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The Open Source Business Resource

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**Last summer, the Center for Strategic and International Studies** published the sixth update to their Open Source Policy survey ([http://www.csis.org/media/csis/pubs/0807218\\_government\\_opensource\\_policies.pdf](http://www.csis.org/media/csis/pubs/0807218_government_opensource_policies.pdf)). The survey "tracks governmental policies on the use of open source software as reported in the press or other media." The report lists 275 open source policy initiatives. It also breaks down by country and by government level whether the policy on the use of open source is considered to be advisory, preferential, or mandatory.

**The editorial theme for the** May issue of the OSBR is "open source in government" and we are pleased that the authors have drawn upon their experiences to provide insight into public policy regarding open source for many parts of the world.

**As news editor of the** European Union's Open Source Observatory and Repository, Gijs Hillenius stays up-to-date with open source activity within the 27 member states of the European Union. His article provides an overview of some the advancements and setbacks in the implementation of open source and open standards by European public administrations.

**Edgy Paiva, whose company helped** the government of the Brazilian State of Ceará to develop its government websites using open source content management systems, shows how the Brazilian Government is using open source. He gives some examples of successful Brazilian projects, explains some implementation difficulties, and makes a comparison of the advantages and disadvantages of mandating the use of open source.

**Mike Gifford, president and founder** of an open source consulting firm, discusses the global momentum in federal government departments to support open source. He presents some of the problems with the Canadian federal government's procurement process and why he believes Canada is at the tipping point for acceptance of open source at a policy level.

**The latest generation of open** source policies encompass more than just the use of open source software. They address a culture of openness where the government collaborates with its citizens. The recently published Spring 2009 Intergovernmental Solutions Newsletter provides insights into the ongoing cultural shift within the United States. Darlene Maskell, Director of Intergovernmental Solutions at the US General Services Administration, wrote the introductory article to the publication which we are pleased to republish in the OSBR.

**Like many small countries with** an emerging economy, the government of Latvia recognizes the importance of education and technology and has stressed the acquisition of higher education and multiple-language fluency. Tom Schmit, an instructor at Riga Business School, and Zigmunds Zitmanis, Vice-Rector for Information Technology at Riga Technical University, discuss the reasons for the University's choice of an open source product as the application to provide the single point of entry into electronic services.

**As always, we encourage readers** to share articles of interest with their colleagues, and to provide their comments either online or directly to the authors. We hope you enjoy this issue of the OSBR.

*The editorial theme for the* upcoming June issue of the OSBR is "Women in Open Source" and the guest editor will be Rikki Kite from Linux Pro Magazine.

**Dru Lavigne**

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*This edition of the OSBR* provides a fascinating look at open source software projects and policy approaches by representative governments in North America, South America and Europe.

*The governments of France, Spain and Brazil* have been very active in supporting open source software--in some cases, even mandating it. The following articles show different reasons for these policies: whether it is to lower cost, to support local industry or to gain control over software from proprietary models.

*As Edgy Paiva states in* his look at Brazil's software situation, when given the choice, it really should be all about return on investment (ROI). I would contend that ROI needs to be broadly defined. It goes beyond cost, it also includes support of local industry and innovation. As Darlene Meskell implies in her article, open source can help instill a culture of transparency and openness in government.

*Returning to the concept of* innovation, Tom Schmit and Zigmunds Zitmanis imply that innovation can be defined as the ability to "change, extend, create, and individualize its structure". This type of innovation gives the potential to develop solutions which will take the organization to the next step and develop competitive advantage over its rivals.

*Gijs Hillenius reminds us that* it is not always easy and that changing the entrenched procurement model seems to be the biggest obstacle to the adoption of open source software.

*Mike Gifford presents the Canadian* situation with an adoption problem similar to the Europeans. Within the existing Canadian government procurement model, the rules present an obstacle to adoption. He also presents some good news as open source usage continues to grow despite the obstacles.

**James Bowen**

**Guest Editor**

*James Bowen, PhD, PMP, CMC is an Ottawa technology entrepreneur and adjunct professor at uOttawa's Telfer School of Management.*

# THE STEADY MARCH OF THE EUROPEAN PENGUINS

*"We want to encourage innovation and innovators - inside Government by encouraging open source thinking, and outside Government by helping to develop a vibrant market."*

Open Source, Open Standards and Re-Use: Government Action Plan

[http://www.cabinetoffice.gov.uk/cio/transformational\\_government/open\\_source/policy.aspx](http://www.cabinetoffice.gov.uk/cio/transformational_government/open_source/policy.aspx)

Open source licenses allow public administrations to change, share and re-use their applications freely. Open standards allow for connectivity and interoperability between the applications. For a wider use of open source software (OSS) by public administrations, it is equally important to require the use of open standards in the public sector. Open source projects can face difficulties when using proprietary standards, especially if these latter require usage royalties.

The member states of the European Union (EU) made steady progress in 2008 in developing information technology (IT) policies on open source and open standards. Spain and France have taken the lead, yet in all EU member states examples of administrations using OSS can be found. Europe's competition commissioner Neelie Kroes warned the EU's institutions to follow suit and use open standards: "I know a smart business decision when I see one".

This article provides an overview of the advancements and some of the setbacks of the implementation of open source and open standards by public administrations in the 27 member states of the European Union in 2008. It is mostly based on the news items the author wrote for the European Union's Open Source Observatory and Repository (OSOR, <http://www.osor.eu/>).

## OSS in France

France and Spain are two EU-member states where the authorities are embracing open source. In 2008, the Gendarmerie, part of France's police force, made the decision to convert all of its 70,000 desktop computers to the GNU/Linux distribution Ubuntu. This switch represents the biggest public administration world-wide to move to open source.

The Gendarmerie, totalling 100,000 employees, is following a typical process of gradual conversion. It started its switch in 2005 by replacing Microsoft Office with the open source alternative OpenOffice. It replaced Microsoft's Internet Explorer with the open source web browser Firefox and Microsoft's email application, Outlook, with the open source Thunderbird program. It is now taking the final step, replacing the operating system. Another open source move, to OpenOffice, was announced last year by the city council of Marseille, the country's second largest city.

Other French authorities using open source include the Directorate for the Official Gazettes, converting its 600 workstations to OpenOffice, the 577 members of the French parliament using Ubuntu, and the Paris city council members using open source on their new laptops. Paris attracted a lot of attention in 2007 when it gave all of its 175,000 high school students and their teachers USB keys loaded with OSS such as OpenOffice, Firefox and the multimedia player VLC. The city hosted two open source conferences in 2008, drawing thousands of attendees. The first, held in Paris, was the 'Capital du Libre' and the second, held in December, was aptly titled the "Open World Forum".

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## Linux Distributions in Spain

A study ([http://observatorio.cenatic.es/index.php?option=com\\_rubberdoc&view=doc&id=49&format=raw](http://observatorio.cenatic.es/index.php?option=com_rubberdoc&view=doc&id=49&format=raw)) published in September 2008 by Cenatic, the Spanish government's resource centre on open source, shows that the country is at the forefront of EU countries using OSS.

Seven of Spain's autonomous regions and communities are involved in the development of GNU/Linux distributions. Linex (<http://www.linex.org>) is developed by Extremadura. It is installed at 70,000 computers in all schools and is used by some 200,000 school students. Guadalinux (<http://www.guadalinux.org>) is developed in Andalusia and is used on 300,000 computers in schools, libraries and information centres. A third distribution is Linkat (<http://linkat.xtec.cat>), developed by the Education Ministry in Catalunya. The autonomous community of Valencia is developing Lliurex (<http://lliurex.net>) and about a million school students in the community of Madrid use MAX ([http://www.educa.madrid.org/web/madrid\\_linux](http://www.educa.madrid.org/web/madrid_linux)), a locally developed distribution which is installed on 60,000 school computers. The autonomous community of Castile-La Mancha is sponsoring the distro Molinux (<http://www.molinux.info>). In the Canary Islands, the administration installed its distribution, Medusa (<http://www.gobiernodecanarias.org/medusa>), on about 35,000 school PCs. The Cenatic report mentions even more implementations, such as the 1,375 open source servers at the Ministry of Public Administrations and the 800 at the Ministry of Justice. It says that Pista-local+ (<http://www.pistalocal.es/>), an open source platform for e-Government services, is running in some 2,500 town halls across Spain.

## Europe's Open Source Software Licence

To support the spread of OSS in a multilingual and diverse legal environment such as Europe, the European Commission created the European Union Public Licence (EURL, <http://osor.eu/eurl>), compatible with the GPLv2 (<http://www.opensource.org/licenses/gpl-2.0.php>) and other open source licenses.

The EURL, first published in January 2007, takes into account EU law as well as that of the member states. It is available in 22 official linguistic versions that have identical legal value. This means developers and users of software covered by the EURL can choose their linguistic version. "For Europe's public administrators promoting open source, the EURL makes convincing their bosses a little easier," explains Karel De Vriendt, head of the unit responsible for the implementation of the IDABC (<http://ec.europa.eu/idabc>) programme.

It is hard to measure the actual uptake of the EURL. By January 2009, eleven of the sixty applications physically hosted on the OSOR website (about 20%) use this licence. Examples of EURL'ed applications include:

- Wollmux (<http://wollmux.forge.osor.eu>), a plugin for creating forms and letterheads in OpenOffice
- IPM (<http://forge.osor.eu/projects/ipm>), a tool to create online questionnaires
- OSBD (<http://forge.osor.eu/projects/osbd>), a tool to provide and manage virtual desktops offered over a local area network or over the Internet

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## Slower Adoption in Rest of EU

Compared with France and Spain, OSS adoption among the administrations in the other 25 member states of the EU is an arduous journey.

In Germany, the most prominent example is the city council of Munich, which has been progressing towards a complete open source desktop since 2001. More recently, plans for a complete move to open source were presented in November 2008 by the council of the city of Böblingen, totalling 450 computers. The council wants an alternative in place for when its current proprietary licences run out around 2010. Other cities and administrations, such as the Berlin state administration and the federal state of Sachsen-Anhalt, are either studying such plans or considering small-scale pilot schemes.

Another well-known case that raised new interest last year is that of the German Foreign Ministry. Speaking at the Open Source World conference in Malaga, the former head of IT, Rolf Schuster, showed that open source desktops are far cheaper to maintain than proprietary desktops. The Foreign Ministry began transitioning all of its 11,000 desktops to GNU/Linux in 2003. According to Schuster, this has drastically reduced maintenance costs in comparison with other ministries. "The Foreign Ministry is running desktops in many remote and some very difficult locations. Yet we invest only one thousand euro per desktop per year. That is far lower than other ministries, that on average invest more than 3,000 euro per desktop per year."

Other small-scale moves to open source are taking place in Belgium and the Netherlands. About half of the 12,891 desktops in use at the Belgian Ministry of Justice are running open source.

### Open up, Administrations

OSOR supports the collaborative development of OSS, particularly cross-border collaboration projects. It focuses on OSS useful to European public administrations. The website allows developers to collaborate on open source applications and share their work. The project also promotes the notion that software projects use recognised OSS licences or the EUPL.

OSOR regularly organises or participates in workshops and meetings. It brings together representatives of the European open source development community, in particular those involved with the EU member states' national repositories. Strengthening the ties between these repositories encourages the emergence of a pan-European federation of OSS repositories.

Launched in October 2008, the number of projects physically hosted on [OSOR.eu](http://OSOR.eu) is still limited. However, its users can already search among more than 1500 e-Government applications hosted on open source repositories in member states. The project started in 2004 at the European Commission's IDABC e-Government unit.

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According to the Ministry, this includes the Vrederegerten, the law courts dealing with local and usually minor legal matters.

The Dutch city council of Amsterdam took a small step towards open source in 2008. It successfully concluded a pilot study with sixty complete open source desktops. The council decided that eventually all of its desktops should be based on open source and open standards. With these sixty, the country has fewer than 400 open source desktops in use by public administrations. Three hundred of these are at the Dutch meteorological institute (KNMI). However, in many other Dutch city councils and provincial governments, there are plans to switch to or at least consider a move to OpenOffice.

Poland attracted attention in 2008, with city councils such as Krakow, Katowice, Łeba and Jaworzno moving to open source and reporting significant cost savings.

Reported moves to open source by some schools in Denmark, Finland, Italy, Lithuania and in the United Kingdom are very small-scale compared with Russia, where a thousand schools moved to open source on the desktop in 2008, with all other schools to follow this year.

In many other EU countries, there is little open source news to be found. Bulgaria and Malta seem to be stalled in studies and not much is reported from Estonia, Greece, Ireland, Portugal, Romania, Slovakia and Sweden. In Slovenia, one computer at a home for the elderly is fitted with open source.

## **Tendering Bias**

A major problem for open source is the tendering process used by administrations.

According to a report commissioned last year by IDABC, the European Commission's unit for e-Government policies, many of the software tenders by public administrations favour proprietary software. The draft of this report, entitled Guidelines on Public Procurement and Open Source Software (<http://www.osor.eu/idabc-studies/OSS-procurement-guideline-public-draft-v1%201.pdf>), was published in October 2008.

The Guidelines show public administrations how to end discrimination against open source in public tenders. It recommends public administrations list criteria for open IT standards when they tender software, for example by requiring that the standard is implementable by all potential providers.

According to Rishab Ghosh, one of the authors of the report: "Many people assume there is a level playing field and that measures to promote open source are no longer needed. In fact, there is widespread bias in favour of proprietary applications". Ghosh is a researcher at UNU-Merit, a joint project by the institute of the United Nations University and Maastricht University in The Netherlands. UNU-Merit is one of the partners in the consortium, that on behalf of the European Commission, has set up, operates and maintains the OSOR, a project to promote the use of open source by public administrations.

According to Ghosh, software tenders often have implicit or explicit bias in favour of software brands or specific applications. Of a thousand government IT organisations, 33% said compatibility with previously acquired software is the most important criterion when selecting new applications.

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As Ghosh notes: "This implicit vendor lock-in means that a tender, meant to last for only five years, leads to a contractual relation lasting ten years or more."

Ghosh and his fellow OSOR researchers also found many cases of explicit bias. Based on a sample of 3,615 software tenders that were published between January and August 2008, 36% requested Microsoft software, 20% asked for Oracle, 12% mentioned IBM applications, 11% requested SAP, and 10% asked for applications made by Adobe. According to Ghosh, a government organisation typically asks for a number of licences or a number of copies of a software application. "It is like requesting the latest Volkswagen and then expecting that everyone can sell these. We all know only Volkswagen dealers can do so."

A basic assumption of public procurement is that, at the end of the defined period, the public administrator has no contractual obligations towards the software vendor. This assumption breaks down for software based on proprietary standards. "If the software originally purchased makes it difficult to use documents and data with similar software from other producers, there is a high cost of changing software vendor", the report says.

"If you cannot quantify these exit costs, then you should limit them. If you cannot limit them, then you either need other software, or you need better criteria", Ghosh explains. He calls on public administrations to begin to evaluate the long-term costs of the use of proprietary standards properly. "Public administrations need to keep their options open. Their documents and data must be available forever."

## Foreign Affairs

Publication of the Guidelines did not immediately result in an improvement of the EU member states' behaviour. However, in the Netherlands the report triggered politicians and IT trade publications to scrutinize a few recent IT tenders, forcing the Dutch Foreign Ministry to cancel one of its software requests in November 2008. A few months later, the Dutch government's open source resource centre, NOiV ([http://www.ososs.nl/about\\_ososs](http://www.ososs.nl/about_ososs)), began investigating a tender from the city council of Utrecht asking for desktops to be shipped with the Microsoft XP operating system. "We want to know if this requirement excludes suppliers of open source operating systems," explains NOiV's legal adviser, Mathieu Paapst.

In several other EU member states, software tenders involving OSS were disputed in 2008. Open source advocacy groups in the Czech Republic are contesting developments in the south district of Ostrava, the country's third largest city. The city district used 230 open source desktops running GNU/Linux, but the head of Ostrava's IT department, Jaromír Tomala, confirmed in 2008 that these are being replaced with Microsoft Windows. In October, open source advocates turned to the web forum of the on-line news site ABC Linuxu (<http://www.abclinuxu.cz>). The city district is the country's best known example of public administrations using open source and the migration back to Windows is a regular topic at open source conferences in the Czech Republic.

Tomala is not involved in the decision-making process of the district and says compatibility issues and problems with applications running on that proprietary platform are the cause for the return to Windows. He notes: "You know how it is, almost everybody uses Microsoft."

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According to Filip Molcan, who heads the Czech Open Source Software Alliance, the city district cancelled a tender procedure for renewal of the desktops in early 2008 after a GNU/Linux service provider offered the cheapest solution. Andrea Vojkovská, spokeswoman at Ostrava's city hall, later commented that the city district simply wants to standardise the desktops. "The district will publish a call for tender for Microsoft licences sometime in 2009. This competition will take place in accordance with legal terms."

The OSOR Guidelines were published too late to be of any help in a Hungarian court case involving open source. The Municipal Court of Budapest (Fovárosi Bíróság) on 1 September 2008 dismissed a case filed by the country's Competition Office. The organisation wanted the court to annul a 25 billion HUF (about 100 million euro) tender by the Hungarian Public Procurement Authority, requesting Microsoft or equivalent software for public administration and educational institutions.

According to a statement by the Competition Office, the software tender violates Hungary's regulations. "It is forbidden to refer to an actual brand. The quoted object of this procurement is Microsoft as a producer. The government cannot neutralise this by adding the expression 'equivalent'." The tender will only strengthen the proprietary software maker's lead position in the market, reasons the Competition Office, and "This is a great mistake."

Dismissing the case, the Municipal Court said that since government institutions already use Microsoft software, it is legally correct to tender for similar or equivalent products. A source that attended the court session, but declined to be named, said: "the judge, Rádi Andrea, explained that this is because Microsoft software is compatible only with itself."

The Competition Office filed an appeal in this case in January 2009. A very similar call for tender, published in January 2009, was cancelled after a few days. The Procurement Authority did not immediately provide an explanation for the withdrawal.

## Competition

At first sight, the OSOR Guidelines also seemed to be falling on deaf ears in Latvia. When discussing the budget for 2009, the country's Ministry of Finance in October last year warned government institutions not to consider migration to open source as a way to reduce costs. According to press reports, the ministry said public administrations should investigate their IT needs and find out if they are able to undertake a migration to OSS, "bearing in mind that this should save money and not bring higher costs along." This type of software will increase costs for maintenance, requiring additional staff and staff training, reasoned the ministry.

When asked to comment on the OSOR Guidelines, the ministry emailed that it never created artificial restrictions in its tenders. "Compliance with requirements is the only criterion. For example, Microsoft Office Sharepoint Server is currently the only solution that is able to meet our functionality requirements. We do not see an open source substitute that provides exactly the same functionality."

Two months later, Latvia's Minister for Electronic Government Affairs, Signe Balina, explained in a speech that open standards are essential for improving efficiency and transparency in government. In her key note address to a conference organised by the Latvian Open Technology Association (LATA) in Riga, Balina said that open technology and open standards are fundamental to efficient communication with the government.

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"It is important that government uses open IT systems to allow citizens and businesses to communicate easily with the government." Minister Balina's message reverberates that of the EU's Competition Commissioner Neelie Kroes. In June, the Commissioner fired a warning shot over the heads of her colleagues responsible for IT in the EU's institutions. "The European Commission should not rely on one software vendor and must not accept closed standards", Kroes said in a speech (<http://tinyurl.com/cqzzb6>).

After commending the German, French and Dutch governments on their progress, she urged the Commission to do its part: "It must refuse to become locked in a particular technology and risk losing control over its information." Kroes recommends governments use software based on open standards. This decision should be made not just because of the long term economic effects.

## Conclusion

Most of civil society, most public administrations and most politicians in the 27 countries in the EU are completely unaware of the risks involved in becoming locked into a particular IT technology and the risk of losing control over their information. Yet in all countries, examples can be found of open source developers, free software advocates, wise public administrators and politicians with a vision that together cause the slow but steady progress of open standards and open source.

European Union Competition Commissioner Neelie Kroes stated in May 2008 that a credible competition policy considers more than just the long term economic effects. "There is a democracy issue as well. No citizen or company should be forced or encouraged to use a particular company's technology to access government information. No citizen or company should be forced or encouraged to choose a closed technology over an open one, through a government having made that choice first."

*Gijs Hillenius is a free lance IT journalist and the news editor of OSOR.eu. He has a major in Physical Geography from the Vrije Universiteit Amsterdam and a graduate degree in Journalism from the Erasmus University in Rotterdam. He can sometimes be found at computer science classes at the Vrije Universiteit in Amsterdam, but if this will ever lead to a Bsc. remains to be seen. His office runs on Debian GNU/Linux. Most of Hillenius's work is done using GNU/Emacs.*

## Recommended Resources

Open Source Business Organisations of Europe

<http://www.obooe.eu/>

Openforum Europe

<http://www.openforumeurope.org>

Public Sector and Open Source: Final Report

<http://www.zeapartners.org/articles/PS-OSS%20Final%20report.pdf>

Consortium for Open Source Software in the Public Administration

<http://www.cospa-project.org/>

# OPEN SOURCE AND THE BRAZILIAN GOVERNMENT

*"...we have obligations in these next years to consolidate free software in Brazil as a viable business model, making it more independent from the policies of the current administration, making it a part of the Brazilian state with its different actors: the government, civil society, universities. We should use this great moment that we're living in for digital inclusion, for the re-organization of our country to implant a new philosophy and a new model of business."*

Marcos Mazoni, head of Brazil's  
Technical Committee for the  
Implementation of Free Software

In most countries, government initiatives that encourage the use of open source software (OSS) are primarily motivated by the goal of reducing costs. In Brazil, the goal is different. According to Rogério Santanna, Secretary of Logistics and IT at the Brazilian Ministry of Planning, Budget and Management, "open source is a strategic choice of the Brazilian Federal Government since 2003 because it reduces costs, increases the competition, creates jobs and develops the knowledge and intelligence of our country. Our preference for open source is not motivated only by economic aspects. But there is also the possibility to develop new products, distribute the knowledge, access to new technologies and to stimulate the development of software in collaborative environments" ([http://softwarelivre.gov.br/publicacoes/DTA\\_ITI.pdf](http://softwarelivre.gov.br/publicacoes/DTA_ITI.pdf)).

This article shows how the Brazilian Government is using OSS, gives some examples of successful Brazilian projects that use OSS, explains some difficulties for implementing OSS, and makes a comparison of the advantages and disadvantages of using OSS.

## Guidelines of the Brazilian Government

Since 2003, the Brazilian government has begun to adopt the use of OSS in many institutions. Brazil has been changing politically, and a group coordinated by the Brazilian government, the Information Technology Institute (ITI, <http://www.iti.gov.br>), has set the guidelines, objectives and priority actions for the implementation of OSS within the Brazilian government.

These guidelines instruct the Brazilian government to:

- prioritize solutions, programs and services based on OSS that promote the optimization of resources and investments in information technology (IT)
- prioritize the web platform in the development of systems and interfaces for users
- adopt open standards
- increase OSS use in the public and private sectors
- expand the amount of services provided to citizens through OSS
- ensure that every citizen has the right to access public services without forcing the use of specific platforms
- ensure OSS is the basis of programs for digital inclusion
- ensure full audit ability and security systems
- ensure interoperability with legacy systems
- restrict the growth of software based on proprietary technology

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- migrate proprietary systems
- prioritize the acquisition of compatible hardware platforms for OSS
- ensure the free distribution of OSS systems in a voluntary and collaborative manner
- strengthen the existing sharing of OSS inside and outside government
- encourage and promote the domestic market to adopt new business models in IT and communications based on OSS
- promote the conditions for changing the organizational culture for the adoption of OSS
- promote capacity building and training of public servants to use OSS
- create a national policy for OSS

From these guidelines, several actions were undertaken by the Brazilian government to achieve these goals. In practice, the Brazilian government is actually using OSS and has created a portal to disclose the use of OSS in Brazil (<http://www.softwarelivre.gov.br>).

## Brazilian Projects Using OSS

The Brazilian government supports many projects that rely on OSS. Many organizations of the Brazilian government use Java as a primary development platform. For example, 98% of annual Income Tax forms, for calculating returns and submitting payments, are sent over the Internet. By 2009, only a Java application will be used for this purpose. At Brazilian Digital Television, the middleware responsible for the process of digital interactive TV, known as Ginga ([http://www.ncl.org.br/faq/index\\_.html](http://www.ncl.org.br/faq/index_.html)), was developed in Java.

Brazil has been using electronic voting since 1995 and 136.8 million people voted in the 2006 election. The next version of the voting machines will use GNU/Linux.

In education, University enrollment is done via the Internet. E-Proinfo (<http://www.eproinfo.mec.gov.br/>) is an e-learning project that has already trained 50,000 students. It is public software which was developed for the Secretariat of Distance Education and released under the GPL.

Since 2006, the government is backing the development of OSS for clusters and grids, with a focus on high availability, load balancing, database replication, distributed mass storage, and virtualization.

In addition to open source, achieving interoperability through the use of open standards is important. The Brazilian e-Government Interoperability Standards (e-PING, <http://www.eping.e.gov.br>) use XML and are browser compliant. Metadata standards are set using the e-Government Accessibility Model (e-MAG, <http://www.governoeletronico.gov.br>).

Luis Inacio Lula da Silva, President of Brazil, stated in the Brazilian Guide of Use of OSS (<https://www.governoeletronico.gov.br/anexos/guia-livre-versao-1.0>) that "There are 22,000 computers connected to the Internet using open source software. These Telecentres have computers with free Internet access, electronic mail, banking service and other online services available to the population that still cannot have a PC at home."

## Difficulties for Implementation of Open Source

The critical factors for a successful implementation of open source include:

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- training
- documentation
- defining standards
- technical support

It can be difficult to convince a user to change their operating system or office software because open source requires a change in user habits. In most cases, users use less than 5% of the functionality provided by the Microsoft Office Suite software, making it possible to change the culture of a user. A great challenge for the government is to really change the use of proprietary Office software to an open source office suite.

Another major difficulty is the lack of local technical expertise to support OSS. When the software is proprietary, there is usually an infrastructure of support and assistance provided by the manufacturer. In the case of OSS, there is often no formal structure and the associated community may not provide a fast answer according to the user's needs.

## Case of Bank of Brazil

The Bank of Brazil, the largest public bank in Brazil, has more than 100,000 work stations, more than 6,000 servers, 15 IBM mainframes and more than 42,000 automated teller machine (ATM) terminals. The Bank of Brazil began to use OSS in 2001 with the use of Linux servers and the squid caching proxy (<http://www.squid-cache.org/>).

Since then, various initiatives using OSS have been deployed at the Bank of Brazil. The main initiatives include:

- the deployment of OpenOffice on more than 60,000 stations that reduced by 70% the amount of licenses paid to Microsoft for its Office Suite

- the migration of over 5,500 servers and more than 57,000 stations to Linux

In terms of economy, the Bank generated a savings of more than \$30 million USD in the reduced licensing of software.

## Use of OSS in State and Municipal Governments

Use of OSS was started by the federal government, but now the state and municipal governments are also using OSS. As an example, the Government of the State of Ceará has already passed a law that "established the preferential use of free software as corporate standard tool for implementation and management of state policy of information technology and communication within the Government of the State of Ceará" (<http://softwarelivre.ceara.gov.br/categorial/documentos-oficiais-arqs/decreto-29255-DOE.pdf>). This "preferential use" has already resulted in every department switching from the proprietary Oracle database to the open source PostgreSQL database.

Licia Maria Viana Bezerra, IT strategic manager for the Ceará government, said in an interview: "The challenge is a change of culture. Government needs to convince all users to adopt and use new products, with new interfaces, but it's so hard to do it. In the Ceará State Government, we have several cases of success; some entities in the government are using only open source software. The Ceará Government Migration Project to Open Source Software was already presented in other states and is serving as a model for other governments."

Our company, IVIA (<http://ivia.com.br>), helped the government of the State of Ceará to develop its government websites using open source content management systems.

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The project was considered very successful as the OSS solution added more functionality while saving licensing costs. Today, the Ceará government is able to easily manage the content of each website using this solution.

## Advantages and Disadvantages

There are many advantages and disadvantages for using OSS. The main economic advantage is related to license cost. In Brazil, when the voting machines were using propriety software, the government paid a lot of money to license this software. Another advantage is the fact that many people and companies can contribute to new versions and features of OSS.

The main disadvantage is related to a lack of technical support providing a Service Level Agreement (SLA). This can be an issue when you want to use OSS in a mission critical environment.

We believe that while there are many advantages provided by the use of OSS in a government environment, the government does not need to change all software solutions to OSS. There are some OSS solutions where the Total Cost of Ownership (TCO, [http://en.wikipedia.org/wiki/Total\\_cost\\_of\\_ownership](http://en.wikipedia.org/wiki/Total_cost_of_ownership)) is more expensive than a proprietary solution. It is important for the government, or any organization, to research the best solution to solve a specific problem.

## Brazil vs. Canada's Use of OSS

At the Canadian Government's website (<http://www.tbs-sct.gc.ca/fap-paf/oss-ll/faq-eng.asp>), you can see "Open Source Software Frequently Asked Questions" and get some information about use of OSS in Canada.

Brazil is creating laws to obligate entities, such as government departments, to use

only OSS. In some departments, users are not allowed to use proprietary office software and must instead use OSS equivalents.

In contrast, the Canadian Government believes that mandating one type of solution, such as OSS, restricts the decision-maker's flexibility to choose the best available solution according to their business needs and the principles of the government's Federated Architecture Program (<http://www.tbs-sct.gc.ca/fap-paf/index-eng.asp>).

## Conclusion

The Brazilian Government has seen much success in the adoption and use of OSS in many projects. The Brazilian Government's strategy to use OSS will motivate many Brazilian IT companies to create, innovate and support OSS. In the near future, the Brazilian Government will continue to use more and more OSS.

We believe that governments should use both proprietary and open source solutions. However, government decision-makers should be mandated to avoid spending money on a proprietary solution when an equivalent open source solution exists. The government should think like private companies and choose the best return of investment (ROI) solution.

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# THE FEDS ARE READY FOR A CHANGE

*“OSS is indeed the start of a fundamental change in the software infrastructure marketplace, but it is not a hype bubble that will burst and [the] UK government must take cognizance of that fact.”*

Douglas Alexander

<http://www.h-online.com/open/Health-Check-Open-Source-and-the-UK-Government--/features/112884/1>

Canada is at the tipping point for acceptance of open source. Open source software (OSS) and culture has reached a critical mass in the business world and it is also being actively deployed within the Canadian government. While open source has contributed outstanding code, its impacts are even more profound, raising core values of participation, co-operation and standardization. However, like many large institutions, there has been reluctance by the Canadian federal government to modernize its official position regarding this approach to software development. There is still considerable investment in existing procurement practice and thousands of jobs and billions of dollars are being invested in old information technology (IT) solutions.

Roger Burkhardt from Ingres summed it up well in a recent presentation to the US Embassy in Ottawa that was well attended by a wide range of Canadian federal departments. He described a perfect storm in which:

- OSS has clearly matured and is ready for the enterprise
- the economy requires departments to reduce costs quickly
- demands for IT innovation are growing faster than ever

According to Burkhardt, the best practice of modern IT development now involves commercially supported OSS. This practice frees up government staff and

empowers them to take full control of their software applications.

This article discusses the global momentum in federal government departments to support open source as well as some of the problems with the federal government's procurement process. However, despite the problems and relatively slow adoption of open source technology, there is movement for adoption. Federal government policies may be lagging behind other G7 governments, but OSS is being implemented across the civil service. There are also many people within government, at all levels, who understand the advantages of using open source.

## Global Governments

In Canada, we tend to compare ourselves with the United States. The election of Barack Obama, who has been called the open source president, poses a challenge to our government. High profile sites like <http://recovery.gov>, built using open source technology, and the Government of Canada's counterpart <http://actionplan.gc.ca> illustrate a difference in government transparency and accessibility. Obama uses the Web as an interactive medium to communicate effectively with his citizens.

It is worth noting that this move toward open source started before Obama was elected. The US intelligence and diplomatic community have been using [MediaWiki.org](http://MediaWiki.org) extensively. The CIA has been using [Plone.org](http://Plone.org) since 2007. The US Department of Defence has been promoting open source through [https://Forge.mil](http://Forge.mil). Red Hat also has a long relationship of working closely with US federal government agencies to produce SELinux, a secure version of Linux (<http://gcn.com/articles/2008/03/14/nsa-updates-selinux.aspx>). In February 2009, the United Kingdom changed its

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official open source policy ([http://www.cabinetoffice.gov.uk/government\\_it/open\\_source/action.aspx](http://www.cabinetoffice.gov.uk/government_it/open_source/action.aspx)). The Cabinet Office set a new mandate to consider open source procurement with all transactions. These policies stipulate that “open source and proprietary products are [to be] considered equally and systematically”, and note that “learning from others is a key aspect of the CIO Council’s operating principles”. The guidelines also state that “general purpose software developed by or for government will be released on an open source basis”.

If the UK government is officially engaging with the open source community, and “actively encourag[ing] projects”, how can the Government of Canada not benefit from following the same path? All levels of government could significantly benefit from shared security audits, usability enhancements, scalability testing, and code enhancements.

Leadership by the Canadian government would allow provinces and municipalities to adopt open source technologies to help them save money and have more customized tools. The UK provides an example through their Open Source Academy (<http://www.opensourceacademy.gov.uk>) which promotes open source to “local authorities through knowledge sharing and practical advice”.

There are many more examples from Brazil, Chile, Cuba, Switzerland, Pakistan, Holland, and the other G7 countries ([http://www.csis.org/media/isis/pubs/070820\\_open\\_source\\_policies.pdf](http://www.csis.org/media/isis/pubs/070820_open_source_policies.pdf)). The EU has established an Open Source Observatory and Repository for European public administrations (<http://www.osor.eu>) and has produced a GPL 2.0 equivalent license in the European Union Public License (EUPL, <http://ec.europa.eu/idabc/eupl>). The global community is moving much more quickly on open source adoption than Canada's federal government

policy makers.

## Canadian Procurement Difficulties

The existing Canadian federal procurement vehicles fail to support open source. The focus is still on product based software in which a department buys a license. Since the cost of open source is derived from services and not products, OSS is more difficult for procurement officers to manage.

The only government website that lists open source and proprietary software choices is Public Work's Software Procurement Acquisition Resource Catalogue (<http://logiciel.tpsgc.gc.ca/catalogue/index-e.cfm>). Unfortunately, this document is outdated and most government employees start looking for software either with Google or existing vendors.

Policies tend to favour large bids from large vendors rather than from smaller shops specializing in open source products. Most government procurement policy is “led by the need to offset blame. The bigger the company involved, the better” (<http://www.h-online.com/open/Health-Check-Open-Source-and-the-UK-Government--/features/112884/0>). While IBM supports [Drupal.org](http://www.drupal.org) and other open source tools, the company will tend to make a larger profit by selling the government a more expensive system that ensures lock-in.

When small companies are approached by departments, they are asked if they have an existing standing offer, which most do not have the resources to set up. Most open source shops are small and medium sized businesses and do not have the resources to compete head to head with the opportunities that come up through systems like MERX (<http://www.merx.com/>), Canada's electronic tendering service.

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Federal procurement officers are not encouraged to consider open source solutions. With a wide range of staff preaching fear, uncertainty and doubt, there are many procurement officers who shy away from open source even when it does have a considerably smaller bottom line. It is safer and easier for most project managers to renew or extend a license with an existing vendor, rather than consider a mature open source alternative.

## Movements Within Government

Recently, the federal government has been looking at revising its policies on open source. In January 2009, Public Works posted a Request for Information (RFI) on no charge licensed software. OpenConcept was one of many organizations and individuals which responded ([http://openconcept.ca/blog/mgifford/response\\_to\\_pwgscs\\_no\\_charge\\_licensed\\_software\\_rfi](http://openconcept.ca/blog/mgifford/response_to_pwgscs_no_charge_licensed_software_rfi)). Unfortunately, the RFI questions were too general, diluting the value of the evaluation. The request included this definition: "No Charge Licensed Software means Licensed Software that is available at no charge for the Licensed Software and is typically made available as a free download from the Internet" ([http://merx.com/English/SUPPLIER\\_Menu.Asp?WCE=Show&TAB=1&PORTAL=MERX&State=7&id=PW-%24%24EE-015-18733&FED\\_ONLY=0&hcode=Au64x22Vv9pVNE3IKtFp3Q%3D%3D](http://merx.com/English/SUPPLIER_Menu.Asp?WCE=Show&TAB=1&PORTAL=MERX&State=7&id=PW-%24%24EE-015-18733&FED_ONLY=0&hcode=Au64x22Vv9pVNE3IKtFp3Q%3D%3D)). This broad definition could be interpreted to include non-OSS software such as abandonware, adware, crippleware, demoware, and postcardware, all of which dilute the value of open source.

The 2004 federal government position paper, Open Source Software Position (<http://www.tbs-sct.gc.ca/fap-paf/oss-ll/position-eng.asp>) has yet to be updated. This paper is geared more to IT architects rather than procurement officers and the range of software

addressed is significantly limited. However, the paper does establish a precedent for including open source in procurement decisions. Legal and administrative systems will always be the last to change, but this is no longer uncharted territory.

It is encouraging to note that there are a number of internal advocates for open source within the federal government. OpenConcept works with Drupal, a popular open source content management platform, and has been approached by IT staff in several departments who are looking for support with this application. There are many people working in government who know that open source solutions fit their needs in that it is cost effective, secure, and can be deployed quickly.

## Already Engaged

OpenConcept has been providing services for federal government departments over many years. Over this time, we have seen considerable progress in the use and understanding of open source. Any government department that deals with the scientific community has been actively using open source for years. Environment Canada's Weather department, Natural Resources Canada, National Resource Council Canada, and the Canadian Space Agency have been leading the way as their researchers have needed to use powerful, cost effective tools. More conservative departments, like the Canadian Revenue Agency, are using open source internally, although less extensively.

While the implications of a procurement policy that mandates open source are being discussed, OSS is quietly being deployed throughout the government. In 2009, OpenConcept surveyed Government of Canada web servers to determine where open source was being used.

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Nearly half the sites surveyed were using some form of OSS (<http://tinyurl.com/b8ocqr>). With Gartner estimating that private sector adoption of open source is now at 85% and growing quickly (<http://tinyurl.com/6be88s>), it is clear that the policy makers in Canada are trailing technology implementers in understanding the benefits and maturity of OSS. According to Slashdot editor Timothy Lord, "tax-paid software should be seen as a uniquely extensible part of the commonwealth, because whenever the government supports open source software, even through mere use, it adds value to the same software for everyone else" (<http://tinyurl.com/cdtnew>). By adopting open source tools like Apache, MediaWiki, Drupal, and Firefox, the government is supporting Canadians who are use these tools.

## Values

Jeff Braybrook, Deputy Chief Technology Officer for Canada, spoke in February about the Treasury Board's adoption of MediaWiki for GCPedia, the Government's internal proof of concept wiki for the exclusive use of government employees (<http://en.wikipedia.org/wiki/GCPEDIA>). He addressed the advantages and challenges to adopting open source in government. Government and open source communities are natural allies as they share common values. Both communities: i) encourage participation and having a platform to contribute and interact with others; ii) promote the co-operation and collaboration which is critical for any successful federal government or open source project; and iii) depend upon and are improved by agreed upon standards that allow for innovation.

The adoption of OSS clearly ties into a sound economic policy to support small and medium businesses in Canada. Canada's Economic Action Plan has

allocated 7.5 billion to support Canadian businesses and communities during the recession. Smart investments in open source technology produce jobs for Canadians while building a stronger information infrastructure for everyone. According to Red Hat's Javed Tapia, "the service-oriented model of open source has a positive fallout on the domestic economy through the generation of local employment, spurring of local investment and ensuring local technological upgradation" (<http://tinyurl.com/d6p3qz>). Using open source means that government funds go back into the pockets of citizens rather than add to a multi-national corporation's profit margins.

## Conclusion

The hard work of many people inside and outside of the Canadian government to manifest a rational, economic and innovative technology practice is about to be realized. Despite obstacles, civil servants are implementing OSS solutions that meet real needs. It is prudent for government to invest in tools which can be re-used, shared and extended to maximize the impact of increasingly limited budgets. Open source provides a metaphor for a larger cultural shift in Canadian society which is pushing for greater transparency, accountability and involvement.

*Mike Gifford is the founder and president of OpenConcept Consulting Inc., an open source web development shop specializing in non-profits, unions and government. He has led open source projects since 2000, is actively engaged in Ottawa's Drupal community, and is spearheading the accessibility initiatives within the latest version of Drupal. OpenConcept has a policy of ensuring that all their software development is licensed under the GPL 2.0.*

## TRANSPARENCY IN GOVERNMENT

*"The goal of electronic government is not just to substitute one delivery system for another...Rather, it is important to think of technology as a "game-changer" that transforms the culture, organization, and functioning of government."*

Darrell West, Director of Governance  
Studies at Brookings Institution

The focus of the Spring 2009 Intergovernmental Solutions Newsletter was Transparency and Open Government ([http://usaservices.gov/events\\_news/documents/Transparency\\_000.pdf](http://usaservices.gov/events_news/documents/Transparency_000.pdf)). The introductory article, republished here with permission, introduces the topic and the rest of the Newsletter. It provides an overview of current initiatives in both the United States and other parts of the world. Other articles from the Newsletter are referenced here by page number.

### Government Accountability

Newly elected President Barack Obama has taken bold steps to inaugurate an era of government openness and transparency. In one of his first official acts, the President issued a Memorandum on Transparency and Open Government, affirming his commitment to achieving an "unprecedented level of openness in government" ([http://www.whitehouse.gov/the\\_press\\_office/TransparencyandOpenGovernment](http://www.whitehouse.gov/the_press_office/TransparencyandOpenGovernment)). Making known his belief that transparency is a fundamental responsibility of a democratic government, he called for the creation of an Open Government Directive that would require agencies to reveal their inner workings and make their data public.

A commitment to government accountability is at the heart of this message. By allowing citizens to "see through" its workings and investigate whether or not their leaders and organizations have met their expectations, the government brings the public into its inner circles and

empowers citizens to contribute to decision-making. As citizens gain knowledge and understanding, their trust in government begins to grow.

Providing government data to citizens in a meaningful way will require a culture change, away from one where data are stored away for internal purposes to one that looks broadly at how data can be made accessible for re-use by the public. The federal website [Recovery.gov](http://Recovery.gov) Reveals Details of the Stimulus Spending (page 5) on the \$787 billion American Recovery and Reinvestment Act ([http://en.wikipedia.org/wiki/American\\_Recovery\\_and\\_Reinvestment\\_Act\\_of\\_2009](http://en.wikipedia.org/wiki/American_Recovery_and_Reinvestment_Act_of_2009)). It will put the data out in useable form so that people can slice, dice and mash it up to gain meaningful information about how government is working.

These data feeds create opportunities to look at government programs in new ways that could never have been imagined by the data collectors. The District of Columbia's Apps for Democracy Contest (<http://www.appsfordemocracy.org>) drew upon the public's imagination to make D.C. data more useful to constituents. Under the leadership of then-CTO Vivek Kundra, the District sponsored a contest seeking creative applications that use D.C. government data. The results were astonishing. The 47 entries submitted to Apps for Democracy within only 30 days "produced more savings for the D.C. government than any other initiative", according to Kundra, who has since been named federal CIO.

Making government data available is just the beginning of the process. To reach the President's goal, agencies must solicit public feedback to identify information of greatest use to the public, expanding citizen participation in public policy decision-making.

# TRANSPARENCY IN GOVERNMENT

It will bring a new wave of remarkable technological applications that will have government and citizens working together in partnership. The resulting network within which citizens and their government can work together to solve problems, will change the way citizens and governments interact.

## **Democratization of Data**

Information technology has made data available to everyone. This democratization of data unveils the internal workings of government and sets in motion the wheels of transformation. Unfettered Access to Data that Can Transform Government (page 6) examines the government's need to look beyond transparency and accountability when delivering data to increase worker productivity and citizen engagement. Technology as a Game Changer (page 7) looks at the transformational possibilities of inviting greater participation and collaboration from citizens. Information as a Public Good (page 9) presents examples of Web based geospatial technologies that are leveraging government data as a public good. The results of a survey conducted by Rutgers University on the different dimensions regarding what citizens are looking for in the way of transparency are detailed in Citizens' Views on Transparency (page 11).

## **Practices at Work in Government**

Web 2.0 practices are changing public services now. Governments are providing citizens with extraordinary tools that inform them and others with similar interests. One of the fastest growing trends in state and local government is to provide citizens with timely, easy to understand information on how their taxpayer dollars are being spent.

Texas Websites Improve Accountability (page 13) describes the state's three initiatives aimed at improving government accounting, spending and transparency. The State of Georgia's gateway to information and key documents about how the state spends tax dollars and other revenues is outlined in Georgia's Commitment to Customer Service and Good Government (page 15).

New Zealand is moving strategically to use online tools to engage citizens and learn their views on matters important to them. Online communities are viewed as partners working to improve the quality of government in Transparency 2.0 (page 16).

Recognizing the need for a new approach in the maintenance of federal records, E-discovery, Transparency and Culture Change (page 19) lays out a framework for changes that will enhance access to public documents. Current methodology for measuring eGovernment progress is nearing the end of its usefulness. Measuring E-Government 2.0 (page 17) presents a new benchmarking approach for measuring e-government's return on investment. The Association of Government Accountants (AGA) establishes a baseline for understanding public attitudes with regard to transparency and accountability in AGA Opens the Doors of Government to Citizens (page 21).

## **Shedding Light on Corruption**

Increasing transparency and citizen participation goes a long way toward undermining the problem of corruption. Transparency in the oil, gas and mining industry has been gaining traction over the last decade. Fighting Corruption while Building Energy Security (page 26) looks at the paradox of resource-rich countries that are impoverished because of corruption and conflict.

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In India, land records are vital documents for both farmers and the government. They are used to prove ownership and are required for numerous administrative functions. India: Revolutionary Land Records (page 23) reveals the incredible impact computerization of land records has had on the livelihood of small farmers.

Openness and transparency are necessary for effective government oversight and accountability. The idea that transparency does not guarantee accountability is explored in Through a Glass, Darkly: What do we mean by Transparency in Government? (page 28) The need for government to tap into the expertise of others and withstand public scrutiny is discussed in Transparency in Government Begins Outside (page 29). As U.S. Supreme Court Justice Louis Brandeis so aptly put it "sunlight is the best disinfectant".

### **Collaborative Government**

The issues of culture and policy need to be addressed before major progress can be made toward a truly collaborative government. Beyond Transparency in Government (page 31) speaks to these challenges and the need to engage citizens to solve today's complex problems. Get Ready for Wiki-Government (page 33) looks at the millennial generation's use of social networks. This generation will change the shape of America's governing processes to one where some decisions will be made by crowds.

Government in ancient Athens was conducted in the public square. People met there to debate civic issues and drive policy decisions. Building the Digital Public Square (page 35) describes how the District of Columbia is re-creating the public square to bring people closer to their government using collaborative technologies.

Even today, Open Government Serves Citizens (page 37), as Maryantonn Flumian, the founding head of Service Canada illustrates, offering numerous examples of transparent government from the public and private sectors in the U.S. and around the world. Following her lead, this newsletter offers more of the many stories of how cooperation and innovative technology are being used to confront the huge changes required to create an open and participative government. The range of subjects is just the tip of the iceberg, and shows how better communications "on all levels" must be a key priority for government in the future.

President Obama's January 21 open government memorandum calls for transparency, participation and collaboration in government. These three concepts have been underlying American democracy since the start, but never have they been so central to a presidential vision. With advanced technologies and creative use of the Internet, a commitment to open government will go a long way toward giving the public control of the levers of power, and encouraging widespread participation in the civic life of the nation.

*This article was originally published in the Spring 2009 Intergovernmental Solutions Newsletter on Transparency and Open Government ([http://usaservices.gov/events\\_news/documents/Transparency\\_000.pdf](http://usaservices.gov/events_news/documents/Transparency_000.pdf)). The Newsletter, a semi-annual publication from the GSA Center for Intergovernmental Solutions, focuses in depth on a topic of particular interest and current relevance to the intergovernmental IT community with articles and analysis from government officials and academic, non-profit, and industry organizations.*

*Darlene Meskell is the Director, Intergovernmental Solutions, GSA.*

# USE OF MOODLE FOR SINGLE ENTRY PORTAL

*"Changes in modern society and economy promote new requirements for the education system...It has to be of high quality, rational in its expenses and accessible to every inhabitant of Latvia."*

2008 National Report of the  
Republic of Latvia

[http://www.unesco.org/fileadmin/MULTIMEDIA/INSTITUTES/UII/confin tea/pdf/National\\_Reports/Europe%20-%20North%20America/Latvia.pdf](http://www.unesco.org/fileadmin/MULTIMEDIA/INSTITUTES/UII/confin tea/pdf/National_Reports/Europe%20-%20North%20America/Latvia.pdf)

This article discusses the reasons for the decision of Riga Technical University (RTU) in Latvia to choose an open source product as the application to create ORTUS. ORTUS is an acronym for Open Riga Technical University Services and provides the single point of entry into electronic services for the University.

## Background

Latvia is a country of 2.3 million people, located in Northern Europe on the Baltic Sea. The country was occupied by the Soviet Union from 1945 to 1991. Upon separation from the USSR, Latvia reestablished its parliamentary republic in continuity with its pre-occupation status. It has a majority ethnic Latvian population with a significant (30%) Russian minority.

The official language of Latvia is Latvian, with Russian a common second language. As a small country, Latvia recognizes the importance of education and technology and has stressed the acquisition of higher education and multiple-language fluency (primarily English). This means that the Latvian information technology (IT) industry has worked actively to both localize software products into Latvian and to take local products and provide them in multiple languages. A number of open source programs and platforms have been localized, including Latvian versions of Open Office with a Latvian dictionary available.

Riga Technical University (RTU, <http://www.rtu.lv/>), the second largest university in Latvia, has a history of technical innovation. With a strong academic base in engineering fields, the University offers a wide range of technical programmes. The physical facility of RTU is spread throughout Riga and includes branches in other cities in Latvia. RTU has eight faculties and a student population of over 17,000.

RTU has had pockets of early adopters of technologies for various academic and institutional needs. In the late 1990s, the RTU Riga Business School (RBS) created its own course content management system, known as On-line Assistant. It began as a relatively straightforward means for faculty to provide class and course content to students. The functionality was extended to include student course registration and student financial management, such as providing semester bills. Instructors used the system largely as a platform to supplement in-class materials. RTU's Center of Distance Education used the commercial Blackboard product for similar purposes. By 2006, there was no common platform to support the substantial use of course content management at RTU. Administration recognized the need to develop a coherent IT strategy for RTU. To save resources where reasonable, a strategy was developed with the University of Latvia, Latvia's largest university, to use common standards and software platforms.

## IT Strategy Recommendations

In 2006, RTU undertook an institution-wide review of its IT use, needs and strategy. The review looked at all systems in place at RTU, examined their advantages and disadvantages, surveyed functionalities that might be available, and made recommendations regarding future IT needs and institutional strategy for IT development.

# USE OF MOODLE FOR SINGLE ENTRY PORTAL

Stakeholder groups included students, faculty, administrative workers and academic administration. The review was both broad and deep.

The review made a number of recommendations. The primary recommendation was that as many services as possible should be made available through an online portal, and that there should be a single portal entry for all services. Among the services that were to be made available online were:

- library services, including database access
- financial services, including the ability for students to check their financial status

In addition, there was a need for course content management with a wide range of functionalities including:

- document posting
- multimedia posting
- grade posting
- blogging
- discussion and discussion groups
- personnel matters such as checking on vacation time availability
- email access
- phone and university contact database

## Comparing Commercial and Open Source Solutions

The administration responsible for implementation recognized that choosing the right core application(s) was of primary importance.

Various units of RTU already had experience with a range of course content management systems and portals, including the commercial Blackboard product, self-developed systems, and the open source Moodle (<http://moodle.org/>) system.

Administration considered the following as significant criteria for choosing an application as the core of the system:

**Flexibility:** the system had to be language adaptable, expandable and capable of handling heavy demand.

**Cost:** as these decisions were being made, it was becoming apparent that funding for education might contract and that the price was important.

**Support:** the system would be complex and support needed to be available.

**Stability:** the system had to be robust enough to withstand the demands of RTU.

**User friendly:** the system needed to be open to user requirements.

In a broad sense, administration saw significant differences between commercial and open source applications. Each had its drawbacks. Limitations of commercial solutions included:

**Cost:** often prohibitively expensive.

**Support:** the user might be in a situation where they asked questions and are given answers, but they often failed to learn from the interaction.

**Flexibility:** in many ways, RTU would be subject to the commercial market whims of the producer. If RTU desired new functionality, but the producer did not see commercial viability, the firm was unlikely to expend efforts to provide it.

# USE OF MOODLE FOR SINGLE ENTRY PORTAL

**Limited ability:** to participate in further growth or development of the functionality of the product. As an academic institution, it is important that the academic community have the ability to participate in the development of the product.

The limitations for open source included:

- potentially unstable or unreliable code
- the developer community for that product might not be interested in the issues that RTU introduces
- potential lags in development time
- limited and possibly unreliable support

The advantages were, ultimately, more important in making the decision. Open source advantages were seen as:

- the openness of the code/product
- the ability to recruit developer community assistance
- considerably lower barriers to extension or expansion of functionality
- cost, especially the costs associated with expanding the functioning of the product

One very important criteria was the ability to combine resources with the University of Latvia to provide language localisation. Finally, the decision was made to use an open source product.

## Why Moodle?

RTU chose Moodle based on these criteria:

- the IT Institute at RTU had used Moodle and found it stable and reliable

- the University of Latvia was going to move to a Moodle platform
- the number of Moodle installations was constantly growing
- the modular structure of Moodle made it easier to change, extend, create, and individualize its structure
- Moodle was cheaper than comparable commercial products with little functional difference
- Moodle has a large and active developer community
- the next iteration of Moodle was already in development and RTU and its developers could be actively involved
- an understanding that open source is the future for this type of technology

The implementation process involved all important stakeholder groups with a plan including functional development, testing and active education of the various user groups. A full-time, dedicated database manager was hired and various academic departments were involved in supporting or creating user training projects. RTU also did small research projects with the aim of demonstrating the effectiveness of the use of course content management systems to instructors. The University has a dedicated help desk for problems and questions.

## Results

Most members of the RTU community have been enrolled in the portal and there are up to 4,000 users logging into the system per day. The portal provides single password entry, filtered by authorities, into all services that are available online. Training for academic personnel is offered on an as-needed and as-requested basis.

# USE OF MOODLE FOR SINGLE ENTRY PORTAL

RTU's experience in choosing and implementing Moodle was a great success. It was simple enough to integrate Moodle with the existing student management system, student portal, and the service for single signon.

We will always consider open source as a first alternative for future IT projects. When evaluating a potential open source candidate, we keep in mind to look at the community and maturity of the particular open source project.

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## Recommended Resources

Moodle: Using Learning Communities to Create an Open Source Course Management System  
<http://dougiamas.com/writing/edmedia2003/>

Moodle and its Tools in the Online Mediating Process  
<http://www.eadtu.nl/conference-2007/files/OER7.pdf>

IOSN Open Source Primer for Education  
<http://www.iosn.net/education/foss-education-primer/fossPrimer-Education.pdf>

### **Guide for SMEs**

**Copyright:** Conecta

#### **From the Introduction:**

Open source software is the most significant all-encompassing and long-term trend that the software industry has seen since the early 1980s...Despite this situation, there is still a significant barrier in the adoption process for small and medium companies, both in terms of using FLOSS internally and in creating products and services centered on FLOSS products. The purpose of this report is to provide a simple and in-depth view of the fundamental aspects of FLOSS, how to adopt it within a small/medium company, and how to build a sustainable business based on it.

[http://flossmetrics.org/sections/deliverables/docs/deliverables/WP8/D8.1.3-SMEsGuide\\_3rd\\_Edition.pdf](http://flossmetrics.org/sections/deliverables/docs/deliverables/WP8/D8.1.3-SMEsGuide_3rd_Edition.pdf)

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### **The Bees and the Trees: The Beekeeper Model of Commercial Open Source Software**

**Copyright:** James Dixon

#### **From the Introduction:**

In 2004 I co-founded Pentaho to provide Business Intelligence (BI) under a commercial open source software business model. After spending a few years immersed in commercial open source software I created the Beekeeper model as a way to share my thoughts about the workings of this business model. Two years have gone by and I have expanded the model based on the encouraging feedback I got from many people. There are various kinds of commercial open source business models and various companies using variations of those models. The first version of the Beekeeper model only addressed commercial open source companies using a 'single vendor' or 'open core' model. This version includes models for companies using a service/support model. It also includes analogous models for proprietary software companies and pure/organic open source projects.

<http://jamesdixon.wordpress.com/2009/04/09/new-version-of-the-beekeeper-model-for-commercial-open-source/>

### **Open Source Paves The Way For The Next Generation Of Enterprise IT**

**Copyright:** Forrester Research Inc., Bull

#### **From the Executive Summary:**

In October 2008, Bull commissioned Forrester Consulting to evaluate the upcoming paradigm change of open source software enterprise adoption. In conducting in-depth interviews with 132 senior business and IT executives from large companies that are using open source products, Forrester found that these companies are embracing a fundamentally different understanding of software.

<http://www.bull.com/p/register.php?id=172>

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### **How Open Source Software Can Save the ICT Industry One Trillion Dollars per Year**

**Copyright:** Michael Tiemann

#### **From the Conclusion:**

At this time, in this moment, the choice is clear: it is time for regime change in the software industry. Open Source software is the key to unlocking 21st century economics and solving 21st century problems. The proprietary software model is unsustainable. It did not scale to meet the challenges of the 1960s, and 50 years later it surely does not scale to address the challenges we now confront. We can no longer afford to pay so much to so few for so little in return. Open Source allows us to invest equally well financial and intellectual capital, and it gives us all the freedom to direct that investment as we each see fit—a scalable model that grows stronger with each additional contributor. The cost savings of Open Source software alone is enough to restore the health of the global economy. When we consider the additional innovation potential that Open Source provides compared to proprietary software, the economic benefits are exponential. Perhaps this explains why an increasing number of local, state, and national governments are adopting formal open source education, development, and procurement policies<sup>53</sup>. And perhaps we should now have hope that these policies, after years of study, are ready for funding and implementation.

<http://www.opensource.org/files/OSS-2009.pdf>

**April 15**

Canadians have Full Access to The Cochrane Library

**Ottawa, ON**

The Canadian Cochrane Network and Centre, in partnership with the Canadian Health Libraries Association, has successfully secured a national license to The Cochrane Library which provides a subscription for every Canadian to benefit from the Library's immense volume of health information. This new access will help inform health consumers and healthcare practitioners will save valuable time to research the best patient treatment.

[http://www.ccn.cochrane.org/Files/Website%20documents/Other/Press%20release\\_EN%20\\_3\\_.pdf](http://www.ccn.cochrane.org/Files/Website%20documents/Other/Press%20release_EN%20_3_.pdf)

**April 15**

WASSAIL Released Under GPL 2.0

**Camrose, AB**

The University of Alberta, Augustana Campus, has released WASSAIL under the GPL 2.0 license. WASSAIL is a database-driven, web-based application originally created to manage question and response data from the Augustana Library's library instruction sessions, pre- and post-tests from credit bearing information literacy courses, and user surveys. It has now expanded beyond its original function and is being used to manage question and response data from a variety of settings. Its most powerful feature is the ability to generate sophisticated customized reports.

<http://www.augustana.ualberta.ca/services/library/infolit/wassail/>

**April 15**

Lead-to-Win Turns Economic Downturn into Opportunity for Laid-Off Technology Workers in Canada's Capital

**Ottawa, ON**

Ontario's Talent First Network is pleased to announce the launch of the Lead To Win program for laid-off tech workers. The program is based upon a program of the same name that was delivered during the last economic downturn in 2002. The program is intended for talented individuals who want to launch a new technology business and is free to qualified applicants. The Talent First Network enables the commercialization of market offers that rely on open source projects and global ecosystems for their revenue.

<http://www.free-press-release.com/news/200904/1239839584.html>

## UPCOMING EVENTS

**May 29**

DemTech

**Montreal, QC**

DemTech 2009 will showcase cutting edge projects that use information technology to encourage citizen access and foster democratic participation. DemTech is a pre-conference of the 2009 Annual Conference and Trade Show of the Canadian Library Association, sponsored by [VisibleGovernment.ca](http://VisibleGovernment.ca), Apathy is Boring, and members of the [CivicAccess.ca](http://CivicAccess.ca) community.

<http://demtech.ca/>

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**June 11-12**

Open Web

**Vancouver, BC**

A conference showcasing open source technologies, communities and culture.

<http://openwebvancouver.ca>

**June 16-18**

CEM-TD

**Victoria, BC**

The objective of the CEM-TD workshop is to further the development of an open source computational electromagnetics system.

[http://www.cerl.ece.uvic.ca/cem-td\\_2009.htm](http://www.cerl.ece.uvic.ca/cem-td_2009.htm)

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**June 20-21**

ChangeCamp

**Vancouver, BC**

Van ChangeCamp is a participatory web-enabled face-to-face event that brings together citizens, technologists, designers, academics, social entrepreneurs, policy wonks, political players, change-makers and government employees to answer the questions: "How can we help government become more open and responsive?" and "How do we as citizens organize to get better outcomes ourselves?"

<http://wiki.changecamp.ca/VanChangeCamp>



James Bowen, PhD., PMP, CMC  
Technology Entrepreneur  
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**Editor of the most anticipated book in the Ottawa Technology Industry:**

## **Shifting the Barrel**

**A practical advice book by entrepreneurs for entrepreneurs.**

**Watch for it in the Fall of 2009.**

The book's proceeds will help the tech industry grow.

The goal of the Open Source Business Resource is to provide quality and insightful content regarding the issues relevant to the development and commercialization of open source assets. We believe the best way to achieve this goal is through the contributions and feedback from experts within the business and open source communities.

OSBR readers are looking for practical ideas they can apply within their own organizations. They also appreciate a thorough exploration of the issues and emerging trends surrounding the business of open source. If you are considering contributing an article, start by asking yourself:

1. Does my research or experience provide any new insights or perspectives?
2. Do I often find myself having to explain this topic when I meet people as they are unaware of its relevance?
3. Do I believe that I could have saved myself time, money, and frustration if someone had explained to me the issues surrounding this topic?
4. Am I constantly correcting misconceptions regarding this topic?
5. Am I considered to be an expert in this field? For example, do I present my research or experience at conferences?

If your answer is "yes" to any of these questions, your topic is probably of interest to OSBR readers.

When writing your article, keep the following points in mind:

1. Thoroughly examine the topic; don't leave the reader wishing for more.
2. Know your central theme and stick to it.
3. Demonstrate your depth of understanding for the topic, and that you have considered its benefits, possible outcomes, and applicability.
4. Write in third-person formal style.

These guidelines should assist in the process of translating your expertise into a focused article which adds to the knowledgeable resources available through the OSBR.

## Upcoming Editorial Themes

<b>June 2009:</b>	Women in Open Source Guest Editor: Rikki Kite LinuxPro Magazine
<b>July 2009:</b>	Collaboration Guest Editor: Stephen Huddart J. W. McConnell Foundation
<b>August 2009:</b>	Tech Entrepreneurship
<b>September 2009:</b>	Business Intelligence Guest Editor: Mike Andrews SQLPower

**Formatting Guidelines:**

All contributions are to be submitted in .txt or .rtf format.

Indicate if your submission has been previously published elsewhere.

Do not send articles shorter than 1500 words or longer than 3000 words.

Begin with a thought-provoking quotation that matches the spirit of the article. Research the source of your quotation in order to provide proper attribution.

Include a 2-3 paragraph abstract that provides the key messages you will be presenting in the article.

Any quotations or references within the article text need attribution. The URL to an online reference is preferred; where no online reference exists, include the name of the person and the full title of the article or book containing the referenced text. If the reference is from a personal communication, ensure that you have permission to use the quote and include a comment to that effect.

Provide a 2-3 paragraph conclusion that summarizes the article's main points and leaves the reader with the most important messages.

If this is your first article, include a 75-150 word biography.

If there are any additional texts that would be of interest to readers, include their full title and location URL.

Include 5 keywords for the article's metadata to assist search engines in finding your article.

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For pricing details, contact the Editor [dru@osbr.ca](mailto:dru@osbr.ca).



The Talent First Network program is funded in part by the Government of Ontario.



The Technology Innovation Management (TIM) program is a master's program for experienced engineers. It is offered by Carleton University's Department of Systems and Computer Engineering. The TIM program offers both a thesis based degree (M.A.Sc.) and a project based degree (M.Eng.). The M.Eng is offered real-time worldwide. To apply, please go to: <http://www.carleton.ca/tim/sub/apply.html>.