

# OSBR.CA

The Open Source Business Resource

## Editorial

Dru Lavigne

## Free and Open Source Software: Overview and Preliminary Guidelines for the Government of Canada

Robert Charpentier

## The OpenTTT Approach

Carlo Daffara

## Open Source e-procurement Software

Dave Stephens

## Open Source in Canada's Public Sector

Glenn McKnight & Evan Leibovitch

## Q & A

Murray Stokely

## Call for Proposals

## Recent Reports

## Newsbytes

## Upcoming Events

## Contribute

MARCH  
2008



# MARCH 2008

**PUBLISHER:**

The Open Source Business Resource is a monthly publication of the Talent First Network. Archives are available at the website: <http://www.osbr.ca>

**EDITOR:**

Dru Lavigne  
dru@osbr.ca

**ISSN:**

1913-6102

**ADVERTISING:**

Rowland Few  
rowland@osbr.ca

**GRAPHICS:**

Ryan May

**ADVISORY BOARD:**

Tony Bailetti  
John Callahan  
Kevin Goheen  
Peter Hoddinott  
Thomas Kunz  
Steven Muegge  
Trevor Pearce  
Stoyan Tanev  
Michael Weiss

© 2008 Talent First Network

**Editorial**

Dru Lavigne introduces the editorial theme of procurement. 3

**Free and Open Source Software: Overview and Preliminary Guidelines for the Government of Canada**

Robert Charpentier from Defence Research Establishment Valcartier describes the results from one of a series of studies studying the benefits of incorporating open source usage within the Government of Canada. 5

**The OpenTTT Approach**

Carlo Daffara, the Italian member of the European working group on libre software, discusses the preliminary findings of the OpenTTT project which is studying how small to medium enterprises can overcome barriers to open source adoption. 11

**Open Source e-procurement Software**

Dave Stephens, CEO of Coupa Software, introduces e-procurement software and how open source is leveling the playing field for this category of software. 15

**Open Source in Canada's Public Sector**

Glenn McKnight & Evan Leibovitch, independent open source consultants, describe the "quiet evolution" of open source within Canada. 18

**Q & A**

Murray Stokely from the FreeBSD Project provides some statistics into how Google's Summer of Code benefits both the students and the projects who participate. 21

**Call for Proposals****Recent Reports**

Recently published papers on the business of open source. 24

**Newsbytes**

What's new and notable in the world of open source. 25

**Upcoming Events**

Canadian open source events at a glance. 26

**Contribute**

27



**Earlier this month, the European** Commission issued a press release stating that it "will take a more pro-active approach to its own use of open source" and that "for all new development, where deployment and usage is foreseen by parties outside of the Commission Infrastructure, open source software will be the preferred development and deployment platform (<http://tinyurl.com/2rcb9z>)." While this is a strong stance regarding the use of open source, the European Commission still considers itself to be "an early adopter of open source".

**Canada has yet to issue** such a clear cut procurement policy towards open source. It has been five years since e-cology corporation made its recommendations in its fact finding study (<http://tinyurl.com/2ruj2v>) funded by the Canadian Federal Government. The current official position is that "departments and agencies base their decisions to acquire, develop and use software (including open source software) on their business needs and the principles set out in the government's Federated Architecture Program (<http://tinyurl.com/326rqf>)."

**The Canadian Federal Government's position** is wide open to interpretation and often leaves open source contractors to struggle against departments who are ignorant of and perhaps hostile to open source, and a bidding process that uses terminology which assumes a proprietary business model. Citizens are also affected, as can be seen in the example of Statistics Canada requiring the use of a particular proprietary operating system and software application in order to complete a mandatory Canadian Automated Export Declaration form (<http://live.gnome.org/Government>).

**While much needs to change,** progress is being made regarding the procurement of open source within Canada. In the first article, Robert Charpentier discusses a report he co-authored with Richard Carbone for Defence R&D Canada. At the time of the original study, there was both government and commercial pressure to avoid the use of open source. For this reason, the study methodology was rigorous in order to bypass agendas and get a realistic view of what open source was available and if it met Defence Canada's technical and procedural requirements. The report offers specific guidelines for evaluating open source within the Government of Canada, and spawned a series of other studies which are in progress.

**The second article provides an** open source adoption model for Canada. Carlo Daffara describes the preliminary findings from the OpenTTT project which adapted the best practices used by Europe's existing Innovation Relay Centres to include the adoption of open source solutions. He details the benefits to small businesses and the lessons learned thus far.

**The third article highlights that** open source isn't just something that can be procured, it can also be used to create a solution to manage procurement. Dave Stephens, CEO of Coupa Software, describes how open source is bringing e-procurement out of the exclusive domain of the Fortune 500 as well as the business model behind the first open source e-procurement solution provider.

*The fourth article is written* by two consultants, Glenn McKnight and Evan Leibovitch, with decades of experience in IT projects, open source, education, and advocacy. They describe open source's quiet revolution in Canada and identify the key factors that need to change for open source to become better known.

*This month, we also have* a Q&A written by Murray Stokely from the FreeBSD Project. He provides an answer to the question "does Google's Summer of Code project provide any value to open source projects and the students who participate?"

*Until there is a clearly* defined policy for open source in Canada, open source adoption will remain sporadic and experiential. We welcome comments from readers regarding their own experience as well as pointers to other reports and documentation. Comments can either be sent to the Editor at [dru@osbr.ca](mailto:dru@osbr.ca) or registered readers can post a comment directly on the website, next to the article of interest.

**Dru Lavigne**

**Editor-in-Chief**

**[dru@osbr.ca](mailto:dru@osbr.ca)**

*Dru Lavigne is a technical writer and IT consultant who has been active with open source communities since the mid-1990s. She writes regularly for O'Reilly and DNSStuff.com and is author of the books BSD Hacks and The Best of FreeBSD Basics.*

## OVERVIEW & GUIDELINES

*"The federal government neither prevents nor encourages open source adoption...but effective exploitation will require clear and well-communicated policy and proactive education - Government needs to seize OSS opportunities through clear and well-communicated policies and by being proactive without being provocative. There are numerous examples of effective use of OSS within the public sector today but lack of clear OSS policy is creating fear, uncertainty and doubt about its legitimacy preventing optimal exploitation."*

Open Source Software in Canada

<http://www.e-cology.ca/canfloss/report>  
(2003)

After a slow beginning in the late 1990s, Free/Libre and Open Source Software (F/LOSS) has been constantly growing in importance and expanding in many software architectures all over the world. This impressive growth has been supported by the numerous successes, the high-quality reputation of F/LOSS-based systems and, of course, by the expectation of cost savings.

In 2003, Defence Research & Development Canada (DRDC) initiated a special study to determine the role of F/LOSS in our information system architectures. This study was later expanded to the whole Government of Canada (GoC). This article summarizes some key findings based on the original DRDC report published in 2004. It includes a general introduction to F/LOSS followed by some guidelines in assessing the usefulness of F/LOSS in GoC project contexts.

### **F/LOSS Advantages and Associated Challenges**

Over the years, many very useful software products have been distributed under the various open source licenses. Moreover, F/LOSS also evolved in a very efficient development process.

By its simplicity and efficiency, the F/LOSS development model has repeatedly demonstrated many benefits, including:

- huge diversity of software
- high flexibility and scalability of software solutions through source code editing
- high reliability and security through source code review and validation
- one-order of magnitude faster release rate than equivalent commercial off the shelf (COTS) software
- rapid development of custom solutions to meet specific requirements through code reuse and extension
- lifetime extension of F/LOSS-based systems through source code upgrades
- high degree of compliance with open standards leading to more interoperability between information systems
- leaner and meaner systems compared to COTS equivalents that often suffer from marketing feature bloat

The strategic rationale for migrating to F/LOSS is typically related to three main factors: i) the expectation of direct cost savings; ii) the reduction of economic loss at the national level caused by commercial software imports; and iii) the hope to better develop national IT (Information Technology) expertise by means of access to source code (and development of original components).

When the original DRDC report was prepared, the following criticisms about OSS were still found in the technical literature: i) version control may be more complex; ii) system maintainability requires more local resources; iii) higher technical

## OVERVIEW & GUIDELINES

skill is needed from system administrators; and iv) F/LOSS may offer less integration within an application suite and less user-friendliness. But these challenges have been addressed to a large extent in the last 5 years and may be seen as debatable now.

### F/LOSS Adoption Around the World

During the past two decades, the software market has been dominated by COTS products. However, the intrinsic limitations of COTS software such as closed source code, lock-in effect, expensive upgrades, and security weaknesses have emerged over time, leading to the development of a parallel economy based on F/LOSS.

The good reputation of F/LOSS has attracted the attention of many governments around the world. The leading countries, migrating to F/LOSS in 2003/04, were the United Kingdom, Germany and France. Canada appeared to be behind these countries in F/LOSS adoption. The lack of clear business cases and the underestimation of the strategic value of F/LOSS partly explain this situation.

In 2004, the GoC endorsed a pro-active position on F/LOSS to ensure that GoC staff are aware of the options available and that no barriers to procurement remain. For comparison purposes, the Center for Strategic and International Studies publishes periodically an overview of F/LOSS policies around the world.

([http://www.csis.org/media/osis/pubs/070820\\_open\\_source\\_policies.pdf](http://www.csis.org/media/osis/pubs/070820_open_source_policies.pdf))

### F/LOSS in the United States

F/LOSS originated largely in the United States and remains a very strong movement with many large American corporations and some government initiatives.

However, adopting a strong F/LOSS policy may be problematic for the American government since the proprietary software industry strongly supports the US economy.

While a plethora of reports discuss the growth of F/LOSS in the US economy, a large portion of this information is incomplete and/or biased, written to support a specific perspective. Almost unanimously, however, it is recognized that F/LOSS is expanding rapidly in most IT infrastructures. The well-known Linux operating system and Apache web server are the most often cited because of their recognized maturity and their technical qualities compared to their commercial equivalents.

Government sponsoring of F/LOSS is becoming more common. Security Enhanced Linux (SELinux) can be downloaded directly from the National Security Agency (NSA) web page (<http://www.nsa.gov/selinux/>). In geomatics, the National Technology Alliance (NTA) sponsored the Open Source Prototype Research project which had a significant impact on geospatial information organizations in the US government, including the Department of Defense (DoD). More recently, a mission-critical development with F/LOSS has been reported in IEEE Software and describes how F/LOSS has been used very efficiently in the NASA JPL project (<http://portal.acm.org/citation.cfm?id=968798>).

The software business was estimated to be \$70B (US) in 2004 and so it is not surprising to see a vigorous reaction from COTS editors against F/LOSS

([http://cipp.gmu.edu/archive/cip\\_report\\_1.10](http://cipp.gmu.edu/archive/cip_report_1.10)). [Editor's Note: The Critical Infrastructure Protection Program, the source of the cited report, has updated reports available at <http://cipp.gmu.edu/report/>).

## OVERVIEW & GUIDELINES

### F/LOSS in Canada

In June 2004, the Government of Canada announced a new position on F/LOSS ([http://www.cio-dpi.gc.ca/fap-paf/oss-11/oss-11\\_e.asp](http://www.cio-dpi.gc.ca/fap-paf/oss-11/oss-11_e.asp)). It is based on a balanced approach to ensure that governmental policies and guidelines do not bias one software business model over another, such as F/LOSS vs. COTS vs. custom development. Some government departments will address a series of next steps to support the national policy on F/LOSS including: i) to review federal procurement practices to ensure a level playing field; ii) to provide advice on software quality and security best practices; iii) to develop a strategy for property rights, patent protection and technology transfer; and iv) to provide advice on licensing and other legal issues.

At the time that this report was being written, the use of F/LOSS in Canada was mostly in software development and in the back-office environment such as servers and network management. Analysts often describe this phenomenon as the horizontal market penetration of F/LOSS. Most analysts consider that vertical penetration of F/LOSS, through the multiple layers in a specific application domain, is required to support a more widespread penetration of F/LOSS technology.

### F/LOSS and Software Security

When software is created, it has a level of quality that depends directly on the programmer's competence, experience and professional methodology. To increase the reliability and security of code, it is essential to use some complementary mechanisms such as peer review, testing, quality audits, and beta versioning. F/LOSS and proprietary software rely essentially on the same processes during development.

However, after the first public release, F/LOSS offers the very significant advantage of keeping access to source code. This encourages more peer reviews, testing, and quality audits by a much larger community of users/developers than what would be possible with proprietary code. For closed source software, flaws and code defects are often discovered by subversive exploits which can lead to some destabilization in corporations that rely on such COTS packages. In short, F/LOSS is not intrinsically more secure than COTS software, but the openness of source code makes security enforcement more ubiquitous and less disruptive.

The dilemma on security through obscurity vs. openness was the subject of a heated debate in the cryptographic community in the 1980's. The final decision was to make the cryptographic algorithms generally available so as to provide for security assessment and validation by the widest scientific community possible. Whitfield Diffie, the inventor of public key cryptography, and now chief security officer at Sun Microsystems, has repeatedly said that "openness is essential for trust" in software as it was for cryptographic protocols twenty years ago.

Other security advantages for F/LOSS include:

- since they are smaller, open source systems are expected to provide fewer opportunities for exploits
- source code can be enriched with assertions and complementary safety checks
- increased code diversity in the software ecosystem could reduce the speed and the proliferation of cyber attacks

## OVERVIEW & GUIDELINES

F/LOSS does have some increased risks to manage. It is often perceived as a return to more reliance on internal resources for system development and maintenance. For security enforcement, high-quality expertise is scarce and may often have to be developed to adequately cope with the increased responsibilities that F/LOSS-based systems will require.

At any rate, neither COTS nor custom software are immune to malicious or programming defects that result in information system vulnerabilities. F/LOSS proponents consider these threats to be exaggerated (<http://www.cl.cam.ac.uk/~rja14/Papers/toulouse.pdf>). As noted in the full report, advantages and disadvantages can only be balanced in a specific project context.

### Guiding Principles for GoC

While very attractive in general, F/LOSS must be evaluated in the context of each project on a case-by-case basis in order to determine if the advantages outweigh the disadvantages in practice. In the case of GoC, special attention must be paid to the protection of classified technologies, the protection of intellectual property, and the selection of a license suitable for the specific activity. Some preliminary guidelines are available in Parts III & IV of the full report.

Adoption of F/LOSS development methods can have fundamental and far-reaching consequences on engineering practices, especially if the objective is to contribute actively to an open source project. It is recommended that experience be gained with F/LOSS as a passive user first, then to become progressively more involved by reporting bugs, suggesting new features, and modifying existing code before engaging in active development within a collaborative project.

GoC should consider F/LOSS solutions alongside proprietary ones in IT procurements, especially in large development contracts such as Technology Demonstration Projects (TDPs). According to Industry Canada, contracts are awarded on a value-for-money basis and no Public Works Government Services Canada (PWGSC) rules restrict F/LOSS uses in federal government contracting and no Treasury Board rules restrict F/LOSS use in our internal programs. The Canadian position on F/LOSS confirms that no barriers to procurement should be maintained.

The process (<http://tinyurl.com/3y4ze7>) to evaluate F/LOSS or COTS software is essentially the same and a side-by-side comparison remains the best approach to identify the pros and cons of each option. The evaluation process can vary in duration and in technical depth depending on the application context and the project requirements.

It is to be noted that most COTS packages are designed for a very broad client spectrum and typically include diversity of functionalities and potential configurations. On the other hand, F/LOSS tends to be more specialized since it is often designed to meet the requirements of a specific user community. A direct comparison of both types of software against a well-defined application context is recommended to determine the best option. In short, the main evaluation steps include:

1. understand the requirements and the application context
2. prioritize the selection criteria
3. identify COTS and F/LOSS candidates
4. compare the best candidate options



## OVERVIEW & GUIDELINES

5. analyze the best products in depth for performance, security audit, cost
6. seek approval from local management and from the project client
7. document lessons learned

At this time, it does not seem appropriate for GoC to select one license model and to impose it on all projects. It seems preferable to identify the most suitable license model in the context of each project, including due consideration of:

- intellectual property (IP) protection
- national and international partnership constraints
- client preferences

### Recommended Evaluation Steps

The following six steps are recommended for GoC procurement policies.

#### Step #1: define the application context

- clarify objectives and client expectations
- document project constraints such as classification level, partners' demands, compatibility with development/execution environment, compatibility with legacy systems and existing information formats, and mandatory standards to comply to
- prioritize evaluation criteria to compare software including functionality, cost, required support/maintenance, reliability, security, performance, flexibility, scalability, user-friendliness, legal/license issues and other issues specific to the applications

- estimate internal and external resources available to the project such as money, time and technical expertise
- seek support from an experienced colleague that would mentor the evaluation process and help in avoiding pitfalls

#### Step #2: identify candidates

- perform search on the Internet
- gather technical reviews and product comparisons

#### Step #3: compare the best 3-4 options side by side

- consult existing internal lists of reliable F/LOSS such as the Generally Recognized As Safe (GRAS), Generally Recognized As Mature (GRAM), and IDA (Interchange of Data between Administrations)
- read/assess technical product reviews while remaining vigilant concerning excessively biased evaluations
- consider compatibility of the software with existing libraries and your development and execution environments
- assess maturity and technical risk through download counts and other popularity measures, product longevity, and market penetration
- summarize your findings in a spreadsheet that includes your criteria as prioritized

#### Step #4: if appropriate, perform an in-depth code analysis

- if time permits, download evaluation versions to confirm performance, compatibility, and user-friendliness

## OVERVIEW & GUIDELINES

- clarify details with suppliers/developers
- evaluate licenses and seek advice from your local Business Development Service (BDS) for IP protection
- if appropriate, perform detailed code analysis with software analysis tools to detect flaws and other types of defects
- if appropriate, evaluate the feasibility of adding new functions

### **Step #5:** seek approval from client and local management

- even if software packages are used unchanged with no code development, it is recommended to inform your local management, and possibly the project client, of the use of F/LOSS
- if F/LOSS is used to build a research prototype involving substantial code development, seek approval from your local management and project client
- if a GoC development is considered for distribution in one of the F/LOSS networks, estimate the additional effort required to clean up the code, to improve the documentation and to support the community in a timely fashion once released
- if a GoC development project is to be carried out in a collaborative open source paradigm, it could be necessary to build a comprehensive business case to justify this approach

### **Step #6:** document lessons learned

- summarize lessons learned from your evaluation in a brief tech note to share your experience with GoC communities

- keep track of F/LOSS usage and changes made through a rigorous software revision control throughout the development process where the revision control data must remain available to the Crown after the development has finished

### **Conclusion**

F/LOSS offers a credible alternative to commercial software. However, it is not a panacea. GoC could benefit from improved diversity in software supplies, augmented security by source code auditing and enhancement, and higher compliance with open standards that contribute to system interoperability.

Specific actions are proposed to increase awareness/use in GoC: i) promote F/LOSS by means of publications and workshops; ii) consider F/LOSS in contractual work; iii) and support GoC departments in assessing this emerging technology.

*This article is based on the report with the same name, published for unlimited distribution as DRDC ECR 2004-232 in December, 2004. A copy of the full report is available online at [http://www.tbs-sct.gc.ca/fap-pafloss-llfoss-llolfoss-lllo00\\_e.asp](http://www.tbs-sct.gc.ca/fap-pafloss-llfoss-llolfoss-lllo00_e.asp). Readers are encouraged to submit comments to:*

*Robert.Charpentier@drdc-rddc.gc.ca*

*Robert Charpentier completed his degree in engineering physics at l'École Polytechnique de Montréal in 1979. After working at CAE Electronics on flight simulators, he joined Defence Research Establishment Valcartier, where he specialized in infrared imagery and space-based surveillance. His current research domain is software security design and attack resistance of information systems operated in hostile environment. He has been deeply involved in F/LOSS studies since 2003.*

*"The majority of open source attention goes to the hobbyist market and large enterprises, and it's much more difficult for smaller companies to find what they need."*

Maria Winslow  
<http://tinyurl.com/39fr2n>

There is no shortage of data and results that demonstrate that open source software (OSS), when adopted with appropriate best practices, can significantly lower costs and provide quality IT (information technology) solutions, especially for small and medium enterprises (SMEs). For example, the Consortium for Open Source Software in Public Administration (COSPA, <http://www.cospa-project.org/>) project demonstrated that by using best practices for OSS procurement, not only was software acquisition cheaper, but the evaluation of tangible and intangible costs over 5 years demonstrated a cost reduction ranging from 20% to 60%. The EU study on the impact of OSS indicates that OSS can reduce software research and development costs by 36%, while the INES project (<http://tinyurl.com/338lrh>) found that companies adopting OSS increased profits and reduced time to market and development costs in 80% of the trials.

If OSS is so advantageous, why is so little use of it perceived in the marketplace, especially among SMEs? We present the preliminary results of an European project called OpenTTT to improve the adoption rate and study the effectiveness of best practices in OSS adoption within SMEs.

### **The OpenTTT Project**

The OpenTTT project (<http://www.openttt.eu>) is an European project devoted to finding strategies and validating best practices to facilitate the take-up and adoption of OSS, with a specific focus on SMEs.

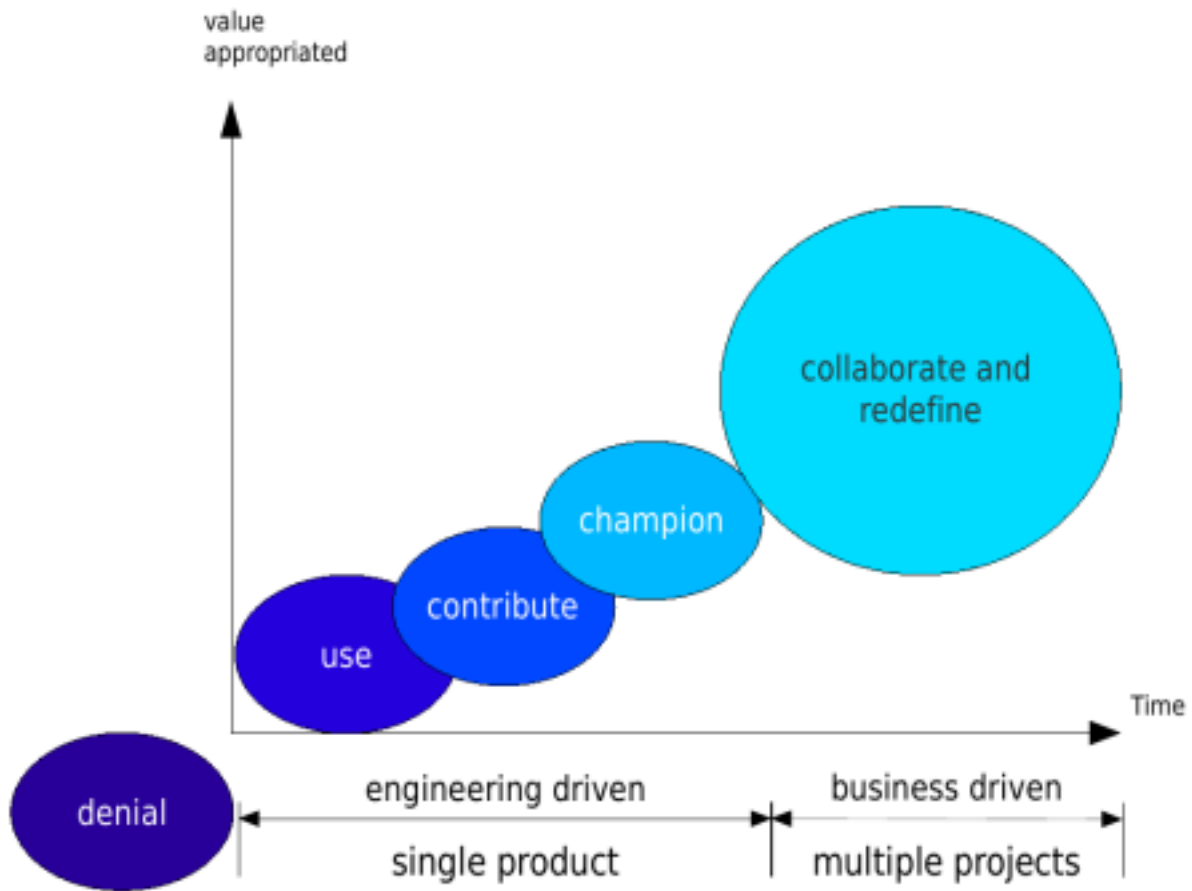
The core of the project is overcoming barriers to adoption, by replicating and adapting the best practices of the IRC (Innovation Relay Centres <http://www.innovationrelay.net/>), a European network that has for many years helped European companies in the technology mediation and technology transfer process. The IRC is a large (71 centres in 33 countries) network of technology transfer centers that since 1995 has supported more than 55,000 companies in technology selection, transfer, and adoption. The approach is that of mediation; that is, the identification of technology needs and the appropriate matching with the technology offers already identified in the internal database.

OpenTTT was created in 2006 to test the hypothesis that the IRC model can be specialized and modified to support open source technology transfer, and that the unique properties of open source licenses can be leveraged to improve the process. The partners are a multidisciplinary group of companies, universities, and technology transfer centers from France, Italy, Germany and Bulgaria.

### **Barriers to Adoption**

Our target is facilitating the first adoption, as several research projects highlighted the fact that after an initial adoption, the majority of companies are satisfied with the adopted OSS solutions and plan to extend the experiment to additional areas. Thus, the project is focusing on overcoming the initial adoption barrier, that from non-users (denial) to users (use) as seen in the Ladder Model of OSS Adoption figure on the next page (adapted from Carbone P, Value Derived from Open Source is a Function of Maturity Levels).

**Figure 1: Ladder Model of OSS Adoption**



The analysis of the difficulties encountered by companies in the OSS adoption was performed through analysis of literature, workshops and a specific encounter with companies participating in a regional industry association ICT (information and communications technology) club. The difficulties can be classified as problems with:

- the identification of needs, and the repercussions of planned changes into the firm's ICT infrastructure
- finding the most suitable OSS package or packages that can help in solving the ICT needs
- finding information and support
- identifying local partners and training

- installation and configuration
- integrating the OSS solution with external ICT systems and standards
- acceptance or end-users resisting change

The problems fall in three different areas: exploration of the solution space, the actual migration itself, and managing the post-migration environment and its interaction with external systems and the expectations of end-users.

### OpenTTT Findings

The OpenTTT project tried to address all of these concerns, in a way that is non-intrusive and designed to be accessible to all kinds of companies, independent of size or technological capability.

The first activity was the design of a specific identification process, adapted from the IRC standardized one. This included the design and test of Technology Request and Technology Offer forms, with several examples available from the OpenTTT website (<http://tinyurl.com/2w27qa>). The forms are adapted from the official IRC ones by adding OSS-specific fields and removing unnecessary requests. The forms have been used in the audit process of over 90 companies across Europe. Divided into areas, these companies represent: energy and environment, logistics, industrial production, and public administration.

The second step entailed the classification of requests into horizontal requests, which are needs common to a large number of companies, and vertical requests, which are specific to a single industry sector. As an example, most companies expressed an interest in software for project management, groupware (both messaging and calendaring or coordination software), infrastructural software (security, backups, network and system management), ERP (enterprise resource planning) and CRM (customer relationship management). It is interesting to note that companies expressed an expectation not only in the lower overall cost, but also in the added flexibility, and openness of the open source solutions.

The vertical solutions were much more specific in terms of desired functionalities. Examples include software for physical simulation and optimization for polymer physics, thermal transfer modeling of buildings, logistic planning and optimization, and machine maintenance software. A complete list is available from <http://tinyurl.com/2nun9o>.

In parallel, requests to OSS communities and commercial vendors were performed to create a list of what has been called the “developers club”.

This is a list of companies and consultants working in the field of OSS-based services. Invitations were circulated across the IRC network mailing lists to collect potential participants. Individual competencies were collected, along with geographic area of activity, approximate company size, contacts, and participation within OSS projects. Using an internal database of OSS projects and the results of previous EU projects (like SPIRIT, AMOS and others, <http://tinyurl.com/3bjh2r>), we created an initial list of potential solutions. We then prepared a software catalog (<http://guide.conecta.it>) that was circulated among the project participants and later released as a Creative Commons document.

The most interesting part is the next step, called matching. For those needs that can be immediately satisfied, potential users are provided with a list of matching solutions and contacts for those registered in the developers club that are compatible with the request in competence and geographic area. This way, users are relieved of the task of finding software, evaluating it, and finding potential support. At the same time, the project does not take part in any commercial transaction, and as such is not perceived as a potential competitor to those companies that offer OSS services. In this sense, the OpenTTT mediation is a pure catalyst.

What happens to the needs that are not satisfied with existing OSS solutions? The matching process continues, with the identification of pieces of the solution that fill as much as possible the user request, and the identification of the missing functionalities. This information is passed on to the users and the developers, who are then free to propose a commercial transaction for creating the missing functionalities.

Pooling together similar requests allows for a much lower price per company for obtaining the desired functionality, and the consultant can complement the development with the provision of additional services like training and support.

## Lessons Learned

As the project now approaches the final stages, what have we discovered? First, while there is a significant interest in OSS by companies, there is no single place to look for information. Some regions do have OSS competence centers, but most of the European ones are designed to offer services for public administrators, and provide limited support for commercial actors. The other discovery is that the number of OSS companies is still quite limited; as an example, in Italy the estimates are of around 200 companies. Yet, many traditional software vendors and independent software vendors (ISVs) are offering open source services, despite the lack of any mention on their web sites. In fact, several companies were able to satisfy their support needs directly from their original support providers.

The most important discovery is the fact that the need for the development of missing pieces is quite limited. Of 91 technology requests, only 5 were not immediately satisfiable, and required further analysis. This is a testament to the fact that OSS is mature enough to sustain most SME's needs, and that the range and scope of tools available allows even very specialized requests to be satisfied. This is supported by findings of other projects like FLOSSMETRICS (<http://robertogaloppini.net/2007/08/23/estimating-the-number-of-active-and-stable-floss-projects/>).

## Conclusion

The OpenTTT project demonstrated that OSS can be effectively used in SMEs, even within specialized environments, and that with proper best practices, the adoption process is greatly simplified. As the project concludes, it will be interesting to see if the model is adapted as the basis of a new generation of open source competence centers that are more proactive and effective in helping companies in the OSS adoption process. Such centers can leverage local technology incubators or regional peculiarities to be more effective in not only the matching process, but in presenting the results of successful adoptions to show that OSS can be economically effective both as a licensing and development model (<http://tinyurl.com/33pult>).

*Carlo Daffara is head of research at Conecta, an open source consulting company. He is the Italian member of the European Working group on Libre software, chairs several other working groups like the open source middleware group of the IEEE technical committee on scalable computing and the Internet Society working group on public software, and contributed to the article presented by ISOC to Unesco on global trends for universal access to information resources. His current research activity is centered on the sustainability of OSS-based business models.*

### Recommended Resources

FLOSSMETRICS/OpenTTT Guide for SMEs  
<http://guide.conecta.it/>

Economic impact of FLOSS on Innovation  
<http://ec.europa.eu/enterprise/ict/policy/doc/2006-11-20-flossimpact.pdf>

Open Source Business Organisations of Europe  
<http://www.obooe.eu/en/>

*"Most procurement experts believe 15-20% of purchased materials and services can be saved (billions of dollars in a large company) by centralizing procurement and leveraging a far-flung corporation's buying power. Despite this expert opinion, backed by numerous examples, many medium and large companies maintain decentralized, splintered, uncoordinated procurement operations."*

Gene Richter, former  
Chief Procurement Officer at IBM

While every business needs to track the purchase of goods and services, many small and midsize businesses (SMBs) have been discouraged from using centralized software solutions due to high upfront licensing fees, expensive implementations, and the level of organizational training necessary to get the full value out of an enterprise-class procurement solution. This article provides an overview of the benefits provided by e-procurement solutions, then introduces the first open source e-procurement software and the business model for the company behind the open source project.

### **Why Automate Purchasing?**

The purchase of goods and services is often a time-consuming process for companies. The situation can be worse for SMBs who can't justify the cost of software to consolidate all purchasing avenues. For these businesses, the purchasing process involves manual procedures which are often rife with mistakes and delays.

In terms of scope, the end-to-end procurement process starts with identification of need, usually in the form of a requisition. From there you may need to issue an RFP (request for proposal), which is answered with a supplier quote, turned into a contract, and issued as a PO (purchase order).

The process continues until the enterprise issues payment to the vendor. There can be a lot of complexity in each of the transactional steps.

Enterprises, who can afford to do so, use procurement systems to centrally manage the purchase of goods and services needed to run the business. A rule of thumb is that these systems, when implemented correctly, can save approximately 15% of a company's annual spend. A part of the savings is "hard savings", that is, reduced prices paid or cost avoidance. Another piece is "soft savings", as these systems can dramatically improve operating efficiency. They also tend to reduce the risk of fraud and other forms of corporate abuse.

The e-procurement concept, introduced in the late 1990's, centers around a browser-based self-service buying portal. Employees have easy access to corporate contracts, and the system takes care of things like pre-approval, auto-generation of POs, and communication with suppliers. This empowers individual employees to request goods and services and dramatically reduces the manual labour required of clerical staff. Employee requests go through an email-based approval process, further streamlining corporate oversight.

Study after study prove the effectiveness of these systems, including a 2007 research report from Aberdeen (<http://tinyurl.com/2wjtja>). Aberdeen surveyed over 600 firms who invested in automated purchasing, and found that these systems enabled them to:

- slash order cycle times by 84%
- slash order processing costs by 59%
- slash uncontrolled spending by 40%

E-procurement automates and optimizes the entire procure-to-pay process. From requisitioning, approvals, and purchase order creation to RFQs (request for quotations), receiving, inventory, and invoicing, manual steps are minimized. Email and the web replace phones and fax machines. It's clearly a more efficient way for businesses to buy the goods and services they need.

### **Why Hasn't Every Business Automated Purchasing?**

Because automating purchasing makes common sense, you may be surprised to learn that e-procurement is not a widely adopted tool by today's businesses. The simple reason automated purchasing systems aren't more prevalent is that they are extremely expensive to purchase, and cost even more to own and operate. In addition, SMBs don't necessarily need a solution with extensive bells and whistles and may prefer a straightforward user interface with easily configurable functionality.

When e-procurement first emerged as an enterprise software category in 1996, it became an instant success with the Fortune 500. After all, these companies spend the most money and have the most waste. So, even though the software could cost up to five million dollars to license and another ten million to get up and running, it still paid for itself long-term.

I was personally involved with e-procurement projects at General Electric, Alcoa, NCR, Citibank, and many other well-known firms. Even in the early days, these firms succeeded in gaining greater control over their spending while dramatically reducing their G&A (general and administrative) expense costs. Even though the software was buggy, hard to use, overly complex, and expensive, they eventually reaped the financial gains.

Naturally, beyond the Fortune 500, an automated purchasing system was just a pipe dream. Systems were too expensive and implementation costs were too high. Also of import, systems were hard to use without extensive training, which added to their cost. The risk associated with taking on an e-procurement project just wasn't worth the reward. And so, the nascent e-procurement software category was viewed as exclusively for the Fortune 500.

### **Open Source Changes The Game**

Not surprisingly, the underlying technology used to create automated purchasing systems has improved since 1996, with open source playing a big role. Rock-solid open source operating systems like Linux, technology stacks such as Apache and MySQL, and a host of application frameworks like PHP, Python, Java, and Ruby on Rails have matured into high-quality open source components. These components dramatically reduced the investment required to create enterprise-class software. And we've seen the results across a number of enterprise software categories, including CRM (customer relationship management), HR (human resources), procurement, and even core financials.

Coupa (<http://www.coupa.com>) is a case in point. Formed in February 2006, a 100% open source stack was used to build the first freely downloadable e-procurement system, Coupa e-Procurement Express. We were able to deliver the initial version after just five months of development. Two years later, we have improved the code countless times, issued many major updates and releases, and have surpassed 12,500 downloads on Sourceforge (<http://sourceforge.net/projects/coupa>) alone.



## E-PROCUREMENT

In large part because of today's open source tools, we've broken through the Fortune 500 barrier to deliver an automated purchasing system truly accessible to emerging, smaller companies.

While open source components fundamentally lowered the R&D (research and development) investment required to create an automated purchasing platform, companies were still faced with a lengthy on-premise implementation to get the software up and running. Most companies don't have the time or the resources to dedicate to the traditional 20th century on-premise software implementation. After all, there's hardware to acquire, software to install, and ongoing maintenance to consider.

So we turned to SaaS (software as a service) as a way to provide added value to our open source e-procurement platform. The SaaS delivery architecture enables companies to automate purchasing without taxing their IT (information technology) team. This eliminates the need to buy and install hardware, software, and middleware anywhere within the company. The only requirement is a browser.

Coupa's business model is to expand and enhance the Coupa e-Procurement Express open source project into a packaged solution available via SaaS. Annual subscriptions start at \$3,495 USD and, in addition to the delivery platform, include updates, maintenance, backups, and monitoring.

### Results

Once Coupa made e-procurement software accessible via open source and an optional on-demand delivery model, it didn't take very long for the success stories to start rolling in. We were immediately surprised by the variety and size of the businesses attracted to the solution.

We originally suspected that companies with fewer than 100 employees would keep their manual procedures. Instead, firms with as few as twelve employees have subscribed to Coupa e-Procurement. We have heard from CEOs of startups that "it just makes sense to do things right from the beginning". Even Fortune 500 firms have expressed an interest in looking for a simple and quick way to improve their purchasing processes.

Success has been seen across different sized and very different types of companies. We've seen Coupa e-Procurement help keep R&D on track for biotechs. Retailers also look to Coupa to help them efficiently run centralized procurement for their non-merchandising spend. Non-profits, engineering and construction firms, legal firms, and even high tech manufacturers use our software as a better way to buy.

### What Will The Future Hold?

In our personal lives, the way we buy has been transformed by the web. We buy online for convenience, to get access to products we couldn't otherwise obtain, and to research the best prices.

Ironically, businesses have failed to transform in the same fashion. The way businesses buy goods and services isn't all that different than 10, 20, or even 30 years ago. Coupa's goal is to leverage open source to affect a transformation so that business can implement a system that helps employees buy what they need conveniently and quickly, yet still keeps finances in control and on track.

*Dave Stephens is CEO and co-founder of Coupa. Prior to co-founding Coupa, he was VP of Oracle Procurement Applications. A strong advocate of open source in the enterprise, Dave introduced Oracle's first Apache and JServ-based application in 1998 and delivered Oracle's first multi-tenant SaaS in 2000. Dave holds a Bachelor of Science in Chemical Engineering from UC Berkeley.*

# OPEN SOURCE IN PUBLIC SECTOR

*"The squeaky wheel gets the grease, and it's high time open source squeaked."*

Dana Blankenhorn

<http://tinyurl.com/2yp2ex>

The story of the growth of open source use in Canada has been far more a matter of evolution than revolution, so quiet in its pace that its progress has been difficult to measure. This has posed many challenges to Canadian open source advocates in their efforts to ensure that their country does not lag behind the rest of the world in understanding the social and business benefits open source provides.

Perhaps some of the leading soldiers in the trenches might be our civil servants who protect the public purse. In addition to managing and minimizing the costs of delivering necessary services, public sector projects should also advance the social good through the delicate balance of transparency and efficiency.

## Government and Standards

In North America, much news was made of the state of Massachusetts and its attempts to promote open standards in the face of massive opposition from proprietary technology vendors. The simple logic of not tying access to public information to a single software vendor has been extremely difficult, thanks to the well-bankrolled lobbying efforts of proprietary vendors and their proxies.

The long story of this effort, which is not over, is well detailed at Groklaw (<http://www.groklaw.net>) and other sites such as No OOXML (<http://www.nooxml.org/>). Groklaw describes how the fight over standards has gone international, with Microsoft working hard to achieve ISO approval for a file format "standard" that depends upon proprietary software implementations.

At the heart of Microsoft's entry into the world of international standards is the understanding that governments are increasingly looking to free and open standards as a way to enhance transparency and public accessibility to its services. Open source, by its nature, gravitates effortlessly to truly open standards such as TCP/IP and the OpenDocument file format. Conversely, open source is impeded in working with "standards" which are protected by patents or controlled by a single source.

Most governments are following the standards battles closely, looking for winners and losers. Others, such as China, have been more proactive. The Chinese government mandated its OpenDocument-friendly UOF (uniform office format) regardless of the results of the ongoing skirmishes (<http://tinyurl.com/3ycfsk>). Such occurrences are good news for open source solutions as they level the playing field. Moreover, end users should have the ability to use file formats or networking protocols; this should not be an area in which vendors compete with incompatible alternatives.

Various government agencies, from Bosnia to the United Kingdom, are adopting an open source strategy. Prominent countries such as Germany and China are getting significant press on their procurement policies. A famous 2003 win for Linux in the City of Munich – despite Microsoft's CEO Steve Ballmer's personal intervention against it – is still offered as a case study (<http://linux.sys-con.com/read/32658.htm>).

## Open Source in Canada

By contrast, most government use of open source in Canada is done with little fanfare or awareness. Sometimes, open source is implemented through conventional tendering and RFP processes.

## OPEN SOURCE IN PUBLIC SECTOR

Just as often, though, open source projects in the public sector start life as back-room experiments, often on shoestring budgets and exceeding expectations.

In reality, few facts are available to prove the level at which open source has become a part of the IT (information technology) landscape in Canada's federal, provincial and municipal governments. Indeed, it is a common perspective amongst open source advocates and consultants that the three levels of Canadian government do not have an official procurement policy that favours open source solutions, or even mandates fully open IT standards. Interesting, little has changed since e-cology corporation completed their 2003 benchmark research study ([http://www.e-cology.ca/canfloss/report/CANfloss\\_Report.pdf](http://www.e-cology.ca/canfloss/report/CANfloss_Report.pdf)) regarding the prevailing private and public sector views on open source.

Despite government attendance at various workshops and discussions included in the report, the open source community has witnessed little concrete action by the federal government to take a proactive role in adopting a pro-open source procurement policy. A 2006 speech by University of Ottawa Professor Michael Geist at the Emerging Dynamic Global Economies Network conference in Ottawa, noted that the Canadian government has been "painfully slow" to adopt and promote open-access software and research.

In a recent interview, Geist commented that "building an open-source network in Canada by requiring open-source software on most civil servants' desktops would not only help Canada innovate, it could improve security by reducing our reliance on a small number of proprietary software developers, which increase risks and costs" (<http://www.itbusiness.ca/it/client/en/home/News.asp?id=41225>).

Furthermore, little evidence exists to indicate that provincial or municipal governments are any more progressive in this regard. No study similar to the e-cology project has ever surveyed their attitudes or policies, though some open source advocates are trying to initiate one.

While some of the cost and accessibility benefits of open source may seem self-evident to advocates, within the government procurement mindset these may be balanced against external concerns. Russell McOrmond, who works with the Canadian Association for Open Source (<http://www.cluecan.ca>) identifies the concerns with "copyright and patent laws, and their interaction with other economic policy such as procurement (NAFTA chapter 10) and Competition policy" (<http://www.digital-copyright.ca/node/3115>).

The situation in the United States is not substantially better since the highwater mark in Massachusetts. Government Computer News reports that the US Office of Federal Procurement Policy has advised government agencies that "they must ensure software licensing requirements are understood before purchasing technology because they can be legally complex and can directly impact agency operations" (<http://tinyurl.com/39qxgp>).

While such a warning does not mandate against open source, it provides obstacles because open source models and licenses are not as well understood as conventional payment for proprietary technology. The concept of software sharing may be difficult for some long-time managers to grasp, which means that open source must also constantly fight against fear of the unknown.

# OPEN SOURCE IN PUBLIC SECTOR

## Towards Change

Rather than providing a shopping list here of the countries who have adopted a pro-open source strategy, readers are encouraged to visit the Redhat website ([http://www.redhat.com/truthhappens/public\\_policy/osa](http://www.redhat.com/truthhappens/public_policy/osa)) where such activities are tracked. Red Hat acknowledges that “governments of the world are among the key players in the building momentum of open source software”.

Perhaps Canadians need to look further afield for examples of open source victories in public procurement. The European Union (<http://europa.eu.int/idabc/>) has indicated a greater friendliness to open source, and neutral procurement policies exist in England which, in theory, favour open source by requiring the evaluation of open source solutions before proprietary ones.

In the Canadian context, advocates need to recognize that the current adoption of open source as part of IT procurement policies is facing an uphill challenge, due in part to:

- the lack of education and advocacy to procurement offices
- an absence of marketing to promote OSS to government departments
- no OSS presence in the federally funded ICT council (<http://www.ictc-ctic.ca>)
- the 2001 National Occupational Classifications are out of date and contain little information on OSS skills (<http://www23.hrdc-drhc.gc.ca/2001/e/groups/index.shtml>)
- a noticeable absence of open source input into various IT job growth studies produces an “out of sight, out of mind” phenomenon

Advocates hoping to create a neutral procurement policy in Canada need to be aware that this requires:

- better co-operation between open source solutions, vendors, and community advocates
- improved awareness of the existing procurement policies in order to address deficiencies and uphold standards of fairness and transparency
- advancement of the benefits to government aims of maximum efficiency and minimized costs and the public benefits of technology sharing and open standards

The challenges are significant but not insurmountable. They require some resources, but also vigilance and perseverance.

**[Editors Note:** Canadian readers are encouraged to join GOSLING (Get Open Source Logic INto Government <http://www.goslingcommunity.org>)].

*Glenn McKnight has worked extensively with Canadian and international private and public sector organizations to promote cost effective IT and non-IT projects. His work included Baygen Radio of South Africa, environmental technologies in China, and IT strategies in India. His certification experience includes developing apprenticeship programs, operating IT schools, and promoting the Linux Professional Institute as an international standard.*

*Evan Leibovitch is Senior Analyst of Xunil Corporation of Toronto. He is a founding director of the Canadian Association for Open Source (<http://cluecan.ca>) and co-founder of the Linux Professional Institute. Evan is currently involved in projects involving open standards, innovative web services, and eliminating obstacles to use of open source.*

**Q. Google recently announced their fourth Summer of Code. Does the Summer of Code project provide any value to open source projects and the students who participate?**

**A.** While the amount of value will vary between the open source projects who participate, I can provide statistics for the FreeBSD project (<http://freebsd.org>). When the Fourth Annual Google Summer of Code (SoC) was announced, it got me wondering about the 58 students that participated with the FreeBSD project for SoC for the years 2005, 2006, and 2007 (<http://wiki.freebsd.org/SummerOfCode>). I sent out an email to find out what they're currently up to and was pleasantly surprised by the breadth of the responses. From pursuing grad school and even post-docs, to founding start-ups, or working in established industry companies (Oracle, Cisco, Google), our SoC students have pursued a variety of paths since completing their projects.

Perhaps the largest number of SoC alumni are currently in graduate school. Ivan Voras and Fabio Checconi continue to pursue Ph.D. studies and work with FreeBSD in areas related to their original SoC work. Ru-Gang Xu is nearing completion of his Ph.D. in Computer Science from UCLA. Matus Harvan is pursuing a Ph.D. in Information Security at ETH Zurich. Zhouyi Zhou is a Ph.D student in Institute of Software, Chinese Academy of Sciences and has recently written a paper about static analysis on the MAC (Mandatory Access Control) framework with FreeBSD core team member Robert Watson. Alexey Tarasov is a Ph.D. student working part-time at the Computing Center at Far Eastern Branch of the Russian Academy of Sciences. Jesper Rosenkilde is studying for an M.Sc. in mathematics and computer science and working as a department system administrator.

Constantine A. Murenin is pursuing an MMath at the University of Waterloo and is a full fledged OpenBSD committer that also continues to follow FreeBSD. Nanjun Li is pursuing a postdoc in the University of Edinburgh. His current research focuses on wireless sensor networks and a related application called Firegrid. Maxim Zhuravlev worked on the Generic Input Device Layer for SoC 2007 which has since moved to a more general Enhanced NewBus project.

Emily Boyd from 2005 SoC has co-founded an online task management service, Remember The Milk. Roman Divacky successfully graduated and is now employed in Unix development and still involved with FreeBSD. Christoph Mathys is working at Lucerne University. Victor Cruceru is a Software Engineer at Oracle's European Development Center doing UNIX porting and integration. Garrett Cooper is working for Cisco and credits his FreeBSD SoC experience in helping him land that job. After two successful SoCs, Chris Jones went on to join Google's Site Reliability Engineering team in Mountain View, California.

And finally, the following 9 students were given full commit access to the FreeBSD source code repository to facilitate their continuing development work on FreeBSD after the SoC ended : Michael Bushkov, Ulf Lilleengen, Kai Wang, Rui Paulo, Attilio Rao, Gábor Kövesdán, Paolo Pisati, Shteryana Shopova, and Roman Divacky.

*Murray Stokely is a core team member of the FreeBSD Project. He was the primary release engineer for FreeBSD releases 4.4 through 4.9. He currently works at Google and has organized the FreeBSD participation in the Google Summer of Code each year since 2005. Murray has contributed to numerous books and articles about FreeBSD and release engineering practices.*

# CALL FOR PROPOSALS

The goal of the Talent First Network Proof of Principle (TFN-POP) is to establish an ecosystem anchored around the commercialization of open source technology developed at academic institutions in Ontario.

The priority areas are the commercialization of open source in:

- Mapping and geospatial applications
- Simulation, modeling, games, and animation
- Conferencing
- Publishing and archiving
- Open educational resources
- Social innovation
- Business intelligence
- Ecosystem management
- Requirements management

## Expected Results

The TFN-POP is expected to:

- Establish a healthy ecosystem anchored around the commercialization of open source assets
- Maximize the benefits of the investment in the Talent First Network by the Ministry of Research and Innovation
- Accelerate the growth of businesses in Ontario that use open source assets to compete

## Eligibility to Receive Funds

Individuals eligible to receive funds are faculty, staff, and students of universities and colleges in Ontario.

## Budget and Size of Grants

A total of \$300,000 is available. Applicants' requests should not exceed \$30,000.

The TFN-POP may provide up to 50 percent of total project costs.

## Criteria

Proposals will be judged against the following five criteria:

- Strength and novelty of open source technology proposed
- Extent of market advantage due to open source
- Project deliverables, likelihood that the proposed activities will lead to deliverable completion on time, and effectiveness of the plan to manage the project
- Track record and potential of applicants
- Extent of support from private sector

## Application

The electronic version of the application received by email at the following address: [TFNCompetition@sce.carleton.ca](mailto:TFNCompetition@sce.carleton.ca) will be accepted as the official application. The email must contain three documents: a letter of support, project's vitals, and a project proposal.

# CALL FOR PROPOSALS

**Letter of support:** (maximum 2 pages) a letter, signed by the person responsible for the Technology Transfer Office or Applied Research Office of the academic institution that proposes to host the project and the faculty member or student who will lead the project, must be included. This letter should describe the nature of the support for the project from the academic institutions, companies and other external organizations.

**Project's vitals:** (maximum 1 page) The project's vitals must include:

- Person responsible for applied research or technology transfer at the college submitting the proposal: name, mailing address, telephone number, and email address
- Project leader: name, mailing address, telephone number, and email address
- Team members: names, mailing addresses, telephone numbers, and email addresses
- Budget: Total budget, with TFN's contribution and that of other organizations
- TFN investment: TFN contribution broken down by payments to students, payments to faculty, and payments to project awareness activities

**Project proposal:** (maximum 5 pages) Project proposal must include the following:

- Benefits: (maximum 1/2 page) Description of the benefits of the proposed project, and an overview of the context within which the project is positioned
- Advantage: (1/2 page) Market advantage provided by open source assets used in the project

- Information on applicants: (maximum 1.5 pages) Background information to help assess the track record and potential of the people who are key to the project and the college
- Project plan: (maximum 2.5 pages) Description of the deliverables (what will be delivered and when); key project activities; nature of the involvement from companies, and other external organizations; and plan to manage the project

## Evaluation & Deadline

Proposals will undergo review by the Expert Panel established by the TFN-POP. The Chair of the Panel may contact the applicants if required. A final decision will be communicated to the applicants within 30 days after the email with the official application is received.

There is no deadline. Applications will be evaluated on a first-come basis until the \$300,000 available is committed.

## Contacts

Luc Lalande: [Luc\\_Lalande@carleton.ca](mailto:Luc_Lalande@carleton.ca)

Rowland Few: [rfew@sce.carleton.ca](mailto:rfew@sce.carleton.ca)

## About the Talent First Network

*The Talent First Network (TFN) is an Ontario-wide, industry driven initiative launched in July 2006 with the support of the Ministry of Research and Innovation and Carleton University. The objective is to transfer to Ontario companies and Open source communities: (i) Open source technology, (ii) knowledge about competing in Open source environments and (iii) talented university and college students with the skills in the commercialization of Open source assets.*

### **Champions of Revealing – The Role of Open Source Developers in Commercial Firms**

**Copyright:** Joachim Henkel, Technische Universitat Munchen

**From the Abstract:**

The link between firms engaging in open source software (OSS) development and the OSS community is established by individual developers. This linkage might entail a principal agent issue due to the developer's double allegiance to firm and OSS community, and expose the firm to the risk of losing intellectual property. Using both interviews and a large-scale survey, I substantiate the importance of the developer's role. However, neither interview data nor regression analysis show indications of commercially harmful revealing behavior induced by Free Software ideology. Management, on the other hand, sometimes seems to be overly concerned about openness. I conclude that a more positive stance towards openness will allow firms to better share in the benefits of open innovation processes.

[http://opensource.mit.edu/papers/Henkel\\_Champions\\_of\\_revealing\\_2008-01.pdf](http://opensource.mit.edu/papers/Henkel_Champions_of_revealing_2008-01.pdf)

---

### **Licensing Freedom: An Ethical Analysis of Free and Open Source Software Licenses**

**Copyright:** Saskia van de Nieuwenhof, Utrecht University

**From the Abstract:**

Free and open source software enables users to use, read and modify the source code of computer programs. In proprietary software, access to the source code is not given and users are generally not permitted to use, read and modify the source code. Opponents of a proprietary system state that proprietary software is morally wrong and in this thesis, the arguments they use are evaluated.

Several licensing schemes can be used as an addition to copyright law to give users the rights described above. The most important division between these different licenses can be made on the basis of the use of the copyleft principle. This principle obliges the licensee to distribute modified versions of the software under the same, or similar terms as the original license. In this thesis, this obligation is seen as a restriction on the freedom of the individual. Comparisons and possible justifications will give better insight in this supposed contradiction.

[http://opensource.mit.edu/papers/Thesis\\_SaskiavandeNieuwenhof.pdf](http://opensource.mit.edu/papers/Thesis_SaskiavandeNieuwenhof.pdf)



**Geist Wins EFF Award****February 21, Ottawa, ON**

Digital rights group the Electronic Frontier Foundation announced the winners of its annual Pioneer Awards, and once again a Canadian is among those honoured. Privacy and copyright activist and academic Michael Geist was named a winner, alongside the Mozilla Foundation and its Chairman Mitchell Baker, and AT&T whistleblower Mark Klein. Geist, the Canada Research Chair of Internet and E-commerce Law at the University of Ottawa, has been a frequent commentator on privacy issues in Canada and around the world. But he's most known these days as one of the most vocal critics of the federal government's efforts to reform Canadian copyright law.

[http://www.cbc.ca/technology/technology-blog/2008/02/geist\\_wins\\_eff\\_award.html](http://www.cbc.ca/technology/technology-blog/2008/02/geist_wins_eff_award.html)

**Protecode to Increase Open Source Use in Large Organizations****March 17, Ottawa, ON**

Protecode announced an automated preventive Intellectual Property (IP) management solution. Protecode logs, identifies and reports pedigree and licensing information associated with external content in any stage of software development projects. Protecode automatically creates a software Bill of Materials (BOM), and manages compliance with organization's IP policies, offering a clean pedigree that insures that developers/contributors are using licenses accurately. Protecoding (coding with Protecode plug-in as part of the development environment) frees developers from having to understand open source rules and licenses.

<http://java.sys-con.com/read/520461.htm>

**Study on Canadian Science and Technology****March 18, Ottawa, ON**

On February 7, 2008, the House of Commons Standing Committee on Industry, Science and Technology adopted a motion to conduct a study into Canadian science and technology. Canadian government policies have aimed to foster world-class research programs in universities and research institutes and to encourage business investment in research and development. The Committee believes that it is important to hear from Canadians on this topic. The Committee will also be accepting briefs on this topic from groups and individuals who will not have the opportunity to appear before the Committee.

<http://cmte.parl.gc.ca/cmte/committee/publication.aspx?sourceid=231160&lang=1>

## UPCOMING EVENTS

### March 28

Ecosystem-based Approach to the Commercialization of Technology Products and Services

#### Ottawa, ON

The inaugural lecture of the TIM Lecture Series examines the advantages that companies can realize when commercializing their technology products and services by actively participating in business ecosystems and using complementary assets such as open source hardware and software, and open platforms. To successfully compete in markets where product development is heavily dependent on open environments, technology companies need to be stakeholders of one or more business ecosystems. The company's position within business ecosystems and the use of open source assets enable and constrain the company's ability to generate sales. This lecture is for company executives, entrepreneurs, graduate students, individuals interested in admission into graduate programs, capital providers, and academics in the Ottawa-Gatineau region who are interested in the commercialization of technology products and services.

[http://www.talentfirstnetwork.org/wiki/index.php?title=TIM\\_Lecture\\_Series](http://www.talentfirstnetwork.org/wiki/index.php?title=TIM_Lecture_Series)

### April 7-9

IT360

#### Toronto, ON

"Cultivating Innovation in Technology" takes off at the interactive IT360° experience. IT360° is the only industry event that fully integrates key industry participants from diverse sectors. IT360° is a "teaching conference" where you will learn about current applications and solutions, innovations, tools & technologies, what works and what does not and what is most relevant to your organization. Content areas include open source, security, SOA, IT green, and storage.

<http://www.it360.ca/>

---

### April 10

The Entrepreneur: Heretic or Hero of Innovation?

#### Ottawa, ON

This presentation will address a number of areas and lessons including: negotiating some early intellectual property from NRC, inventing new technology and the importance of patents for a start-up, pros and cons of raising funding from Angel Investors, VCs, government programs, and building out the team. Pre-registration is mandatory for this Colloquium Series event.

[http://iit-iti.nrc-cnrc.gc.ca/colloq/0708/08-04-10\\_e.html](http://iit-iti.nrc-cnrc.gc.ca/colloq/0708/08-04-10_e.html)

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>April 2008</b>	Communications
<b>May 2008</b>	Enterprise Readiness
<b>June 2008</b>	Security
<b>July 2008</b>	Accessibility
<b>August 2008</b>	Education
<b>September 2008</b>	Social Innovation

**Formatting Guidelines:**

All contributions are to be submitted in .txt or .rtf format and match the following length guidelines. Formatting should be limited to bolded and italicized text. Formatting is optional and may be edited to match the rest of the publication. Include your email address and daytime phone number should the editor need to contact you regarding your submission. Indicate if your submission has been previously published elsewhere.

**Articles:** Do not submit articles shorter than 1500 words or longer than 3000 words. If this is your first article, include a 50-75 word biography introducing yourself. Articles should 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.

**Interviews:** Interviews tend to be between 1-2 pages long or 500-1000 words. Include a 50-75 word biography for both the interviewer and each of the interviewee(s).

**Newsbytes:** Newsbytes should be short and pithy--providing enough information to gain the reader's interest as well as a reference to additional information such as a press release or website. 100-300 words is usually sufficient.

**Events:** Events should include the date, location, a short description, and the URL for further information. Due to the monthly publication schedule, events should be sent at least 6-8 weeks in advance.

**Questions and Feedback:** These can range anywhere between a one sentence question up to a 500 word letter to the editor style of feedback. Include a sentence or two introducing yourself.

**Copyright:**

You retain copyright to your work and grant the Talent First Network permission to publish your submission under a Creative Commons license. The Talent First Network owns the copyright to the collection of works comprising each edition of the OSBR. All content on the OSBR and Talent First Network websites is under the Creative Commons attribution (<http://creativecommons.org/licenses/by/3.0/>) license which allows for commercial and non-commercial redistribution as well as modifications of the work as long as the copyright holder is attributed.



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>.