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The Open Source Business Resource

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Recently a Carleton University student asked his professor "how do you make money from open source?" An excellent question for which there is no short answer. If anything, it appears to lead to a conundrum: aren't the motivators behind open source diametrically opposed to those that drive business? Dig deeper and you'll find that open source and business have much to gain from each other. The difficulty is finding accurate information from those who understand both the business and open source environments.

The Open Source Business Resource promotes an open dialog on the issues involved with making money from open source. It is an opportunity for those who wish to learn more about the business of open source to benefit from the experience of those who have already studied the success factors and from those who have successfully integrated open source into their business strategy. The OSBR:

—helps create the right environment for companies to commercialize goods and services based on open source assets

—removes barriers to the commercialization of open source assets

—surfaces the open source related activity that is going on in companies, universities and governments and knits it together as a cohesive story that we can take to the world

—will evolve to satisfy the needs of companies that use open source to compete

Initially, the scope of the OSBR will be the province of Ontario, then Canada, and eventually the world.

We begin by introducing ourselves and some of the initiatives that are occurring in the Ottawa area. The feature article summarizes the collaborative research between Nortel and Carleton University that examined the maturity stages a business goes through as it creates an ecosystem around an open source community. Additional articles focus on the Eclipse ecosystem, the Talent First Network, the Ontario Research Commercialization Program, and the multiple dimensions of software licenses. In addition, the July issue describes two exciting open source projects, and provides news, links to open educational resources, information on upcoming events, and answers to questions received.

We want to hear from you! Let us know what you are doing with open source and the lessons you have learned. Share the resources which were most useful to you. Suggest themes for future discussion. Ask questions you would like to see answered. Submit events and news items. Email your submission to the Editor. You'll find formatting guidelines in the Contribute section to assist you in your submission.

There is an exciting lineup of themes for future editions of the OSBR. Be sure to check out the Editorial Themes on the last page.

Visit the OSBR website to subscribe to an email or RSS notification when new versions of the OSBR become available.

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.

"*In the past, innovation was defined largely by creativity and the development of new ideas. Today the term encompasses coordinated projects directed toward honing these ideas and converting them into developments that boost the bottom line.*"
Howard Smith, Computer Sciences Corporation

Ottawa has become a source of a rich set of knowledge on all aspects of open source. Over the past two years, there has been a focused, collaborative effort between industry and academia to explore and understand the business of open source. This joint research examined the dynamics and value propositions surrounding open source and explored the non-cost values such as structure, metrics, applicability and transformation challenges. One conclusion is clear: open source is a powerful, new, competitive tool that can be leveraged by companies to appropriate value.

Several key insights have emerged. One insight is that open source is a viable competitive business tool. This is opposed to the prevailing industry perspective that open source is merely about free software and that company interactions with open source projects are limited to decreasing development costs and shortening time to market.

Five Stage Model

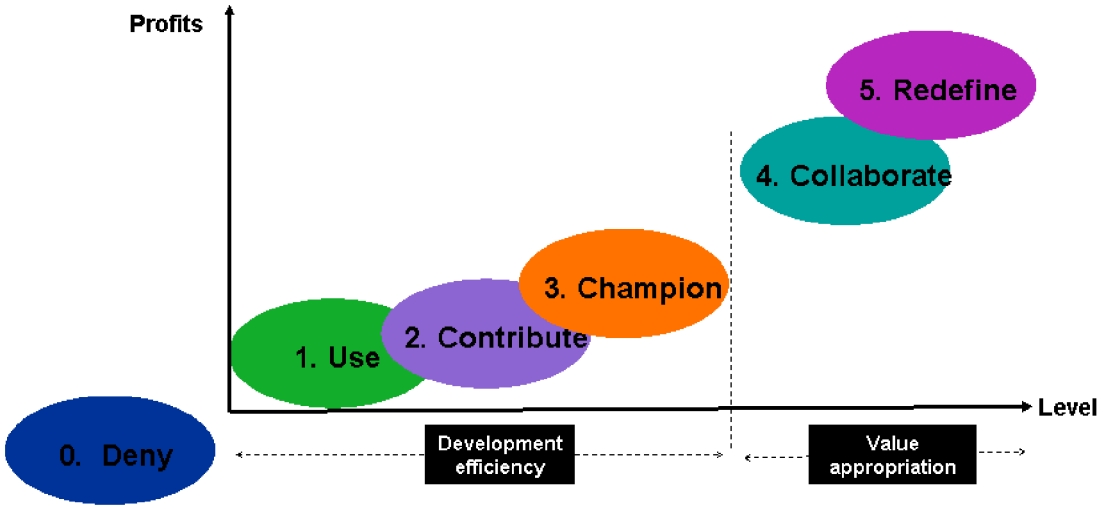
Work during 2006 examined companies' interactions with open source projects and developed a unique perspective around value creation and value appropriation opportunities. This resulted in the creation of a Maturity Model that explains much of the dynamics between companies and open source projects.

This 5 stage model (see **Figure 1**) characterized both the engineering centric behaviour of companies that leverage open source as well as the strategic business approach that enables more mature players to appropriate higher value.

Stage 1-Use: This stage focuses on development efficiency. At the most basic level a company leverages existing open source projects to reduce development time and costs. In other words, the company is a user of open source; its employees use F/LOSS (Free/Libre Open Source Software) and the open source community is neither harmed nor helped by the company. While the company wraps up its own value around F/LOSS, it provides no or little competitive value.

Higher levels (stage 2 and 3) of maturity result in contribution or even leadership of open source projects in order to accelerate this R&D effectiveness value.

Figure 1: Profits from each level of interaction with open source projects



Stage 2-Contribute: This stage occurs when the company moves beyond passive user to collaborator. Managers begin to contribute code to and/or fund the open source project. This benefits the community and enhances the software distribution. However, there is a very narrow business focus, little rivalry, and a loose company-community coupling.

Stage 3-Champion: At this stage executives provide support and a known leader to champion the development of the open source project. The community benefits from the company's activities and vice versa. The company proactively selects and manages an ecosystem anchored on F/LOSS to attain business goals.

Real profits and competitive differentiation can be achieved at stages 4 and 5 of maturity when a company shifts its focus from efficiency to value appropriation and a more strategic interaction with the market and value chain.

Stage 4-Collaborate: The company has now become an open source strategist. Executives identify a position within the ecosystem, define a business model that relies on F/LOSS, and then release code, fund efforts, and exert influence to attain the company's business goals. The community benefits from customer driven resources to produce new versions of software. The company obtains a competitive advantage by changing the environment. Competitive value and proprietary value are coupled with business strategy.

Stage 5-Redefine: This is the most aggressive stage where executives invest in programs and tools to design products relying on F/LOSS projects. The community benefits as it can exploit linkages across F/LOSS projects. The company gains a significant competitive advantage by harnessing changes in multiple ecosystems.

At this stage, the company changes its position in the value chain; for example, a company can shift to a service business model from a product business model.

Lessons Learned

The academic analysis provided data for a number of cases that reinforced the potential competitive leverage that can be achieved via open source. The behaviour of a company and decision authority around open source determines the value that can be appropriated.

Some of the lessons learned dispelled some of the popularly held myths around open source, including those that questioned the quality of the software, the motivation of the contributors, the viability of commercialization, and the legal risk of using open source. They also confirmed the value of an ecosystem to maximize the appropriation of value. Some of the key lessons were that:

—the ability to appropriate co-created value is more important than lowering costs

—F/LOSS is about a competitive environment, not a free environment

—the customer's experience with F/LOSS is a key driver

—a company needs to scale up the ecosystem in order to co-create value

The research also identified several insights into the challenges of incorporating open source into a company's business model:

—the need for internal structural changes

—the effort required to growing and managing ecosystems and the couplings with the company

—the ability to keep up with worldwide innovation due to the global nature of open source communities

—managing the unknown of adoption by mainstream customers

—managing the unknown of company adaptation to value co-creation, new business models, and a scaling ecosystem

Although open source is popularly associated with software, the collaboration achieved by open source extends beyond software into content, hardware, process, and science domains. Collaborative design and development is increasingly becoming a force in the marketplace, so understanding the dynamics is important. This is a relatively new frontier that is the subject of new research.

Ottawa is growing its Center of Excellence for exploring, leveraging and commercializing open source. The state of knowledge for key open source topics has been described in a number of public sessions dedicated to this topic. The Talent First Network in collaboration with industry leaders, open source foundations, and the Ottawa Centre for Research and Innovation (OCRI) has delivered four focused events addressing how open source provides competitive advantages, open source licenses, the ways businesses use open source to create value for their customers, and methods to deliver clean intellectual property.

There are a number of master's theses on the subject of Competing with Open Source completed by students of the Technology Innovation Management program at Carleton University that provide further details on various dimensions of the open source domain.

Recognizing that we have only scratched the surface of the business of open source, new programs, such as the Talent First Network (described in a subsequent article) are filling gaps in skills, knowledge, tools, and processes that will continue to build on the momentum the joint industry-university started in late 2005.

Additional Reading

Competing with Open Source Software: Insights from Recent Research
http://www.ocri.ca/events/presentations/partnership/April2106/Carbone.pdf

Value Derived from Open Source is a Function of Maturity Levels
http://www.ocri.ca/events/presentations/partnership/April1907/PeterCarbone.pdf

Lessons Learned at the Competing with Open Source Conference
http://www.carleton.ca/tim/osv/competing.pdf

Peter Carbone is currently the Chief Architect for Nortel. He has 28 years industry experience in telecommunications. Peter has held various leadership positions in vendor, R&D and service provider companies. Peter's experience includes serving international customers, creating start-ups within large corporations, and with the regulatory environment. Key leadership roles have included: General Manager responsible for profit and losses; Chief Technology Officer responsible for architecture, technology strategy and acquisitions/partnerships; Vice President of R&D responsible for portfolio delivery via a multi-site team; and, Vice President Systems responsible for network product designs and technical engagements with customers.

"I love deadlines. I like the whooshing sound they make as they fly by."
Douglas Adams

The Eclipse community has established the best existing model for multiple corporations to create innovation networks, enabling co-operation on the development of product-ready open source software. This really is the best of both worlds: the openness, transparency and meritocracy of open source with the resources and commitment of corporations both large and small.

This article describes some of the lessons learned over the past five years of growth of the Eclipse ecosystem. But first, it is important to understand the distinction between the Eclipse *technology* and the *Eclipse Foundation*.

Eclipse is an open source community, whose projects are focused on building an open development platform comprised of extensible frameworks, tools and runtimes for building, deploying and managing software across the lifecycle. There are over seventy projects hosted at Eclipse that are focused on building the Eclipse technology.

The *Eclipse Foundation* is a not-for-profit, member supported corporation that hosts the Eclipse projects and helps cultivate both an open source community and an ecosystem of complementary products and services.

A Brief History

2001: IBM creates www.eclipse.org and Eclipse 1.0 ships as a Java IDE. At the time, the community was primarily made up of IBM and its partners. We believe the early decision to run Eclipse as the marriage of an open source project community and an industry consortium has been a major source of our community's enduring strength and growth.

2002, 2003: Eclipse 2.0 and 2.1 ship and Eclipse begins to really come into its own as a tools integration platform. The consortium around Eclipse starts to grow quickly and begins to show life as a real industry force. Organizations begin to trust the quality and predictability of Eclipse technology releases enough to make significant product bets and investments on the platform.

2004: Eclipse 3.0 ships, and the Eclipse Foundation is formed. This new version is a watershed because it migrates the plug-in model to an open standard (OSGi) implementation and includes an open Rich Client Platform (RCP). Eclipse starts to broaden support from a tools integration platform to an application integration platform for the desktop. It is interesting to note that RCP largely came into being because of community interest. Enough people were ripping the IDE bits out of Eclipse 2.1 to build desktop applications on top that it became obvious that doing it once and doing it well was the obvious choice.

Vendor Neutral Governance Model

The Eclipse Project was originally created by IBM in November 2001 and supported by a consortium of software vendors. The Eclipse Foundation was created in January 2004 as an independent not-for-profit corporation to act as the steward of the Eclipse community. The independent not-for-profit corporation was created to allow a vendor neutral and open, transparent community to be established around Eclipse.

The Eclipse Foundation was successful in promoting its independence in 2004, leading to the rapid expansion in strategic membership in 2005. Establishing Eclipse as an independent entity took some time and effort.

The tipping point was EclipseCon 2005 when BEA, Borland, CA, Sybase and Wind River all joined the board of directors as strategic developer members.

Diversity

The health and vitality of the Eclipse open source projects is absolutely key. Although Eclipse is in many ways a trade association or consortium, the open source projects are the source of value creation in the Eclipse ecosystem. The perfect scenario is where we see a virtuous cycle of growth and investment between the projects and the commercial ecosystem. As companies capture value by creating products based on the Eclipse platform, they find opportunities where it is in their commercial interest to contribute back to the Eclipse technology. We've certainly seen a large growth in the number of organizations contributing code, projects and committers at Eclipse.

Growing the ecosystem was and is an important goal. Our membership has grown to over 160 companies. Growth in membership is an indicator of the health of the overall ecosystem. But probably even more important is the huge number of products now built on top of Eclipse, with more coming all the time. No single organization can control the destiny of the Eclipse Ecosystem as a whole.

Common Technical Architecture

Europa is the current deliverable along the vision of Eclipse becoming the open development platform. It is about Eclipse continuing on the community-led evolution that it has been on for the past several years. Europa's importance is, in many ways, linked to the emergence of Eclipse as an application integration platform which spans servers and devices. It's not just the client any longer.

This is not a small thing. Eclipse is one of the very few organizations which is attempting to develop a standards-based development platform of tools, runtimes and frameworks which span devices, clients and servers. All of which is based on a single component architecture and programming model.

And once again, it is the community that is driving the evolution. Just as a few years ago when people noticed they could create their own desktop applications and drove the creation of RCP, developers are now noticing the opportunities in running the Eclipse plug in model, on or under a server.

So today Eclipse is not just about tools or even Java. What our community is building is something which is much more ambitious and interesting. And with new projects including persistence layers, service-oriented runtimes and Rich Internet Platforms starting up, the future looks even more interesting.

Measuring Progress – Size versus Health

Measuring the size of an Ecosystem (like number of members) is important, but the Eclipse Foundation is far more interested in the health of the Eclipse Ecosystem. In their paper Strategy as Ecology, Iansiti and Levien identified three key elements of ecosystem health:

—Productivity of the Ecosytem: how much economic value is being created by the ecosystem

—Robustness: how durable and able to adapt the ecosystem is to external events

—Niche Creation: the ability to expand the ecosystem with meaningful diversity

Productivity

It is important to be clear what is meant by productivity here in the context of measuring health -- we are talking about the ability of the Eclipse ecosystem to create economic value, not the individual productivity of developers. If a framework or tool is generating economic activity, then we would expect to see more and more organizations seeking to pay employees for those skills. Moreover, we would also expect to see an increasing number of products based on the Eclipse platform.

Measuring this precisely could be extremely time consuming, but luckily there are some tools that help spot trends such as Indeed's job listing archives and Google's News Archives.

Robustness

Over the years the Eclipse community has dealt with quite a few external events driven by our competitors. Which raises an interesting point: if Eclipse is a free and open community with a diverse commercial ecosystem, who are its competitors? This is a bit of a simplification, but it really boils down to two: Microsoft and Sun.

Microsoft Visual Studio was the product which Eclipse was originally created to compete with. But in many ways, the competition has morphed into co-opetition, as many developers use both Eclipse and Visual Studio (VS). There are a lot of developers who use VS for their .NET development and Eclipse for Java and everything else. So there are actually interesting scenarios where interoperability between Eclipse and Microsoft products makes sense.

The competition with Sun's developer products is more direct, as in many ways we are competing for the same developer: Java programmers. Despite the fact that Eclipse does so much more than Java tools, this remains our key franchise, and commercial ecosystem opportunity. Visual Studio and Eclipse can complement one another. In most cases, NetBeans and Eclipse are substitutes. As a result, the only major organization dedicated to competing head-to-head with the Eclipse community is Sun.

But despite large investments by Sun in NetBeans, the market share and our download numbers show only steady growth for Eclipse. So clearly the robustness of the Eclipse ecosystem is very high and still growing.

Niche Creation

The last element of ecosystem health is niche creation, where the technology is rapidly adopted in new technology niches. Don't get confused: "niche" is not a synonym for either "small" or "insignificant". Think more along the lines of "new" and "cool".

Again, Eclipse rates very highly. Eclipse as a platform has excelled in enabling niche creation. Its adaptability has driven growth and success in many new technology niches as quickly as they've been created.

Here are just a couple of recent examples:

—According to Linux Watch, there is cross-community interest in rallying around Eclipse as the tools platform for Linux Standard Base (LSB) development.

—Within days of Apple shipping the iPhone, Aptana shipped its Eclipse based, EPL (Eclipse Public License) licensed Integrated Development Environment (IDE) for iPhone development.

—Verigy recently shipped its semiconductor test solution which leverages Eclipse to provide "...an active hardware view, which provides the user with an intuitive, graphical view of the RF (Radio Frequency) measurement block diagram, and the ability to export RF setups to test method templates...".

Summary

Eclipse today provides a wealth of commercial opportunity for the participants within its ecosystem. Just as importantly, Eclipse offers companies and individuals mechanisms to establish and grow innovation networks for collaborative development of new technologies. Those of us who work within the Eclipse community are very excited about the road ahead. We have a challenging mission to create an open development platform, an amazing wealth of development talent amongst our committer population, and a vibrant and healthy ecosystem.

Donald Smith is Director of Ecosystem Development for the Eclipse Foundation, an independent not-for-profit foundation supporting the Eclipse open source community. He brings over a decade of worldwide industry experience, from small "dot-com" through Fortune 50 companies. Donald speaks regularly at both technical and business oriented conferences.

Recommended Reading

Iansiti, M, and Levien, R., Strategy as Ecology, Harvard Business Review, March 2004

Mike Milinkovich is the Executive Director of the Eclipse Foundation. In the past, he has held key management positions with Oracle, WebGain, The Object People, and Object Technology International Inc. (which subsequently became a wholly-owned subsidiary of IBM), assuming responsibility for development, product management, marketing, strategic planning, finance and business development.

"The future is here. It is just not widely distributed yet."

William Gibson

The Talent First Network (TFN) is the publisher of The Open Source Business Report (OSBR). For this reason it is important that we describe what the TFN is about in the inaugural issue of the OSBR.

This article first describes the network's mission, launch, and initiatives and then in the last section raises awareness that:

—in addition to open source software, many other types of assets are being developed by open source projects worldwide

—thousands of companies and government organizations pay their employees and contractors to contribute to open source projects

—the use of open source assets is pervasive across product markets in which Ontario companies compete

—open source assets and the processes that produce them can become powerful competitive tools for companies to appropriate value co-created with others and reduce the advantages of large companies

Mission

The TFN enables the transfer of:
(i) open source technology,
(ii) knowledge about how businesses can use open source assets and processes to generate revenue and reduce costs, and
(iii) talented students with skills in the commercialization of open source assets from academic institutions to Ontario's companies and open source communities.

The TFN benefits from the active participation of:
(i) executives of technology companies,
(ii) professors and students in engineering, computer science, information technology, science, and business faculties,
(iii) directors of open source foundations,
(iv) leaders of open source projects and open source groups, and
(v) staff of public organizations who support wealth creation through innovation.

Launch

The TFN is a province-wide project launched with the financial support of the Ontario Ministry of Research and Innovation and Carleton University in July 2006.

Premier Dalton McGuinty announced 16 awards for the Ontario Research Commercialization Program (ORCP) on July 21, 2006. Of the 16 awards announced, five were to University-led networks that won both components A and B funding. The TFN, a Carleton University led network, won one of these five awards.

Initiatives

The TFN is organized around four initiatives:

1 Company affiliates

2 Lead projects

3 Knowledge development

4 Knowledge dissemination

All four initiatives develop the talent pool that Ontario companies need to effectively compete in open environments.

TFN: OPEN SOURCE AND INNOVATION

The TFN supports innovation by establishing and maintaining the health of an ecosystem of Ontario companies each of which sells products and services that rely on open source for competitive advantage. TFN's company ecosystem is a showcase of how open source assets and processes result in improved innovative performance.

To ensure the health of the ecosystem, the TFN provides:

–talented students
–low cost, high quality communications infrastructure
–a newsletter focused on the business issues of open source
–professional development programs
–help selling to government departments
–tools to maintain clean intellectual property
–links to open source groups, foundations and communities
–links to professionals who can provide legal services
–assistance to raise funds
–assessment of whether or not to release proprietary assets as open source
–information on opportunities to replace proprietary assets with open source
–inventories of companies, projects and professors with expertise in open source

Innovation is the key driver of economic prosperity and our provincial and federal governments spend millions of taxpayers' dollars funding self-proclaimed "pre-eminent" research-to-commercialization vehicles across the country. However, when compared to other countries in terms of innovation, Canada rates poorly. For example, the Conference Board of Canada in How Canada Performs, a report released in June 2007, describes Canada's performance in innovation as being stunningly poor. Canada was found to rank 14th out of 17th countries in innovation performance and was rated a D.

While many differences exist between Ontario and the countries that ranked as being the most innovative, one anomaly jumps out immediately. Each of the countries rated highly in terms of innovation performance (i.e., Switzerland, Sweden, Finland, United States and Finland), has embraced the link between open source and innovation. Ontario has not.

The TFN enables the successful transfer of open source technology to Ontario companies. Many professors and students in Ontario academic institutions contribute to open source projects and set up their own home grown projects. The TFN will ensure that Ontario companies benefit from work carried out in open source by professors and students in Ontario.

The TFN is committed to producing leading edge research in open source which is relevant to Ontario companies. For this purpose, the TFN:

–sponsors graduate students preparing theses and projects in open source
–assists in the production and dissemination of open source educational resources
–evolves a high quality, comprehensive open source curriculum
–promotes joint industry-university research
–mentors students who enter business competitions with plans based on asset source commercialization
–organizes competitions to identify opportunities to produce open source related assets and processes with commercialization potential
–organizes conferences, seminars, showcases, and gate reviews on topics relevant to open source
–hosts events of interest to open source groups

Change in perspectives

The prevailing perspective is that open source is about software which is developed by geeks who work for free. This is an incorrect perspective of what open source is about and must change. Under the leadership, structure and governance of open source projects, individuals, companies, and organizations produce open source software, integrated circuits, printed circuit boards, standards, platforms, content, scientific knowledge, and workflows.

The view that geeks develop open source for free is incomplete. Multinationals such as IBM, Hewlett Packard, Oracle, Intel, Nokia and many other companies as well as government organizations pay their employees and contractors to contribute to open source projects.

Open source is not just about software for niche markets. Companies operating in the automotive, airlines, telecommunications, media, education and other industries benefit from the use of open source assets.

Top management teams of Ontario technology companies believe that company interactions with open source projects are about decreasing development costs and shortening time-to-market. This perspective is incomplete. Top management teams are becoming aware that open source assets and processes can become powerful competitive tools for companies to appropriate value co-created with others and reduce the advantages of large multinational companies. When compared to Ontario companies, US companies are larger, have larger home markets, lower financing costs, and greater access to venture capital. Open source offers to reduce the scale and financing advantages US companies have over Ontario companies. Open source is more about a new competitive environment than it is about free software.

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Tony Bailetti holds a tenured faculty appointment in both the Department of Systems and Computer Engineering and the Eric Sprott School of Business at Carleton University, located in Ottawa, Canada. Professor Bailetti has been the Director of the Technology Innovation Management Program from 1998 to 2005 and from 2006 to date. He is also the Director of the Talent First Network and the Research Centre for Technology Innovation. He was the Director of Carleton University's School of Business from 1981 to 1988 and worked at Bell-Northern Research (today a part of Nortel) from 1988 to 1992. Professor Bailetti has published in engineering management journals such as IEEE Transactions on Engineering Management, Journal of Product Innovation Management, Research Policy, and R&D Management. He has taught for the Executive M.B.A. program offered by Queen's University in Ottawa since 1996. In 1996 he won a Carleton University Teaching Award and in 2007 a Leadership Breakthrough Award.

"We did an internal review of the innovation infrastructure in place in Ontario and discovered we needed more of the right kinds of money and more of the right kinds of people."

Premier Dalton McGuinty

Launched in June 2005, the Ontario Research Commercialization Program (ORCP) is a key element in the government's strategy to help business innovators take their products to market. ORCP helps Ontario's researchers and entrepreneurs to combine their expertise to help commercialize their innovations and create high-value jobs.

There are a number of strategies within ORCP. The first one focuses on facilitating the movement of technology or scientific discovery from public universities and research institutions to the private sector. Here business knowledge and skills can help identify promising technologies, develop the technology into a product or service, and move them more rapidly to market. In total, ORCP supports 55 Ontario public research and not-for-profit organizations in their collaboration with numerous technology-based companies. This initiative, the first of its kind in Canada, is being implemented through Component A (Technology Transfer) and Component B (Proof of Principle or POP).

The second strategy (Component C or Building Receptor Capacity) supports working partnerships between companies and Ontario researchers. That initiative helps to speed up the development process and give each partner a competitive advantage. These collaborations allow small and medium-sized companies quicker access to intellectual property, and to Ontario's top researchers, the latest sophisticated equipment and research tools within institutions.

Finally, ORCP is giving the next generation of thinkers a head start. Here ORCP supports an internship program that will give the next generation of Ontario thinkers the practical business skills they need to help shape future discoveries into products and services.

ORCP and the Talent First Network

The Talent First Network (TFN) is one of the ORCP successful proponents. The TFN enables talented students to leverage internal and external resources to move technologies and knowledge to private sector companies.

The TFN is building a provincial network with companies, open source foundations, open source groups, universities and colleges. The TFN works across all three strategies of ORCP: knowledge transfer, proof of principle funding, and building industry capacity to innovate.

The TFN offers a unique and strategic approach to knowledge transfer and commercialization with a strong focus on the needs of clients ranging from researchers to entrepreneurs and start-ups to multinational corporations. This approach is a global best practice model which is aligned with the marketplace and the needs of clients which build business platforms from open source.

The TFN will help Ontario companies acquire and lever open source technologies and knowledge allowing them to compete more effectively in increasingly open environments. Talented graduates moving into the work force will be the focus. The TFN will provide students and companies with the training, tools and methods required for the transfer of open source technologies and their use for competitive advantage.

Ontario industry has become an importer of open source products and services as no major open source company and only one large open source foundation is headquartered in Ontario. Many major open source companies and open source foundations are headquartered in the United States. In 2006, VCs (Venture Capitalists) invested $500M in open source companies in the US, with $0 being invested in open source companies in Canada.

Dozens of open source user group exist in Ontario. Provincial and municipal governments have an interest in open source, but Canadian suppliers claim that they cannot sell them open source products and services. Open source assets are a cost-effective alternative to proprietary assets. The use of open source assets is pervasive across product markets in which Ontario companies compete.

Open source projects represent a radically new method to develop assets and to present economic opportunity. By removing the market and monopoly value from a product, open source exponentially increases the economic value by making the product more stable and robust. It also can provide first-mover advantage. It has a number of other specific advantages as compared to the more traditional ways of developing products.

The TFN is coordinating and catalyzing open source activity across the province to develop Ontario as a global leader in open source business development.

ORCP and Knowledge Transfer

MRI places a lot of emphasis on knowledge transfer. There is a distinction between traditional technology transfer and knowledge transfer.

Technology transfer is a term used to describe a formal transfer of rights to use and commercialize new discoveries and innovations resulting from scientific research to another party. Universities typically transfer technology through protecting (using patents and copyrights), then licensing new innovations. The major steps in this process include the disclosure of innovations, patenting the innovation concurrent with publication of scientific research and licensing the rights to innovations to industry for commercial development.

Knowledge transfer is an element of so-called “informal” technology transfer” and it includes student placement, consultancy, research and training for industry, technology licensing, and spin-off company formation. Universities are tasked with knowledge creation and dissemination of this knowledge through an economic engine. Research faculty members are the key agents of knowledge transfer as they bring the value of innovation in tacit knowledge. Social networks through academic and industry scientists, university administrators, TTO directors, and managers/entrepreneurs allow knowledge transfer to work in both directions.

It is vital that university and other stakeholders are very clear on the university’s objectives on knowledge transfer, motivations and benefits. The TFN project, backed by Carleton University’s leadership as well as by great number of private industry leaders, is a very good example of how effective knowledge transfer can be achieved.

Brad DeFoe is the Manager and Dmitri Prokopiev is a Senior Policy Advisor of the Commercialization Branch of the Ontario Ministry of Research and Innovation.

"*Of every tree of the garden thou mayest freely eat; but of the tree of the knowledge of good and evil, thou shalt not eat of it.*"
Genesis 2:16-17

In the Garden of Eden, God made His statement on prohibiting the consumption of the fruit of knowledge. Maybe this is the first ever known License! And, we all know the story of denial of this statement by Adam and Eve.

In the social mechanism of exchange, goods are characterized by rivalry in consumption and excludability from consumption. Rivalry in consumption arises when a person's consumption of a good obstructs the consumption of the same good by another person. Excludability is the ability of sellers to force consumers to become buyers, and thus to pay for whatever goods and services they use. These characteristics can either exist or not exist in a good.

Software, in simple words, is a set of instructions for performing a task automatically through computerized devices. Software, as an expression of ideas comprises the guidelines for a computer to complete the given task. Software can be thought of as being a good. Assume that a person consumes a software good. This does not affect the consumption of the same software by other consumers as, theoretically, software neither wears nor tears.

Moreover, the consumption of software by a consumer does not cause any detritions to the software. Being a digital expression, software can be copied infinitely with out any loss of quality.

The general assumption of software being non-rival can be revisited as rivalry if software is made for the possession and ownership of a particular business organization solely. In this case, the software becomes rival goods kept or made nonexclusive.

Assume that a software producer has possession of a particular software. It is economically feasible for the producer to exclude consumers from consuming the good while having no rivalry in consumption among consumers. Thus, the software can be viewed as a club good with possible exclusion and no rivalry in consumption.

In an alternate environment, the producer distributing the software over the Internet completely looses control over the software. Any one on the Internet can make the distributed software beneficial to others, thus making the software as non-excludable from consumption. Being non-rival and non-excludable, software can also be viewed as pure public good.

We can not make a decision on software as a good and adopt the principles of distribution of goods to the distribution of software. Software has its own several dimensions which also affect the distribution of software.

Commercial Dimensions:

—The value of software is not quantifiable without consumption. The greater the surplus of users for a particular software, the greater the value of the software.

—Commercial exploitation of the developed software should occur as quickly as possible, reducing the time to market.

Economical Dimensions:

—The cost of producing the first unit of software is always high.

—Software as a finished product superimposes no restrictions for the developer to reproduction.

—The costs of software production have an atypical anatomy differing from the economies of scale.

—Software has a high cost of production but an extremely low marginal cost of reproduction.

—The cost of storing and accessing software is low.

Legal Dimensions:

—The behavior of software represents the internals of a business process. Thus, the behavior becomes valuable in the software market. Knowing the implementation of behavior can not be a big issue.

—Software is an intangible asset and may be protected by copyright.

Sociological Dimensions:

—Software being a digital work can be vulnerable to perfect copying, and unlimited copies identical to the original can be made.

—The producer/consumer relationship is significant when developing software.

Technological Dimensions:

—Software does not deteriorate physically with wear and tear.

—Software can malfunction due to the negligence of a user or can be affected by virus attacks.

—Different implementations of the given software can be available for different platforms.

—New software can arise by merging of various software elements.

—The intangible nature of software makes it concurrently available to many consumers.

A software producer can make a decision on how the software can be consumed by users and what rights to provide users.

A consumer has the right to know how he/she can use the software. A license expresses these rights.

Recommended Reading

1. Kaul, I., and Mendoza, R., Advancing the Concept of Public Goods, in the book Providing Global Public Goods: Managing Globalization (Editors: Kaul, I., Conceicao, P., Le Goulven, K., and Mendoza, R.) Oxford University Press, New York (2003)

2. Kooths, S., Langenfurth, M., and Kalwey, N., Open Source Software: An Economic Assessment, Technical Report ISSN 1612-9032, Muenster Institute for Computational Economics (2003)

G.R. Gangadharan is a doctoral student at the University of Trento, Trento, Italy. His research interests include Service Oriented Computing, Intellectual Property Rights, Free/Open Source Software Systems, Software Engineering, and Business Models of Software and Services.

Corporate Directory Platform and Ottawa Tech Community

Lead: Peter Hoddinot

The Corporate Directory Platform and the Ottawa Tech Community comprise a lead project initiated by the Talent First Network. If interested in contributing, please contact Peter Hoddinott via email (peterh@sce.carleton.ca).

Corporate Directory Platform

The objectives of the Corporate Directory Platform lead project are to:

—Develop a Web 2.0 platform for corporate directories across Ontario

—Demonstrate the capabilities of the platform by providing information across Ontario in real time

The Corporate Directory Platform enables a user to easily obtain information across Ontario technology communities. For example, a user will be able to find the number of companies that develop Wi-Max products across Ontario and show their location in an Ontario map. A second user will be able to find the number of new products, processes and services introduced by the companies that are part of wireless clusters across Ontario cities. A third user will be able to measure the health of the photonics cluster in Toronto and compare it with the health of the photonics cluster in another Ontario city.

The Corporate Directory lead project is searching for:

—Designers and programmers interested in contributing to platform development

—Individuals and organizations interested in deploying corporate directories in their own communities

The Ottawa Tech Community

The Ottawa Tech Community is an example of an online directory using the Corporate Directory Platform. The five objectives of this lead project are to:

—Provide reliable and comprehensive information on Ottawa's technology community

—Provide an assortment of tools that make sense of the information in near real-time

—Showcase the capabilities of Web 2.0 technology

—Facilitate communities across Ontario deploying and operating similar corporate directories

—Facilitate the networking of corporate directories across Ontario for the purpose of providing Ontario-wide consolidated Corporate Directory information.

The Ottawa Tech Community lead project is searching for:

—Authors who wish to contribute content to the Ottawa directory

—An Editor in Chief

—Editors with domain expertise

—Stewards

—Advisory Board members

Blindside Communications Platform and TFN System 100

Prime: Richard Alam

The Blindside Communications Platform (BCP) and the TFN System 100 lead application comprise a lead project of the Talent First Network. If interested in contributing to this platform and/or lead application, please contact Richard Alam via email (alamr@rogers.com).

Blindside Communications Platform

The goal of the Blindside Communications Platform lead project is to develop and evolve an open source software stack to deliver on-demand web meeting applications similar to those provided by WebEx and Webtrain.

The BCP project integrates Asterisk, Red5, AppFuse, and other open source software.

The Blindside Communications Platform lead project is searching for:

—Developers with experience in user interface design and knowledge in developing Red5 applications

—Developers with Java and J2EE frameworks (Spring) and/or C/C++/Qt experience

—Developers with Linux system administration experience (rPath experience a plus) and/or experience in maven/subversion/Eclipse/Trac

—Developers with Asterisk/FreeSwitch installation and configuration experience

Richard Alam completed his Master's degree at Carleton writing a thesis on how companies make money from the open source projects they initiate. He started the Blindside Project which develops a multimedia communication system using software from different open source projects.

TFN System 100

The goal of the TFN System 100 lead project is to enable the delivery of courses and presentations over the Web. The system will include: (i) a portable PC for capturing and archiving internal and external events, (ii) a server that integrates Red5, OpenOffice, Openfire, and other software, and (iii) an Asterisk/Free Switch.

The TFN System 100 lead project is searching developers to:

—Design and develop a Flash user interface to provide slide presentation, chat, presence, and video using Flex/ActionScript/Flash Media

—Extend OpenWengo softphone using C++/Qt library and modify and extend Asterisk/FreeSwitch to scale and support many concurrent users

—Develop J2EE web application for scheduling and delivering presentation archives

Do you wish to propose a new lead project? Do you wish to describe a lead project for which you need contributors?

A lead project is a project designed to use open source to create a discontinuity in the market place. A lead project is comprised of a platform (e.g., open source stack) and a lead application/service that demonstrates the customer value of the platform. Typically, the lead application is led by an entrepreneur.

The TFN is particularly interested in supporting lead projects based in academic institutions that add value to Ontario companies.

If you wish to propose a new lead project or describe one with which you are already involved, please contact Tony Bailetti at Bailetti@sce.carleton.ca .

ePresence Interactive Media Summer Release

June 21, Toronto

On June 21st ePresence Interactive Media, KMDI, University of Toronto announced details for the next version of the ePresence webcasting system. Due out this August, the team promises v.4.0 will be their most exciting release to date! (Watch the archive of the June 21st announcement). Not only have they changed their licensing strategy – the entire system is being released under a BSD license for the first time since launching the project 2 years ago – ePresence will be the world's first open source webcasting and webconferencing system. The Beta version of 4.0 is available now on the ePresence blog.

www.epresence.tv

The Eclipse Foundation Releases Europa

June 27, Ottawa

Europa, consisting of 21 open source projects of the Eclipse Foundation, represents the Foundation's largest coordinated release to date. As in the previous three years, Europa was released on schedule--a commendable feat for a release containing more than 17 million lines of code and comprised of contributions from over 300 developers in 19 different countries. Over 400,000 download requests were processed for Europa projects in the first week. The Foundation's press release contains the details of the projects and the technological features in this release.

http://www.eclipse.org/org/press-release/20070627_europarelease.php

Canadian Library Association (CLA) Moves Open Access

June 29

The CLA Executive Council has revised its policy in order to provide virtually all of its intellectual property online, free of charge, and free of most copyright and licensing restrictions. A link to the recommendations from the Open Access Task Force as well as the details of the revised policy are available in the June edition of the CLA Digest:

http://cla.informz.net/cla/archives/archive_155065.html

CMAJ Congratulates Open Medicine Canada

July 3, Ottawa

The current issue of the Canadian Medical Association Journal contains a public congratulation to their colleagues at Open Medicine. From the commentary: *"We welcome the arrival of a new venue that shares CMAJ's objective of providing timely dissemination of research findings and clinical knowledge to as broad a community as possible. If successful, this new journal will be a positive development for the world in general and Canada in particular. With a second general medical journal based in Canada, yet open to the world, there is no good reason why Canadian researchers, who are world leaders in scientific productivity, should have to leave home in order to find a suitable medium for dissemination of their best work."*

http://www.cmaj.ca/cgi/content/full/177/1/59

2007 Open Source Thinktank: The Future of Commercial Open Source Executive Summary Report

Published and Copyrighted by: Olliance Group and DLA Piper

From the Introduction:
The purpose of the event was to provide a venue for thought leaders from key segments of the open source industry to collaboratively discuss, brainstorm and develop solutions to key issues in the growth and maturation of commercial open source. Topics discussed included business models, licensing and intellectual property issues, and adoption and usage models. The 100 attendees represented many sectors of the open source ecosystem including senior executives from large and small software vendors (both open source and proprietary), CIOs, venture capitalists, analysts and other industry experts.

http://thinktank.olliancegroup.com/ostt2007report.pdf

Open Source Software's Expanding Role in the Enterprise

Published and Copyrighted by: Forrester Consulting

From the Executive Summary:
Open source has emerged as one of the more important IT trends in this young century. The application of open source methodologies has grown significantly in scope, as has its usage, over a relatively short period of time. Once evaluated by companies, open source software is frequently adopted and has taken its place alongside commercial software, often without regard to the ways in which it is different. In this study, more than half the companies that are using open source are using it for mission critical applications. However, because there are differences between open source and commercial software, customers want their concerns about open source software addressed before they incorporate open source more completely in their IT portfolios. Forrester Consulting, under Unisys sponsorship, undertook an in-depth study of how open source software is being used in North America and Europe to better understand the important role it is playing in IT. The study also examined the barriers and benefits that open source software represents to enterprise customers.

http://www.unisys.com/eprise/main/admin/corporate/doc/Forrester_research-

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September 24-27

FOSS4G 2007
Victoria, B.C.

The 2007 Free and Open Source Software for Geospatial (FOSS4G) conference gathers developers and users of open source geo-spatial software from around the world to discuss new directions, exciting implementations, and growing business opportunities in the field of open source geo-spatial software. Focused on the practical “make it work, get it done” world of open source application development, this annual conference boasts a very high concentration of geo-spatial technical opinion leaders. Attendance at this event has grown at over 50% a year since its inception in 2003, paralleling the rapid growth and adoption curve of open source geo-spatial tools in the marketplace.

http://www.foss4g2007.org

October 13

Ontario Linux Fest 2007
Toronto, ON

Ontario Linux Fest is a conference designed to present compelling topics of interest to users of Linux and open source software. These topics span a range of interests from technical to motivational, educational to organizational and social to legal. Attendees will find out what is happening in the open source world from the people directly involved. It's a great event to catch up with old friends, meet project contributors and develop new business relationships.

http://onlinux.ca/

October 15-17

GTEC2007
Ottawa, ON

The GTEC Conference attracts the senior vanguard of IT decision makers from across Canada and around the world. The GTEC conference tracks will be a unique forum for discussing Government Policy Initiatives, Trends in Program Management, for exploring Emerging Technologies and discussing the challenges governments face in Shared Infrastructure and Solutions. Over an engaging 3-day conference, we will explore the dynamic business environments that are being driven by web 2.0 internet applications and solutions. We will discuss the evolution of internet-based technologies is driving the "business of government" from "government 1.0" to "government 2.0"

http://www.gtec.ca/conference/conference.html

October 22

Workshop on Integration of Open Source Components into Large Software Systems (Co-located with OOPSLA 2007)
Montreal, Canada

Developing large software systems has largely become an exercise in integration. About 85% of code that goes into the software of a typical system is written by others, and the main role of businesses is to write the glue that holds the externally developed components together. While in the past, businesses were largely concerned with the integration of commercial off-the-shelf (COTS) components, many of these components will now come as free/open source software (F/LOSS) components. The use of open source components provides new strategic options for reducing the exposure to risk and cost of development, while significantly increasing the available solutions. Models for the integration of COTS components do not necessarily apply to open source components. A particular focus in this workshop will be on the shift away from COTS to F/LOSS components, and what new opportunities and issues are introduced by it.

http://www.carleton.ca/tim/oopsla

October 25-26

FSOSS07
Toronto, ON

FSOSS is a high-profile event that attracts leaders from industry and the open source community in order to discuss open source issues, learn new technologies, and promote the use of free and open source software. The Symposium is a two-day event aimed at bringing together educators, developers and other interested parties to discuss common free software and open source issues, learn new technologies and to promote the use of free and open source software. At Seneca College, we think free and open source software are real alternatives.

http://fsoss.senecac.on.ca/2007/

Q. I thought open source meant free software. How can you run a business if you are giving the software away for free?

A. Let's start by defining free software from the perspective of the Free Software Foundation. Their Free Software Definition states:

Free software is a matter of liberty, not price. Free software is a matter of the users' freedom to run, copy, distribute, study, change and improve the software. More precisely, it refers to four kinds of freedom, for the users of the software:

1. The freedom to run the program, for any purpose (freedom 0).

2. The freedom to study how the program works, and adapt it to your needs (freedom 1). Access to the source code is a precondition for this.

3. The freedom to redistribute copies so you can help your neighbor (freedom 2).

4. The freedom to improve the program, and release your improvements to the public, so that the whole community benefits (freedom 3). Access to the source code is a precondition for this.

This is the most publicized definition of free software from the open source perspective. Further, there are many ways to make money from open source other than just charging for the software itself. It is interesting to note that the current trend in business is to move away from the model of charging for software and towards a SOA (Service Oriented Architecture) model.

Additional Reading

Free Software Foundation : http://www.fsf.org/

Eric Raymond, A Brief History of Hackerdom: http://www.catb.org/~esr/writings/cathedral-bazaar/

Q. Open source is so new. Isn't it risky to apply unproven technology to business practices?

A. While the open source definition is fairly new, the practices behind that definition are as old as software itself. In fact, these practices pre-date the advent of commercial software by over a decade. When computing hardware became available in the 1950s, it was very expensive. Typically software wasn't included as users were expected to create their own programs; any software that was included was thrown in as a free add-on. Computer users quickly saw the benefit of creating user groups in order to collaborate in the creation and sharing of programs. That many of these groups still exist today (for example IBM's SHARE and HP's Encompass which started life as Digital's DECUS) is testament to the success of open collaboration.

History aside, it is common business practice for competitors to collaborate. Consortia are formed by vendors in order to create common standards to fast track new technologies. While the standard is shared, each vendor expects to recoup their investment by the branding and differentiating features their product adds to that standard.

In other words, open source isn't new. It doesn't increase or decrease risk. Just like any other technology, it needs to be weighed on its own merit. For example, does a particular open source application meet a business need? Does it provide the required features? How does it compare to other similar applications? These are the types of questions to be asked when evaluating any software, whether it be open or closed.

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: A magazine page of article text averages 500 words and most articles span 3-4 pages. Do not send 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 the interviewer and 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. 100-200 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.

2007 Editorial Themes

August 2007	Business Models
September 2007	Defining Open Source
October 2007	Open Source Licensing
November 2007	Support
December 2007	Clean IP

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The Talent First Network is a Carleton University-led network that includes executives of technology companies, directors of open source foundations, leaders of open source projects and open source groups, staff of public organizations who support wealth creation through innovation, as well as professors and students in engineering, computer science, information technology, science and business programs in universities and colleges.