

Platform Strategies and the OW2 Consortium

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The opinions expressed in this paper are those of the author and do not necessarily reflect the views of OW2 Consortium.



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Introduction

A previous paper published about a year ago¹ described the OW2 business ecosystem strategy. The paper explained how a business ecosystem provides a framework for different, even competing, organizations to share a common goal and analysed what it takes to drive such a multi-faceted structure.

In this paper we intend to explain how our business ecosystem strategy is supported by a platform strategy.

Although the word platform is most often used to identify specific products or services, in this paper we choose to apply it to the OW2 Consortium; we demonstrate that the OW2 organization itself is a platform. The objective of this paper is to position OW2 as a *business ecosystem platform*.

In the first part, we look at the concept of the platform as it is usually applied to products and services, through examples from the IT and other industries and, in the second part, we explain why the platform concept also applies to OW2 and the tactics used to implement our platform strategy. Naturally, this paper is biased toward technology and, more specifically, software.

-A- Characteristics of Platforms in Business Environments

1. Defining a platform

First of all, how do we recognize a platform? Why are some products or services called platforms? Is this purely marketing or can specific characteristics be identified which point to the platform concept? Different examples help us to identify the four key characteristics which, in our view, define a platform in a business environment.

Political platform

In politics, a platform often defines an ideal of citizenship and government. For instance, in the late nineteenth century, the reconstruction of America after the Civil War saw the opposition of the Democrat and Republican platforms and eventually the development of a national identity based upon a mainstream vision shared by all Americans: "(...) the Liberal Republican platform defined a new alliance in American politics for the rest of the century and began the reconciliation of North and South around the idea of individualism." ²

First characteristic, a platform provides a *value that can be shared by different independent stakeholders*.

1 Initially published in Quaderni di Management (Italy) n° 33, May-June 2008 under the title "Reflexions on the OW2 Consortium Business Ecosystems Strategy".

2 Heather Cox Richardson, West from Appomattox: The Reconstruction of America After the Civil War Yale University Press, 2007, Page 147,

Product platform

Platforms have been well known for years in the automotive industry as a way to rationalize manufacturing: "For cars, the platform is primarily its chassis (...) and an associated family of engines and transmissions. Auto makers then create variants by putting different bodies on top of the same platform allowing multiple car models to use it."³ Product platforms are not exclusive to the manufacturing or high-tech sectors: credit cards companies, hotel chains and theme parks for example, also have core product platforms from which they develop a range of different services targeted at different market segments.

Second characteristic, a platform groups together the *key elements common to a family of different products or services*⁴.

Technology platform

In the world of technology a platform is usually at the crossroads between technologies, products and even stakeholders. Take, for example, the i-Mode technology for multimedia services in Japan: "The i-Mode technology platform consisted of two standards for creating content and for transmitting data wirelessly"⁵ or in a more obscure field we find: "We studied a USN middleware platform based on multi agent (...) with standardized interfaces between wireless infrastructure and application services using multi-agents."⁶

Third characteristic, a platform *facilitates the cross-integration of third party offerings*.

Software platform

Platform is a popular concept in the software industry, consider the following excerpt from the Eclipse Foundation: "(...) the project's broader goal is to deliver a general-purpose application and tool-integration platform. In order to fulfill this goal, it must be capable of integrating new functionality from different independent software vendors (ISVs) while preserving the appearance of a single cohesive environment"⁷

Fourth characteristic, a platform *provides and retains its own rationale and architecture when integrating complementary offerings*.

2. Three key platform mechanisms

Because of its characteristics, a platform can have an impact on its environment through three key mechanisms: the rationalization and the reduction of R&D and manufacturing costs, its extension through complementary products and services and standards, and the support for firms inter-dependencies and business ecosystems.

3 Daniel F. Spulber, Global Competitive Strategy, Cambridge University Press, 2007, page 92

4 Michael E. McGrain, Product Strategy for High Technology Companies: Accelerating your Business to Web Speed, McGraw-Hill; 2nd ed., 2000, page 53

5 Annabelle Gawer, Michael A. Cusumano, Platform Leadership: How Intel, Microsoft, and Cisco Drive Industry Innovation, Harvard Business Press, 2002, page 215

6 Ngoc Thanh Nguyen, Geun Sik Jo, Robert J. Howlett, Lakhmi C. Jain, Agent and Multi-Agent Systems: Technologies and Applications: Second KES International Symposium, KES-AMSTA 2008, Incheon, Korea, March 26-28, 2008, Proceedings, Springer, 2008, page 692

7 Jim D'Anjou, Sherry Shavor, Scott Fairbrother, Dan Kehn, John Kellerman, Pat McCarthy, The Java Developer's Guide to Eclipse, Second Edition, Addison-Wesley, 2004, page 219

Rationalization and the reduction of R&D and manufacturing costs

As seen in many industries, a platform can be the pivot of a product portfolio management strategy and help minimize the costs of developing product lines. For example, a platform strategy allowed, the French car manufacturer PSA to produce 85% of its cars on just three platforms.⁸

In a platform-driven R&D organization, where different products share the same structure, technology and production process, one can define *platform efficiency* as the "ratio between the average R&D cost (or development time) for derivative product over the cost (or time) spent for the platform."⁹ This ratio depends upon the degree of commonality within a product family: the lower the ratio the more efficient the platform is at supporting the development of derivative products sharing the same components.

In business terms, the benefit of an efficient product platform strategy is the ability to design a family of products, or services, better suited to the specific needs of different market segments setting the stage for a potential increase in revenue.

One platform, however, cannot be the universal answer to a product strategy; a given platform comes with its own limitations, it determines precisely the market positioning of an entire product line and its boundaries cannot be stretched too far. It has been noted that: "For instances, excessive component sharing across brands in the automotive sector has often been criticized by consumer and the press as in the case of Ford components being used in Jaguar cars, or Volkswagen's use of the same platform for widely different models."¹⁰

Standards and extension through complementary products and services

A platform's value is enhanced, on one hand, by derivative products provided by the platform developer and, on the other, by complementary product extensions or services offered by third party vendors. A platform offers opportunities for outsiders to develop profitable activities without having to develop the whole platform. From this point of view, a platform can benefit independent firms, outsiders or niche players.

Standards are important in this context because they facilitate (or reduce the cost of) the relationships between the platform provider and third party vendors and users. While product platform strategies developed in the automotive and aerospace industries were often based on proprietary standards (i.e. technical specifications owned and controlled by a single vendor and accessible only at a cost by third party vendors), platforms in the IT industry tend to be more reliant upon open standards which are, by definition, easily accessible to third party organizations.

Standards are important because they provide shared references and some long-term stability. Whether imposed to others through the dominant market position of a powerful vendor or the outcome of a collaborative effort by engineers and standards organizations, standards help reduce the variability of base components and architectures. They tend to limit complexity and uncertainty and to lower barriers to information access, technical compliance, operational implementation, maintenance, service development, etc. They facilitate integration and, over time,

⁸ Brüggemann/ Nyström/ Kiefer/ Gence, *Competence Analysis: An Approach to a Firm's Competence Domain: An Approach to a Firm's Competence Domain*, GRIN Verlag, 2007, page 12

⁹ John Clarkson, Claudia Eckert, *Design Process Improvement: A Review of Current Practice*, Springer, 2005, page 416

¹⁰ John Clarkson, Claudia Eckert, *Design Process Improvement: A Review of Current Practice*, Springer, 2005, page 416

help develop ecosystems of plug-and-play offering providers and achieve industry-wide linkage between stakeholders.

Firms inter-dependencies and business ecosystems

In today's fast changing markets where competitive advantage derives from rapid innovation and narrow market segmentation, market leadership is often achieved through a combination of a platform-based product development strategy¹¹ and an efficient leverage of complementary offerings. The management literature abounds in examples of how successful platform strategies define industry structures and yield market leadership.

In high-tech sectors, it is well known that end-results are so complex that no one company can provide all the constituents required to fully address customer needs. In network industries such as such as telecommunications, software and hardware networks, utilities, banking services, etc. companies must necessarily take into consideration the providers of complementary products and services. "A firm must innovate internally to succeed - yet its success may equally depend on corresponding innovations by external firms."¹² In this context, the most successful companies are those who manage to position themselves as providers of the core technology foundation, i.e; the platform, shared by, and necessary to other products, services and solutions. A platform provider, its complementors and the network of reciprocal dependencies between them form an industry structure that we call a business ecosystem. "Platform serves as an embodiment of the functionality that forms the foundation of the ecosystem, packaged and presented to members of the ecosystem through a set of interfaces. Ecosystem members then (...) think of them as the starting point of their own value creation."¹³ Platform providers become the keystones of their business ecosystem to the extent that "platforms provide them with a critical opportunity to shape and control their ecosystems."¹⁴

3. Multi-sided Platforms

Those platforms which serve as a hub for the relationship of business partners of different natures are called multi-sided platforms. They are particularly efficient at structuring industry segments. Understanding how multi-sided platforms work will help us understand OW2.

The multi-sided platform defined

A platform by itself is usually not enough to provide a solution; it requires complementary products and services. When they are provided by the platform vendor itself, we have a single-sided platform. When they are provided by independent third party vendors we have multi-sided platforms. To attract independent complementors, a platform must have a certain market reach or market recognition, but it can only achieve this if the collective value offered by complementors make it attractive for customers: the more customers the more complementors and vice-versa; this chicken and egg situation is fundamental of two-sided platforms. "Many if not most markets with network

11 Timothy W. Simpson, Zahed Siddique, Jianxin Jiao, Roger Jianxin Jiao, Product Platform and Product Family Design: Methods and Applications, Birkhäuser, 2006

12 Annabelle Gawer, Michael A. Cusumano, Platform Leadership: How Intel, Microsoft, and Cisco Drive Industry Innovation, Harvard Business Press, 2002,

13 Marco Iansiti, Roy Levien, The Keystone Advantage: What the New Dynamics of Business Ecosystems Mean for Strategy, Innovation, and Sustainability, Harvard Business Press, 2004, pages 148-149

14 Ibid. page 158

externalities are characterized by the presence of two distinct sides whose ultimate benefit stems from interacting through a common platform."¹⁵

There are many examples of two-sided platforms including shopping malls and software platforms: "The mall is available to stores and shoppers. Once there, the merchants and consumers interact directly on the platform. (...) Likewise, the software platform is available to developers and users. (...) Both user and developer rely on the services provided by the platform.»¹⁶

Conditions for multi-sided platforms

Multi-sided platforms tend to be found in sectors or markets with three main characteristics.¹⁷

First of all, there should be two or more distinct groups of stakeholders with a need for connection. This includes vendors seeking buyers such as, for example, merchants and credit card holders, but also vendors of complementary products or services willing to cooperate such as software and hardware vendors supporting a specific Linux distribution.

Second, there should be some industry-wide inefficiencies (or high transaction costs) in the connection process against which the platform represents a better solution, including through the provision of standard interfaces or processes, for example, eBay was created to help connect vendors and buyers of second-hand goods.

Third, there should be network effects or advantages in numbers as in the video game sector where "users like platforms with more games, and developers like platforms with more users"¹⁸ which, in turn, would favour cooperation between complementors.

Skewed pricing in multi-sided platforms

In most cases, the cost of using a multi-sided platform is not evenly shared between the different groups of users: "In a N-sided market, price should be set so that the right communities are attracted to the market in the right combination and balance. (...) The essence of the argument is that in an N-sided market, the value obtained by each type of customer depends on the presence of other types of customers."¹⁹ But stakeholder groups are not symmetrical and, technically, the way to obtain the right balance is to reflect these asymmetries in the platform pricing strategy: one group will end up paying more than the others. The group who will pay the most generally has one or more of the following characteristics: a) is most in need of the presence of the other group(s), b) has the lowest price elasticity and c) is easier to invoice by platform operators.

That is, simply put, the reason why most multi-sided platforms operate with a pricing structure that is strongly skewed toward one group of stakeholders. For instance, advertisers not readers bear most of the cost of newspapers, merchants not shoppers support the cost of shopping malls, etc.

Multihoming

There is generally no exclusive relationship between a user and a platform. The situation in which a

¹⁵ Jean-Charles Rochet, Jean Tirole, Platform Competition in Two-Sided Markets, Journal of the European Economic Association, vol. 1, n°4, juin 2003, pages 990-1029

¹⁶ David S. Evans, Andrei Hagiu, Richard Schmalensee, Invisible Engines: How Software Platforms Drive Innovation and Transform Industries, MIT Press, 2006, page 53

¹⁷ Ibid. page 55

¹⁸ Ibid. page 138

¹⁹ Marco Iansiti, Roy Levien, The Keystone Advantage: What the New Dynamics of Business Ecosystems Mean for Strategy, Innovation, and Sustainability, Harvard Business Press, 2004, pages 199

user or a complementor joins or supports more than one platform for a comparative need or function is described by the term *multihoming* which is borrowed from the vocabulary of computer networking technology. "For example, consumers may carry, and merchants may accept, more than one credit card for payment. Computer users may install a Windows or a Linux operating system on their PCs, or both. Software developers may write applications for Windows, Linux, or both."²⁰

Multihoming behaviours depend on a number of factors (switching costs, platform differentiation, access cost, etc.) and contribute to shaping both competition and cooperation between platforms.

Feature accretion

As already noted, platforms by themselves do not provide any benefit to end-users. For a platform to be of use, it needs to get all stakeholders on board and to attract them it needs to offer them a credible value proposal embodied into valuable services. These can be shared facilities as in the case of the shopping mall (parking, restrooms, security, lighting, cleaning, etc.) or functionalities as with software platforms (graphic features, file management, resilience, ease of administration, etc.). Feature accretion is typical of software platforms: "And, as with all code-based products, they compete by adding features — and thus grow larger — over time"²¹

Sometimes platform grow to the point where they integrate features already offered by complementors thus jeopardizing their market positioning: "As platforms grow in the range of functionality they support, and as once-new functionality becomes increasingly stable and tightly integrated into the platform, firms that staked out terrain at the frontier of the platform will be absorbed as the frontier shifts outward. This is the fundamental reason why, for example, so many software middleware firms have failed to scale as independent entities."²²

20 Justus Haucap, Ralf Dewenter, *Access Pricing: Theory and Practice*, Emerald Group Publishing, 2006, page 230

21 David S. Evans, Andrei Hagiu, Richard Schmalensee, *Invisible Engines: How Software Platforms Drive Innovation and Transform Industries*, MIT Press, 2006, page 216

22 Marco Iansiti, Roy Levien, *The Keystone Advantage: What the New Dynamics of Business Ecosystems Mean for Strategy, Innovation, and Sustainability*, Harvard Business Press, 2004, pages 154

-B- OW2 as a Multi-sided Platform

OW2 is a consortium dedicated to developing a code base of open source middleware. As a non-profit organization, OW2 drives a community of developers and companies which share the same interests. .XXXXXXXXXXXXXXXXXX

1. Market environment

Middleware defined

Middleware is commonly defined as the software layer that runs above the operating system and the network and under the application. Middleware offers a number of services through application programming interfaces (APIs) which programmers use to develop their applications. We should add here that *application* means *business application*; to that extent a generic application such as a browser or a portal which offers APIs can be considered to be middleware. Essentially generic, middleware does not embody a business process nor the key business functions that make one company more competitive than another.

The middleware market opportunity

Our understanding is that market trends call for open source infrastructure software. Middleware becomes critical as corporations and public administrations open up applications to remote employees, partners, suppliers, customers and citizens, as distributed computing infrastructure interconnect a growing number of organizations, and as cloud computing emerges as a new key trend in computing.

Modern computing systems are increasingly complex and middleware, an essential part of the foundation of large information systems, has become a strategic infrastructure component of our information society.

Because the value of infrastructure software increases with usage (also known as “network effects”), a large open single source is more efficient than many smaller proprietary sources. Moreover, as middleware becomes generic, product differentiation in this market tends to become less and less strategic. The rise of open source software is consistent with such trends, as is the emergence of a concentrated supply of open source middleware software. The OW2 Consortium was founded to leverage these trends.

Leaders, outsiders and long tail

As it happens in all markets on their way to commoditization²³, the middleware industry is increasingly concentrated: standardization and company mergers and acquisitions are reducing the number of middleware vendors to a few, usually North American, companies. At the same time, however, continuous innovation in middleware on one hand and open source, as both a collective development organization and a market entry strategy, on the other support the emergence of new vendors.

Middleware covers a number of functionalities which are often incorporated into established software platforms and, as noted above, this can make difficult the growth of independent middleware vendors. While market leaders clearly control their own market environments (partners,

23 A future paper will discuss commoditization and its relevance to the OW2 community.

complementors, even customers) outsiders and niche players struggle to control their own development paths. We think there is an opportunity to serve outsider vendors with modest market shares and fledgeling new entrants. We think that OW2 can play the role of the *aggregator*, making them "available and easy to find, typically in a single place."²⁴ There is a possibility that independent vendors coordinated around OW2 and abiding by mainstream open standards can, collectively, gain enough market power so as to balance market concentration forces and the influence of proprietary market leaders.

2. Community structure

What is the structure of the ecosystem that surrounds OW2 and how do we segment the different groups of stakeholders we want to serve or attract? We have identified nine groups.

Industry leaders

Leading industry players include large companies who have, or who are planning to develop an open source strategy. Usually they are not pure play open source companies. They want to implement an open source strategy on one part of their activity and would join OW2 if they recognize that the consortium can help them. They intend to leverage their OW2 membership to grow their own market and business ecosystem. Expected benefits include: greater visibility and goodwill in open source developer communities, a platform for ecosystem development, increased market power and market share, and the creation of de facto standards.

Within OW2 this group includes companies such as Bull, France Telecom, Red Hat and Thales

Software vendors, ISVs, start-ups

This group includes the many smaller companies which typically represent the most pro-active part of the open source market. They are innovative companies entirely dedicated to an open source business model. They join OW2 to become part of a business ecosystem which they expect to provide them with business opportunities and relevant feedback to accelerate the development of their technologies. These vendors expect networking benefits and they leverage the consortium to share the efforts required to build market visibility.

This group includes companies such as EBM Websourcing, Exo Platform and Xpernet

Systems integrators

Most systems integrators are agnostic as it is not in their interest to specialize too narrowly in one kind of technology. Systems integrators join OW2 mainly because: they want to open source software modules that they often re-use in customer projects in order to share their development and maintenance; they have identified open source as a valuable market positioning tactic; they want to belong to a technology-oriented business ecosystem which can help them grow their revenues. In short, joining OW2 helps them boost the efficiency of their open source strategy.

This group includes companies such as CVIC-SE, Edifixio, Engineering Engenharia Informatica, European Dynamics, Serli, SERPRO and Sogeti

²⁴ As defined in Chris Anderson, *The Long Tail: Why the Future of Business is Selling Less of More*, Hyperion Books, 2008, page 89

IT consulting firms

While systems integrators have the ability to take full responsibility for large projects, consulting firms concentrate on the initial phases of IT project life cycles: analysis, specification, technical expertise, architecture recommendations, etc. Typically they are small firms, even micro enterprises run by high-level consultants who leverage their community relationships to develop their business and maintain state-of-the-art expertise.

This groups include companies such as Altic, Artic Park, Experlog, Konsultex and Neociclo

End-users

End-users are defined in opposition to other groups. They include companies which cannot be included in other groups, they do not sell software, SaaS (software as a service) nor IT services, and they do not develop software to be embedded into products. End-users, however, have development teams for their own projects which can contribute to the OW2 code base. They would join OW2 because the freedom derived from open source software has value for them, because they seek to share experience and best practices with other end-users and to have easy and privileged access to technical specialists in the community.

This group includes companies such as France Ministry of Interior, Hospitals, Banks, Utilities, etc.

Research organizations

These are private or publicly funded organizations with leading IT research teams developing a significant amount of code and are keen users of and contributors to open source software. These organizations are interested in developing relationships with the IT industry they are seeking real-life experiences and test opportunities; resources to fund research projects while permanently looking to enhance their reputations and visibility.

This group includes organizations such as CNRS, Fraunhofer, INRIA, ISCAS and GMRC

Universities and IT R&D laboratories

This group is formed by universities and their research labs involved in software development. Students and post-graduates find in the OW2 code base a valuable environment for their studies. OW2 also provides them with an access to the open source world and to career opportunities. Most often, joining OW2 is the decision of a research laboratory rather than the whole university.

This group includes organizations such as Beihang University, Charles University, NUDT, Pekin University and University of Fortaleza.

Individuals

Although OW2 is an organization of organizations, it welcomes individual members. Many are freelancers and technology enthusiasts who have joined by curiosity or to improve their skills, to enhance their professional profile and some to find job opportunities, and some have registered on behalf of their employers in order to evaluate the opportunity of joining in the future.

Contributors

Contributors come from a variety of backgrounds. There are essentially three categories: the first includes direct projects team members, the second IT professionals using OW2 software in their own work (ISVs, systems integrators or end-users projects) and the third students working on projects within the framework of their studies.

3. Value proposal

All the above groups can consider joining OW2 because they have an interest in open source, middleware and the portfolio of software they find at OW2. But OW2 is much more than just a repository of open source code. It is an active organization whose mission, as written in its bylaws, is to "to develop open source middleware and to foster a vibrant community and business ecosystem"²⁵.

The OW2 Consortium operates for the benefit of its community. It is an organization designed to facilitate inter-relationships, first, between the community members themselves and, second, between the community and the market. To some extent, OW2 incorporates, on behalf of its members, functions, such as software distribution, license management, communication and evangelization, which are traditionally integrated into the value chain of independent companies. Or, at least, OW2 tends to share some of these functions with its members.

OW2 provides three types of services to its community. The consortium is first a technical platform delivering collaborative services to project teams, second, it is a catalyst for social and business interaction, and third the consortium provides communication and branding services for developing projects' visibility and market awareness. The following paragraphs provide an overview of the services provided by OW2 to its members.

Technical services

The OW2 platform offers a range of technical services to its members. Architecting, implementing and running a collaborative development infrastructure are the fundamental services offered to the community.

These services are currently supported by several main applications. The first is a forge, the application which technically supports the projects through a number of tools to manage code contributions, versions, debugging, licenses, contributors, downloads, etc. The second application is a mailing list system which helps create the lists used by the community. The third is a wiki system to support the organization's web site as well as projects' web pages.

Just as software platforms evolve by adding new features²⁶, we plan to keep adding new services and, over time, we have committed to adding features required by the different groups of stakeholders. The next wave of additions will include more tools for developers, a webinar solution to help members provide online presentations, a new forum to support more agile community interaction, a software appliance integration utility to enable our members to quickly integrate packages and a licence management system to improve the legal traceability of the software on the OW2 code base. Not all the new services will be operated directly by OW2, some will be outsourced to third party providers and not all of them are clear open source followers. For each new service, the issue arises of whether OW2 should rely exclusively on open source software or whether some facilities can be provided by non open-source software and services.

Governance services

²⁵ OW2 bylaws: <http://www.ow2.org/xwiki/bin/view/MembershipJoining/LegalResources>

²⁶ David S. Evans, Andrei Hagiu, Richard Schmalensee, *Invisible Engines: How Software Platforms Drive Innovation and Transform Industries*, MIT Press, 2006, page 305

Although the open source development model has been compared to a "bazaar" as opposed to the well architected, but rigid, cathedral²⁷, open source organizations such as the Linux, Apache and Eclipse foundations, and the OW2 Consortium aim to bringing a bit of the cathedral to the bazaar. The governance system implemented at OW2 relies on five guiding principles: Openness, Fairness, Trust, Transparency and Independence. It provides a framework, rules and organizational entities designed to address three main risks perceived by the market. Technology risk: Is the code good enough? Does it do what it is meant to do? Is it safe?, etc. Legal risk: Do I infringe someone's rights when using or modifying this code? What are my rights? Market risk: Is my investment protected? Will this code be supported in the long run? It takes a mature open source organization to address these risks, they are not covered by simple open source code repositories.

Let's take one of our governance entities, the Technology Council, as an example. It discusses the technical vision and controls the consistency of the code base, it recommends new projects, evaluates projects' progress and categorizes them into three evolution stages – Incubator, Mature and Archive – and it organizes discussions in the event of conflict between projects, etc. Some may think it is a bureaucratic organization but its role is to create consensus among members. An example of consensus is that a project can only be considered mature if it is documented, if professional support is available to help end-users implement the technology and if they have been tried and tested by community members. Projects in the OW2 code base can generally be supported by more than one members and are not entirely dependent on just one company as already proven in the past.

Marketing services

The role of the OW2 Consortium is also to build the community identity and brand and to help build the visibility of projects. In other words, OW2 drives a collective marketing effort to develop the visibility and market attractiveness of the community. While being developed by and for the Consortium, marketing and communication services benefit all members. This is achieved through a number of marketing and communication initiatives which, while developed for the group, help members improve their own market positioning. Indeed, the more the Consortium communicates, the more it gains respect and the greater the market recognition of its members.

With the help of marketing specialists from the community, the Consortium's Management Office (i.e; the day-to-day management team of the organization) supports the community's communication essentially in three ways: creating collateral, organizing the community's presence at professional events and driving outbound communication.

Collateral include presentations, a Web site, flyers, project datasheets, case studies, white papers, factsheets, logos and other tools such as flyers, T-shirts, note pads, pens, stickers, etc. Promoting projects at conferences and events involves, for instance, circulating call for papers, coordinating the participation of members at major trade shows under a single OW2 banner, organizing specific sessions to present OW2 projects in public conferences or setting-up public community meetings such as the OW2 Annual Conference, etc. Outbound communication efforts include the writing of press releases, presenting OW2 at conferences, producing a monthly newsletter or a blog, advertising OW2 in community-related web sites or paying to drive traffic to the OW2 Web site and briefing industry analysts and journalists, etc.

4. Pricing strategy

²⁷ Eric S. Raymond, *The Cathedral and the Bazaar: Musings on Linux and Open Source by an Accidental Revolutionary*, O'Reilly, 1999, page 30

OW2 is a non-profit association and, to protect its independence, it relies exclusively on membership fees and seeks neither government subsidies nor participation in publicly funded projects. As a result, the organization is entirely dependent on its members renewing their commitments. Should OW2 cease to provide adequate value for the money paid by its members, they would leave and the Consortium disappear. Genuine commitment to provide positive return on investment (ROI) to members and the need to attract all groups in the community have led to the implementation of a carefully segmented and skewed fee structure. The OW2 pricing strategy has four characteristics.

First of all, membership fees cover *access fees*; they are not usage fee. In a way, members pay for the right to use the Consortium's technical infrastructure (whether they use a lot of bandwidth or not does not affect their fees), to participate in its governance system (i.e. to participate in the decision-making process) and to leverage the brand (i.e. to increase their own market power). They also pay to guarantee the sustainability of the Consortium. This is not to say that there are no variable costs for members: they can be significant and consist of all the costs, mainly staff and travel, incurred by participating in the consortium's activities. These costs represent the real *usage fees* members should consider. But it is understood that members will only support these costs because when they participate in a Consortium's activity, they do it for their own benefit.

Second, the Consortium derives most of its resources from one group of members, the Strategic Members²⁸ group. This group includes industry leaders and leading research organizations which have decided to leverage OW2 for the development of their own open source strategies on the promise that it would cost less to do so than going through the learning curve of building a community and an open source organization from scratch on their own. Compared to other groups of members, the Strategic Members have a long-term commitment to the Consortium, they stand out to provide significant resources to support the Consortium's objectives and wish to play an active role in setting the directions of the Consortium's in both the code development activities and facilitating the use and acceptance of the Consortium's technology. This is the reason why Strategic Members commit to remain members for a minimum of three consecutive years.

The third characteristic is that, for Corporate Members, in between those who pay the most and those who pay nothing, the pricing scheme is designed to closely match the resources available to members. There are three company segments: large organizations and small and medium size organization as defined by the European Commission, micro organisation for companies under ten people, and two academia segments: universities and research laboratories, the main difference being that the former may have thousands of students while the latter only a few dozen. Interestingly, these segments were not defined ex-ante but in response to the requests made by potential members. One category of members, Individual Members, can actually join for free; that is because the price elasticity of this group is very high and a strict ROI analysis would lead to a fee so low that the financial gain for the Consortium would probably be offset by the cost of collecting the fees. There is an interesting debate whether end-users could be members at no charge for specific reasons;

Fourth, and last but not least, in order to comply with one of our five guiding principles, Fairness, in our pricing strategy, we decided to apply the Purchasing Power Parity ratio²⁹ as defined by the

28 The OW2 membership is divided into three categories: Strategic Members, Corporate Members and Individual Members. See: <http://www.ow2.org/xwiki/bin/view/MembershipJoining/MembershipCategories>

29 <http://www.ow2.org/view/MembershipJoining/ppp>

World Bank so that the financial effort of membership would be the same in rich as in developing countries. This is another way of implementing a skewed pricing structure to adjust to members expectations. Corporate Members who compete at a local level can be expected to support a membership fee compatible with the cost of living in their countries, Strategic Members however compete at a global level and it can be debated whether it is relevant to calculate their fees using the Purchasing Power Parity ratio.

5. Platform governance system

Confronted with the rise of open source, established commercial vendors have often retaliated by deploying FUD (Fear, Uncertainties and Doubt) communications strategies. Targeted at fledgling offerings by communities and open source vendors, these strategies have been devastating. The cultural image attached to open source is still by and large a liability to the point that, if commercial software is simply evaluated on the basis of standard buying criteria, an open source proposal needs to provide additional guarantees. The open source environment is still perceived as a jungle by a number of decision makers and the conventional information system manager often feels uncomfortable with the open source model which is by and large still perceived somewhere between rebel and immature³⁰.

To counter this perception we have implemented a simple yet effective governance system materialized by governing bodies with clear roles. At OW2, members work collaboratively at developing the code base and their business and community relationships within the framework of three kinds of activities: *Projects*, *Initiatives* and *Local Chapters*. Decisions are made at three levels: the Board of Directors discuss the strategic decisions, the Management Office (MO) makes the decisions relevant to running the organization and each Activities Management Team makes the day-to-day decisions to its activity. The Board and MO can rely on three Councils available to provide expert guidance and recommendations. The Technology Council for issues related to the technology platform and the code base, the Ecosystem Council for marketing and communication and the Operations Council for administrative, legal and financial affairs. At this point however, only the Technology Council is running properly.

It is not a one-sided leadership as in most software industry technology platforms. The OW2 governance system is democratic: all decisions are transparent and can be challenged and discussed.

The Intellectual Property Right (IPR) policy is a key part of the governance system. OW2 IPR policy is threefold. First of all, at OW2 we decided not to contribute to open source licence proliferation (we did not create the OW2 public licence) but to rely on existing open source licences. Second, we have implemented a mechanism called revocable non-assertion by which a company can bring patented code to our code base under an open source licence and still be protected. Third, because we do not want to restrict our members ability to develop a profitable business derived from its open source contributions, we accept dual licencing.

Governance drives the evolution of the code base and of the services provided by the OW2 platform. OW2 is a community driven by a set of rules and governance systems which aims at minimizing the randomness of relational power networks and politics often found in grassroots communities. From this point of view, OW2 is very much comparable to other open source

³⁰ Source: private interviews

organizations such as the Apache, Eclipse and Linux foundations even if some of its options, its IPR policy in particular, are different. Currently, it could be said that, of all these organizations, Eclipse is the benchmark against which OW2 evaluate the efficiency of its governance system.

-C- Specific Challenges

1. Multi-homing and self-homing

ISVs and Systems Integrators support OW2 typically because the consortium provides them specific services. In paying their fees, they form a community sharing the same commitment to building and sharing the tangible and intangible assets of the consortium. The scope of services provided by OW2 does not claim to address the entire spectrum of their activities. It therefore happens that some firms either look for additional services from different organizations, buy them from private vendors or develop them themselves. Example of such services include: recruitment, market studies and marketing services, product management, etc.

It happens in many service business that the service provider risks to find itself competing with its own customers; this rule applies to OW2. All the situation exist from very small companies depending extensively on OW2 to firms with such critical mass that they border on finding more valuable to create their own community environment. When companies develop their own community assets we can talk of *self-homing*. Self homing may have the well known advantages of hierarchies³¹, the principal one probably being the marketing ability to better track and manage user behaviors in order to increase conversion rates to services for a fee, but it must be very well managed to avoid frictions in the world of open source communities. Any member tempted by self-homing on the basis of recent success must clearly evaluate whether this decision will bring a long-term competitive advantage.

Besides a possible combination with self homing, there seems to be little incentive for multi-homing. We see no particular strategic or marketing advantage in supporting two, or more, platforms because this reduces the network effects of concentrating its commitment on one platform. Multi-homing can be justified only by a clear complementarity – rather than differentiation – between community environments. For this reason some OW2 members are also Eclipse members, for instance, but not for the same projects.

One last comment. There seems to be significant switching costs between community platforms and moving to another community environment is not an easy decision to take. For a member to leave a platform or to switch to another one is generally the result of a painful or radical decision driven by, for example, a member's internal change of leadership and strategic realignment, a management failure to execute the strategy which initially led to joining the platform, a member's management complete disagreement with orientations given to the platform.

2. Opportunism

31 Oliver E. Williamson, *Markets and Hierarchies: A Study in the Economics of Internal Organization*, Free Press, 1983, page 257

OW2 is founded on a simple contract between members. The platform was established as a non-profit association with the following purpose: "to develop industry grade open source middleware, to nurture the associated code base, to foster cooperation among its Members, and to help foster a vibrant eco-system for the exploitation of its middleware code base."³² It is also said that the activities "shall not be conducted for the financial profit of its Members but for their common benefit."³³ A simple contract, yet its execution seems to be hampered by a number of behavioral issues.

The OW2 platform is driven by a limited group of stakeholders who are not immune to opportunistic behaviors. Such behaviors, well described by economists³⁴, typically occur when agents believe they can bend some shared rules in pursuit of their own interests and escape detection and retaliation. "There is a considerable gap between the desire to engage in co-ordinated interaction and the ability to do so successfully. It can be difficult to reach mutually acceptable terms of co-operation, and to ensure that firms do not deviate from them"³⁵.

These issues derive from the fact that OW2 is endeavouring to organize the interdependence of agents characterized by a mix of converging and diverging interests. Members have entered into the OW2 contract with different perspectives: for instance, some are commercial companies whereas others are academic institutions, some are large, diversified organizations whereas others are small, single product companies, some are financed, others struggling, etc. Moreover, some have joined as strategic members and others as corporate members. It is therefore not surprising that members have different attitudes towards the consortium.

This difference is manifest in the way members comply with their commitments, specifically strategic members who have the highest level of commitment. In return for governance privileges, strategic members commit to providing both financial and in-kind contributions – personnel resources to help run the consortium to the extend of a full-time equivalent – for a period of three years. Information on financial contribution is clearly accessible: annual dues have been settled or not. In contrast, in-kind contributions are more difficult to measure. A questionnaire distributed to strategic members on their in-kind contribution produced the most improbable – and creative! – answers. The overall impression is that the majority of strategic members are opportunists in the way they do not provide their in-kind contribution in full. Some strategic members are also opportunists in the way they threaten to break their three-year agreements after having enjoyed their governance privileges for two years. As far as corporate members are concerned, some can be regarded as opportunists in the way they use OW2 exclusively – and, for some, abusively – as a download infrastructure without contributing back to the community or taking part in the activities of the consortium (this is our version of the "free rider" problem).

The OW2 platform governance is characterized by two weaknesses. First, it is difficult to really measure in-kind contribution or how members take advantage of the technical infrastructure. Second, despite legal binding by the membership contract and the bylaws, the potential cost of international litigation make such action almost impossible. Imperfect information on one hand, and the difficulty to enforce the commitment on the other, fuels an inherent propension to opportunism.

32 OW2 Bylaws, Section I.4 Purpose

33 *ibid*

34 George J. Stigler, "A Theory of Oligopoly," *Journal of Political Economy*, 22 (1964), pages 44-61

35 Directorate for Financial, Fiscal and Enterprise Affairs, Committee on Competition, Law and Policy, Oligopoly, DAFPE/CLP(99)25 (1999), page 7

This is a well known situation where members have a quasi structural incentive to "cheat"^{36 37} in order to maximize the net gains from their participation in the consortium. Developing OW2 is an on-going exercise in reconciling diverging and converging interests and in developing such a compelling value proposal that the incentive related to converging interests is permanently greater than that of diverging interests.

3. Maturing endogenous and collective leadership

The OW2 platform is an open source community organisation which belongs to its members and, because of this, it must be driven by a collective governance and not by any measure of strong leadership or dictatorship no matter how benevolent³⁸ it might be. In this respect, the OW2 platform is very much unlike a product or a technology platform controlled by the R&D and marketing departments of a firm, such as Intel's X86 platform or Microsoft's Windows platform for example. The evolution of the OW2 platform reflects the maturation of the collective wisdom of the consortium's members.

As noted above, the OW2 platform brings together different types of stakeholders and their own goals in interacting with the platform may differ. When they join OW2, members bring their own experience and understanding of the open source movement. Heterogeneity, diverging expectations and incongruent objectives are problems well known to organizations.

As a platform, OW2 can exist only in so far that it offers its stakeholders benefits which exceed the contributions it requires from them and, as a community-driven organization, OW2 can exist only in so far as it offers proper conditions of reciprocity and equity to its members. We can analyse OW2 as a bureaucraties³⁹ which role is to organize the interdependence of its members more efficiently and on a fairer basis than provided by the market. However, as we have seen, because of excessive ambiguity in the evaluation of the contribution to the OW2 platform and the utilization of its resources, the bureaucratic organization of OW2 is still quite inefficient at preventing opportunistic behaviors.

We expect that the world of open source's strong ethical values will help contain opportunistic behaviors within acceptable limits. And we assume they are more the result of a lack of maturity in the OW2 platform or, in other words, of uncertain intentions in an uncertain environment, rather than deliberate strategies. From this perspective, a key success factor of the OW2 platform will be its ability to grow a common expectation ("goal congruence") among its members in order to be able to operate with a certain level of uncertainty, between tolerance and opportunism, on participants contribution and usage ("ambiguity in performance evaluation")⁴⁰ In the meantime, OW2 will have to better explain its strategy and educate its community or should this fail improve its ability to strictly enforce its bylaws.

36 George J. Stigler *ibid*

37 Oliver E. Williamson, *Markets and Hierarchies: A Study in the Economics of Internal Organization*, Free Press, 1983, page 257

38 Eric S. Raymond, *The Cathedral and the Bazaar, Musing on Linux and Open Source by an Accidental Revolutionary*, O'Reilly, 1999, page 124

39 William Ouchi, "Markets, Bureaucraties and Clans", *Administrative Science Quarterly*, Vol. 25, No. 1. (March 1980), pages 129-140

40 Ouchi, *ibid*, page 135

Conclusion

Established from the onset as an unconventional means to share code among developers, open source has evolved into a major structuring factor in the software industry. Since open source is on its way to becoming mainstream, it is expected by the market to give itself the necessary business, community and legal environment to make it a sustainable phenomenon. The OW2 Consortium was launched to leverage these trends. OW2 is both an open source community and a community-driven organization. OW2 provides a meeting point for stakeholders of differing natures who share an interest, either technical or business, for open source middleware.

In this paper, we have analysed how the OW2 Consortium is positioning itself as the platform at the center of a business ecosystem. We have shown how OW2 is implementing the core tactics of multi-sided platforms including skewed pricing schemes and feature extension.

Today's priority for the OW2 platform is to explain clearly its positioning and to offer a vision, an ambition shared by all participants so as to, first, develop a real community momentum among existing members and, second, to become both visible and attractive enough to potential members.

Now that the OW2 Consortium is establishing itself as a community-driven business ecosystem platform, its next challenge is to actually offer a technology platform as defined at the beginning of this paper. Today, projects in the OW2 code base follow their own architecture and integrating them sometimes requires significant efforts. An ambitious goal for OW2's should now be to offer a real technology platform with projects which seamlessly integrate with each other. Combining a consistent organization with a consistent technology would grant the consortium and its members a long-lasting competitive advantage in the ever-changing software industry.