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In December, the Open Solutions Alliance published CEO Predictions 2008 (http://tinyurl.com/2nur7q) which contains the responses received from their 2007 Customer Forum Series. A key finding was that the interoperability of open source with other open source and proprietary solutions was a primary concern. Several of the CEOs polled included interoperability in their answer to the question "what is the biggest challenge for the open source software industry in 2008?".

Wikipedia defines interoperability as "a property referring to the ability of diverse systems and organizations to work together (inter-operate). The term is often used in a technical systems engineering sense, or alternatively in a broad sense, taking into account social, political, and organizational factors that impact system to system performance." The articles in this issue examine interoperability on several of these levels.

Dominic Sartorio from the Open Solutions Alliance discusses the importance of vendor collaboration for tackling the interoperability challenge and for taking open source to the next level of enterprise maturity. Michael Bauwens from the Foundation for Peer to Peer Alternatives describes eleven possible models for interaction between participatory communities and business. Vijay Mahendran from Nortel examines the SCOPE Alliance and its efforts to promote service provider interoperability through carrier grade base platforms based on open source software building blocks. Stoyan Tanev and Amy Xu from Carleton University and Jim Wilmore from Intel introduce the OpenAccess Project and its impact on the Electronic Design Automation industry.

The articles in this issue demonstrate that while there is more to be done regarding interoperability, foundations and alliances already exist and frameworks are in place to promote both open standards and interoperability. The articles include references to many resources and OSBR readers may be pleasantly surprised to learn that a large body of knowledge regarding both interoperability and viable business models is freely available.

This month you'll notice our "new look" as the OSBR is now published using Open Journal Systems. If you haven't already, take a moment to create a user account for the new website. This will allow you to continue to receive notification of newly published issues as well as take advantage of the new reading tools available in the right frame associated with each article. As always, we look forward to your feedback.

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

"As enterprise open source solutions become more prevalent (and more mission critical) in IT, they will need to interoperate with other open source applications and non-open source systems. This is the main challenge faced by most open source vendors today."

Bertrand Diard, CEO, Talend SA

The Open Solutions Alliance (OSA) is a consortium of leading commercial open source vendors, integrators and end users dedicated to the growth of open source based solutions in the enterprise. We believe Linux and other infrastructure software, such as Apache, has become mainstream, and packaged solutions represent the next great growth opportunity. However, some unique challenges can temper that opportunity. These challenges include getting the word out about the maturity and enterprise-readiness of those solutions, ensuring interoperability both with each other and with proprietary and legacy solutions, and ensuring healthy collaboration between vendors and their respective customer and developer communities.

We feel this last point, collaboration, is critical. All of these challenges are common problems that relatively small vendors find difficult to solve on their own, and collective action is called for. However, collective action is something that differentiates the open source community: we have proven this works in development. Now it's time to take this spirit of collaboration to the next level, into the business domain.

While this article focuses on interoperability, the overarching theme is that of effective collaboration between vendors and their customers and developers. Within this spirit of collaboration, interoperability can be much more effectively dealt with.

Why is Interoperability Important for Open Source?

The OSA is often asked: "why is interoperability an issue with open source?. The code is open, so can't people easily make the necessary changes to interoperate as they wish? And, don't developers have the good sense to use open standards and build modular code?"

Our experience is that this is true with only the most successful projects, but not universally true for all open source projects. Drupal is an example of a successful project that owes its success to getting interoperability right at the very beginning. Its modular design facilitated parallel development by individuals all over the world, and downstream customers could easily "plug and play", thus helping drive adoption. But many great product ideas are being left behind because interoperability was an afterthought. Thus, collectively, the open source industry faces a significant unmet opportunity.

This isn't only true with developer communities, as commercial open source vendors often make the same mistake. Most vendors are small and take pride in being "focused," and their natural tendency is to focus on core product features so they can better compete with each other and the proprietary alternatives. Product managers request interoperability, but it frequently ends up "below the line" for product releases because of limited time and resources. Vendors get caught up in the feature competition game, and they plan on "ilities" later, such as interoperability, manageability, scalability and so forth.

The OSA believes this is suboptimal. Interoperability should be treated as a core feature.

Without interoperability, many prospects will simply not adopt, resulting in less revenue opportunity, and therefore fewer engineering resources to fix the problem in later releases. Furthermore, the feature competition game never ends. This may sound like a chicken-and-egg problem, but vendors need to get interoperability right in version one of their products. The OSA wants to help educate and promote this among independent software vendors (ISVs). A little bit of near-term pain can result in a lot of long-term gain.

Many commercial open source companies sell through channels. They should be aware that the 800-pound gorilla of software channels is Microsoft, which sports a broad array of infrastructure and applications, most of which interoperate in a sensible way. Many integrators get everything they need from Microsoft, and don't worry about interoperability. That is our competition. Most commercial open source vendors, on the other hand, are small and focus on a point solution, which may or may not interoperate as well as the Microsoft alternative. If an integrator finds they need to spend more time to "stitch together" disparate open source solutions, they'll be less inclined to adopt them.

The same holds true for enterprise customers inclined to integrate themselves. Buying from Microsoft, Oracle or SAP may be deemed the "safe" option, because there is one vendor to hold accountable for getting the whole set of solutions to work. There is no equivalent in commercial open source. Instead, smaller vendors need to rely on a collaborative spirit and work together to overcome this.

Why is Interoperability Important Now?

The OSA has interviewed many commercial open source ISVs and other industry figures in recent months. We get the sense that the commercial open source industry is at an inflection point. There was a big wave of new startups and Series A and Series B investment rounds in 2005 and 2006, with entrants in most major categories of business software. Name any type of product, and there is probably a commercial open source vendor who delivers it.

Now, there's a sense of "show me the money," as these companies try to drive adoption and grow their businesses. There is tremendous growth opportunity, but challenges remain in order for that growth to be realized. Most are adopting the usual "Open Source Sales 101" model of many downloads of free community versions, conversion to support and services contracts or commercial licenses, and attracting channel partners who add value. However, it seems that a small number of companies are excelling, and their success is overshadowing a broad spectrum of underachievement. We sense a growing disillusionment by many ISVs with this model as being too expensive and too time-consuming to generate results. We fear there will be a period of consolidation as more opportunity and attention accrues to the leaders.

This would be unfortunate. There are many strong products available, but they are paired with business models and strategies that are aimed in the wrong direction. Fortunately, we see only a few things separating winners from losers, and these are all actionable by vendors' executive teams. We suggest three differentiating factors.

First, the spirit of collaboration doesn't begin and end with open-sourcing one's code and attracting a few developers. The whole company, including sales, marketing and support, needs to engage in a spirit of collaborative give-and-take with its customers.

Many companies are missing this, inevitably those whose management has limited open source experience. The winners understand collaboration at their core, as a defining aspect of their corporate cultures.

Second, don't assume there is a silver-bullet technical solution to the problem of how to reach customers. There is a lot of press these days about software-as-a-service and virtual appliances. These are useful, and vendors would be remiss to ignore them. But they are not a replacement for ongoing care and feeding of one's community, especially channel and end-users downloading one's product.

Third, don't ignore interoperability! If only we had a dollar for every time we heard: "I know I should make my product more interoperable, but I have to focus on core features instead." This stance misses the point that, increasingly, interoperability is a core feature. Most commercial open source ISVs, especially application vendors, are small companies focusing on a point solution, but most customers don't want a point solution. Customers need something that fits well into an end-to-end solution and the rest of their environment. ISVs ignore this at their peril. Successful ISVs plan for interoperability, with modular and standards-based architectures. Moreover, they form an ecosystem of complementary ISV partners, and then collaboratively build out and test the integrations.

The OSA and Interoperability

Shortly after our launch in February 2007, we found that we needed to be more specific about our interoperability goals and methods. Interoperability is a big hairball of issues, and if one isn't careful, it's easy to get bogged down and distracted from the issues most important to businesses looking to adopt open solutions.

But what are those important issues? To answer this, the founding members spoke with our mutual customers, and their feedback resulted in our initial Interoperability Roadmap, published in April (http://tinyurl.com/2nu29y).

Simultaneously, we decided that we needed to actually build integrations between our disparate applications, before getting too far ahead of ourselves with best practices and white papers. This allows us to learn from our own experience and confidently recommend approaches that we know work in practice, instead of extrapolating from individual members' prior experiences. This exercise culminated in August at the LinuxWorld Expo, where we demonstrated the Common Customer View (CCV), an integrated suite of applications that streamlines visibility of business data relevant to customer relations. This was a huge success, both in terms of lessons learned and garnering further interest in our mission. Unisys decided to make the CCV the centerpiece of their open source business unit's services marketing efforts, and it continues to be our main interoperability testbed to this day.

And finally, we collectively realized that customer input isn't a point in time, but an ongoing process. Technologies and business requirements are always evolving. So, we decided to start the Customer Forum Series, a city-by-city series of half-day events designed to elicit input from end users of open solutions. We have done five of these now, and each has resulted in a wealth of anecdotes, success stories and lessons learned. Universally, we hear that the lack of interoperability is what stands in the way of broader adoption. Consequently, the interoperability priority hasn't changed, although we may focus on some specific problems, such as single sign-on and data integration, before others.

What is the OSA Doing Going Forward?

Interoperability will be a key focus through 2008. First, we continue to publish best practices for interoperability. These usually take the form of a white paper or how-to document focusing on a specific challenge. These are sometimes paired with code that developers can download and use as a starting point.

Second, we have several ongoing hands-on projects involving OSA members' product teams working together to get their solutions to interoperate. These efforts have several goals, including learning through experience, and offering lessons learned to integrators and enterprise developers.

Finally, while we usually try to leverage existing code and standards in our interoperability initiatives, sometimes we can't find anything that meets our requirements, and so we'll deliver something new. Such projects are available on Sourceforge under an OSI-compliant license.

Call to Action

Companies can get involved in several ways, with the most direct as joining the OSA as a member. Membership provides direct governance privileges and day-to-day influence and interaction with the rest of the membership, consisting of mostly executive-level development and marketing representatives of the member companies. Membership does come with responsibilities such as member dues and time commitment. For those companies not inclined to make the commitment, there are other ways to stay involved. First, we have an active mailing list which is open to the public. Anybody may subscribe and suggest ideas.

Second, all of our work is publicly available on our website (http://www.opensolutionsalliance.org). The "Community" tab contains landing pages of current projects. One can also register and respond to discussion threads and offer feedback on existing projects.

In short, it's all about a spirit of collaboration. "Go it alone" open source is the path to failure for all except those few companies with a killer app that were fortunate to get their product right at the very beginning. Everybody else should think holistically about what their customers really need, which often goes far beyond their own point products, and figure out how to best collaborate with other players to meet those needs.

Dominic Sartorio is president of the Open Solutions Alliance, and is employed as Senior Director of Product Management at SpikeSource, Inc. Dominic has over 15 years of experience in enterprise software including open source, in roles ranging from engineering to technical sales to product management.

"Peer production is viable when: 1. capital costs (needed for production) fall far enough and 2. coordination costs fall far enough. Cheap computing and communication reduce both of these exponentially, so peer production becomes inevitable."

Jed Harris (http://jed.jive.com/?p=23)

Open source software (OSS) is just one part of a much wider social and economic ecosystem that is evolving around increased participation of what-used-to-be consumers. New roles are emerging, including "produsers", with an intentional 's', to refer to the amalgamation of being both a user and a producer (http://snurb.info/produsage), and "end-makers", another intentional concept to be contrasted with end-users (http://tinyurl.com/29hmvz).

In this new ecosystem, produsers and end-makers either partially, but sometimes fully, produce value, aided or unaided by institutions and companies. This creates new dynamics that need to be understood. One way of increasing our understanding is to look at the interlocking dynamics of both businesses and the participant-communities, for which the following article constructs a model of interaction. Each distinct type of relationship generates different dynamics and associated business models.

Three New Economies

More and more, end-users of business products are demanding an active say in what kind of products are delivered and are increasingly creating value for and by themselves. The peer to peer dynamics that emerge in an increasingly networked society and that enable citizens to self-organize and create value for themselves are so far creating at least three major economic models.

In the "sharing economy", individuals congregate over participatory platforms that allow them to share their creative expression. While the sharing itself is mostly not monetary, the platforms are proprietary and their owners sell the aggregated attention of their user communities to advertisers. This is essentially the business model behind the thriving Web 2.0 world with YouTube as the paradigmatic example.

In the "commons economy", individuals congregate into communities that explicitly produce common artifacts, such as OSS, that are universally available for use through commons-oriented property licenses. These artifacts generate vibrant business ecosystems, with businesses creating added value that can be monetized. The Linux model follows this economy.

Finally, in the "crowdsourcing economy", businesses or platforms integrate participatory dynamics in their own production and value chains, under the form of unwaged distributed labour which remains under their overall control. Think of the Lego Factory model. Contributors are only paid after their product has been purchased or chosen.

The above triune distinction is a first approach; we believe we can offer a much more fine-grained approach to participatory business models, once we factor in more consciously the dynamic between the communities and the institutions.

The Ladder of Participation: Corporate View

Peer to peer as a social logic means that instead of institutions dealing with atomized individuals through mass media, directing products to passive consumers, individuals are now considered as already connected through peer groups.

These peer groups include both pre-existing and intensional networks that are purposely formed at various points in order to achieve specific goals. This turns institutions into facilitators and enablers.

To see what this means in terms of relationships between institution and community, we have created a two-part ladder of participation model, inspired by Roger Hart's Ladder of Youth Participation (http://www.freechild.org/ladder.htm). The model starts from the point of view of the for-profit institution, and considers the degree of participation that will be allowed. In this context, the initiative comes from the company, and though there may be pressure by its consumers, the political framework is controlled by the corporation. Such a model has been proposed by Xavier Comtesse, which he calls the direct economy model (http://giussani.typepad.com/loip/2006/08/direct_economy.html). This model defines five categories of consumer:

1. Passive consumption: the consumer receives the available products or services with no real interaction and choice

2. Self service: the consumer is given the ability to choose between various products or services

3. DIY (do it yourself): the consumer is involved in the value chain. An example of this first disruption from the standard retail value chain is IKEA, where the consumer self-delivers and assembles the purchased product

4. Co-design: the consumer starts adding value by customizing the product as defined by his needs; for example, customers choose their options to build a Dell computer (http://www.p2pfoundation.net/Co-Design)

5. Co-creation: the consumer is involved in the design of the product or service itself (http://www.p2pfoundation.net/Co-Creation). For example, Procter and Gamble has a Connect and Develop program that lets innovators define products (http://pg.t2h.yet2.com/)

Xavier Comtesse believes that open source belongs to this fifth model. We believe this will only be the case for corporate-initiated open source initiatives, but not for those initiated by open source communities.

It seems clear that the first three models have been well established for several decennia. The fourth model is already used in many corporate strategies. The fifth model would seem the current cutting edge which is being embraced by many of the more advanced players of the marketplace.

The Ladder of Participation: Community View

The Comtesse direct economy model leaves out half the story, the agency of the peer producing communities, and the for-benefit institutions associated with them (http://www.p2pfoundation.net/For_Benefit). Production communities are not just followers, neither Linux nor Wikipedia were initiated by companies, but active creators of new production models representing forms of 'production without a manufacturer', which companies can or can not join.

Clearly, if a project is started by a community, with its own institutional choices and history, companies who join will not be in control of the framework of participation. On the contrary, it is the community which can allow various levels of corporate involvement.

A new model is needed, starting from a different polarity, and which complements the model proposed by Comtesse. These models are not contradictory, but as they start from different polarities, they are complementary and both necessary for a full understanding of the new hybrid forms that are emerging.

To understand this second half of the ladder of participation, please note that we make the distinction between: i) the direct creation of use value, for direct use, not sale; and ii) the direct creation of exchange value without powerful corporate intermediaries who would own and direct the production process as part of their own value chain.

Peer production occurs when produsers freely engage, without direct payment, in a productive activity which is made universally available. While exchange value is therefore not peer production, it is part of the same trend towards participation and the distribution of production that is an effect of lowering the capital requirements of productive machinery. We are entering a period where the automatic linkage between capital and entrepreneurship is no longer a given, and where both can go their separate ways, giving rise to entrepreneurs operating outside the framework of capital.

However, our proposed model does not exclude proprietary platforms which enable and empower such cooperation to take place. Finally, as we explained in our introduction, it is important to distinguish the sharing economy of individuals sharing their creative expression, from a commons economy where a common product is created.

Seen from the polarity of the community dynamic of peer production, the following six hybrid models may be added, and we would argue, are already taking place:

6. Direct peer production of use value with no concern for monetization: an example is the adventure economy of http://couchsurfing.com, a direct and non-reciprocal exchange of use value (hospitality), outside of the monetary sphere. Wikipedia and Craigslist refuse advertising and its enormous monetary gains as a conscious decision

7. Direct peer production of use value with concern for equitable monetization: communities develop a commons where a business ecology may be formed but the peer producers control this monetization process and choose equity-based formats, such as cooperatives

8. Direct production of use value by groups with commons-oriented business ecology: a community of peer producers, usually combined with a non-profit foundation in charge of its infrastructure, creates a commons from which emerges a business ecology to create marketable scarcities around the freely available common value

9. Direct production of use value by individuals with monetization of attention through proprietary platforms: this is the Web 2.0 model in which individuals share their expressive production, using a proprietary platform which in turn sells their attention

10. Direct production of exchange value by groups as cooperative production: an example is Mondragon (http://tinyurl.com/rzj65)

11. Direct production of exchange value by individuals: An example is eBay, playing the role of a universal platform with specialized platforms for minipreneurs around the design of products

The last category also refers to local distributed manufacturing and design by independent individuals using a growing infrastructure for distributed production. They may design a product on their own, use a platform to present it to the world, use three dimensional fabbing printers to create physical models, and be connected with production units that can be mobilized anywhere in the world. Such individuals can form networked micro agencies seeking platforms to market their production.

Where are we now? There are many non-monetary exchanges thriving on the Internet (model six). Equitable monetization of peer production is only in a seed phase, but it is a concern that has already substantially changed the material economy with fair trade, social entrepreneurship, and blended value approaches, so we believe it will develop in the immaterial economy as well. The Linux and Web 2.0 economies attest to the vibrancy of models eight and nine; these are presently the dominant business models which include the OSS industry. While there is a thriving world of cooperatives in the material economy (with more employees than multinationals!), it has barely gotten a foothold in the immaterial economy so far. Apart from the success of eBay, there are a number of other platforms doing well, such as iStockphoto (http://www.istockphoto.com/). The number of platforms for minipreneurial communities is growing rapidly.

Conclusion

The above modelling is not perfect yet, but we believe that, combined with the direct economy model of Xavier Comtesse, it gives a more comprehensive idea of the many different hybrid models being created.

Obviously, business and marketing practices will differ according to which pole is being addressed, and we can expect the emergence of a new set of businesses and marketing agents catering directly to the peer production polarity.

At the Foundation for Peer to Peer Alternatives (http://www.p2pfoundation.net/), we believe that distributed network infrastructures are becoming the mainstay of our economic and social/technical organization, and that these engender bottom-up, self-organized dynamics that will profoundly change not only our economy, but the very form of our civilization. It is a mistake to believe that such changes are limited to the immaterial economy of knowledge and software only, as every physical production is also first and foremost a function of design, which is an immaterial process. So, peer production and peer produser communities will influence the totality of our social and economic life, including physical production. It is expected that in an increased number of sectors, production will partly derive from open design communities.

It is our intent to document, research and promote such P2P-based alternatives, and so far we have collated more than 5,000 pages of finely grained but structured information, which have been consulted over 2.5 million times.

We invite all readers who are interested in understanding such developments, to consult our resource base at http://p2pfoundation.net, and, better yet, to collaborate in building it. Figure 1 (on the next page) is a preliminary visualization of the P2P business trends that we have catalogued and described in 2007. A poster sized version of this image is available at http://www.p2pfoundation.net/images/P2PBusinessVisualization.jpg.

Figure 1: P2P Business Visualization

Michel Bauwens was a serial Internet entrepreneur in his home country of Belgium, as well as eBusiness Strategy Manager for the country's largest telco Belgacom. In 2005, he moved to Chiang Mai, Thailand and created the P2P Foundation, lecturing worldwide about the implications of this social/economic re-organization of our life. Michel has created a workshop format to introduce business and policy audiences to the logic of peer production and its implications for business strategies and policy making.

Recommended Reading

Bauwens, M., The Political Economy of Peer Production, CTheory, 2005
http://www.ctheory.net/articles.aspx?id=499

Peer to Peer Business Trends
http://www.p2pfoundation.net/Category:Business

P2P in Physical Production
http://www.p2pfoundation.net/Category:Design

"The resources, experience, area expertise and perspective of these leading companies added to our existing members makes for a powerful combination that can generate timely results."

Magnus Karlson, chairman of the SCOPE Alliance

This article introduces the SCOPE Alliance (http://www.scope-alliance.org), a vertical alliance focused on accelerating the development of open standards for carrier grade base platforms (CGBPs), the base platforms satisfying the carrier grade requirements of the telecommunication industry. The focus of these network equipment providers (NEP) is to build base platforms comprised of hardware, middleware, and an operating system using open modular building blocks to provide service solutions.

Secondly, the article presents an adoption model along with the benefits, risks and factors affecting the adoption of open CGBPs by telecommunication companies. This adoption model is beneficial to top management teams and project managers who wish to improve the product development process. It also provides startups and independent software vendors (ISVs) a reference model to cost effectively deliver products and obtain maximum return.

SCOPE Alliance Initiatives

Leading NEPs joined forces in January 2006 to form the SCOPE Alliance with a mandate to promote and accelerate the development of open standard based CGBPs. The SCOPE Alliance has released development profiles based on open standards to encourage the use of both commercial off the shelf software (COTS) and free/libre open source software (F/LOSS) blocks.

The founding members of the SCOPE Alliance are Alcatel-Lucent, Ericsson, Motorola, NEC, Nokia and Siemens. Other NEPs are continuously joining as contributors in order to accelerate the development of open CGBPs.

The SCOPE Alliance identifies gaps in the existing standards and works with the open standard bodies to address these gaps. It releases reference architectures, technical position papers, and strategic whitepapers.

The SCOPE Alliance has published development profiles in hardware, operating systems, and middleware. In the future, it will publish profiles on tools, control planes, applications, operations, and maintenance.

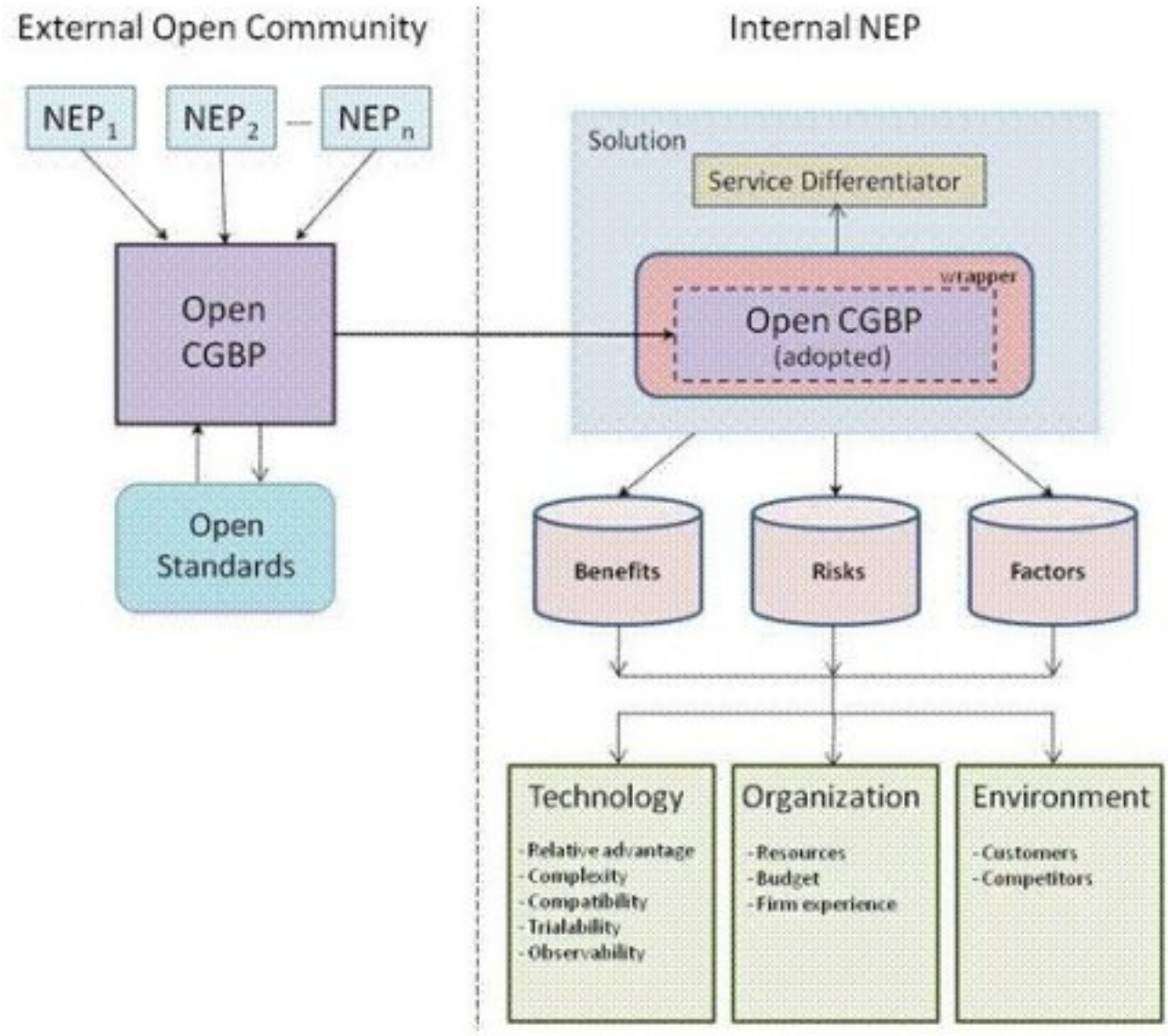
The SCOPE Alliance initiatives offer the following benefits to telecommunication network equipment providers (http://www.scope-alliance.org/scope-marketing-position.pdf):

- Reduced time to market
- Reduced operating costs and capital expenditures
- Improved interoperability
- Open standard compliance

Benefits of Open CGBP Adoption Model

Figure 2 (next page) illustrates the adoption model of a CGBP developed using the open standards in the external open community. The left side of the model shows that multiple NEPs collaborate to define the open CGBP. The adoption of the open CGBP is internal to a NEP's own development environment, as shown on the right side of the model.

Figure 2: Adoption Model



The adoption of open CGBP into the internal development environment requires the use of proprietary wrappers to integrate with existing infrastructures. The externally developed open CGBP is not modified during the adoption to maintain the concept of open platform. Service differentiators are developed internally on top of the adopted open CGBP and the wrappers to deliver the proprietary solution offering. The base platform still remains open and adopted, but the service offering is unique.

The NEP develops product solutions using the adopted open CGBP and the proprietary service differentiator. The identified benefits, risks, and factors of product solutions are organized using the TOE (Technology, Organizational, and Environmental) framework (http://opensource.mit.edu/papers/west.pdf). The identified benefits, risks and factors affect all domains of the TOE framework: technology context, organizational context and environmental context.

Technology Context

The attributes of technology context are relative advantage, complexity, compatibility, trialability and observability of the adopted solution. The adoption of open CGBP increases the relative advantage of solutions provided by the NEPs. It also reduces complexity on two fronts. First, customers find it easy to use the solution. Second, the product development process is simplified.

The adoption of open CGBP increases the compatibility of the product solution among other NEP solutions. Trialability and observability of the product are also increased as a result of NEP's open CGBP adoption. The adoption of open CGBP affects these attributes as follows:

Relative advantage: the adoption of open CGBP increases the relative advantage of the solutions provided by the NEPs. In the past, NEPs developed proprietary solutions from start to finish. Today, when an NEP adopts the open CGBP into its development environment, the knowledge of various providers are integrated into the product solution. The adoption of open CGBP frees up resources which can be reallocated to implement more features in the product solutions.

Other key benefits of open CGBP adoption that increase the relative advantage of the product solution are time saved in generating the product concept, reduction in development cost, and removal of the vendor/supplier dependency. The resulting product solution is perceived to be better than the proprietary solution because it increases economic profitability.

Complexity: the adoption of open CGBP reduces the complexity of the product solutions in two ways: customers find it easy to use and product development is simplified.

The open standard based products reduce the number of platforms managed by the service providers (SPs) to deliver end to end solutions. The operational costs are reduced along with increased flexibility and increased features. The adoption of open CGBP enables the NEPs to focus on the integration of the base platform into their environment and building service differentiators to generate product offerings. It removes the complexity in building the CGBPs to satisfy the telecommunication requirements. The vendors and suppliers receive compliance with open standard based component development which further reduces the complexity in adopting the open CGPBs in the development environment. The development focus has shifted from developing completely in-house to the integration of components to deliver product solutions.

Compatibility: the adoption of open CGBP increases the compatibility of product solutions while increasing interoperability with other NEPs' solutions. The increase in participation delivers product solutions with common base platforms across NEPs. SPs are looking to reduce their operational costs which can be achieved by having one platform with multiple vendor solutions.

Trialability: the adoption of open CGBP increases the triability of the product solutions as the open CGBP will be fully tested by the participating NPEs. Since the defects will be visible to the open community, this increases the likelihood that these defects will be fixed. The service differentiators of the product solutions are the only proprietary components tested by the NEPs.

Observability: the adoption of the CGBP increases the observability of the product results.

The open standards based product reduces the operational costs of the SPs and the development cost of the NEPs. The solution is able to deliver increased features and increases the interoperability among the NEPs. The results of the open CGBP adoption are observable to the NEPs, SPs and the end users.

Organizational Context

The attributes of organizational context are resources, budget, and experience with adoption. The adoption of open CGBP increases the cash availability and it enables the NEPs to invest in new product innovations. The positive affects from the adoption of open CGBP include:

Resources: NEPs allocate resources for active involvement in open standards communities to ensure that they are up to date in the standard development. The adoption of open CGBP frees resources from proprietary base platform development, allowing the allocation of resources to research new product innovation. It is possible that the integration of the open CGBP in the development environment may require additional resources, depending upon the complexity of the integration.

Budget: budget availability increases as NEPs reduce the development cost, effort and time required to generate product concepts and their implementations. The unused budget availability enables the NEPs to invest in new product innovations.

Experience: the adoption of open CGBP provides the positive experience for the NEP to be known to able to adopt to fit the economic market shift.

Environmental Context

The two attributes of the environmental context are customers and competitors. The adoption of open CGBP increases customer satisfaction of the product solution. It also redefines competitor relationship to one of cooperation and competition. The adoption of open CGBP affects the environmental context as follows:

Customers: increased customer satisfaction of the product solution. SPs are looking for flexibility, increased features, reduced operational cost and interoperability. Open standards based products offer SPs the satisfaction that they have been demanding from NEPs.

Competitors: the adoption of open CGPB enhances the competitor relationship in two ways: cooperation and competition. As NEPs collaborate to define the open CGBP, vendors and suppliers are shifting towards a more open standards based component development to enable this positive collaboration among the NEPs. The partnerships and cooperation among the competitors are elevated to another level in the industry. The NEPs then compete with each other to capture market share using their proprietary service differentiator built on top of the open CGBPs. Even though the NEPs are still competing to capture market share, their solution offerings will interoperate with each other in the market. The adoption of open CGBP has achieved what it could not in the proprietary solution space.

Risks and Drawbacks

While there are many benefits for the adoption of open CGPB, adoption is not without risk. This section discusses some of the risk factors.

The identified benefits, risks and factors of open CGBP adoption are applicable to the product solution and not the adopted platform. The integration of the open CGBP involves the development of wrappers necessary to integrate the adopted CGBP with the NEP's development environment without modifying the open CGBP. Any modification on the adopted open CGBP would make the platform proprietary.

The adoption of open CGBP into the NEP's development environment is complex. It involves the understanding of the open CGBP development in the external open community and the NEP's internal development environment. The ideal integrator needs to follow the development proceedings in the open community and be an integral part of defining the functionality of the open CGBP. Understanding of the internal development environment is a crucial factor to successful adoption of the open CGBP. The wrappers have to work together with the open CGBP interfaces to extend the development of service differentiators to offer product solutions.

The skill sets required to accomplish the adoption of open CGBP is scarce within NEPs. Identifying the specific skills to accomplish the adoption of open CGBP into the internal development environment is beyond the scope of this project. Typically, prototypes are developed from the standards and characterized. Then the standards are continuously updated and reviewed based on the characterization. This iteration lasts over several years.

Once adopted into the development environment, the NEP is responsible for operation and advancement of the open CGBP. This adds uncertainty to the NEP.

Summary

While adoption of open CGBP is still in its infancy, the telecommunication industry is moving towards using open standards based products. NEPs adopting the open CGBP in their development environment create differentiating services to gain market share. This model provides an environment where NEPs must both compete and cooperate with each other.

Vijay Mahendran is currently working as an embedded designer at Nortel. Vijay recently received his master's degree in Technology Innovation Management program from Carleton University. His research topic was the adoption of open carrier grade base platforms in the telecommunication industry. His interests include open source, network packet processing and embedded systems.

Recommended Reading:

An interview with Paul Steinberg:
http://tinyurl.com/2c7l63

A network equipment provider's view:
http://tinyurl.com/3xnj5y

Mahendran, V., Adoption of Open Carrier Grade Base Platforms
http://www.ottawatechwiki.com/wiki/images/1/13/MahendranV_Adoption_of_Open_CGBP.pdf

"...(My) take on the whole issue of open standards versus open source? I would say this: If it doesn't have an open-source reference implementation, the term "standard" is an abuse of the language. That's still a very strong position by today's standards. But it won't be in three to five years. If it doesn't have an open-source implementation, how do you know what the standard means?"

Eric Raymond, Co-Founder of the Open Source Initiative

In this article we provide some insights into the relationship between non-code based open assets, open development processes, and open standards. The insights are based on a case study of the OpenAccess (OA) Project of the Silicon Integration Initiative. The unique relationship between the OA standard's openness, evolution and adoption is an example of how open processes could be used to enable design tool interoperability, innovation, and cooperation.

Open Access API Standard

It is widely accepted that the lack of interoperability between Electronic Design Automation (EDA) design tools is a major limitation for the cost-effective design and manufacturing of silicon integrated circuits. The OA project and OA Coalition (OAC) were proposed by the Silicon Integration Initiative (Si2, http://www.si2.org) and founded by Hewlett-Packard, Intel, IBM, Motorola, Lucent, Sun, Cadence, and Mentor Graphics in late 1999 to provide an industry-accepted API-based design data standard.

The OA project comprises three building blocks: a specification of an API (Application Program Interface) standard, a reference database implementation, and an open process (called OpenEvolution) to manage the evolution of the standard.

The OA API specification includes three components:

- an information model defined by a collection of entity relationship diagrams
- a data model defined by C++ header files specifying software class and public function interface details
- API header information in a readable format

The OA reference implementation (OARI) is the source code for, or linked libraries of, an implementation of the API that is publicly available as part of the OA distribution. The OARI is not a formal part of the OA API standard, but was designed to be publicly available as an adoption and critical standard development mechanism.

At the heart of the OA OpenEvolution governance structure are several groups of stakeholders controlling the evolution of OA in terms of funding as well as technical guidance, including:

- the OpenAccess Coalition (OAC)
- the ChangeTeam: a body of technical experts representing coalition member companies who serve the OAC to manage the evolution of the OA standard specification and the OARI
- the Integrator: Cadence, who is responsible for maintaining the OARI
- the Working Groups: teams of professionals from member companies that cooperate/collaborate on requirements for needed enhancements and extensions

Surrounding this core of active participants is the OA Community which includes anyone who wishes to use or contribute to OA. An open source community model was developed by sequentially enabling the main characteristics of open source software (OSS) development to benefit the OARI from a potentially large pool of support for on-going enhancements and fixes.

The OAC developed a two-layer structure of the OA project comprising the API specifications and the OARI by following three principles: i) all changes of the API must be suggested through an implementation in the current OARI; ii) the OA OARI must always comply to the OA API standard; and iii) EDA companies using the OARI as part of their commercial products must use only the officially released versions and in binary form only. Companies requiring a modification of either the OARI or the OA API to improve their commercial EDA products must get the modification approved by the Change Team. These three principles, together with the benefits enabled by the open source development characteristics of the OARI, were intended to provide an efficient standard development and adoption mechanism.

OA Standard's Project Chronology

The OA standard project was developed as a continuation of the CHDStd (Chip Hierarchical Design System: Technical Data) initiative sponsored by SEMATECH (http://www.sematech.org) in the mid 1990's. CHDStd was developed on the basis of a proven technology donated by IBM to provide a common representation of IC (integrated circuit) design data and an API to access and manipulate that data. However, CHDStd failed to gain industry acceptance, mainly because its deliverable was a paper specification with no available reference implementation code.

OA Viability Phase

In late 1999 when Si2 accepted ownership of the CHDStd program, it became clear that the success of an industry standard data model would be predicated on an available database implementation compliant with the API and useful as a production vehicle in itself. Further, there was strong interest in an open source implementation of this database. This motivated Si2 to seek out a solution different from the CHDStd technology and ultimately to accept a technology contribution from Cadence Design Systems. This contribution included an API specification and source code for a reference implementation, then called Genesis.

In December 1999, Si2 formed the Design API Coalition (DAPIC), whose founding members included many large, high-end EDA user companies that were previously involved in the CHDStd initiative. Si2 made as a condition for membership in DAPIC that members must commit engineering resources on an active project making use of the reference implementation. Further, Cadence set conditions on DAPIC for its contribution, one of which was that a Working Group (WG) would be formed to address some important missing technological aspects of Genesis. The DAPIC members agreed to form a WG to define an "Extensibility" technology that would play a critical role in convincing other major EDA vendors to consider using technology from a major competitor.

In June 2001, Si2 renamed DAPIC to OAC and publicly announced its launch. The OAC released the Genesis API specifications to the public as "OA API 1.0", accompanied by the database binary code and, later, the source code. During this phase of the program, the attitude of most EDA vendors was one of "wait and see."

They perceived this to be a competitive move largely driven by Cadence, and seriously doubted the OAC would ever succeed. The main goal of this phase of the program was to prove the viability of the OA goals.

During this viability phase, the OAC focused on establishing the OA technology base and the business management processes to be used to publish and support the standard. The OAC interacted heavily with industry to understand and react to fears and doubts of the "wait and see" companies. Decisions were made, and supporting policy and legal agreements were developed, to use a community source model for OA as opposed to a full open source model. The Coalition agreed to give Cadence control of a full rewrite of the API and OARI without detailed change review for three initial releases by specifying only their coverage and schedule. After this, control of the API and OARI would be turned over to the OAC ChangeTeam.

The end of this viability phase in January 2003 was marked by the public release of the Genesis rewrite, OA version 2.0, and by the introduction of the first OA compatible commercial tool, the Cadence Virtuoso custom design platform. Virtuoso, at this time, also continued to support its well established CBDA database.

Commitment to the OAC goals by the EDA users was established by the early adoption of the technology into production design flows by two OAC member companies, Hewlett-Packard and LSI Logic. These early adopters were motivated as much by an interest to advance the OAC cause by proving the viability of OA in production design flows as they were by significant technical advantages.

LSI Logic also developed a complete set of extension language bindings for the OA API in the Python scripting language and contributed this technology, thus making it available to the entire OA Community. This was the first contribution to OA from a company other than Cadence.

OA Refinement Phase

The next major phase can be thought of as a refinement phase of OA that saw greater input of requirements by OAC members, the release of OA versions 2.1 and 2.2, and the beginnings of adoption by additional EDA user companies and vendors. During this phase, the number of OAC members grew significantly, although other big EDA vendors were still notably missing. Additional WGs were established to address new requirements for the technology. Cadence worked diligently to fine tune the reliability and performance of the OARI. The OAC developed formal training programs, a text book, and software providing translation utilities to aid the migration to OA from existing EDA format standards.

As planned, in July 2004 Cadence began to share control with the OAC Change Team, leading more vendors to believe that the Coalition was not just a Cadence driven project. In addition, a new multitiered membership was established by Si2, which especially encouraged more small vendors to join the Coalition.

The end of the refinement phase was marked by the community release of a more mature and stable version of the OA standard in November, 2004. This version was the point at which Cadence and the OAC committed to a very stable, backward compatible API standard. During this phase, there was a marked increase in the number of OA product announcements made by EDA vendors.

Cadence introduced a new version of Virtuoso which supported the OARI and proclaimed the end-of-life for CBDA. By the end of 2004, there were 29 commercial and in-house design tools supporting OA. Most significantly, the top five EDA vendors, Cadence, Synopsys, Mentor Graphics, Magma and Zuken, were all members of the OAC.

OA Adoption Phase

2005 began the adoption phase of OA and the end of 2006 was marked by further growth in OA product availability of both commercial and in-house EDA tools. As the OA Project progressed into its adoption phase, there were 43 such tools. If the OA standard is to become the primary industry standard database technology for IC physical design, there will be few exceptions to its use in vendor tools and user design flows.

How Open are the OA Assets?

The OA open assets have a hybrid nature. Formally, the OA API specification provides the standard. The API, however, cannot be considered apart from the OARI, which is made accessible in two forms: binaries and source code. Access to the OARI binaries enables familiarization with the API functionality and, moreover, actual application development using the API but without the ability to suggest improvements. Access to the source code provides an innovation and development mechanism enabling full scale open source development practices and the ability to suggest improvements.

The openness of the OA assets can be described by the rights given to users. Non-Si2 members can download general releases of the OA standard specification as well as the binaries and the source code of the OARI.

Academic members and Si2 members have access to member releases which are available earlier than the general releases. Si2 members can also use, reproduce, and prepare derivative works of the OA standard specification and the OARI in both source and binary code for non-commercial and internal use. In addition, OAC members can reproduce, distribute and sublicense the OA standard specification and the OARI in both source and binary code for non-commercial use, but can only include compiled binary code in the products they sell.

Any modifications to the compiled source code distributed in products outside a company's boundaries must be contributed back to the OAC within 30 days. However, if the modification is not accepted into the released OA source code, the modification may still be used in distributed products. This flexibility in the licensing terms was found to be important to OA adoption.

The description of the OA asset user rights shows that the OARI does not meet the criteria of the OSS definition provided by the Open Source Initiative (http://www.opensource.org). The distribution terms for OAC members do not allow anyone to distribute derivative source code of the OARI. For commercial purposes, members are only allowed to distribute compiled binary code. In addition, the rights to use and distribute the OARI differ by Si2 membership levels.

Companies wanting to distribute the unmodified version of the OARI binary code in their products must become OAC members and pay an OAC membership fee. Last but not least, the source and binary code of the OARI are not technology-neutral since they must comply with the OA API standard specifications.

It must be pointed out that the main deviations between the characteristics of the OA assets and the criteria of the OSS definition were intentionally implemented by Si2 and the OAC to help the development, the integrity, and the consistency of the standard by securing the commitment of the major industry players.

How Open are the OA Development Processes?

To discuss the openness of the OA development processes we will use an approach developed by von Hippel who applied user innovation network theory to study open source technology development (http://opensource.mit.edu/papers/vonhippel3.pdf). Von Hippel identified five dimensions of open source development:

1. Free revealing of a technology or asset

2. User innovation community

3. Collective invention process: a cyclic process of follow-on innovation leading to a series of incremental improvements triggering new rounds of innovation activities

4. Commons-based peer production: a newly emerging mode of production in which the members of the user community collaborate on projects leading to improved or completely new versions of the released technology or asset

5. User community governance and support

All these dimensions can be found in the OA OpenEvolution process: i) the founding of the OAC, the Si2 management processes and the OA IT infrastructure enabled the user community support and governance mechanism; ii) the release of Cadence's OpenAccess specifications and binary and source code as OARI 2.0 enabled a freely revealed technology; iii) public access to the OA Developer Forum, Enhancement Request Tracker and downloads of the OA 2.0 API specifications and OARI code enabled an active user innovation community; iv) the release of the OA 2.0 source code to the community enabled a collective invention process most notoriously expressed in the activity of the WGs; and v) the release of the OA 2.2 version was based on coalition member input and ChangeTeam acceptance and signified the presence of a peer-production process.

How Open is the OA Standard?

There is no clear cut definition of open standards. One of the most recent definitions was provided by Michael Tiemann (http://tinyurl.com/39ewfs) who identified four levels of standard openness:

Open Standard 0: the standard is documented and can be completely implemented, used, and distributed royalty free

Open Standard 1: there is a specified OSS product that can interoperate with the standard

Open Standard 2: there is an open source implementation that provides the ability to review the actual working of the standard

Open Standard 3: the reference implementation of the standard is an open source implementation

According to this classification model, level 2 is characterized by the availability of OSS implementation(s) of the standard but no reference implementation. Level 3 is characterized by the availability of an OSS reference implementation; that is, the reference implementation of the standard is open source.

The OA standard level of openness is higher than level 1. However, it has characteristics of both levels 2 and 3 since: i) there is an OA implementation that is open source (a feature of level 2) with somehow limited redistribution terms; and ii) the existing OA "quasi"-open source implementation is the reference implementation (a characteristics of level 3). The combination of OA features from both levels 2 and 3 was designed to provide a means for: i) advancing the standard over time as practices improve; and ii) providing a safeguard against fragmentation when a proprietary implementation extends the standard but the extensions have not been reincorporated into the open source reference implementation.

Insights from the OA Project

At the very early stages of the development of an open standard the major demand for open assets is driven mainly by the larger user companies.

Providing the primary technology supplier with a balanced control over the organization's governance can accelerate technology development that is consistent with the goals of the standard setting organization. However, other companies may develop a "wait and see" attitude towards the standard's adoption which may slow down the adoption process.

The development of OA's standard adoption mechanisms prevents the reference implementation code from meeting the full set of criteria for OSS. The standard adoption process requires that the reference code be distributed with no modifications in compliance with an interface implemented with a particular technology. These two requirements prevent the asset from being referred to as an open source asset.

The phases of the life cycle of standard development can be identified using product-release milestones. The end of each phase of the OA standard project was marked by the release of a new version of the OA standard which was qualitatively different than the previous one. The end of the viability phase was marked by the release of OA version 2.0, the starting point of the OpenEvolution technology development process. The end of the refinement phase was marked by the introduction of OA version 2.2, a mature, production enabling and backward compatible reference implementation. The adoption phase was marked by a considerable growth in commercial OA-based EDA design tools.

Reaching the adoption phase of a standard project with the scope of OA takes many years, particularly because it is a database technology to be used at the very heart of EDA applications and systems. Replacing the RunTime Model at the core of legacy EDA software, even with excellent software strategies, is a considerable challenge.

In order to understand user innovation networks, one must understand the pedigree and user rights of the common asset being produced as well as the interactions between companies with the development project and the market. Knowing only the characteristics of the open development process is not enough.

A multiple tier membership structure can accelerate a standard project's adoption. The number of members in Si2 and OAC grew significantly when the structure was changed from a single tier to a three tier membership structure. Each membership structure targeted a particular type of member. This made it easier for companies to join a membership tier with which they felt most comfortable.

Acknowledgements

We would like to express our gratitude to Mr. Donald Cottrell for his invaluable editorial contributions and role as a reference for the timing and specific nature of the historical facts from the very beginning of this research project. Cottrell began his professional career with IBM Corporation, and during the next 28 years was a member of IBM's Corporate EDA development where he held a number of senior technical and management positions. Following his retirement from IBM in 1993, Don joined the Si2 management team where, as Vice-President of Technology, he was responsible for all Si2 engineering and service projects. In 2003, Cottrell was titled as Si2 Fellow with responsibility for investigation of new technology areas in which Si2 should engage. The Si2 Design for Manufacturing Coalition (DFMC) program, for which Cottrell was responsible, is one such example. In June 2007, Cottrell retired.

We would like also to express our gratitude to Mr. Steve Schulz, President and CEO, and Mr. Sumit DasGupta, Senior Vice President of Engineering, of the Si2 for their support and cooperation.

Last but not least, our gratitude goes to Dr. Tony Bailetti, Professor in the Technology Innovation Management Program at Carleton University and Director of the Talent First Network, an open source technology commercialization initiative funded by the Ontario Ministry of Research and Innovation, for his research cooperation and financial support.

Dr. Stoyan Tanev has a M.Sc. from the University of Sofia, Bulgaria and a Ph.D. jointly from the University Pierre and Marie Curie, Paris, and University of Sofia in Physics, as well as a M.Eng. in Telecommunications Technology Management from Carleton University, Ottawa. In July 2006, Dr. Tanev joined the Department of Systems and Computer Engineering at Carleton University. His main teaching and research activities are associated with the Technology Innovation Management Program and include the application of open source innovation principles in new and emerging technology domains as well as the relationship between competitive intelligence, technology marketing, and innovation.

Amy Xu has a Bachelor in Computer Science and has just completed the Technology Innovation Management program at Carleton University. Her M. Eng thesis work was dedicated to the study of the OpenAccess standard development processes.

Jim Wilmore has been working in the IC CAD industry for over 30 years, first as a graduate student with Sandia Corporation, then for over 20 years at Hewlett-Packard, and most recently at Intel as Intel's Program Manager for EDA Industry Initiatives. Jim's work in IC CAD has been in many roles: as an application/tool/engine developer, as a tool customizer, as a CAD integrator, as a CAD System Architect, and finally as an Infrastructure architect and developer primarily focused in database and design management. He has worked on EDA industry standards for most of his EDA career. He has participated in OpenAccess from the outset and is now the Co-Chief Architect of the OAC's ChangeTeam.

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

The priority areas are the commercialization of open source in:

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

Expected Results

The TFN-POP is expected to:

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

Eligibility to Receive Funds

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

Budget and Size of Grants

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

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

Criteria

Proposals will be judged against the following five criteria:

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

Application

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

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

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

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

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

- Benefits: (maximum 1/2 page) Description of the benefits of the proposed project, and an overview of the context within which the project is positioned
- Advantage: (1/2 page) Market advantage provided by open source assets used in the project
- Information on applicants: (maximum 1.5 pages) Background information to help assess the track record and potential of the people who are key to the project and the college
- Project plan: (maximum 2.5 pages) Description of the deliverables (what will be delivered and when); key project activities; nature of the involvement from companies, and other external organizations; and plan to manage the project

Evaluation & Deadline

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

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

Contacts

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About the Talent First Network

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

Carlo from Italy writes: OSBR readers may be interested in the preliminary results from two EU projects on Open Source Software (OSS).

The European Commission has a long history of investigation and support of OSS, starting with the creation in 1998 of the European Working Group on Libre Software (http://cordis.europa.eu/ist/ka4/tesss/impl_free.htm) and later with studies and reports like the recent study on the economic impact of OSS (http://ec.europa.eu/enterprise/ict/policy/doc/2006-11-20-flossimpact.pdf). Among the most recent efforts, two projects are focusing in a specific way on how to facilitate the adoption of OSS by small and medium enterprises, through complementary efforts.

The first project, called FLOSSMETRICS (http://www.flossmetrics.eu) is developing a set of automated tools for facilitating software selection and quality evaluation, and the research goal is to be able to extract from public data (like code repositories and mailing list archives) trends and measures that can be used to help companies in the selection process among similar OSS efforts. Within the same project, the consortium has created a guide designed to help small and medium enterprises in understanding what OSS is, how it can help the internal IT processes, and guide in the adoption process.

The second part of the guide is designed for companies already producing software that may be interested in offering OSS services; for those companies, the guide provides an in-depth analysis of existing and potential business models, along with measures on relative effort and profitability.

The second project is called OpenTTT (http://www.openttt.eu) and is the result of the application of a long-standing practice in European technology transfer, formalized and applied in the European IRC (Innovation Relay Centres) and translated to OSS. The approach used standardized procedures and forms (called technology request and technology offer forms) and a mediation service that tries to match them in the optimal way. In the context of OpenTTT we are introducing a novel idea, called “clubs”, that tries to pool together similar open source software requests to find sufficient economic incentive for developers to create a customized solution.

This mediation service is currently being tested in dedicated workshops that are gathering interested companies (around 90 at the moment) in the sectors of industry, logistics and transport, energy, environment and public administrations (treated as SMEs, to provide insight into potential differences in internal adoption structures). As part of the service, a catalog of potentially useful applications has been prepared, listing 165 solutions for infrastructural software (like operating systems and security), business applications, engineering and groupware.

The projects will provide updates to both guides every 6 months; the guides are available at the address http://guide.conecta.it/ and released under a liberal Creative Commons license, to allow for commercial use.

Andrew from Ottawa writes: I would like to report that OSBC1, the first Open Source Boot Camp in Ottawa, was a success. The maximum of 80 people registered and 75 attended, which is exceptional.

There were lots of good questions from the audience such how can open source software be secure if people can see the code, how can you make money giving away the code, how do you dual boot, and questions about GPL licensing implications. Even the command line session, which was expected to be boring for most, generated murmurs about how useful various commands and tips and tricks were.

Planned OSBC sessions for 2008:

OSBC2 February: More shell commands, backup & restore, Windows interoperability

OSBC3 March: Web programming using open source

OSBC4 April: C and C++ development using open source

OSBC5 May: Open source databases

OSBC6 June: Geospatial solution development using open source

OSBC7 July: Development using the Eclipse framework

OSBC8 August: PERL, Python, and Bourne shell development

OSBC9 September: Basics of using open source (repeat of material from OSBC1 & 2)

OSBC10 October: Developing embedded devices using open source

OSBC11 November: Sockets and Threads programming

Open Source Boot Camp (OSBC) is a mini-conference aimed at outreach and awareness of open source software (OSS).

At OSBC, you'll learn the basic skills with OSS you need to differentiate yourself and help to get a good job and succeed in your career. OSBC teaches the basic skills that are not often taught elsewhere. For instance: shell commands, basic skills with the vi or emacs editors, makefiles, working with a code repository, and much more. OSBC aims to help people get started so they know where to go to learn more on their own. OSBC goes beyond foundation technical skills to try and help attendees understand open source based businesses and open source communities.

OSBC provides value to students and also to those interested in developing skills with open source. Students studying computer science, engineering, information systems, math, and geography will especially benefit from OSBC. This is just a guide and should not be interpreted to rule out other disciplines. All are welcome.

Mingle with members of the OSS ecosystem to learn what it is like to work with open source and about interesting opportunities.

If you would like to get involved with OSBC such as attending an OSBC, or possibly contributing a talk or sponsoring OSBC, please contact Andrew Ross (grof@rogers.com).

OSBC is generously sponsored by Ingres (http://www.ingres.com), Carleton University (http://www.carleton.ca), and the Talent First Network (http://www.talentfirstnetwork.org/).

January 22

Workshop on Open Source Best Practices

Montreal, QC

The commercial use of open source is hindered by many factors. These include a lack of integration with traditional requirements-driven product development approaches, licensing issues, a clash with existing corporate culture, and the perception that in order to benefit from open source you need to open your source to the outside world. The goal of this workshop is to bring together researchers and practioners with experience in open source adoption and value creation from open source, and to document the best practices.

http://www.carleton.ca/tim/events/wosbp2008/

January 23-25

Montreal Conference on eTechnologies

Montreal, QC

MCETECH2008 will feature a special track on open-source software for e-businesss, which brings an additional twist to the usual technical, organizational, and regulatory aspects of e-business. We also welcome contributions that deal with the extent to which open-source e-business software helps bridge the digital divide that exists between developed and developing countries.

http://www.mcetech.org/

February 7

Using Open Source in Commercial Embedded Systems

Ottawa, ON

Open source software, including GPL-licensed code, is becoming common in embedded systems. However, it's not easy to safely mix proprietary and GPL licensed code. Many companies and institutions are still struggling with how to integrate and manage the use of open source software in their development and distribution practices. This presentation will explore the nature of Open Source Software licenses, how they work (or don't work) in embedded systems, and what this means to developers and licensing practitioners. We'll also look at some of the changes recently introduced in Version 3 of the GPL. Pre-registration is mandatory for this event.

http://iit-iti.nrc-cnrc.gc.ca/colloq/0708/08-02-07_e.html

February 7-8

Privacy & Security 2008

Victoria, BC

This conference and exposition is recognized as one of the pinnacle events on privacy and security in North America. The conference is renowned for its outstanding content, world class experts, and excellent peer to peer networking opportunities with industry and government leaders. The agenda includes talks on open source software in the area of security.

http://www.rebootconference.com/privacy2008/

February 20, 2008

ePresence Day

Ottawa, ON

ePresence Interactive Media, Knowledge Media Design Institute, University of Toronto is hosting ePresence Day – an informative, instructive event to be held at Carleton University in Ottawa, on Wednesday, February 20th, 2008. The purpose of the event is to introduce you to ePresence Interactive Media (http://epresence.tv), the world's first open source webcasting, conferencing and publishing solution. Join us to hear all about ePresence and get the chance to experience it firsthand. If you're interested in online multimedia communications or open source software then you won't want to miss attending ePresence Day.

Time: 9am to 3:30pm

Location: Fenn lounge at Carleton University, 1125 Colonel By Drive, Ottawa. (Fenn lounge is located in Residence Commons marked as (CO) on the map http://www2.carleton.ca/campus).

RSVP (acceptances only) by February 4, 2008 to Kelly Rankin at 416-946-8512 or by email at kelly@kmdi.utoronto.ca.

Please note that the morning session of this event will be webcast live. If you are unable to attend ePresence Day in person, and would like to receive information about attending the webcast, please contact Kelly Rankin for more details.

http://epresence.tv/blog

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

February 2008	Data
March 2008	Procurement
April 2008	Communications
May 2008	Enterprise Readiness
June 2008	Security

Formatting Guidelines:

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

Articles: Do not submit articles shorter than 1500 words or longer than 3000 words. If this is your first article, include a 50-75 word biography introducing yourself. Articles should begin with a thought-provoking quotation that matches the spirit of the article. Research the source of your quotation in order to provide proper attribution.

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

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

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

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

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.