

## ***Brazil and Open Source***

### ***Brazil's Open Source policy***

In January 2003, Luis Inácio Lula da Silva, leader of the Worker's Party, was elected to the Brazilian presidency on the basis of a left-wing political agenda. Open source software had already been used successfully in some states and cities governed by the party; the election of Lula – as he is known in Brazil – meant this effort was refocused on a national scale. Open source software has now been adopted – to varying degrees – by Ministries and governmental bodies at the Federal, State and City levels, as well as in private business. Yet questions have been raised over the effectiveness and commitment of governmental policy in this area. The position of the open source movement in Brazil is not straightforward.

Since Lula's election, open source usage and the developer community in Brazil has been growing. In April 2006, Jonathan Schwartz, Chief Executive Officer and President of Sun Microsystems described Brazil as "one of the more progressive nations in the world when it comes to the use of free and open source software. It's got one of the largest and most vibrant developer communities."

There had been moves towards legislation mandating the use of open source software in public institutions every year from 1999 to 2003, yet none were approved. The election of a new government, however, brought fresh impetus. Throughout 2003, Lula's government made moves to promote the use of free software. In June, the government announced it would be developing its portal, ComprasNet, with the intention of distributing free software to the state and municipal governments. By August, it had finally committed to accelerating the passage of federal laws backing the commitment to open source applications. By October, the Ministry of Science and Technology had allocated \$2.1 million to funding open source software research.

The state-funded National Institute of Information Technology (ITI) coordinates the national information technology policy in Brazil. It has strong political backing, yet it has no mandate on the issue of software usage; the Ministry of Planning, Budget and Management is formally in charge of standards and use of software.

In April 2004, the Brazilian government provided training for some 2,100 municipal, state and federal public employees in the implementation and management of open source platforms for government administration. By this time there were plans for at least 5 ministries in the federal government are to switch their internet web servers and most desktop computers to free software. Nearly 12 government agencies had used free software on a trial basis.

A presidential decree was drafted in 2005 which would make it compulsory for all Brazilian federal departments to switch to open source software. Until this point, policies had only expressed a pro-open source preference; migration from proprietary software had not been mandated. It was reported at the time that only seven of the 22 federal ministries used open source software.

Brazil has produced its own version of Linux: Conectiva, which later became part of the Mandriva open source distribution. The voting system is run on open source software and the country boasts the world's first open source bank ATM network. The army has adopted free software as well as the main data processing entity at the government, SERPRO. State-owned Banco do Brasil SA, the postal service, state oil company and national statistics agency have all switched to Linux at the government's bequest.

The extent to which Brazilian adoption of open source has been successful, however, is disputed. Marko Mannila argued in 2005 that the implementation of the policy thus far had been poorly coordinated between the relevant institutions charged with its execution. He points out that the Congress announced in August 2003 that certain proprietary software licences would not be upgraded when they expired, but instead, they should be replaced with open source, thus effectively imposing a time-limit on proprietary software use. However, the ITI and the arm of the Ministry of Planning, Budget and Management in charge of software policy argued migration to open source should be non-compulsory, thus contradicting the more stringent position of Congress. Mannila sees this lack of consensus in the open source debate echoed elsewhere. For example, Rio Grande do Sul was the first Brazilian state that approved a Bill of Free Software in December 2002; the law gave preference to free and open source applications in public administration. Yet there was local resistance to this from the state-owned company in charge of implementing the law; they were not convinced by the efficacy of open source and there have been problems translating the law into practice.

Mannila argues that the proprietary software industry is still very influential in Brazil and there are other barriers to open source adoption. For example, he claims that there has been a lack of funding provision from the government for open source migration and that there has been poor provision for language translations. When the Ministry of Education purchased 12,000 computers for schools, using Linux and Open Office, the project was delayed because of lack of Brazilian Portuguese versions of the software.

More recently, there has been some cooling within the Brazilian government to the policy and some open source advocates have criticised the level of genuine commitment to the software. When Lula was re-elected in late 2006, the Worker's Party platform contained only one brief reference to the software policy – it promised "to improve direct and remote service-rendering to citizens, simplifying procedures, training civil servants and broadening the technological base, including the utilization of free software." This may be due to increased opposition by proprietary software interests to the Party's more vehement open source promises. Critiques have also argued that where open source software has been implemented it has been of poor quality or does not conform to the traditional open licence policies because it does not include the source code. For example CAIXA, one of Brazil's largest public banks, has implemented its own Debian OS, yet it is very poorly maintained.

### ***What lies behind the policy?***

The rationale behind the Brazilian government's open source policy is based on three very closely related factors: economics, development and ideology.

#### *Economics*

Sérgio Amadeu da Silveira, the open source enthusiast who formally headed Brazil's National Information Technology Institute, told Wired in 2003 that paying Microsoft fees was 'unsustainable economically' when Linux offers a far cheaper IT solution. Switching to open source is an attempt to save public funds in a developing country with an indebted government and massive disparities in wealth within the population.

Brazil had a GDP per capita of \$8,600 in 2006 – 98th of 229 countries – and is Latin America's largest economy, yet many are extremely poor. 31 per cent of the population live below the poverty line and public debt amounted to 50 per cent of GDP in 2006.

In 2001, Brazil's federal government paid \$1.1bn for commercial software licences. For every workstation, the Brazilian government were paying Microsoft fees of around 1200 Brazilian Reais (\$500) in 2005. 2003 figures show that only 10% of Brazil's 170 million people had home computers and the debt-ridden government was the nation's largest computer customer.

Not only is proprietary software more expensive to install; the cost of maintenance is high too. In 2005 it was reported that Brazil's national statistics agency had not upgraded its Microsoft software since 2000 because of the high cost of fees. The government thus calculates saving from the switch to open source could save it around \$120 million a year. The postal service, for example, predicted in 2005 that it would be saving 21.4 million Reais in the coming years by switching.

### *Development*

According to Rishab Aiyer Ghosh, one of the reasons for the popularity of open source in developing countries is that it is a skills enabling platform; because it encourages developer participation and extends computer usage to the poor it helps countries foster a skilled workforce – both in software production and basic IT literacy - which is a boost to the economy. It has been argued that the Brazilian government's open source policy is part of a wider focus on extending technological tools and knowledge throughout the country in order to leverage its impact for development purposes.

Brazil's economy is the world's 10th largest, but it is also the most unequal, with 10% of the population in control of almost half of the wealth and whilst many people living in desperate poverty. In 2005, 9 out of 10 people had never used the internet in Brazil. But the Brazilian government is concerned that these inequalities should not be reflected in a digital divide where the rich have access to all the advantages of the computer age, whilst the poor remain technologically disempowered. In his book 'Digital exclusion: Misery in the information era', Sérgio Amadeu argues that the gap between rich and poor will only become worse unless the less wealthy have easy access to the technology which the rich can purchase, especially in developing countries such as Brazil.

This policy is demonstrated in a number of initiatives to bring technology to the poor. The Telecentre free internet café project began in 2001 in Sao Paulo. The cafés were set up by the local authority as part of a digital inclusion plan aimed at improving access to information. Since 2002, all

centres have been using GNU/Linux. In 2003, there were 86 Telecentres in Sao Paulo.

This is an issue the country has also been pursuing on the world stage. Brazil and Argentina proposed a 'Development Agenda' at the World Intellectual Property Organisation in 2004, warning of the dangers of a 'digital divide' between rich and poor and the importance of an international intellectual property regime which took this into consideration.

Brazil's interest in intellectual property issues extends beyond open source software. The government supports the Creative Commons project and they have been active in drawing attention to the question of IP in health provision. Brazilian negotiators played a key role in drafting a World Trade Organisation agreement in 2001 that affirms developing countries' right to give public health needs a priority over drug patent protection. The open source software movement is part of a wider interest in the implications of intellectual property regimes for the developing world.

### *Ideology*

Julian Dibble argues that this take on the relationship between development and intellectual property is, however, peculiarly Brazilian. He compares it with the 1960s Brazilian counter-culture music scene known as 'Tropicalismo'. This was an eclectic mixture of different sounds and ideas; borrowing, remixing and remoulding material from other genres and culture. Sixties Tropicalismo artist and the current Brazilian Minister of Culture, Gilberto Gil, describes the movement in the following terms: "no longer a mere submission to the forces of economic imperialism, but a cannibalistic response of swallowing what they gave us, processing it and making it something new and different." Dibble argues that these ideas have become critical to Brazil's self-image and that they are now being applied to attitudes towards intellectual property. The open source ethic fits in nicely: it is about the freedom to borrow from all the really good parts of many different ideas and reform them into something new. For Gil, tropicalismo is central to the country's development. He argues that the culture is about "the margins of Brazilian society getting access to the digital world. The creative impulses of the people getting access to the digital world. The repressed intelligence of the Brazilian poor, of the Brazilian middle class, getting access to this intelligence-empowering tool that is the digital world."

Interim Minister of Foreign Affairs, Ambassador Samuel Pinheiro Guimarães Neto, expressed a similar idea, in rather different terms, during the December 2003 the Information Society World Summit: "Brazil sees free software as emblematic of the Information Society and of a new culture of solidarity and sharing, as an instrument to guarantee for all the access and domain of this universal language."

It is easy to see the Brazilian open source policy as an expression of crude anti-Americanism, anti-globalisation or anti-capitalism. It effectively equates to an anti-Microsoft policy; a company which is an emblem of US corporate power extending its influence across the globe. Brazilian policy initiatives in the 1970s and 1980s made an attempt to develop an industrial base for IT in Brazil. These policies ended in 1990 and were viewed by some as evidence of the failures of an authoritarian and interventionist state. Lula's policy on free

software gives the impression of rehabilitating some of these old policies; encouraging technological independence, national autonomy and the development of regional economies. In 2004, the Brazilian government declared software exports to be one of its four priorities for industrial policy. Some argue this is protectionist.

Yet perhaps there is more subtly behind the open source movement in Brazil. It might be argued that the policy is a way for the country to deal with the realities of a globalising world. For many, globalisation has been synonymous with the ever-increasing reach of American and western products and ideas into the developing world. For many in Latin America, this is a negative image. The Tropicalismo self-image which Dibbell suggests Brazil is displaying provides an alternative interpretation of the threats and possibilities of a global world. This is a vision which equates globalization to the free flow of ideas: it provides the freedom to take from many different ideas and remix, remake and produce something new, improved and individualized. Perhaps this ideal is part of what Brazil's open source policy represents.

If this is a fair description the ideological aspect influencing Brazil's open source policy, combined with the fact that the government wishes to utilize technology for development, there is a distinctive aspirational quality to the project. Sérgio Amadeu said that "the purchase of software that preserves the values of openness and freedom is, for the Brazilian government, a subject unavoidably connected to the democratic principle." Alexandre Silva Pinheiro and Henrique Luiz Cukierman agree that Lula's open source policy is reflective of the kind of political nation Brazil desires to become.

### ***How has Microsoft responded?***

6-10% of Microsoft Brazil's \$318 million revenue in 2002-3 came from the government. Not a huge figure (although Brazil is its largest South American market), yet it is enough – and the danger of the open source path becoming a trend followed by other governments world-wide is significant enough - for the company to be concerned. It has made various attempts to counter the open source threat through lobbying and incentives.

In January 2005, Bill Gates unsuccessfully sought a private meeting with President Lula at the World Economic Forum in Davos. As it does in other developing countries where it has faced an open-source challenge, Microsoft donates software to Brazilian non-profit organisations and schools. It has sought to discredit open source software in a number of ways; likening its challenge to the proprietary model to communism and suggesting its openness means it is insecure and unreliable. Microsoft launched a stripped-down, cheaper version of Windows XP in Brazil and a new credit deal for companies investing in Windows software, in partnership with Bradesco Bank.

In a more bullish moment, Microsoft attempted to sue Sérgio Amadeu in June 2004, after he had compared the company's policy of donating licences and software with the actions of a drug dealer encouraging addiction and dependency in their clients. A petition supporting him raised 10,000 signatures in three weeks and Microsoft backed dropped the case.

To combat the rise of open source software, both in Brazil and other areas of the world, Microsoft has created a controversial slush fund to allow it to offer

discounts to ensure it did not lose government sales on the basis of price. Microsoft has also funded various studies which invariably find that in specific applications, Windows costs less than Linux.

Microsoft has been imitating some aspects of the open source community. In 2002 it launched a 'shared source' initiative which allows certain approved governments and large corporate clients to access most of the Windows code, although it doesn't allow modification. This was partly designed to allay fears of foreign governments that Windows might contain secret security entrance points.

It has also launched a scheme designed to appeal to those who cannot afford to buy a PC because they cannot afford the cost of a one-off large payment, or their income is irregular or cyclical. FlexGo is a rent-to-buy arrangement in which customers determine the frequency of payments. They pay around half the price of the computer and software at the start and then pay to use it by buying scratch cards. Once their credit is depleted, the machine goes dark; a bit like a pay-as-you-go mobile phone. After two years of use, Microsoft estimates, the full price of the PC and software has been paid and the owner has unlimited use. It's also working on another scheme to reach out to poorer communities that allows users to plug a keyboard and an ordinary television into a mobile phone thus enabling it to function like a simple PC.

### ***Open source in other Latin American countries***

Bloomberg reported in May 2005 that the state-owned Banco do Brasil SA planned to fund the creation of a group to promote Lula's initiative for open-source software outside of Brazil through the creation of a World Open Source Software Organisation.

#### *Peru*

In September 2005, the Peruvian Congress passed a bill prohibiting any public institution from buying systems that tie users into any particular software or that limits 'information autonomy'. Public institutions were barred from having a preference for either proprietary or open-source software. Whilst the bill was under construction, there were claims that Microsoft had been putting pressure on the Peruvian government. Bill Gates made a \$500,000 donation to the country's school system during a visit to the country in 2002. There were also claims that the company enlisted the American ambassador in Lima to help attempt to kill the legislation.

#### Venezuela

A decree mandating Venezuela's entire government to switch to open source was passed by President Hugo Chavez in 2004. However, Microsoft managed to win a long-term contract with the Ministry of Education immediately before the decree was passed after it donated several hundred computers to Venezuelan schools. Chavez described his policy as following "the principle of national scientific independence, so that we do not depend on privately-owned software. If knowledge does not have owners, then intellectual property is a trap set by neo-liberalism".

#### Argentina

In May 2001, a bill was introduced into the Argentine Congress calling for the mandatory government use of free software. However the dire economic situation in the country at the time led to the entire government being forced out of office before the bill was signed. As of 2005, the central government enforces a policy which does not give preference to either free or proprietary software – the idea being that proprietary software developers tend to offer competitive pricing when other options are available. According to a 2004 survey by Argentine analyst, nearly 50 per cent of businesses were using Linux and cost was cited as the major factor for switching amongst those businesses interviewed.

#### *Open source use in governments elsewhere in the world*

There are numerous examples of governments elsewhere dropping proprietary goods in favour of open source alternatives. The Economist argues that modern governments generate lots of digital files which they wish to store for long periods of time and are reluctant to store such data in proprietary formats. As e-government services expand, The Economist says, this concern will only increase. The government market is crucial for Microsoft because when a government institution opts for a particular technology, citizens and businesses that deal with it often follow suit for ease of compatibility.

In May 2003, the city of Munich dropped Windows from the 14,000 computers used by local government employees in favour of Linux. Their Microsoft contract has only been worth \$35m, yet it was enough for the company's Chief Executive, Steve Ballmer, to interrupt his Swiss holiday to lobby the Mayor and drop their prices to match the open source OS. The response from city officials to Microsoft's attentions was that the matter was one of principle: they wanted to control their own technological future and did not want to place government software in the hands of a business responsible to shareholders rather than citizens.

China has been working on a local version of Linux for years to avoid being too dependent on a single foreign supplier and in 2003, it agreed to collaborate with Japan and South Korea to develop open source alternatives to Microsoft. India is following a similar path.