is a long-time FOSS advocate and member of the PT who was brought into the MPOG in 2003 after Lula's election in order to implement the transition to FOSS at the ministry. While the current administration of Lula's successor Dilma Rousseff (PT) has been less supportive of FOSS and many of the FOSS initiatives of Lula's administration have been stalled or even dropped, the SPB initiative represents one of the few that continues under the same leadership and is, according to its administrators, still growing.

The initial idea of SPB first coalesced in the early 2000s at PROCERGS, the data processing company of the state of Rio Grande do Sul in Porto Alegre (Castro 2012). During the PT administration of Olívio Dutra, PROCERGS became a bastion of FOSS activism. Under the leadership of its president Marcos Mazoni, and along with the support of prominent FOSS activists such as Mario Teza and Marcelo Branco, PROCERGS was responsible for efforts to implement FOSS within the state government (Murillo 2012). In 2001, individuals from PROCERGS presented a proposal about their ideas about public software at SECOP, an information technology (IT) conference for public administrators (PROCERGS 2001). At the time, SPB was a broad conceptual framework more so than any concrete idea. The idea centered on treating software as a public good rather than a private commodity. The PROCERGS officials urged the government to invest in software tailored to the needs of public administration that was open-source and, thus, publicly available. The openness of this new public software model would allow software to be used across a number of public institutions, which would do away with the inefficient tendency for each institution to

develop its own software independently. While part of the goal was to reverse the trend in which the government increasingly relied on proprietary software companies to operate, the proposal still called for private sector participation in this project although in a way that adhered to the new public software paradigm they were proposing. While the use of FOSS in this model was present from these initial stages, the SPB project was not merely about the implementing the use of FOSS in government agencies. It was a larger project because it aimed at creating a new model for meeting the government's IT requirements. However, the details of what it might entail were still somewhat unclear and would only be sorted out later at the federal level when the Lula administration decided to pick up the cause of SPB.

Defining Software Público Brasileiro (SPB)

While officially launched in 2004, the SPB initiative as it exists today only truly came into being in 2007 with the launch of the SPB web portal that hosts software designated as SPB by SLTI. Between 2004 and 2007, individuals at SLTI were working on the details of what would actually constitute SPB and how, once identified, it could be incorporated by government institutions on the federal, state, and municipal level. Some of the first attempts to implement FOSS in government had been poorly executed, which caused a backlash against FOSS in many government institutions, and thus officials working on the SPB project were trying to come up with an innovative system that would be more likely to succeed and more enduring. The current scope of SPB is more limited than the initial proposal developed at PROCERGS. SPB is now essentially a certification bestowed on qualifying FOSS projects that are applicable to public administration. Software on the SPB web portal are not developed by SLTI, but are pre-existing software that the ministry identifies as good fits for the project and are then referred to as SPB. The software is originally developed by a number of different entities including federal agencies, municipalities, public and private companies, NGOs and even an individual programmer (Freitas 2012:109). Currently, there are approximately 60 programs available on the website. In addition to hosting the software, the website creates software community space for each software which allows users, programmers, and software companies that service the software to interact. At present, it is this curated software clearinghouse and their related communities that are the essence of the SPB initiative.

In order to be certified as SPB and to be featured on the website, software must meet specific criteria. These were detailed in January 2011 the government act published in that codified the legal parameters of SPB. The most important of these being that software licenses must be GPL-compatible and that they must be in Portuguese. The software must be registered with the Instituto Nacional de Propriedade Industrial (INPI) and it must use the Licença Pública de Marca, which is a new license developed by the ministry that covers not just the software code, but also its corresponding documentation and branding. It must also be accompanied by a user's guide, have a team of programmers who interact with the user-community, be linked to an official discussion forum, and have a collaborative management set-up. These criteria were developed by the SLTI staff in hopes that they would contribute to the success of implementation in government institutions that often have very little technical staff. The required accompanying manuals and assistance provided along with the software are meant to facilitate the actual implementation of the software,

particularly among government agencies which are some of the primary potential users of SPB. Current examples of software that have been certified as SPB and are hosted on the web portal include operating system, education programs, and software to manage city administration and services.

According to Meffe, the current leader of the SPB initiative and one of the visionaries of SPB in its current state, the goal of the web portal is to create a software "ecosystem" in which programmers, software companies, and users can interact and collaborate in the community forums on the website (Meffe 2012). The project harness the logic of so-called Web 2.0 social networking platforms to connect potential software users both with FOSS programs that serve their needs and the software companies that are available to service the software. Meffe and others have written extensively about this new model of software production and the commons-based business model that it attempts to foster (Alves and Pessôa 2010; Alves et al. 2009; Freitas and Meffe 2010; Freitas 2012). He contends that this new model represents a revolution in the software model and creates a framework whereby software is converted from a proprietary commodity to a public good in the form of FOSS. While other federal FOSS initiatives have faced setbacks in recent years, Meffe upholds that SPB is gaining steam and he points to a January 2011 executive order signed by President Rousseff that gives preference to the procurement of SPB in government institutions as well as the fact that the Procuradoria Geral da Fazenda (PGFN) began contracting software companies to service SPB programs on their computers in 2012 as evidence of this. Indeed, Meffe believes that the SPB paradigm will be the catalyst for a larger revolution related to how people think about intellectual property. Just as FOSS spurred a number of other related movements that seek to expand the knowledge commons, he believes that the public software paradigm can be applied to other fields including cinema, and even poetry, in order to harness intellectual property for the common good. In the past few years there have been preliminary attempts to internationalize the public software model under the auspices of the United Nation Development Programme (UNDP). Thus, the SPB initiative does, indeed, have the potential to affect the software model on a global scale.

The Expansion of the Knowledge Commons

The SPB initiative demonstrates the way that government policies are able to foster the development of the knowledge commons in the realm of software. This has been evident in the way that the public software model has led to an expansion of the number of software programs that exist in the commons. This expansion has taken a variety of forms and has included the "opening" of software code that was originally developed by the Brazilian government as well as the decision by software companies to license their software as FOSS in order to participate in the SPB ecosystem. While the SPB initiative is still relatively small, it does offer hints about the frameworks that governments can create in order to nurture the knowledge commons.

While much of the focus of the FOSS movement in Brazil has been on implementing FOSS in government institutions, the SPB initiative has also included opening up the code that these government institutions have already produced. The release of the CACIC software in 2005, which was originally developed by the government data processing company DATAPREV, represents the prime example of this effort. Meffe, who worked at DATAPREV in Rio de Janeiro before joining SLTI in 2003, worked with individuals at his former employer to convince them to release the

computer networking software under a GPL license. In fact, CACIC was considered the first SPB and actually predates the launch of the web portal (Freitas and Meffe 2010:534). While it never was a top-of-the-line software, it did fill a niche and was used by a number of government agencies and private companies, including even Embraer. Also, a number of software companies started to offering to provide services to administer the software (Meffe 2012). Thus, the release of the software into the commons proved to be quite positive in many ways for both the government and the private sector. At the same time, the fact that in the subsequent 8 years there have been few similar success stories is an indicator that this effort was unique and, for whatever reasons, proved very hard to replicate.

Arguably a more significant example of how the SPB initiative has expanded the commons is e-Cidade, a software used by city governments for administration. The program was first launched in 2002 by software company DBSellers. At the time, the company employed just three employees and the software had an extremely restrictive license that restricted its use to clients who had contracts with DBSellers. According to the e-Cidade director and DBSellers founder Paulo Ricardo da Silva, in 2009 the company was approached by officials at SLTI about the possibility of adding the software to the SPB portal (Silva 2013). The company had already been following the SPB initiative and decided to have e-Cidade certified as SPB in order to take advantage of the visibility that being placed on the SPB portal would offer. Indeed, after e-Cidade was placed on the website the growth of the firm increased significantly as more city government contracted DBSellers to service the software. Today the company has more than 60 employees and is growing, in large part due to the success of e-Cidade. It is important to highlight the fact that the certification as of e-Cidade as SPB required that the restrictive license be replaced with a GPL license. This has meant that in addition to being available without a licensing fee to cities, other companies are also able to provide services to cities that decide to download the software. Thus, DBSellers has lost exclusive control over the software as it entered into the knowledge commons. DBSellers no longer has a monopoly on servicing e-Cidade and there are also a handful of other software companies that are contributing to the software's development. This example shows how the government promotion of FOSS through SPB certification can prompt the software industry to be more focused on providing services rather than generating profit by selling licenses. Both CACIC and e-Cidade are examples of how the government SPB framework successfully fosters an expansion of the commons.

Trouble in the Commons

At its core, the SPB initiative attempts to harness the work of FOSS communities in a way that makes it compatible with government administration. The bureaucratic requirements, however, also appear to be creating distance between the traditionally lively FOSS development communities and the SPB initiative. This is evidenced by the weariness about SPB that was stated by a number of Brazilian FOSS programmers who believe that the initiative lacks both a vibrant programming community and innovative, top-of-the-line software. In analyzing governance of the commons, Ostrom argued that local stakeholders are most capable of making decisions to regulate common property resources (CPRs) (2010). She contended that government intervention to protect the commons might fail because top-down interventions by people who are less familiar with the functioning of the commons often disrupt its equilibrium. Indeed, the

government criteria and framework for SPB are an impediment to the active participation of many FOSS programmers.

Perhaps one of the key conceptual differences that contributes to programmer participations is that, according to Meffe, SPB is a product rather than a project (Meffe 2012). Whereas FOSS programmers working on software generally see their work as an ongoing, iterative project that involves constantly improving the software and releasing new versions, SPB is meant to be a stable product that is ready to use by institutions that often do not have a high level of technical skills. This focus on a final product seems to inhibit contributions by FOSS programmers who enjoy the process and the autonomy of FOSS projects. Many of the programs on the SPB website do not appear to have been updated in quite some time, and some may be orphaned, which means that they lack an active development community. Indeed, this issue has not gone unnoticed by SLTI. In addition to steps to improve the quality of the already existing SPB by stimulating developer participation, there is currently public consultation taking place in order to identify ways that the web portal can be improved in order to foster a more vibrant developer community.

FOSS programmers have also been concerned about the fact that in order to participate in the SPB communities, users must create a profile on the SPB government website. Among many FOSS programmers there is a concern about the way that government institutions and the private sector use their personal information. However, government officials at SLTI consider registration essential in order to monitor the number of people participating in the SPB ecosystem. The ability to generate usage statistics is vital to proving that the initiative is working and that it should receive more support and funding. Indeed, while much of the concern among FOSS programmers about registrations has decreased since 2007 when the portal was launched because of the fact that registration on all types of websites has become more common, it is still possible that this concern hampered participation from the get-go and turned people off to the initiative. Overall, the SPB project's difficulty creating an active, dynamic developer community demonstrates the challenges of integrating a FOSS development strategy into a government platform that has slightly different objectives.

The Proprietary Software Pushback

While the SPB initiative has encountered difficulties working with the FOSS community to create an innovative software development ecosystem, perhaps far more threatening to the project is the opposition from those who support proprietary software development models. This opposition comes from both the private sector software industry as well as government officials who favor a proprietary development model. These opponents adhere to neoliberal notions that the free-market and individual property rights are the key to economic growth. In fact, neoliberal policies have resulted in a transfer of wealth to large multinational corporations that in large part is based on the expropriation of what had previously been public resources (Harvey 2005). The policies have targeted intellectual property, such as software, and scholars have labeled these actions the "second enclosure movement" a reference to Marx's theory of "primitive" capital accumulation (Boyle 2003; Evans 2005). SPB is threatening to the neoliberal agenda because it not only defends the commons, but goes one step further and attempts to expand the knowledge commons in the area of software.

The most vocal pushback to SPB has come from the proprietary software lobby ABES (Associação Brasileira das Empresas de Software). The association represents hundreds of Brazilian software companies and also counts among its members some of the largest multinational proprietary software companies like Microsoft, SAP, and Oracle. The president of ABES, Gerson Schmitt, has been one of the most outspoken opponents of SPB. In interviews and op-eds he contends that the FOSS development model does not promote innovative software and that since it does not lead to an exportable commodity it does not add value to the Brazilian economy (Schmitt 2012). In particular, he believes that the SPB initiative is essentially the Brazilian government choosing sides in the software market rather than letting the free-market determine which software institutions should be using. In his opinion, the focus on FOSS by the Brazilian government over the past decade has stagnated the software industry and needs to be rolled back. The fact that Schmitt directly addresses the SPB initiative, which is overall is still a relatively small project in the larger scheme of things, indicates the perceived threat that it posses to the proprietary software industry.

Opposition to SPB has not just come from the external lobbies, but also from policymakers at other government ministries. For example, the Deputy Director for Software and IT Services in the Secretaria de Política da Informática (SEPIN) which deals the software policy at the PT-controlled Ministério de Ciências, Tecnologia e Inovação (MCTI) Rafael Henrique Rodrigues Moreira stated that the SPB initiative is, at least in some cases, detrimental to the software market because it distributes sub-standard products that fill market niches and thus depresses investment by proprietary software companies in producing higher-quality software for the same purpose (Moreira 2012). He used the example of the health care software InVesalius, which is used to generate 3D medical images acquired with MRI and CT scanners. He said that while the software was initially helpful because many hospitals could not afford more expensive proprietary software, in the long run the hospitals would be negatively affected because they would not be offering the top-of-the-line technology available on the market because they would become technologically dependent on the SPB, which is sub-par and not updated sufficiently because of a lack of government investment. Moreira was essentially making the argument that it made more sense for the Brazilian government to outsource its software development to the private sector and that the proprietary software model is superior. While he did agree that there were some cases that using SPB made sense, such as in the case of municipal budgeting, he indicated that these cases were relatively restricted and that the SPB model was not applicable to the majority of the software market. This shows that the level of support for SPB is not universal even among

Currently, the flagship software initiative by the federal government is the TI Maior plan launched in October 2012, which was developed by SEPIN with the help of Frost and Sullivan, a Silicon Valley based IT consulting firm. While the project contains a small percentage of money slated for investment in FOSS, how these funds will be spent is largely yet-to-be determined. FOSS advocates are unhappy with the funding levels and contend that it is essentially token funding inserted in order to placate them. This is because the overwhelming emphasis of TI Maior is incentives for multinational software firms to invest in R&D centers in Brazil to produce what the government will certify as Brazilian-produced software. Certified software, which will be the intellectual property of the company, will then get preferential treatment in

government software procurement. Those that stand to gain the most from this are the large multinational firms, such as Microsoft, that the government is wooing to set up R&D centers in Brazil. Ironically, while Schmitt argues against SPB because it preferences some companies over others, he believes that TI Maior, which favors large multinationals and proprietary software companies is an excellent government initiative (Ferrer 2012). The fact that TI Maior is now the focus of government stimulus of the software sector indicates that advocates of proprietary software development, even for uses in government institutions, have the upper hand when it comes to determine information technology policy in the country.

Conclusion

The case of SPB highlights the intrinsically political nature of software policy. The concept of public software first emerged in a politically charged moment at PROCERGS when FOSS became linked to a larger progressive political project that involved a commons-based development agenda. While the concept of SPB first envisioned in the early 2000s became much more limited in scope as it was put into practice at the federal level, the current model of SPB represents an innovative attempt to create a legal and technical platform to facilitate the use of FOSS in government institutions and thus increase its use in society more broadly. The SPB initiative clearly demonstrates how state policies can successfully foster the expansion of the knowledge commons. The fact that SPB created a legal framework for FOSS that fits within the bureaucratic logic of government institutions may be one of the reasons that it has fared better than other federal FOSS initiatives that have lost strength, particularly during the Rousseff administration.

The effects of state intervention to protect the knowledge commons are potentially as tricky as efforts to protect other types of commons. Indeed, this government attempt to harness the creativity of the FOSS development model to expand the knowledge commons has not been without challenges and could serve to be improved. However, it appears that what may be a larger threat to SPB is the opposition from the proprietary software lobby and proponents of neoliberal development models within the administration itself. Indeed, the threat to the commons in this case is not primarily from government intervention that detrimentally interferes with its governing, but rather from opposition by proprietary software companies and those in government who support their position. The TI Maior plan, in spite of minimal investment in FOSS, is evidence of a larger and continuing trend away from government support for FOSS, which ultimately undercuts SPB. If, however, the SPB gains steam domestically and if the model is at some point successfully internationalized the public software paradigm that it champions may prove to represent an enduring framework from which to expand the knowledge commons and use of FOSS on a larger scale even in light of persistent threats from corporate interests that seek to enclose intellectual property.

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