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The editorial theme for the August issue of the OSBR is "tech entrepreneurship". High-Tech Entrepreneurship Managing Innovation, Variety and Uncertainty (http://tinyurl.com/nrsm2f) defines tech entrepreneurship as "the creation of value from technical innovation through success in business". While succeeding in business is always a tricky affair, technology-based companies pose additional challenges to the entrepreneur. The authors in this issue examine these challenges as well as the importance of business model selection and participation within business ecosystems.

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

The editorial theme for the upcoming September issue of the OSBR is "business intelligence" and the guest editor will be Mike Andrews from SQL Power. Submissions are due by August 20--contact the Editor if you are interested in a submission.

Dru Lavigne

Editor-in-Chief

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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 the author of the books BSD Hacks and The Best of FreeBSD Basics.

Entrepreneurship is the lifeblood of any technology business and really describes the character of those who would see their new ideas achieve commercial success. That character includes: risk taking and the ability to deal with uncertainty from many quarters, creativity and the ability to connect ideas in surprising ways, orchestration and the ability to marshal resources, and the ability to deliver a message with impact whether in the proverbial elevator or when the customer is listening to best and final offers. There is so much required of an entrepreneur, in some ways it is surprising that we have any at all.

I've recently had the opportunity to witness a wide variety of entrepreneurs in action through the Lead to Win (http://leadtowin.ca) program. Lead to Win was started to assist innovation and entrepreneurship in the Canadian National Capital region. The program is certainly a response to the economic times and recognizes that when the tech sector is depressed, people who might otherwise find employment in established companies are more likely to start a business of their own. Lead to Win is designed to help entrepreneurs who have a deep technology background but need help building out some of the other dimensions of that entrepreneurial character.

It has been a great pleasure to discover that the demand for Lead to Win has exceeded our expectations easily by a factor of two or three. The diversity of people, technologies and market opportunities that have come forward in what is often described as a government and telecom town is extremely encouraging. The patterns and themes in this diversity have the prospect of tapping into existing ecosystems and creating entirely new ones.

This notion of entrepreneurship and how it unfolds in established and new fabrics of companies and customers is the centerpiece of this month's issue of the OSBR. Successful entrepreneurs do not exist in isolation and are able to see massive opportunity by leveraging those around them.

Brian Hurley, an entrepreneur and CEO at Purple Forge, provides an overview of ecosystem models and why they matter. Brian also highlights, through numerous examples, how it is possible to take advantage of the related, like-minded and even competitive players in an ecosystem.

Carlo Daffara, head of research at Conecta, has conducted a survey of over 200 open source companies and provided what amounts to a map of entrepreneurship in that space. Carlo clearly demonstrates the economic advantages of open source across a wide variety of business models and commercialization approaches.

Peter Carbone, an ICT executive and Coral CEA champion, discusses an approach to commercialization through the creation of a new ecosystem for communications enabled applications. This is an exciting effort in terraforming a space to create a new ecosystem.

Gordon Quinn, Co-Founder and CEO of iPic Innovations Incorporated, writes about entrepreneurship and users' experience in a world that assumes the Internet. The Internet was certainly disruptive and spawned a number of new ecosystems. Gordon looks at how to disrupt for gain in that context.

John Boden, CTO and Senior Vice President of Corporate Development at Movius Interactive, takes on the issue of entrepreneurship within existing enterprises. Innovation and culture are closely linked and he explores the role open source can play in stimulating both.

James Bowen, an entrepreneur and adjunct professor at uOttawa's Telfer School of Management, considers a number of the attributes of the entrepreneur. James provides a perspective on the importance of the quality of thinking and quality of people with respect to success in all aspects of a venture.

In many respects, entrepreneurship is like (good) alchemy - seeing gold where others see lead. The ability to act upon the vision, bring others to support its implementation and then to realize success in the market is, of course, what makes all the difference.

David Hudson

Guest editor

David Hudson is the Director of the Lead to Win program and is with Ontario's Talent First Network. He joins the doctoral program at Carleton University's Eric Sprott School of Business in September 2009. Until December 2008, Mr. Hudson was Nortel's Vice President for Advanced Research and Technology Labs. Since 1988, he held increasingly responsible management positions in Nortel both in engineering and product line management, working in all of Nortel's product lines. He has held the Nortel seat on a number of university advisory boards. Mr. Hudson received Bachelor's and Master's degrees in Engineering from the University of Waterloo. He graduated from the Systems Design program at the University of Waterloo and his graduate work focused on pattern recognition and signal processing applied to earth resources imagery.

"It is not the strongest of the species that survives, nor the most intelligent, but the one most responsive to change."

Charles Darwin

To paraphrase John Donne, "no business is an island". Any business is part of a complex ecosystem that includes suppliers, customers, partners, and competitors. A successful business is able to leverage its connections within the ecosystem to its advantage.

This article provides an overview of business ecosystems and how they provide opportunities for creative entrepreneurs to foster economic development and wealth creation.

Business Ecosystems

The concept of business ecosystems was introduced by James F. Moore in 1993 (http://tinyurl.com/nupepg). Moore defines a business ecosystem as: "An economic community supported by a foundation of interacting organizations and individuals--the organisms of the business world. This economic community produces goods and services of value to customers, who are themselves members of the ecosystem. The member organizations also include suppliers, lead producers, competitors, and other stakeholders. Over time, they co-evolve their capabilities and roles, and tend to align themselves with the directions set by one or more central companies. Those companies holding leadership roles may change over time, but the function of ecosystem leader is valued by the community because it enables members to move toward shared visions to align their investments and to find mutually supportive roles."

In Business Ecosystems and the View from the Firm, The Antitrust Bulletin (http://tinyurl.com/5j7jux), Moore provides a summary of his current thinking

on business ecosystems.

Today, "ecosystem leaders" are generally referred to as "keystone organizations". Keystone organizations can be large or small, complex or simple, and include not-for-profit or commercial for-profit organizations. Commercially oriented keystone organizations are the most dominant and most successful in terms of economic value created as a whole and for ecosystem members. Examples of commercial keystone organizations include large companies such as eBay, Google and Apple. Not-for-profit keystone organizations are less common and are emergent. Examples of not-for-profit keystone organizations include the Eclipse Foundation (http://eclipse.org), Joomla (http://joomla.org), Drupal (http://drupal.org), the Mozilla Foundation (http://mozilla.org/foundation), Apache Software Foundation (http://apache.org) and the Open Group (http://opengroup.org).

A keystone organization may evolve organically from a social entrepreneurship activity as did Apache. It may emerge as a spin-off from a commercial entity such as Eclipse. Or, it may be developed explicitly by a commercial operation such as Google.

Successful keystone organizations flourish because they:

- lead the development, operation and distribution of assets that ecosystem members use to build or deliver products and services

- link customers to suppliers through branding and community

- establish trust relationships among ecosystem members through endorsement, certification, and references

• provide a trusted financial transaction channel, such as a sales channel, between ecosystem consumers and members

• do not compete with ecosystem members

• provide a vendor-neutral, equal footing environment for ecosystem members which use the keystone organization's assets

It is important to note that the scope of "vendor-neutral" varies widely in terms of the areas of the ecosystem that are vendor-neutral, and the ability of the ecosystem members to influence the keystone. In general, not-for-profit keystone organizations offer the highest levels of influence to ecosystem members.

Different types of keystone organizations include:

Large Commercial: such as Microsoft, eBay, and Google. The ability for ecosystem members to influence the keystone is low.

Small Commercial: such as 99 Designs (http://99designs.com), oDesk (http://odesk.com), and Just Parts (http://www.justparts.com). The ability for ecosystem members to influence the keystone is low to medium.

Not-for-Profit Voluntary Donations: such as Joomla, Drupal, and Apache. The ability for ecosystem members to influence the keystone is low to high.

Not-for-Profit Supplier Memberships: such as Eclipse. The ability for ecosystem members to influence the keystone is medium for non-strategic members and high for strategic members.

Not-for-Profit Customer Memberships: such as Lead to Win (http://www.leadtowin.ca). The ability for ecosystem members to influence the keystone is high.

The increasing adoption of business ecosystems as a viable business model presents new opportunities for entrepreneurs. Specific examples of how money is made and examples of some business ecosystem keystone organizations are provided below. Advantages and opportunities for the entrepreneur are also provided.

How Is Money Made in a Business Ecosystem?

Ecosystem members make money in the traditional manner: they sell products or services to customers. The business operational model is non-traditional in regard to how the ecosystem member engages with other members of the ecosystem. In an ecosystem, a member competes and collaborates at the same time. The ecosystem member may compete with other ecosystem members and with other ecosystems. Significantly, the ecosystem member also must collaborate with the ecosystem keystone organization and other ecosystem members relative to the development and health of the keystone and its assets.

Keystone organizations need money to operate and sustain their functions. The nature of how the keystone organization makes money depends upon whether it is a not-for-profit or a for-profit commercial business. A not-for-profit keystone organization typically makes its money through the following means:

• selling memberships

• selling consulting services

• selling documentation and books related to the keystone's assets

- accelerating feature developments on the keystone's assets in return for cash

- selling support for the keystone's assets

- selling advertising to associated websites and printed publications

- selling t-shirts and other items with the keystone's logo or tag-line

- soliciting donations from ecosystem suppliers and consumers

- running conferences and symposiums

- selling company/product listing services for ecosystem members

- selling training services or courses related to the keystone's assets

- selling certifications for products which use the keystone's assets

- selling infrastructure services which the ecosystem's assets use, such as web services

- selling sponsorships to commercial organizations in return for access to ecosystem members through offering of meetings or special offers and discounts from commercial businesses to its members

- government grants

For-profit keystone organizations may make money from any of the above, but may also include some or all of the following as key sources of revenue:

- sales channel and fees from associated transactions between consumers and suppliers of the channel such as seen with the Apple Apps Store (http://apple.com/iphone/features/appstore.html)

- selling products that are complimentary to the assets that the ecosystem is based on and which are not competing directly with the ecosystem members

Example Business Ecosystem Keystone Organizations

Some examples of keystone organizations which an entrepreneur could participate in today include:

1. Apple Apps Store: allows individuals to sell applications to Apple iPhone phone users, handles delivery and payment, payment is via iTunes accounts.

2. Google Android Market (http://www.android.com/market): allows individuals to sell applications to Android mobile phone users, handles delivery and payment using Paypal accounts.

3. Amazon Webstore (http://webstore.amazon.com): allows individuals to sell their products online, providing access to Amazon shoppers and Amazon store tools, handles payments using Amazon accounts.

4. 99Designs: connects graphics designers with customers.

5. oDesk: connects professional services teams or individuals with customers and provides an environment to manage the transaction and working relationship between professionals and customers.

6. Shutterstock (http://www.shutterstock.com): connects photographic and graphic designers with customers.

7. Innovation Exchange (http://innovationexchange.com): companies and individuals can post challenges and cash, suppliers post responses.

8. Mechanical Turk (http://mturk.com): people post questions and tasks, suppliers post answers or accept tasks.

9. Cafepress (http://cafepress.com): individuals and companies generate graphic content, Cafepress puts the graphics onto physical products such as mugs and shirts, and handles fulfillment.

10. BookSurge (http://booksurge.com): allows individuals to self publish eBooks via Amazon and their Kindle eBook reader.

11. uTest (http://utest.com): connects testing professionals with customers.

12. Crowd Spring (http://www.crowd spring.com): similar to 99Designs.

13. Lulu (http://lulu.com): allows individuals to self publish books.

14. Beta Test (http://ibetatest.com): connects testers with software publishers.

15. Eclipse Foundation: links Eclipse software consumers with suppliers who build on top of the Eclipse open source platform.

16. Just Parts: links consumers of auto parts with suppliers.

17. Top Coder (http://topcoder.com): links software designers with companies who respond to contest proposals.

18. Audio Life (http://audiolife.com): similar to Cafepress but oriented towards music artists who can produce artist related graphics, which Audio Life will then manufacture on physical products and ship to customers.

The following sections compare a commercial and a not-for-profit oriented keystone organization by their keystone characteristics.

99 Designs: Commercially Oriented Keystone Organization

99 Designs is an example of a commercially oriented niche ecosystem keystone. 99 Designs links graphics design suppliers to graphics customers on a global basis. The company itself is a startup based in Australia. 99 Designs receives operating revenue from the transaction processing fees of purchases made between customers and graphics designers who participate as ecosystem members.

The keystone characteristics of 99 Designs include:

Assets to build or deliver products and services: the keystone provides an online platform which allows: i) customers to post requirements; ii) suppliers to submit and compete in contests to win the business; and iii) interaction with graphics designers.

Links ecosystem customers to ecosystem suppliers: through marketing to attract customers to the website. It aims to attract and support a large and talented pool of independent professional and aspiring professional graphics artists.

Establishes trust relationships among ecosystem members: the keystone provides terms of use for both customers and suppliers and provides a single-point of contact for customer service. It develops the platform and offers to match feedback from customers and suppliers.

Provides a trusted financial transaction channel between ecosystem consumers and members: through trusted financial transactions between customer and supplier. The keystone offers arbitration and escrow services.

Do not compete with ecosystem suppliers: by not offering competitive graphics

design services. The keystone makes money on the transaction fees and only if the ecosystem participants make money.

Provides a vendor-neutral environment for ecosystem suppliers which use the keystone organization assets: this keystone is graphics-designer neutral.

99 Designs changes the whole cost structure for consumers of graphic art. Traditionally, the preparation of a few logo proposals can take weeks to be prepared and cost thousands of dollars. Using 99 Designs, a corporate logo can cost as little as $200, with multiple high-quality proposals to choose from in less than a week.

Eclipse Foundation: Not-for-Profit Keystone Organization

Eclipse is an example of a not-for-profit keystone organization. Eclipse was a spin-out from IBM and is funded by membership fees, sponsorships and conference fees. Eclipse is headquartered in Canada. Eclipse is currently one of the few examples of a non-for-profit paid-membership supported keystone organization. Its keystone characteristics include:

Assets to build or deliver products and services: this keystone provides a packaged software product which allows: i) suppliers to build commercial applications on top of software development tools; ii) manages the software repository; and iii) controls the content and release cycle as a service to its members.

Links ecosystem customers to ecosystem suppliers: the keystone advertises to attract customers to the website and provides regular speaker engagements in the industry. Eclipse facilitates members interacting to support the development and roadmap of the base platform.

Establishes trust relationships among ecosystem members: Eclipse has a trust relationship with ecosystem members due to its strong backing from IBM and other commercial interests. Over 40% of the organization's budget is provided by IBM.

Provides a trusted financial transaction channel between ecosystem consumers and members: Eclipse does not provide any financial transaction services. All transactions between customers and suppliers are handled independently by the customer and supplier.

Do not compete with ecosystem suppliers: Eclipse manages the roadmap of the product platform and features are contributed by Eclipse and ecosystem members. Eclipse manages the product release cycle and testing. Eclipse does not sell any software products.

Provides a vendor-neutral environment for ecosystem suppliers which use the keystone organization assets: anyone can develop and sell products based on the Eclipse software platform.

Practical Advantages for an Entrepreneur

For an entrepreneur who chooses to build a business in an existing business ecosystem, participating as a member of an ecosystem may offer the following advantages:

1. Market entry barrier reduction: joining an existing ecosystem can significantly reduce the technology barriers to enter a market, which in turn reduces the time to money, startup costs and ongoing operations costs.

2. Access to customers: ecosystems provide ready access to a well-defined, often international, base of customers. Access to customers is often one of the most

difficult challenges for a startup to overcome and achieving access to customers can be one of the most expensive operational costs at the early stage of development as the revenue is just starting to ramp.

3. Operations cost reduction: ecosystems provide infrastructure services that reduce operations and startup costs, allowing the entrepreneur to avoid spending time on non-value activities such as information technology, process and technology.

4. Elimination of regional limitations: or local barriers related to access to talent, which no longer restricts a particular business operation to a large population center. The forming and operating of the business can now be location-independent.

For an entrepreneur who chooses to create a new business ecosystem and associated keystone organization, the business ecosystem model offers the following advantages:

1. Makes niche markets viable: keystone organizations can leverage niches by allowing members to make more money than they might as independents due to lack of reach or lack of community.

2. Leverages international disparities: a business ecosystem can allow widely differing costs of labour around the world to be harnessed, which can undermine the economics of incumbent providers.

3. Makes scarce skills abundant: ecosystems can harness under-employed experts and aspiring professionals for a wide variety of products and services.

4. Collaborative communities: help redefine the keystone organization assets to widen its value to member companies; communities can also help develop and

sustain the assets to reduce operations costs.

All of these factors make the business ecosystem model well suited to entrepreneurial businesses.

Brian Hurley is an entrepreneurial leader with over 24 years of experience in building strong teams, innovative products and international businesses. Brian is currently CEO of Purple Forge ([http://purple forge.com](http://purpleforge.com)) which he founded in 2008. He founded Liquid Computing in 2003 and as its CEO raised over $44M in venture financing, built a world-class team, delivered an award winning product to market and won initial sales. Brian has built and led numerous successful business teams at Nortel, Bell-Northern Research and Microtel Pacific Research. Brian is the best-selling author of "A Small Business Guide to Doing Big Business on the Internet". He is an active member of the local tech community and is a member of the OCRI Board of Directors and the Young Presidents Organization. Brian graduated from Carleton University with a Bachelor of Engineering.

Recommended Resources

Business Ecosystems: A New Form of Organizing Creative Individuals Worldwide
http://www.carleton.ca/tim/events/2009/Ecosystems_Feb12_TO_FOCUS.pdf

A Practitioners Guide to Ecosystem Development
http://www.slideshare.net/brianhurley/081015-eclipse-ecosystems-webinar

Leveraging the Eclipse Web Properties
http://www.eclipse.org/membership/special_programs/ECLIPSE_WEB.pdf

"To succeed, companies need to find ways to use outside innovations and to become part of a distributed fabric of innovation through a combination of licensing and well-chosen gifts...This is what open source is all about: harnessing engines of innovation in software."

Innovation Happens Elsewhere
http://tinyurl.com/m6wrxe

"How do you make money with free software?" was a very common question just a few years ago. Today, that question has evolved into "What are successful business strategies that can be implemented on top of free software?" To properly answer this question, it is important to distinguish between the legal, procedural and business model aspects of free/libre and open source software (F/LOSS) and how those aspects interact. For example, the licensing aspect influences the development strategy, the kind of development community that can be created around a project, and the potential business models that can provide a monetization strategy for a company that is interested in adopting an open source project as part of the internal company strategy.

This article provides the most recent results from the FLOSSMETRICS (http://flossmetrics.org) project and its recent survey of the business model of more than 200 open source companies.

Introduction

In order to develop business strategies, it is necessary to have a clear understanding of the different aspects that you seek to address. Popular ambiguous use of some terms for fundamentally different concepts and issues makes clarity more difficult. For example, "open source" can be used to refer to a software model, a development model, or a business model.

These three models are orthogonal, like the three axes of the three-dimensional coordinate system. Their respective differentiators are control (software model), collaboration (development model), and revenue (business model).

The software model axis is the one that is discussed most often. There is proprietary software, for which the vendor retains full control over the software and the user receives limited usage permission through a license which is granted according to certain conditions. There is free software which provides the user with unprecedented control over the software through an ex-ante grant of irrevocable and universal rights to use, study, modify and distribute the software.

The development model axis describes the barrier to collaboration, ranging from projects that are developed by a single person or vendor to projects that allow extensive global collaboration. Collaboration is independent from the software model. There is proprietary software that allows for far-reaching collaboration, such as SAP with its partnership program. There are free software projects that are developed by a single person or company with little or no outside input.

The business model axis describes what kind of revenue model was chosen for the software. Options on this axis include training, services, integration, custom development, subscription models, commercial off the shelf (COTS, http://en.wikipedia.org/wiki/Commercial_off-the-shelf), and software as a service (SaaS, http://en.wikipedia.org/wiki/Software_as_a_Service).

These three axes open the space in which any software project and any product of any company can freely position itself. That is not to say that all of these combinations will be successful.

A revenue model based on lock-in strategies with rapid paid upgrade cycles is unlikely to work with free software as the underlying software model. This approach typically occurs on top of proprietary software for which the business model mandates a completed financial transaction as one of the conditions to grant a license.

The overlap of possible business models on top of different software models is much larger than usually understood. The free software model makes it generally impossible to attach conditions to the granting of a license, including the condition of a financial transaction. But it is possible to implement very similar revenue streams in the business model through contractual constructions, trademarks, or certification.

Each of these axes warrants individual consideration and careful planning for the goals of the project. If the goal is to work with competitors on a non-differentiating component in order to achieve independence from a potential monopolistic supplier, it would seem appropriate to focus on collaboration and choose a software model that includes a strong copyleft licence. The business model could potentially be neglected in this case, as the expected return on investment comes in the form of strategic independence benefits and lower licence costs.

In another case, a company might choose a collaborative community development model on top of a strong copyleft licence, with a revenue model based on enterprise-ready releases that are audited for maturity, stability and security by the company for its customers.

The number of possible combinations is almost endless, and the choices made will determine the individual character

and competitive strengths and weaknesses of each company. Thinking clearly about these parameters is key to a successful business strategy.

Strategic Use of Free Software vs. Free Software Companies

According to Gartner, usage of free software will reach 100% by November 2009 (http://www.gartner.com/it/page.jsp?id=801412). That makes usage of free software a poor criterion for what makes a free software company. Contribution to free software projects seems a slightly better choice, but as many free software projects have adopted a collaborative development model in which the users themselves drive development, that label would then also apply to companies that aren't information technology (IT) companies.

IT companies are among the most intensive users of software and will often find themselves as part of a larger stack or environment of applications. Being part of that stack, their use of software not only refers to the desktops and servers used by the company's employees, but also to the platform on top of which the company's software or solution is provided.

Maintaining proprietary custom platforms for a solution is inefficient and expensive, and dependence upon other proprietary companies for the platform is dangerous. In response, large proprietary enterprises have begun to phase out their proprietary platforms and are moving towards free software in order to leverage the strategic advantages provided by this software model for their own use of software on the platform level. These companies will often interact well with the projects they depend upon, contribute to them, and foster their growth as a way to develop strategic independence as a user of software.

These enterprises are proprietary since where they are not primarily users of software but suppliers to their downstream customers, their software model is proprietary, withholding from its customers the same strategic benefits of free software that the company is using to improve its own competitiveness.

From a customer perspective, that solution becomes part of the platform on which the company's differentiating activities are based. This is an inefficient, expensive and a dangerous strategy.

Assuming a market perspective, it represents an inefficiency that provides business opportunity for other companies to provide customers with a stack that is free software entirely. It is strategically and economically sane for customers to prefer those providers over proprietary ones for the very same reasons that their proprietary suppliers have chosen free software platforms.

Strategically speaking, any company that includes proprietary software model components in its revenue model should be aware that its revenue flow largely depends upon a lack of free software alternatives. Growth of the market, as well as supernatural profits generated through the proprietary model, both serve to attract other companies that will make proprietary models unsustainable. When that moment comes, the company can either move its revenue model to a different market or transform its revenue source to work on top of a software model that is entirely free software.

Usage of and contribution to free software are not differentiators for what makes a free software company. We believe that the critical differentiator is provision of free software downstream to customers.

Free software companies are companies that have adopted business models in which the revenue streams are not tied to proprietary software model licensing conditions.

**Economic Incentives of Free Software Adoption**

The broad participation of companies and public authorities in the open source software (OSS) market is strictly related to an economic advantage. In most areas, the use of free software brings a substantial economic advantage, thanks to the shared development and maintenance costs. Researchers like Gosh estimate an average research and development cost reduction of 36% (http://ec.europa.eu/enterprise/ict/policy/doc/2006-11-20-flossimpact.pdf). The large share of internal free software deployments explains why some of the economic benefits are not perceived directly in the business service market. This can be seen in Figure 1, from Gartner Group's 2006 publication Open Source Going Mainstream.

The diagram shows the relative percentage of OSS and OSS-related services in the context of the overall software market. It shows the compound aggregate growth rate (CAGR) for both OSS and non-OSS. The higher growth rate of open source is the reason for the great increase in market share for OSS. Gartner predicts that within 2010, 25% of the overall software market will be free software-based, with roughly 12% internal to companies and administrations that adopt free software. The remaining market, still substantial, is based on several different business models that monetize the software using different strategies.

We present the results from the February 2009 update of the FLOSSMETRICS study on free software-based business models.

Figure 1: Prevalence of OSS
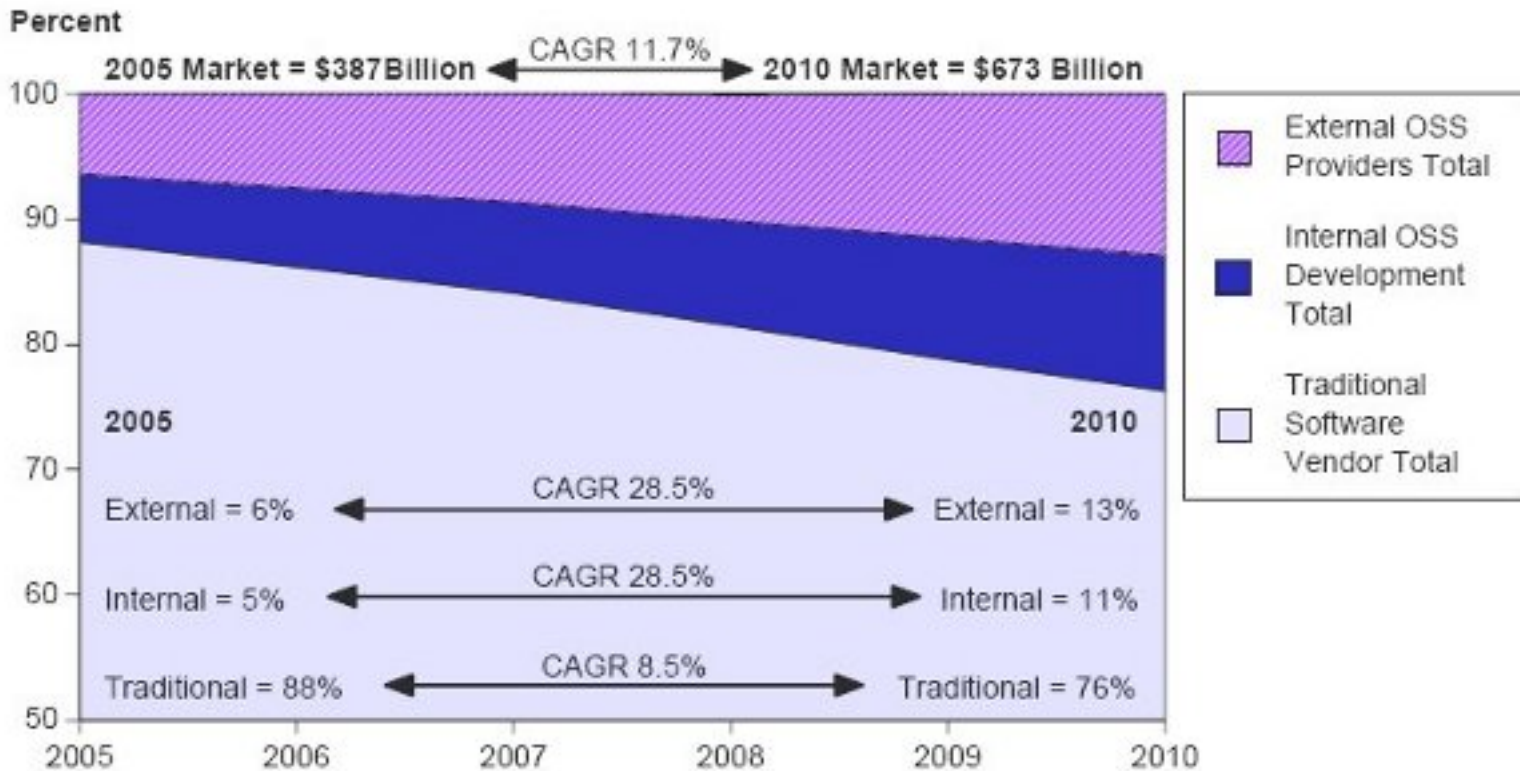
After an analysis of more than 200 companies, the main models identified in the market are:

Dual licensing: the same software code distributed under the GPL and a proprietary license. This model is mainly used by producers of developer-oriented tools and software. It succeeds thanks to the strong coupling clause of the GPL (http://opensource.org/licenses/gpl-2.0.php) that requires derivative works or directly linked software to be covered under the same license. Companies not willing to release their own software under the GPL can obtain a proprietary license that provides an exemption from the distribution conditions of the GPL. The downside of dual licensing is that external contributors must accept the same licensing regime. This has been shown to reduce the volume of external contributions, which are limited mainly to bug fixes and small additions.

Open core: this model distinguishes between free software and a proprietary version which is based on the free software with the addition of proprietary plug-ins. Most companies following such a model adopt the Mozilla Public License (http://www.opensource.org/licenses/mozilla1.1.php) which allows explicitly this form of intermixing. This model allows for greater participation from external contributors without the same requirements for copyright consolidation as in dual licensing. The model has the intrinsic downside that the free software product must be valuable to be attractive to users, yet at the same time it should not cannibalise the proprietary product. This balance is difficult to achieve and maintain over time. If the software is of large interest, developers may try to complete the missing functionality in free software, thus reducing the attractiveness of the proprietary version and potentially giving rise to a full free software competitor.

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Product specialists: companies that create or maintain a specific software project and use a free software license to distribute it. The main revenues are provided from services like training and consulting (http://eu.conecta.it/paper.pdf). This model leverages the common assumption that the most knowledgeable experts on a software product are its developers. Developers can provide services with a limited marketing effort by leveraging the free redistribution of the code. The downside of the model is that there is a limited barrier of entry for potential competitors, as the only investment needed is the acquisition of specific skills and expertise on the software.

Platform providers: companies that provide selection, support, integration and services on a set of projects, collectively forming a tested and verified platform. GNU/Linux distributions can be classified as platforms. These distributions are licensed for a significant part under free software licenses to maximize external contributions and leverage copyright protection to prevent outright copying. These licenses do allow cloning, the removal of copyrighted material like logos and trademark to create a new product. The main value proposition comes in the form of guaranteed quality, stability and reliability, and the certainty of support for business critical applications.

Selection/consulting companies: companies in this class are not strictly developers, but provide consulting and selection/evaluation services on a wide range of projects, in a way that is close to the analyst role. These companies tend to have very limited impact on free software communities as the evaluation results and the evaluation process are usually a proprietary asset.

Aggregate support providers: companies that provide a one-stop support on several separate free software products, usually by directly employing developers or forwarding support requests to second-stage product specialists.

Legal certification and consulting: these companies do not provide any specific code activity, but provide support in checking license compliance, sometimes also providing coverage and insurance for legal attacks. Some companies employ tools to verify that the code is not improperly reused across company boundaries.

Training and documentation: companies that offer courses, on-line and physical training, additional documentation or manuals. This is usually offered as part of a support contract, but recently several large scale training center networks have started offering OSS specific courses.

Research and development cost sharing: a company or organization may need a new or improved version of a software package and will fund a consultant or software manufacturer to do the work. Later on, the resulting software is redistributed as open source to take advantage of the large pool of skilled developers who can debug and improve it. A good example is the Maemo (http://maemo.org) platform, used by Nokia in its mobile Internet devices. Within Maemo, only 7.5% of the code is proprietary, with a reduction in costs estimated at 228M$ and a reduction in time-to market of one year. Another example is the Eclipse ecosystem (http://eclipse.org), an integrated development environment (IDE) originally released as free software by IBM and later managed by the Eclipse Foundation.

Many companies adopted Eclipse as a basis for their own product, and thus reduced the overall cost of creating a software product that provides developer-oriented functionalities. A large number of companies, universities and individuals participate in the Eclipse ecosystem (http://www.flickr.com/photos/92289898@N00/3500328410). As recently measured (http://dash.eclipse.org/dash/commits/web-app/commit-count-loc.php), IBM committers constitute around 32% of the Eclipse project and 43% of commits, with individuals accounting for 15% of commits and 29% of committers, while a large number of companies like Oracle, Borland, and Actuate participate with percentages ranging from 1% to 7%. These results, similar to those obtained from analysis of the Linux kernel, show that a healthy and large ecosystem reduces engineering costs significantly. This is the largest actual "market" for free software, as demonstrated by the fact that 56.2% of developers are using at least some free software within their own code (http://www.evansdata.com/press/viewRelease.php?pressID=91).

Indirect revenues: a company may decide to fund free software projects if those projects can create a significant revenue source for related products which are not directly connected with source code or software. One of the most common cases is the software drivers needed to run hardware. Many hardware manufacturers distribute software drivers at no charge and some manufacturers distribute some of their drivers under a free software license.

Loss-leader: is a traditional commercial model, common also outside of the world of software. In this model, effort is invested in a free software project to create or extend another market under different conditions.

For example, hardware vendors invest in the development of software drivers for free software operating systems like GNU/Linux to extend the market of the hardware itself. Other ancillary models include: i) the Mozilla Foundation (http://mozilla.org/foundation), which obtains a non-trivial amount of money from a search engine partnership with Google, estimated at 72M$ in 2006; and ii) SourceForge/OSTG (http://sourceforge.com) which receives the majority of its revenues from ecommerce sales of the affiliate ThinkGeek (http://thinkgeek.com) site.

We found, confirming previous research from the 451 Group, that at the moment there is no significant model, with companies more or less adopting and changing models depending on the specific market or shifting costs (http://the451group.com/caos/caos_detail.php?icid=694). During 2008, a large number of companies shifted from an open core model to a pure product specialist model to leverage the external community of contributors.

According to the collected data, among free software companies the fully free software approach is still prevalent, followed by the open core and the dual licensing models. Figure 2 shows the prevalence ratio of the models from our research data.

Some companies have more than one principle model, and are counted twice. Most dual licensing companies are also selling support services, and are marked as both. Product specialists are counted only when there is a demonstrable participation of the company into the project as a main committer. Otherwise, the number of specialists would be much greater as some projects are the center of commercial support from many companies. OpenBravo (http://openbravo.com) and Zope (http://zope.org) are good examples.

Figure 2: Prevalence of OSS Market Models
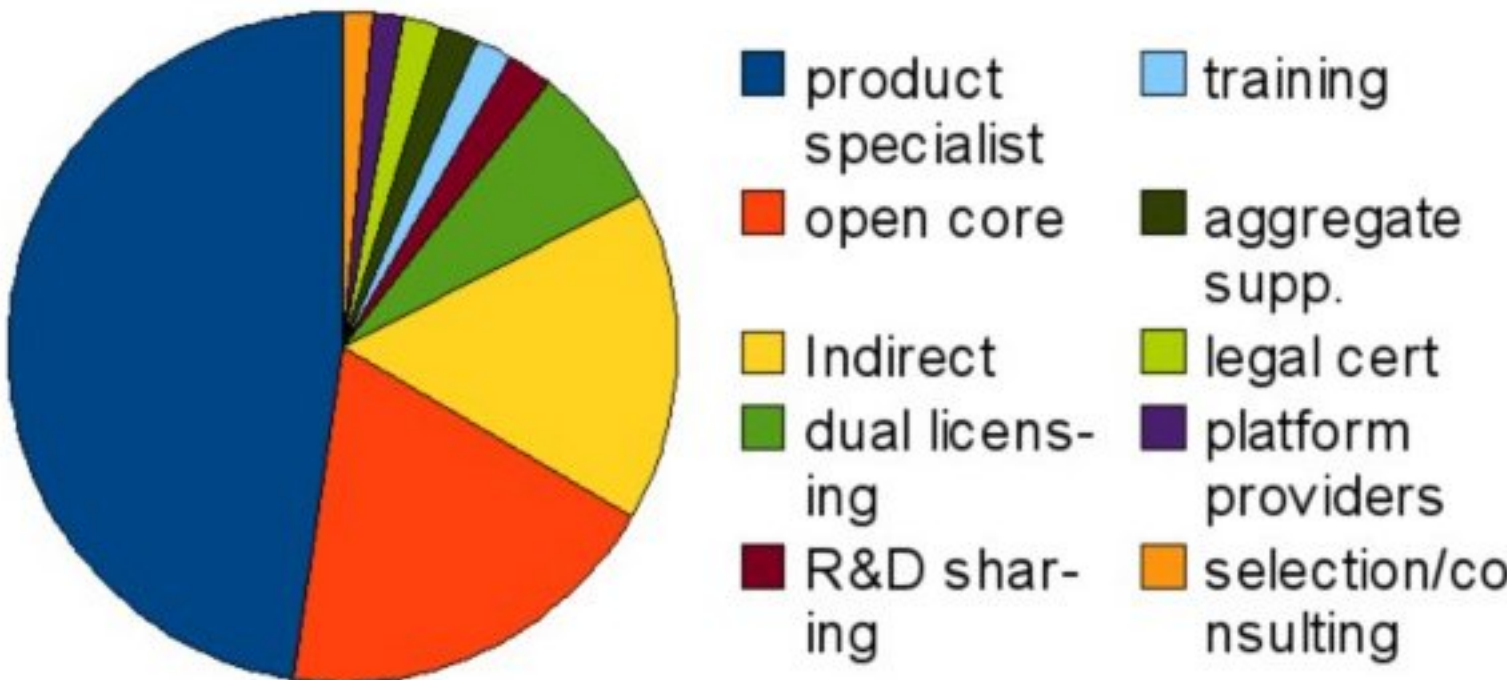
Another relevant consideration is the fact that platform providers, while limited in number, tend to have a much larger revenue rate than both specialists or open core companies.

Many researchers are trying to identify whether there is a more efficient model among those surveyed. We found that the most probable future outcome will be a continuous shift across models. We foresee a long-term consolidation of development consortia, like Symbian (http://symbian.org) and Eclipse, that provide strong legal infrastructure and development advantages, and product specialists that provide vertical offerings for specific markets. This contrasts with the view that mixed models provide an inherent advantage. Matthew Aslett of the 451 Group, one of the leading researchers in free software business models wrote: "The Open-Core approach is mostly (though not exclusively) used by vendors that dominate their own development communities. While this provides benefits in terms of controlling the

direction of development and benefiting from the open source distribution model there are also risks involved with promoting and managing community development--or not. In fact, many of these companies employ the majority of the developers on the project, so they are actually missing out on many of the benefits of the open source development model (more eyeballs, lower costs etc)" (http://blogs.the451group.com/opensource/2009/02/23/on-open-source-business-strategies-again).

Additionally, by providing revenue-generating features on top of open source code, open core vendors are attempting to both disrupt their segment and profit from that disruption. It is probably easier in the long-term to generate profit from adjacent proprietary products than it is to generate profit from proprietary features deployed on top of the commoditized product.

While open core is the commercial open source strategy of the day and is effective in building the revenue growth required to fuel an exit strategy, we have doubts as to whether it is sustainable in the long-term.

The fact that free software is a non-rival good facilitates cooperation between companies, both to increase the geographic base and to engage large scale contracts that may require multiple competencies. Three main collaboration strategies were identified among smaller companies: i) geographical, with the same product or service in different geographical areas; ii) vertical among products; and iii) horizontal among activities. Geographic cooperation is simpler, and tends to be mainly service-based. An example is the Zope Europe Association (http://zeapartners.org) that unites many service providers centered on specific Zope and Plone (http://www.plone.org) expertise. Vertical cooperation is done by companies that perform an integrated set of activities on one or more packages. Multiple vendors with overlapping products can collaborate on a single offer, such as an operating system, that may form a more interesting or complete offer for the selected customer segment.

Table 1 (http://osbr.ca/ojs/august09/table.png) summarizes our findings .

Summary

OSS has demonstrated its role in the current IT economy, with more companies adopting OSS as an addition or as the basis for their business models. The success of those endeavours is dependent on the appropriateness of the model used to monetize the open source asset. This article tried to present a coherent summary of research activities in the area of business models and the advantages and disadvantages of the current models.

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

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

Sustainability of FLOSS-based Business Models
http://www.cospa-project.org/Assets/resources/daffara-OSWC2.pdf

New Economic Models, New Software Industry Economy
http://opensource.mit.edu/papers/fichier_rapporte.pdf

Open Source Software and the "Private-Collective" Innovation Model
http://opensource.mit.edu/papers/hippelkrogh.pdf

ACCELERATING SUCCESSFUL ENTREPRENEURSHIP

"Sometimes if you want to see a change for the better, you have to take things into your own hands."

Clint Eastwood

Technical entrepreneurship is often associated with innovation, research and invention. However, the motivation for entrepreneurship is the creation of wealth and commercialization of an idea.

Wide scale disruptions in the economy, consolidations in industry, and the shift in value towards applications and applied technology create new challenges for the entrepreneur and the need for new business approaches to commercialization. Business ecosystems can effectively address these challenges. This article describes Coral CEA (http://www.coralcea.ca), the keystone of a worldwide ecosystem anchored around the commercialization of communication enabled applications. The vision of Coral CEA is to create new companies and knowledge jobs by implementing new commercialization models and driving massive innovation that is linked to commercialization.

Accelerating Successful Technical Entrepreneurship

Investment is usually focused on finding and incubating breakthrough ideas. However, the entrepreneur is only successful if the idea is brought to market successfully. The technical entrepreneur often lacks the required skills, relationships or support required to be successful. Selected regions around the world, such as the Silicon Valley, Boston, and Tel Aviv, have superior support structures that have been developed over time. These structures can fill value chain gaps and innovate in go-to-market, business models and other non-technical disciplines.

The difficulty of successfully commercializing innovation can be linked to the imbalance in focus and support across the whole business life cycle. In Canada, government investment in research approaches $9 billion dollars per year, which should result in at least a 10x return on investment. According to the study The Means to Compete: Benchmarking IT Industry Competitiveness, our current technology transfer and commercialization processes are not delivering (http://tinyurl.com/l2r3ma). New approaches to commercialization more suited to the dynamic knowledge based economy are needed, such as a business ecosystem commercialization model which, through collaboration, enables companies to leverage each others' respective strengths towards creating globally competitive capabilities.

New approaches are especially important for companies in small markets, where the definition of small now includes multi-billion dollar companies that have not survived industry consolidation. This is driving the need for new, symbiotic, collaborative business models. Companies that are in dominator-controlled models of the past find it difficult to adapt, making them highly vulnerable to competition.

There is also a disruptive shift in the economy away from a familiar industrial era economy, based on manufacturing, to a knowledge-based, creative economy that is more dependent on talent and innovation to create value. In the new economy, more revenue may come from information about data than from the device that collect the data. This drives the need for innovation in business models and technology, the development of new skills, and a move to include the application of technology to business problems rather than just the creation of new products. Figure 1 summarizes these problems and their solutions.

A business ecosystem, modeled on a

Figure 1: The Shift in Innovation

Problem	Solution
• Innovation not leading to commercialization success	• New commercialization process suited for dynamic knowledge based environment (e.g. LTW)
• Companies in Canada losing ability to compete	• Canadian companies (including SME's) advantaged in production of CEA offers • Ability to harness global innovation to follow Canadian priorities
• Shift in value to applied ICT technology 　• Expensive to access 　• Productivity derived from effectiveness of business processes	• Accelerate adoption and hence productivity of key Canadian sectors • Coordination and focusing of key elements of commercialization (e.g., research, incubators)

natural ecosystem, creates an economic community which facilitates collaboration. It magnifies the contribution of any of its members, enabling them to deliver collective value beyond anything they might be able to do alone. Over time, the individuals and organizations in the ecosystem find mutually supportive roles, align their investments, and move in the directions set by leading companies. An implementation of this model is underway in Canada in an initiative called Coral CEA.

Coral CEA is a non-profit company established to build knowledge-based companies and jobs, initially in Canada. It does this by creating and anchoring a business ecosystem that provides strategic value to its members. Coral CEA uses a unique, world class technical platform (called a sandbox) to provide advanced Information and Communication Technology (ICT) building blocks to its members, enabling them to collaborate to deliver competitive solutions that enhance the efficiency and effectiveness of virtually any business process.

Coral CEA has been established as the keystone of a worldwide ecosystem anchored around the commercialization of communications enabled applications (CEA, http://en.wikipedia.org/wiki/Communications_enabled_application), a new, large growth opportunity for ICT. The keystone's role is to provide a focal point for the overall ecosystem and enable it to adapt to external changes. The keystone facilitates:

• overall output and productivity of the ecosystem: the keystone monitors overall health and takes action to ensure that the system is functioning efficiently

• resilience and stability of the ecosystem: the keystone monitors and stimulates members to remain healthy, and, in the case of the loss of a member, stimulates others to assume the role of the missing member

• stimulation of innovation and creation of new members required to provide on-going value and growth to ecosystem members

Coral CEA is implementing the business ecosystem approach to the commercialization of CEA . This creates a strategic opportunity to lower the barriers for companies to bring differentiated solutions that address significant global

problems more effectively. Coral CEA provides the means for companies and researchers to solve significant problems worldwide, such as health, environment, energy, safety, and quality of life, in the same way that the Internet enables e-commerce, roads stimulate economic growth, and tools allow carpenters to build houses.

There are five founders of Coral CEA, each bringing a unique capability to the ecosystem. IBM and Nortel provide a differentiated capability to members, providing virtualized access to advanced ICT. Eclipse brings the knowledge and processes for building and operating a successful global ecosystem. Carleton University provides expertise on commercialization, new tools, and the ability to develop skills to leverage both CEA and ecosystems. The Information Technology Association of Canada (ITAC, http://itac.ca) represents the ICT industry and brings a national focus. Smaller members that join increase the strength and diversity of the ecosystem, improving its overall health.

Coral CEA supports a large, distributed ecosystem with a high level of supplier diversity across its members and a high level of customer diversity worldwide. Coral CEA's ecosystem approach to commercialization enables small and medium sized ICT companies to incorporate a pull model into their go-to-market strategies.

Building Blocks for a Successful Ecosystem

There is significant support in the industry for startups, ranging from the many incubators, venture capital (VC)-based advisory bodies, and various training from academia, economic development agencies and government programs. These programs add value to the early front-end, but fall short on

addressing the emerging companies' needs as they move through the business life cycle and need to scale. Coral CEA addresses the entire life cycle through the implementation of five main ecosystem components:

1. Knowledge and dissemination: to identify, qualify and launch businesses. This pillar creates a supply of new skills and talent. The Lead to Win (http://leadtowin.ca) initiative, which uses the ecosystem model in its implementation, is one mechanism used to find and develop promising opportunities which lead to company and job creation. Entrepreneurs receive coaching and tangible support in refining their opportunity and de-risking its commercialization.

2. Commercial services: to fill execution gaps and provide a framework for collaboration. This pillar provides the required collaboration framework for members to both provide and secure services from one another and to fill execution gaps. Companies become members and donate high value services to other members, which de-risks opportunity development and results in future business as early stage companies and opportunities mature.

3. Sandbox: to create differentiation and ability to sustain a strategic advantage for its members. This pillar provides out-of-the-box, technical building blocks for members. These are often expensive-to-secure and complex-to-operate ICT services, and beyond the reach of members companies. The technical capabilities of the sandbox provides strategic advantage and speed to market at very low cost for members, helping them to compete more effectively.

4. Business development: to provide a brokering capability between members' needs and capabilities. This pillar raises the profile of the ecosystem, attracting

new members to add to the diversity and strength of the ecosystem. Companies that have pain points can bring them forward and have them addressed by other members looking to supply solutions. Providing members access to the deal flow is one element of this pillar.

5. Lead projects: to fill gaps in the ecosystem and ensure sustained innovation and value. This pillar harnesses the research community and fills technical, business, and process gaps to ensure ongoing value to members. Coral CEA will co-invest with members to fill common gaps in the ecosystem, reducing the overall cost of filling gaps.

By putting in place services and capabilities across the entire business life cycle, companies of any size can benefit from membership in the Coral CEA ecosystem.

The first three pillars of Coral CEA are underway. Lead to Win has engaged more than 100 entrepreneurs and, by the end of July 2009, will have launched more than 80 companies. A number of service providers have emerged to offer diverse services ranging from sales support, telecom services, space, legal and other high value services to members. IBM and Nortel have contributed more than $16M worth of technology to the sandbox which is co-located at Carleton University and in a cloud computing environment.

Communication Enabled Applications

A successful ecosystem must be focused around a dominant design which provides a stable point around which innovation can be harnessed. Our focus is CEA as the next generation of ICT. ICT is historically a strength of Canadian talent and its application improves the effectiveness of nearly all business verticals. People making decisions or providing services are at the heart of virtually all

business processes, and CEA provide new ways to drive overall business productivity.

CEA integrate a set of ICT components to increase the productivity of an organization or improve the quality of its users' experiences. Communication enablement adds real-time networking functionality to an ICT application.

The two key benefits of providing communications capability to ICT applications are:

1. Removing the human latency which exists when: i) making sense of information from many different sources; ii) orchestrating suitable responses to events; and iii) keeping track of actions carried out when responding to information received, such as in emergency response and disaster management systems.

2. Enriching the user experience by enabling them to be part of the creative flow of content and processes. Examples include: i) Joost (http://www.joost.com), a new way to watch more than 15,000 shows in more than 250 television channels; ii) Facebook, a social utility that connects users with a network consisting of people around them; and iii) YouTube, a way to watch and share original videos worldwide through a Web experience.

An intrinsic reliance upon communications technologies to accomplish its objectives distinguishes CEA from other software applications. CEA depend on real-time networking capabilities together with network oriented functions such as location, presence, proximity, and identity. Today, these capabilities require specialized skills and knowledge. Another distinguishing characteristic of a CEA is the implicit assumption that network services will be available as callable services within the framework from which the CEA is constructed. To provide callable

services, today's network services must be made virtual and component-like.

The following three scenarios provide examples of CEA:

1. A seriously injured person arrives at a hospital. An application that can find and communicate with the nearest available and qualified medical personnel, securely delivering patient data together with the nearest available required equipment, may save the person's life, while enhancing the performance to cost ratio of medical personnel and equipment.

2. A key component of a sea-based oil rig has been found to be defective. CEA eliminates the serious delay that occurs between when applications provide information about the defective part and when the right people are found, contacted, and in place to fix it.

3. An industrial customer problem is resolved quickly because a CEA project management application scheduled the earliest possible conference call with all key available stakeholders and delivered all relevant information to them.

CEA enhance the productivity and competitiveness of any business process, and will be widely applied to virtually any vertical or business. Coral CEA ecosystem member companies can:

- reduce pre-sales, go-to-market and development costs

- leverage members to deliver more comprehensive value propositions

- decrease time-to-cash

- strengthen specialization

- increase credibility and brand value

- reduce risk of defining and exploiting opportunities

- strengthen collaboration with other ecosystem members

- harness global innovation into profitable new market offers

Members of Coral CEA co-create value and share costs with other members. They will have access to:

- orchestrator, customer and large company opportunities and deal flows

- state of the art architectures, software modules, and processes to: i) build their own market offers using core services and products with a standard infrastructure environment; ii) co-evolve complementary components, products and solutions; iii) explore and advance technology; and iv) showcase their CEA

- lead projects, commercialization services, and training and educational programs that support a global leadership position in CEA

- research initiatives

Coral CEA Membership

Since Coral CEA is driving an ecosystem-based commercialization approach, there is motivation for several types of members. Small and medium sized businesses join to gain access to the assets that allow them to differentiate their offers, or to fill gaps in some aspect of their commercialization plan.

Large companies join to gain access to massive innovation and to exploit partnering opportunities with these innovators. Suppliers of technology join to contribute their assets to the community and to fill gaps in the capability of Coral CEA. Enterprises join to influence offers,

Figure 2: Types of Coral CEA Members

Member Type	Description
Strategic	Strategic Members are corporate entities that demonstrate significant commitment to leveraging Coral CEA to advance their business. This commitment may take the form of strategically leveraging Coral CEA assets to advance their business, contributing key resources to advance the Coral CEA ecosystem.
Commercial	Commercial Members are corporate entities that consider the assets provided or owned by Coral CEA as an integral part of their corporate and product strategy, and that offer products and services based on, or supported by, such assets. Commercial Members are Coral CEA members that generally wish to actively participate in the development of the Coral CEA ecosystem.
Individual	Individual Members are individuals (that is, not corporate entities) that are significant contributors to Coral CEA projects. Their contribution must be confirmed by the executive director and at least 1 board member.
Associate	Associate members are individuals or corporate entities that wish to participate in and support the ecosystem.
Sponsored	Sponsored Members are individuals or corporate entities that are participating in the Coral CEA's Lead-to-Win Program, are focused on Coral CEA opportunities and are being actively being mentored in the Coral CEA's Lead-to-Win Program in order to develop and growth the member's emerging businesses.

contribute capability and to secure partners to solve their problems.

Current membership classes are summarized in Figure 2.

For more information on membership please visit the Coral CEA website (http://coralcea.net/coral/tiki-index.php?page=Benefits%20of%20Membership).

Summary

Business ecosystems are a new form of commercialization and Coral CEA is implementing this mechanism in Canada. Early results are promising and interest in joining and enhancing the ecosystem is building.

Initial discussions are underway to link to other cities in Canada and potentially to 26 cities across the world.

Peter Carbone is an ICT executive who specializes in ICT strategy and commercialization. He has a track record of creating innovative solutions, strategically managing technology and innovation, successfully launching and running new businesses, and leading business development initiatives. Peter has been engaged as a technical advisor to startups and has served on the board of US-based Alliance for Telecommunications Industry Solutions (ATIS). He is past Chairman of the Information Technology Association of Canada's (ITAC) committee focused on the Global Competitiveness of Canada's Knowledge Economy.

"An entrepreneur tends to bite off a little more than he can chew hoping he'll quickly learn how to chew it."
    Roy Ash, co-founder of Litton Industries

Technology-based ecosystems are everywhere. Consumer Internet-based ecosystems are almost always large scale entities because the Internet has few real boundaries. The center of these ecosystems is often a large company that is a household name and has played a significant role in creating, or at least shaping, the market segment its ecosystem serves. Because of this, Internet ecosystems are often thought of as the exclusive domains of large established companies. In the past that was typically the case, but tech entrepreneurs are now increasingly able to act as the driving force behind the creation of Internet-based ecosystems. Entrepreneurs are moving into the role of ecosystem creation and development, and the established big companies are evolving to a supporting role of ecosystem enabler, investor, and operator. This article will review and contrast the roles of tech entrepreneurs with the roles of large established Internet companies in the creation and development of consumer Internet ecosystems.

The Technical Ecosystem

Merriam-Webster's online dictionary defines an ecosystem as "the complex of a community of organisms and its environment functioning as an ecological unit." Applied to a technology context, an ecosystem matches several well-known business models. A clear example is the wireless communications business. Anchored in the middle are the wireless network operators, providers of the infrastructure behind mobile phone communication and owners of the end-customer relationship. Participating in this ecosystem are handset providers, accessory providers, and third-party application providers.

The wireless network operators benefit from the differentiation and user-appeal provided by the other participants, and the other participants benefit from a large managed channel to the end-user, the consumers of their products. The customer only deals with one interface, hence the applicability of the "functioning as an ecological unit" aspect of the definition of an ecosystem. This highlights a significant point about ecosystems: the center of gravity in the ecosystem is the participant that controls the relationship with the customer's wallet, not necessarily the company with the biggest bottom line.

Business ecosystems have long been under the control of large, well established companies. This is because ecosystems have traditionally required significant resources to develop the multi-component opportunity and to manage all of the moving parts. The remainder of this article will discuss the expanding role of the tech entrepreneur in consumer Internet ecosystems. That role is being expanded by the availability of new applications, services, and processes.

Internet Ecosystems as Fertile Ground for the Entrepreneur

Internet businesses differ from most other tech-based opportunities in a few important ways that make them a natural attraction for startup entrepreneurs:

1. Reaching and educating the target user/customer directly is relatively straightforward and low-cost compared with traditional non-Internet based market development. Blogs and social networks can be used for little or no cost to reach well defined demographics. A $1M online brand-building campaign might cost $20-30M in traditional media advertising to reach the same number of right people.

ComScore's most recent report indicates approximately 307 million registered Facebook users and 123 million registered MySpace users (http://www.computerworld.com/s/article/9134463/Facebook_dethrones_MySpace_in_U.S._popularity_race). These two social networks alone have a population greater than the USA. Easy to place ads can contain a simple and non-intrusive pointer to a company website or directly to a YouTube video commercial explaining what's behind the tag line. Ad content must still be compelling to attract a following, but the cost and distribution barriers are much lower than for any other effective advertising medium.

2. Online sales and distribution channels avoid the costs associated with brick and mortar based channel options. In addition, many third-party services exist to support necessary but non-core aspects of the business from day one. These include hosting and online payment services.

3. The addressable market tends to be large and geographically independent. Even a niche opportunity can translate into a healthy business when applied to an Internet-scale addressable market.

4. Time-to-market speed and responsiveness. One of the most important competitive weapons that the startup company has in its arsenal to combat larger and more established competitors is speed and responsiveness. It's rare for a new company to create a perfect offer right out of the gate. Internet startups have learned to leverage a release-and-iterate development model that plays to the strengths of a small company and is enabled by the near immediate distribution attribute of an Internet-based application or service.

These points are well known advantages of Internet business models, but what about Internet ecosystems? An ecosystem implies a broader offer than a straightforward vertical Internet application or service, which is what startups have typically focused on for reasons of complexity and scale.

Tech entrepreneurs are being supported by new industry developments, both mainstream and just emerging. This makes it more feasible for startups to drive larger and more complex opportunities, including undertakings of large scale ecosystem development.

Three significant developments are:

1. Open source is now mainstream. When discussing open source technologies, Linux desktop and server platforms immediately come to mind, but open source includes an extensive and growing list of important solution elements for the startup to choose from. These include databases, Internet protocol stacks, and a wide range of business and consumer applications. The entrepreneur can select the optimal open source component, customize it with unique value, and make it a differentiable component of a new solution or ecosystem. The customization can occur quickly and with an unbeatable cost model. While many established companies are also getting onboard with the benefits of open source, it is significant that the starting point for the entrepreneur and the established company is now much more of a level playing field. Without open source communities, technical startups would be hostage to commercial platform components, resulting in many failed business models for companies that could have proven to be successful. Would Facebook have reached the scale it has achieved without the availability of open source platforms? Unlikely, because the cost model would have been entirely different.

2. Cloud computing and storage. Internet-based ecosystems require processing and storage in large quantities. Computing and storage used to be one of the largest hurdles for entrepreneurs due to the large amounts of capital needed to pay for servers, disks, power, air conditioning, specialized real estate and people to plan, install, and maintain it all. This is the worst kind of capital expense for an entrepreneur because the infrastructure to support the first wave of deployment has to be in place before the business launches. The recent availability of cloud computing services from the heavyweights in the computing industry, including Amazon's Elastic Compute Cloud (http://aws.amazon.com/ec2) and Simple Storage Service (S3, https://s3.amazonaws.com), has changed all that. Now an entrepreneur can purchase pay-as-you-grow cloud computing and storage services. The entrepreneur's scarce resources can be focused on maintaining value-added applications and managing customer support while infrastructure costs are tied to real customer growth. Cloud computing is not free, and in fact will likely cost more than purchased and self-managed equipment over the long haul. But, in the early days of a new business, cash flow is critical and avoiding up-front expense where possible is a high priority. To an entrepreneur, cloud computing is like the difference between purchasing a new car and leasing it. The initial fears associated with cloud computing, namely reliability, scalability, and security, are abating. Twitter, one of the Internet's fastest growing social networking services and a flagship user of Amazon's EC2 computing and S3 storage services, is showing the world that it works. Without cloud computing, Twitter's growth would almost certainly have been much slower.

3. Crowd sourcing. Crowd sourcing is an emerging form of open sourcing that doesn't refer to software, but to the use of non-employee and non-contracted resources to contribute new components to solution development. People get exposed to a project through blog posts or other online calls and volunteer to contribute. Crowd sourcing of content is the model used by Wikipedia, an online encyclopedia, and YouTube, an amateur video content site. Crowd sourcing for software development is new and is not yet a solution for everyone because it requires project visibility and comes with some unsolved challenges associated with process, legal issues, and quality control. However, crowd sourcing is becoming a tool of startup entrepreneurs, who view it as an extension to bootstrapping. It provides a means of accessing a larger group of resources without initially needing the capital to support a corresponding increase in employee or contractor costs. A recent example of design crowd sourcing is the Netflix Prize competition (http://netflixprize.com), in which Netflix offered a $1,000,000 prize for the best collaborative filtering algorithm that predicts user ratings for films, based on previous ratings, and which improves on Netflix' own algorithm by at least 10%. Netflix must have concluded that the internal cost of improving their predictive rating algorithm would exceed $1,000,000, and crowd sourcing became a prudent business experiment. By focusing on the algorithm, Netflix kept the scope of the project to a manageable challenge.

Everything discussed so far points to the advantages that entrepreneurial startups leverage to create and develop new Internet ecosystems. None of these points is a secret weapon consisting of an exciting new capability.

All are about scale: more platform capability at less cost (open source), more computing resources for less up-front cost (cloud computing), and more human resources for less cost (crowd sourcing). Greater scale enables startups to evolve more quickly beyond vertical applications to ecosystem development.

The same elements that make startups effective at the front end of Internet opportunities create a challenge for the large, well-established ecosystem members. Speed and responsiveness are not characteristics associated with big company culture. Neither is a release-and-iterate development process.

The Role of the Big Company in an Entrepreneurial Ecosystem

If big companies are disadvantaged to lead the charge for new Internet ecosystems, what is their role? The answer can be found in the Microsoft Windows personal computer (PC) ecosystem example. Microsoft, the dominant PC operating system provider, depends on hardware manufacturers and application providers of all shapes and sizes. Microsoft partners with and supports channel partners to ensure that the Windows ecosystem remains strong. The model for Internet ecosystems will be the same. Amazon has its sights on becoming the Windows of cloud computing platform providers and has a good head start. Microsoft recognized the opportunity and responded with their Azure (http://microsoft.com/azure) program. Google, Intel, and others will no doubt be major players. These large concerns will become the platforms, sponsors, and ultimately the operators of Internet ecosystems. Entrepreneurs will be the innovators and the ground-breakers that leverage the services provided by the big companies and by open source and crowd source communities to get new ecosystems off the ground.

Large service and platform providers have the infrastructure and skillsets necessary to operate large-scale hosted platforms. Diverse members result in a symbiotic ecosystem consisting of the entrepreneurial startup driving new business and market development, supported by large and well-established enablers. In this model, the entrepreneurial startups become strategic development tools of large companies.

Ecosystems: An Important Source of Investor Capital

The downturn in the economy has severely constrained the amount of available venture capital, particularly for early stage companies. Dow Jones Private Equity Analyst reports that "the venture capital industry saw a 63% decline in fundraising in the first half of 2009" (http://fis.dowjones.com/PEA/1HUSVCFundraising.html). The emergence of the entrepreneur in a more significant ecosystem role may help with the greatest challenge each entrepreneur faces: raising investment capital. As the entrepreneur becomes a more critical link in the front end of the ecosystem development chain and the larger established companies understand the value of this role, it should become more common for established companies to become investors in their ecosystem partners. This model already exists today with Intel Capital (http://intel.com/capital) as a flagship example, but it will become more prevalent as other sources of venture capital contract. The big infrastructure and platform providers will provide fuel to the ecosystems that drive new revenues. Everybody shares a common goal and everybody wins if the business is successful.

Testing the Theory: A New Entrepreneurial Internet Ecosystem

iPic Innovations (http://ipicinnovations.com) is a new Internet ecosystem

startup. It focuses on improving the recreational Internet experience by developing a new ecosystem design around online activity, in the same way that game console ecosystems were developed to optimize the well established PC gaming experience.

The major components of the iPic Innovations ecosystem include: i) a new network-centric desktop design; ii) a hybrid local-hosted computing, storage, and sharing model; and iii) low-cost Web-optimized name brand devices. Netbooks and Mobile Internet Devices (MIDs) are an ideal complement to the iPic Innovations ecosystem. Channel to market is initially a direct-to-consumer model, but the goal is to establish service provider channels for scale and service bundling opportunities.

The key ingredients for launching an entrepreneurial ecosystem that apply directly to the iPic Innovations offer are:

1. A large target user base should already exist. That's not to say that the value proposition being created already exists, but that a well defined user base that will easily understand the value of the new ecosystem exists. For example, when the Sony PlayStation game console was launched, PC video games were already mainstream with a large established user base. The PlayStation was successful as it offered a more cost-effective and specialized ecosystem for video games without compromising the experience. iPic Innovations is applying the same principle to recreational Web activity by providing a more cost effective and specialized ecosystem supporting both new and existing online applications and activities.

2. The other pieces of the ecosystem must be available. An incomplete ecosystem will not deliver the intended value proposition, and using less than ideal substitutes may lead to consumer confusion and disappointment. Netbooks are a recent example of this kind of mistake. They are Web-optimized devices released using PC software platforms instead of a purpose-built network-oriented operating system. iPic Innovations is using generally available cloud computing platforms and name-brand Web-optimized devices. The company will complete the ecosystem and create differentiation by providing a unique network-oriented desktop design that is optimized for a superior Web experience from both a functional and performance perspective, filling in the ecosystem gap that was left open when Netbooks and MIDs were introduced to the market.

3. The result must be a better experience at less cost to the end-user. The new ecosystem provider must overcome two significant hurdles to user adoption: inertia and perceived value. People become comfortable doing things in a familiar way and will continue with the status quo by default. It takes recognized value to overcome consumer resistance to change. Value can be delivered in many ways: solve a problem, deliver new capabilities, provide new aesthetic appeal, offer better performance, or provide the status quo at less cost. The iPic Innovations ecosystem will offer a combination of cost improvement, performance improvement, better privacy and security, and new entertainment capabilities.

Creating a new ecosystem for recreational Internet activity is not a small-scale opportunity. For the first time in history, the tools and platforms are in place to put this scale of challenge within reach of the tech entrepreneur community.

Summary

Entrepreneurs will take a lead role forming and driving new Internet ecosystem opportunities, enabled by a combination of open source resources, the power of crowds, and motivated ecosystem partners.

In the past, the infrastructure and platform development requirements for any technology-based ecosystem created significant challenges for any entrepreneurial startup with an eye on developing an entirely new ecosystem. This has changed thanks to the availability of open source communities and commercial cloud computing service providers. As entrepreneurs discover how to use the power of crowd sourcing, the power of elastic human resources will also become available.

These developments serve to significantly elevate the capabilities of entrepreneurs with an aim of launching new Internet ecosystems. The tools to launch high-value ecosystems are in place for the entrepreneur.

A new and healthy relationship will develop between entrepreneurs and big companies. The entrepreneurs will move quickly to exploit new opportunities to create high-value ecosystems, leveraging the best of the startup and big company cultures. Entrepreneurial startups will continue to be strategic tools for big companies, and investments and ecosystems will increasingly reflect this relationship. As ecosystems develop and grow, control will migrate from the entrepreneurs to the big companies that will productize and scale the ecosystem.

iPic Innovations will be a good test case to watch. All the elements of a disruptive ecosystem that will leverage open source, cloud computing, and crowd sourcing exist. The iPic Innovations value proposition is a good fit with many service provider aspirations so it will also be a good test of the potential for startup and big company ecosystem collaboration.

Gordon Quinn is Co-Founder and CEO of iPic Innovations Incorporated. A communications industry veteran with a passion for leading emerging growth businesses, his roots are in networks and multimedia consumer and enterprise technology. Before founding iPic Innovations, Gordon was responsible for Nortel's New Business Opportunity program, following six years leading Nortel's multimedia business and technology programs. Gordon has an extensive background in networks and market-leading consumer and enterprise businesses, with experience spanning broadband, enterprise, and wireless market applications. He served on the Board of Directors for the Alliance for Telecommunications Industry Solutions (ATIS) representing Nortel from 2001-2002, contributing to the strategy for the transition of the North American telecom networks from legacy voice infrastructures to Multi-Media-capable broadband ecosystems. He is a frequent keynote and specialist speaker at many high-profile industry trade shows in North America and Europe.

"Most companies with a practiced discipline of listening to their best customers and identifying new products that promise greater profitability and growth are rarely able to build a case for investing in disruptive technologies until it is too late."

The Innovator's Dilemma
Clayton Christensen

There are some fundamental differences between how you go about being innovative in a startup and how you go about it when you have more than 350 customers in 75 countries already running their business on your product. and over 2,000 active deployments serving 40 million people every day. We faced that challenge at Movius Interactive Corporation (http://www.moviuscorp.com). This article provides a description of how we took on the challenge of revitalizing innovation and entrepreneurship and how open source plays a part.

Innovation as Strategy

It is easy for an incumbent supplier to wait until the market has proven that there is demand for something before building it into a product. Those who are quick at building and testing can introduce a competitive product, capture market share, and become a successful fast follower. That works as a business strategy as long as the supplier's customers don't need to lead the market.

The fast follower strategy worked for many years in the telecom industry. However, increasing competition among carriers globally over the last decade, especially in the wireless space, means that today's operators need to innovate just to stay competitive.

That innovation needs to come from many places, especially from trusted suppliers, in order to reduce qualification time and time to revenue. In order to provide innovative differentiation in their offers, established suppliers have to challenge the status quo and become entrepreneurial.

Movius has gone from a proprietary application platform to a next generation platform built on open standards. We recognized the need for a platform on which new applications could be developed and deployed more efficiently. Understanding this need differs from embracing the underlying impacts on the development process.

The point of "open" is not only to improve interoperability (the common reason given for open standards) but also to enable better accessibility and creativity (the basis for open source). Most telecom incumbents understand the need for the former but have taken a little longer to embrace the latter.

Movius faced that challenge as recently as a year ago. At the time, all of our research and development (R&D) was targeted to address enhancements and extensions for our existing customers. We realized that this would not serve our customers in today's market and that we needed to foster an entrepreneurial attitude within our organization. We decided to bootstrap our innovation engine, starting with a contest. We chose team leaders who chose multi-disciplinary teams. The goal was to develop and demonstrate a new application within 30 days. To help foster creativity, there were few limits on the type of application: it had to be a commercially viable concept and it actually had to work. The teams' innovations would be judged and a winner declared based on the opinions of two panels of judges.

The first panel judged the applications based on usability while the second team took the first panel's input into consideration along with innovation, market potential, and quality to declare an overall winner.

The results were amazing. When the contest was launched, the initial expectation was that we might see one application which had promise and could be taken to market. Instead, even though we declared a clear winner, we found to our surprise that all the applications were of sufficient value to take to market. The teams were called together again and given just over three months to take the application from a demo to a solution that could be presented for trial by a carrier. All the teams completed their solution successfully.

The difference in spirit and approach within the development team during and after the contest was palpable. The teams, no longer limited to the current platform, incorporated existing technology as well as other open source implementations. Team members who were supporting, maintaining and enhancing our existing products started bringing forward new and innovative ideas for products which had been around for years. The transformation was remarkable.

Innovation Portfolios

Once you have proven to yourself that you can innovate, you have to focus that innovation. This is where a company with multiple products and an established customer base really differs from a startup.

A startup has a single vision, employees must buy into that vision and everybody works towards fulfilling the vision. From R&D to sales, focus is critical. It is an all or nothing bet.

Startups do well because they get the idea right from the outset or they are close enough to getting it right to adapt the idea to the point that it is successful.

If you use the analogy of investment, startups are like a single stock investment. That stock either does well or it does not. With no hedge fund options, diversification options, or insurance, the only way forward is success of a single idea. Startups must bet big and work to make the core idea a success.

For a company with an established product portfolio, much of the startup dynamic is the same within the product team. The difference lies in how the portfolio is treated overall.

Back to the investment analogy, if a startup is a single stock, an established company is like a focused mutual fund. The idea is to invest in a given area, such as green technology, but to make multiple bets to achieve good returns overall. The company has to be very disciplined in evaluating its investment options and if something isn't working out as expected, it must take corrective action to modify the product, or eliminate it from the company portfolio.

In order to do this without confusing customers, the market, or the company itself, the company must know what it is good at and what space it wants to play in. At Movius, we were known for voice messaging and for enhancing messaging offers with interactive mobile multimedia capabilities. This is the market segment we understand and where we have demonstrated success. We know how to develop the kind of capabilities for this market that can be deployed on a very large scale, with high reliability, and with the appropriate interfaces and support capabilities needed in a carrier network.

Now as we evaluate our business, Movius requires its product team to manage our products like an investment portfolio. We balance the investment based on demand and timing of the market. We also recognize that it is easier to see the potential revenue in adding features to an existing product rather than building a new product or application. For that reason, we created a separate budget for investment in new offers. That isn't uncommon in most established product companies. What we do that is unique is to establish innovation vector guidelines for our investment in new entrepreneurial areas.

An innovation vector is a common core capability that is identified to help align the direction of product development. In this way, we invest the majority of our R&D dollars into applications which are relatively close to home. Although the new product development is aligned to one of our core capabilities, the result must be a new product, not simply an extension of an existing product. The fact that the new product is aligned with one of our core capabilities makes it easier for our customers to understand and take to market as part of a portfolio of offers.

We reserve a portion of the R&D budget to spend on new endeavours, ensuring that we invest in development of products which are different from what we would normally bring to market. As a company, our challenge is to determine the best way to take these innovations to market. These innovations also allow us and our customers to look at what could be offered from a totally new perspective.

It is easy to build new and innovative things. The real trick is to build new and innovative things which people will be willing to buy.

This is where we took a page from the open source world: get feedback early and often. To accomplish this, we prototype early and refine all through the life cycle. We identify customers and prospects that we believe are the best fit for a new solution. We partner with them throughout the process from initial idea to demo to prototype to trial product to deployable product. We listen carefully to feedback. It is important to identify both positive and negative aspects of the solution as early as possible during the process and to do so in an objective fashion. This is important in minimizing wasted investment, both for us and our prospective customer.

Using Open Source to Innovate

We have talked about restarting entrepreneurship and innovation but only hinted at how open source enables that entrepreneurship to flourish. Open source lets you start at a baseline of the state of the industry without having to reinvent the wheel. It lets you try things and add innovation without having to start coding from scratch. As a result, you can spend your time innovating. While this may seem simplistic, embracing the benefits of this idea is incredibly powerful.

The first benefit is similar to the advantage an incumbent has in a particular area. As an example, Movius has more than twenty years of code accumulated and refined for our existing messaging products. We use that code as a series of building blocks to develop new things, providing a tremendous advantage in the messaging space. Open source greatly expands the domain in which we have building blocks.

The second major benefit is more subtle but potentially even more powerful. Open source allows cross domain fertilization of ideas. Some of the greatest innovations have come from applying how things are done in one industry to another industry. It is astonishing how people with different domain expertise often solve the same problem quite differently. Sometimes their solutions are simple, elegant and reliable but sometimes they are convoluted to the point of being impractical. Often one domain solves half the problem in quite an elegant manner then hacks its way to solving the rest of the problem. Another domain, when confronted with the same issue, solves the other portion elegantly but totally fails to solve the first part of the problem. Knowing the advantages and limitations of those solutions allows a company to apply them appropriately to solve a problem more simply and reliably. Open source, by its very nature, provides insight into how others with a different industry background approach a given solution. A company can pick the good points and contribute back an improved solution based on their experience from a different domain.

Closing Thoughts

Companies often approach using open source as an all or nothing proposition. By embracing both open source and its philosophies, then learning how to marry that with a company's core competencies and intellectual assets you can help energize an established technology company and give it a foundation for renewed entrepreneurship. At Movius, open source let us extend the domain over which we could innovate and allowed us to cross fertilize solutions from one domain to the other to bring some pretty innovative new products to market.

John Boden is the CTO and Senior Vice President of Corporate Development at Movius Interactive. He brings over 20 years of strategy development, product management, development and marketing experience to the company. Most recently John held the position of senior vice president of product management at Openwave where he was responsible for the development and management of their entire suite of products and solutions. John joined Openwave from the VoIP startup, Genband, where he was the chief technology officer. Prior to that, John had a long career with Nortel, holding several leadership positions in the wireless, wireline and enterprise business units.

Q. What do investors look for in a business venture?

A. When developing and growing your business, it is of value to consider it from the perspective of an investor, even if you don't intend to have outside financing. Investors have an approach to evaluation that will help you to understand your business better. Using an investor's mind set will also show where improvements need to be made. Any business, from an investor's point of view, is all about risk and return.

Let's start by defining an entrepreneur as "one who creates a new business in the face of risk and uncertainty for the purpose of achieving profit and growth by identifying opportunities and assembling the necessary resources to capitalize on them".

Notice three interesting words in the definition: risk, uncertainty and profit.

Risk is a concept that denotes the precise probability of specific eventualities. Risk is a state where some possible outcomes have an undesired effect or significant loss. In the business world, risk also includes too much of a good thing. For example, when too many customers want the product, we risk not supplying all of the customers. When evaluating risk, we can estimate the likelihood and impact (outcomes) of events. These two estimates become critical components of the business plan as we try to reduce one or both of those estimates.

Uncertainty is a state of having limited knowledge where it is impossible to exactly describe the existing state or future outcome. Since uncertainty means that events will occur that we can't foresee, we need to have a flexible plan. This means that our strategy is a not a single point or a straight line approach to a set of desired outcomes.

The business plan needs to deal with a broad array of possible outcomes.

An investor has two goals when reviewing an opportunity. An investor is seeking to maximize their return and minimize their risk.

Typically, when writing business plans, we are advised to write each section of the plan and finish the plan with a section on risk. In fact, each section of the plan should be designed to support the twin goals of the investor. An investor typically invests in a company in financial increments and there is some element of risk being addressed at each increment. Once a given risk has been addressed, the next increment can begin with a new set of risks to address.

The Opportunity

The business opportunity needs to have a basis, something that is happening in the market that says the opportunity will succeed. Introducing a product into a market that isn't interested is a high risk endeavour.

Typically, there are four elements that the opportunity must rest upon:

1. A trend that is happening in the market.

2. A serious gap has been discovered in the market. This means a customer is willing to pay for a solution but is currently using a less than optimal solution.

3. A problem has been identified but no solution has come forward.

4. An industry is either undergoing a mature revolution of the way it does business or a new hybrid industry is forming from two or more mature industries.

The discussion in the business plan of the opportunity needs to address both the:

- chance that the window of opportunity associated with the trend, gap, problem or revolution will be there when the product hits the market

- strength of the connection between the solution the company will offer and the trend, gap, problem, or revolution being addressed

The business plan also needs a discussion of how long the window will remain open and what happens if the solution is too early or late.

Opportunity is connected to time. It will evolve as time passes, so there needs to a discussion of how the solution or product could evolve over time. This product migration can be connected to the evolving business environment, competitor reactions, or value metrics of the customer.

The Management Team

No business plan will be implemented exactly as it is written. Business environments change, competitors introduce new products on the market, and so on. Over the course of time, the actual decisions and actions taken will vary from the plan. What the investor is really looking for in the management team is the ability to handle new and unexpected situations. This goes beyond the ability to implement the current plan or possession of skills in some operational area of the company. This is known as agility, the ability to adapt simultaneously to many different business environments.

In the global environment, many events are occurring at once in the market, including the impact of government regulations and other peripheral forces.

Too often, the management team section of the business plan is written to highlight past experience. What needs to be emphasized are the types of environments in which the management team has been successful and the team's ability to adapt and be flexible. It's this ability to handle the risks as they happen that is important.

The business plan needs to show that management has the ability to anticipate. This is known as acuity, the ability to perceive the competitive environment clearly and thus to anticipate and respond to a customer's evolving needs and wants. Acuity really means to understand.

Gathering metrics on the competition's sales or personnel size or market share is not enough to tell us about the competition. We need people who understand the competition's capabilities and decision-making ability.

To directly address the need to adapt and be flexible, the management section of the business plan needs to show that management has the ability to:

- recognize business situations and associated risks before they happen

- recognize that there are many possible outcomes to a situation

- derive adjustments to the business plan that deal with the highest likelihood or impact outcomes

- recognize when its time to change

- implement plans in a way that maximizes the potential for success in the new environment

In the business plan, the management team is not just chosen for their operational capability, but for their ability to address specific risk items.

Marketing Plan

Typically when starting a company, the product is new, the technology is new and even the market may be new. In the eyes of the customer, this is a high-risk situation when compared with staying with the status quo. The innovation adoption curve shows that the early stage of a technology's life cycle is a high-risk item for the customer. This risk lowers as greater adoption takes place. This means that the message and medium used in an advertising and promotion plan needs to differ, depending on where we are in the adoption life cycle.

The business plan needs to convey what the risks are to the customer and how they will be addressed.

The marketing plan needs to show that the resources spent will be focused on the highest potential for return.

The marketing plan usually has a focus on how the product will enter the market and how sales will be generated. There is always the risk of competition and, in most cases, competition is not just an if but a when. When entering a market and having performed our competitive analysis, if we don't see a difficult competitive situation we still need to ask: "Will this market be a logical extension of a well-established company that is currently operating in an adjacent market?".

If so, we need to plan for their arrival.

Final Take-aways

The final question is how do we measure risk levels? The answer is connected to the following sub questions:

1. What is ease of proving a risk? Can we quickly, cheaply prove or describe the attributes or eliminate a risk?

2. Certainty of proving: once done how certain are we?

3. Time to proof: when will we know?

4. What are the expenses to stay in the game long enough to prove risks?

The business plan must show that between revenue and investment all risk possibilities are covered. Typically most plans only show the ideal situation.

This article is an excerpt from the upcoming book "Shifting the Barrel", a book of articles written by Founders and CEOs of the technology industry, filled with practical advice. The book will be available from Ivenire (http://www.invenire.ca/).

James Bowen, PhD, PMP, CMC is an Ottawa technology entrepreneur and adjunct professor at uOttawa's Telfer School of Management. He has has over 25 years of experience as a technology company entrepreneur. His primary focus is bringing ideas, technology products/services, people, markets and money together into sustainable endeavours.

Open Access: What are the Economic Benefits?

Copyright: John Houghton

From the Conclusions:

This preliminary analysis of the potential benefits of more open access to research findings suggests that different publishing models can make a material difference to the benefits realised, as well as the costs faced. It seems likely that more open access would have substantial net benefits in the longer term and, while net benefits may be lower during a transitional period, they are likely to be positive for both open access publishing and self-archiving alternatives and for parallel subscription publishing and self-archiving.

http://tinyurl.com/nbcf2q

Open Educational Resources: Conversations in Cyberspace

Copyright: UNESCO

From the description:

UNESCO has contributed to building awareness about this movement by facilitating an extended conversation in cyberspace. Over a two-year period, a large and diverse international community discussed the concept and potential of OER in a series of online forums. Open Educational Resources: Conversations in Cyberspace provides an overview of the first steps of this exciting new development: it captures the conversations between leaders of some of the first OER projects, and documents early debates on the issues that continue to challenge the movement. The publication will provide food for thought for all those intrigued by OER – its promise and its progress.

http://oerwiki.iiep-unesco.org/index.php?title=Open_Educational_Resources:_
Conversations_in_Cyberspace

July 6

Canada Joins International Effort to Provide Access to Health Research

Ottawa, ON

Accelerating the development of discoveries and innovations and facilitating their adoption through free and open access to research findings. This is the aim of an important new initiative that will provide researchers and knowledge users free access to a vast digital archive of published health research at their desktop and connect them to an emerging international network of digital archives. The National Research Council's Canada Institute for Scientific and Technical Information, the Canadian Institutes of Health Research (CIHR), and the US National Library of Medicine have announced a three-way partnership to establish PubMed Central Canada. PMC Canada will be a national digital repository of peer-reviewed health and life sciences literature, including research resulting from CIHR funding. This searchable Web-based repository will be permanent, stable and freely accessible.

http://www.nrc-cnrc.gc.ca/eng/news/nrc/2009/07/06/pubmed-cisti.html

July 19

Edmonton Considers Divorcing Microsoft

Edmonton, AB

Edmonton's IT department is considering walking away from Microsoft Corp. applications and investing in open source instead. It's just one step in a major IT transformation, the CIO explains. The municipality has decided that proprietary software is too expensive, and out of step with the direction it wants to take in IT. The move to open source is one part of the transformation, which stems from a desire to see Edmonton's IT department draw on home-grown talent.

http://www.informationexec.ca/index.php?page=shop.product_details&category_id=&flypage=shop.flypage&product_id=4961&option=com_virtuemart&Itemid=&vmcchk=1

August 31

Which Open Source License is Best?

Ottawa, ON

This event is a debate between proponents of the GPL, EPL, and Apache licenses. Which license is the best license for business? For community? For academia? The debate will be moderated by a practising lawyer proficient in open source licensing.

http://www.fosslc.org/drupal/node/407

September 9

Open Source Business Breakfast

Ottawa, ON

This event is the monthly open source business breakfast for the Ottawa area. The intention is to bring industry, government, academia, and community together once a month for an enjoyable breakfast of networking, good food, and a couple of short (15 minute) presentations.

http://www.fosslc.org/drupal/node/463

September 10

eConcordia Summit

Montreal, QC

This event offers academics, professionals and key decision makers a better understanding of the cultural paradigm of technology and learning. Attendees will meet and network with high-profile eleaders who will address how technological advances are impacting the way we learn today.

http://www.econcordia.com/summit2009

September 14-21

Mozilla Service Week

Global

Mozilla is asking individuals to make a difference by using the Web to better their community by offering their time and talent to local organizations and people who need their help.

http://mozillaservice.org

September 15-16

IDEA

Toronto, ON

IDEA2009 brings together the world's foremost thinkers and practitioners: sharing the big ideas that inspire, along with practical solutions for the ways people's lives and systems are converging to affect society.

http://ideaconference.org/2009/

September 19

Software Freedom Day

Global

SFD is a worldwide celebration to educate the public about the benefits of using high quality FOSS in education, in government, at home, and in business. Software Freedom International provides support and giveaways and volunteer teams around the world organize the local SFD events to impact their own communities.

http://www.softwarefreedomday.org/

September 20-21

International Working Conference on Source Code Analysis and Manipulation

Edmonton, AB

The aim of this working conference is to bring together researchers and practitioners working on theory, techniques and applications which concern analysis and/or manipulation of the source code of computer systems.

http://www2009.ieee-scam.org/

September 20-26

IEEE International Conference on Software Maintenance

Edmonton, AB

ICSM provides an international forum for researchers, developers, and users interested in software maintenance issues. Participants will include practitioners and researchers from industry, academia, and government.

http://icsm2009.cs.ualberta.ca/

September 22

OneWebDay

Global

The Worldwide Web belongs to everyone. Because it is built on a principal of openness and interconnection, every person and institution that goes online to connect and create experiences fundamental changes and makes a contribution to the ever growing, evolving One Web that is transforming society. The Web is a vital shared resource, but most people are not empowered to take part in defining the direction of this now indispensable resource. OneWebDay attracts a global network of partner organizations and individual activists committed to broadening the public's awareness of Internet and Web issues while deepening a culture of participation in building a Web that works for everyone.

http://onewebday.org/

October 1-3

Access

Charlottetown, PEI

The place to find out about the latest in library technology is the Canadian Access Conference. Always a good time, it has recently been discovered by library technologists south of the border to be a don't miss event. Thus it is a fruitful and interesting cross-fertilization between the latest developments in Canada and the U.S., as well as Europe and points more distant.

http://vre.upei.ca/access2009/node/9

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 knowledgable resources available through the OSBR.

Upcoming Editorial Themes

September 2009: Business Intelligence
Guest Editor: Mike Andrews, SQLPower

October 2009: Arts & Media
Guest Editor: Anthony Whitehead

November 2009: Co-Creation
Guest Editor: Stoyan Tanev

December 2009: Bootstrapping Startups
Guest Editor: John Callahan

Formatting Guidelines:

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

Indicate if your submission has been previously published elsewhere.

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

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

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

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

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

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

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

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

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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.