

TOWARDS A EUROPEAN SOFTWARE STRATEGY

REPORT OF AN INDUSTRY EXPERT GROUP

Open Source Software Work Group

March 2009

V3.0

Executive Summary

The OSS workgroup has been very active and probably like all other workgroups, we felt that our ideas refinement and passionate debates were only limited by the deadline set for this work.

Our group included members from various sectors and line of thoughts, The group included a non-profit centre of competence for OSS, industry representation with partial or high OSS degree for their revenue model, as well as organisations that base their entire revenue on the proprietary mode. As a consequence some of the views and proposed actions are not backed by all. When this occurred, the views particular to some group members have been identified as such and can be easily located in the report. Appendix 2 provides a full list of participants. Appendixes 3 to 8 also include separate statements or contributions made by some group members to clarify their position regarding some or all the report content.

Open Source Software has become ubiquitous (see § 2). As several recent reports show, OSS is now playing a significant role in the Software economy in general and is a powerful enabler for ICT as a whole. Therefore a number of OSS specific actions can be proposed to be part of the European Software initiative and could contribute to growth in Europe, jobs creation and improvement of the European Software imbalance.

Although OSS is very successfully disseminating across virtually all businesses and organisations, Market Confidence is not equally high in all areas (see § 3.1). If this could be improved, the impact of OSS would be significantly larger. Despite the importance of OSS among European based communities and developers, another issue is the relative fragmentation and lower financial strength of the European OSS actors compared to others, among which the USA.

Some important trends are currently taking place in the Open Source Software economy (see § 3.2) : Coming from a purely proprietary approach, large traditional vendors increasingly incorporate OSS into their software model, typically starting with non-revenue relevant components, resulting in a “mixed model” approach for these vendors. New business models choose freely from proprietary, mixed or OSS software models, with a perceived tendency for mixed models to migrate towards higher OSS components. A “mixed” approach is also found among many user organisations also underlined the increase of company funded OSS, the continuous “up-stack” movement of OSS from “infrastructure” to “application” layers, and the significant impact of OSS on “software commoditisation” and “adoption of “de Jure” standards.

We identified several barriers which may limit the economic impact of Open Source Software in Europe (see § 3.3). The fragmentation of the OSS space in Europe, some “technical” barriers in relation with IPR, quality and security aspects, the relative weak presence of OSS in education, fairness in procurement, some issues related to deployment and integration, and a number of important IPR, licensing and standards related barriers such as exclusions from standards implementation and unsubstantiated use of IPR threats,

In response to the identified barriers we have proposed a number of practical actions (see 3.5).

Actions having a direct effect on the ICT sector such as ‘European Digital Independence’ and promotion of initiatives targeted to commoditize software products of interest to European industries.

Although we do not propose straightforward “mandating” of Open Source we suggest a number of measures related to IPR, interoperability and standards, among which IPR sanity checks, the voluntary Licences of Right regime, protection of OSS implementation of Standards against abusive exercise of IPR, promotion of open source reference implementation of critical standards, the use of open formats for public administration, and recognition of consortia-led standards.

We also considered actions aiming at addressing the OSS space European fragmentation and improving the lack of market confidence such as : the “European OSS forge, promotion of best practises, use of voluntary labels, the European OSS test bed, the support to European Software as a Service platforms based on OSS. The strengthening of OSS organisations in Europe could benefit from tax incentives similar to what some member states have under the concept of Research foundations.

To address the education barrier we propose to include OSS in school curriculum and to promote initiatives such as Computer Driving Licence based on Open Source Software.

Finally, inspired by our knowledge of the key success factors of the Silicon Valley we identified a number of barriers and actions which can impact OSS but also software in general.

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1. INTRODUCTION

1.1. Context

The need to develop a European Software Strategy was raised by Commissioner Reding in her speech "Towards a European Software Strategy" at the Truffle 100 event (19 November 2007), and reiterated at the Microsoft Innovation Day (4 December 2007). The Commissioner appealed directly to industry on this matter. Subsequently, a number of key organisations in the software sector have sent to Commissioner Reding their views on the issues that should influence such a strategy, and have suggested elements that might form part of a strategy.

This led to a position paper which was presented and debated on January 20th during a meeting with Industry and European Commission representatives.

As a follow-on it was proposed by the Commission to organise seven workgroups, each in charge of refining the position papers views on a particular aspect;

Workgroup n°7 was in charge of Open Source Software (OSS) and produced the present report.

1.2. Report structure

Paragraph 2 gives an over view of the present status of OSS (in Europe and outside).

As requested by the commission the main part of the report explores the following aspects : Issues, Trends, Barriers, Benefits and Actions all grouped in paragraph 3 hereafter.

2. STATE OF THE EUROPEAN OPEN SOURCE SOFTWARE SECTOR

2.1. Open Source Software has become ubiquitous

The following are extracts from the press release which followed the UNU-MERIT report commissioned by DG Enterprise and Industry issued in 2006 (the term FLOSS (Free/Libre Open Source Software) is equivalent to OSS) :

- *FLOSS applications are top rung products in terms of market share in several markets.*
- *The existing base of quality FLOSS applications with reasonable quality control and distribution would cost firms almost Euro 12 billion to reproduce internally. This code base has been doubling every 18-24 months over the past eight years.*
- *The notional value of Europe's investment in FLOSS software today is Euro 22 billion (36 billion in the US) representing 20.5% of total software investment (20% in the US)*
- *While the US has an edge in large FLOSS related businesses, Europe is the leading region in terms of globally active FLOSS software developers, and leads in terms of global project leaders, followed closely by North America. Asia and Latin America face disadvantages at least partly due to language barriers, but may have an increasing share of developers active in local communities.*
- *By providing a skills development environment valued by employers and retaining a greater share of value addition locally, FLOSS can encourage the creation of SMEs and jobs.*
- *Defined broadly, FLOSSrelated services could reach a 32% share of all IT services by 2010, and the FLOSSrelated share of the economy could reach 4% of European GDP by 2010.*

The following two studies and Gartner and Forrester clearly show that open source has become ubiquitous:

"Eighty-five percent of companies are already using open-source software, with most of the remaining 15 percent expecting to do so within the next year, according to analysts at Gartner."

See an executive summary of the Gartner report in Appendix 1

<http://news.zdnet.co.uk/software/0,1000000121,39554840,00.htm>

"Survey shows that Open source components are now ubiquitous. Users are well aware that commercial vendors are massively bringing Open Source into all enterprises, without even asking their customers, changing significantly from a complete commercial build to a mixed orchestration of Open Source and commercially licensed software."

<http://biz.yahoo.com/prnews/081201/ukm003.html?.v=101>

2.2. Short reminder on OSS

Open Source Software (OSS), also known as Free Software, Libre Software, FOSS, or FLOSS, is a software model that was defined by MIT scientist and Mac Arthur grant winner Richard M. Stallman in the mid 80s.¹ and then 1998 Open Source Initiative (OSI) started a marketing program for Free Software under the term of Open Source. After maturing in the scientific, university, and individual entrepreneurial environments, OSS has meanwhile established itself in the mainstream of the commercial software industry and has become a commercially and technologically viable alternative or complement to traditional models based on the commercialization of licensees of proprietary products and services in some areas.

2.3. Type of actors in OSS

Although any grouping has an arbitrary element, it is possible to group the actors in this field according to certain criteria, some actors will fit more than one category:

Commercial OSS user

According to Gartner research, 85% of all companies recently surveyed are using OSS, the remaining 15% are planning to do so within the next year. Therefore, all companies are commercial users of OSS. Software development and integration companies are typically among the most active users of software, which is also true for OSS.

Commercial OSS developer

Commercial OSS developers base their revenue stream upon the development of software, either as an on-demand service, or in order to provide secondary means of revenue generation, e.g. see Commercial OSS distributor.

Among OSS developer are also “Hybrid OSS and proprietary” (ex: SAP, IBM, Sun, Novell) and also new actors such as Alfresco, SugarCRM, JasperSoft, Pentaho, Compiere, Talend.... Their products are Open Source but they are the only one to own the copyright. Therefore they can have a dual licensing model (free and not free²).

¹ See <http://fsfeurope.org/projects/wipo/fser> for reference.

² More precisely the product catalog of mixed model vendors combines proprietary, open and proprietary-built-on-open products; dual licensing (where the licensing rights are held by the company, allowing for the same code to be distributed under several alternative licenses, one of which is proprietary) and open with certified binaries (the source code is available under an open license, but binary code is available exclusively to commercial customers).

Commercial OSS distributor

Commercial OSS distributors build their revenue stream entirely or in part upon the distribution of OSS. The commercial differentiator is typically connected to some additional value offering, which can be in the form of a proprietary add-on or component, or in fitness for purpose, warranties, or other forms.

Commercial OSS integrator

Commercial OSS integrators provide a service that is similar to a commercial OSS distributor, but the service is provided specifically for a certain customer and includes additional development and customisation for the specific needs, as well as consulting and training services.

Non-commercial users, developers, distributors

The OSS ecosystem also includes non-commercial parties, which either derive their revenue from an unrelated third-sector (e.g. scientists) and participate in the OSS ecosystem with their specific knowledge from these areas, either as an activity to support their own professional activity, or as a means of creative past-time activity. There is a considerable exchange between these parties and the commercial part of the ecosystem, resulting in new business approaches and developments.

Of course frontiers between categories are blurry, actors can belong to several depending on their product and can move from category to category.

2.4. Business models based on Open Source

Business models are largely orthogonal to the issue of software or development models. There are more than 300 different combinations³ of the three factors, with new approaches and combinations emerging over time.

Generally speaking OSS vendors cannot tie their revenue models to direct licensing cost, but much of the same effect can be emulated through contractual constructions, trademarks and/or certification. There is a large overlap of business models between OSS and proprietary software, with some business models tied to pure OSS, pure proprietary or mixed model approaches.

³ <http://blogs.the451group.com/opensource/2009/02/23/on-open-source-business-strategies-again/>

2.5. Europe OSS structural imbalance

Ideally suited for a model of open innovation and collaboration, OSS has evolved faster in Europe than anywhere else in the world, possibly because its approach is well suited to an environment of diverse participants of varying sizes as it is predominantly found in Europe. But while much of the innovation and development is European in origin, and European experts and contributors are prominent and highly regarded in the OS community worldwide, Europe has yet to bring forth an Open Source champion of comparable size to those operating out of the US.

Reasons for this structural imbalance can at least in part be found in the transformative process that several of the large US IT companies have entered in the late 90s when they began to develop their own OSS strategy. This development brought about very large mixed-model companies that often become visible as champions of OSS, most of which are based in the US.

In addition, most OSS consortia – the non-profit organisations managing OSS development and marketing – appear to be based in the United States and funded by US IT companies. At a second glance, it becomes apparent that a strong European ecosystem of organisations exists, but a lack of strategic focus on these organisations by European players is causing an imbalance of mind-share in favour of the US.

Europe must address this imbalance.

In order to maximise the benefits from OSS in Europe for European developers, users and entrepreneurs, our strategic focus needs to be on the better exploitation of OSS in Europe, the strengthening of the European ecosystem around OSS, and capacity building initiatives.

A pragmatic approach, taking into account legal constraints and market reality is key to Europe's competitiveness.

2.6. OSS is a global phenomenon

The dynamics and OSS ecosystem are global in structure, with commercial success reaped on all levels: local, regional, national, and international. Smaller companies provide employment, competency and taxable revenue for European countries even if projects like Linux, Eclipse and OpenOffice.org thrive mainly based on the code contributions financed primarily by larger US-based vendors.

In some cases, e.g. OpenOffice.org with the primary development based in Hamburg, Germany, that financing contributes directly to European GDP.

The high level of interconnectivity is a primary strength and benefit of OSS, and should be taken into account in all policy setting activities. The focus should be on the creation and support of local champions that will have a global impact.

3. THE ROLE OF OPEN SOURCE SOFTWARE WITHIN THE EUROPEAN SOFTWARE STRATEGY :

3.1. Issues

3.1.1. Inequality of market confidence

Market confidence is not equally high in all sectors due to lack of information and misinformation about availability of support, skill levels, understanding of licence terms, and liability. OSS allows users to approach integration by means of the vendor of the software, a third-party integrator, or their in-house IT department. Wrong choice of integration path can lead to higher cost, which is often falsely attributed to the OSS software model, resulting in misconceptions.

3.1.2. European software companies often get acquired by larger US-based companies

Despite the difficulties that European software start-ups might have, there are indeed European software vendors including open source software vendors with the power to acquire other software vendors (in the US, Europe or elsewhere). However, the acquisitions of European software companies like StarDivision, NetBeans, MySQL AB, Innotek (VirtualBox) and SuSE by US-based vendors show that successful European software vendors often get acquired by US-based companies. Partly due to historic reasons, there are far more US-based IT companies with a large buying power than there are European IT companies who can afford to acquire other software vendors, which leads to the effect outlined in § 2.3 above. European IT companies also have fewer alternative growth strategies than their US counterparts due to smaller/more risk adverse venture capital community and fewer IPO opportunities. This is not an issue per se, but if the lack of Europe-based software companies is seen as an issue, it is important to understand the dynamics of the market.

One should question what are the consequences of this trend. It could impair the so called “Europe Digital Independence” and also impact jobs.

Moreover, there may be situation where a particular piece of software plays a key role in some economic activity or may create security related concerns under certain circumstances. In such situation, promoting open source alternate solutions may be used to modify the situation of actors and shift the competition “playground”.

Regarding jobs we believe that ultimately what matters is where are jobs located. If European Software or OSS companies are acquired by non European firms but if the corresponding jobs stay in Europe (and if the threat on “Europe Digital Independence” is minimal) then the consequences on Europe are limited. Conversely we know that European Software companies can, just as well, while having their HQ in Europe, decide to grow or move R&D facilities to non European countries.

3.2. Trends

3.2.1. *Role of the mixed models*

Some companies combine Open Source with proprietary models to optimize development cost on the one hand and maximise differentiation on the other hand. Some vendors use closed source elements to differentiate themselves from other Open Source vendors based on the same software ("value adding"). Vendors based on a proprietary software model use Open Source in order to improve standards support and to share development cost, in particular on non-differentiating components.

3.2.2. *The near future will be diverse*

Open Source Software represents a software model defined by a high level of user control over the software in combination with often unequalled freedoms to study and innovate upon the software, allowing for rapid incremental innovation. These benefits have become so associated with the software model that OSS is often misunderstood as a new development or business model.

There is a wide variety of development and business models built upon OSS, ranging from traditional approaches, such as custom development or COTS to service based approaches and SAAS. Most of the large players have incorporated OSS into their strategy, resulting in a mixed model approach (see § 3.2.1 above). Considering that almost none of these companies had significant OSS offerings only 10 years ago, it is possible to observe a clear trend towards OSS.

At the current point in time it is impossible to predict when and if that trend will further expand or come to an end. New companies enter the market with models spanning the entire range of proprietary models over mixed models to OSS models. Only time will show which models will be most successful in Europe.

Additionally, as the Information Economy Report 2007-2008 of the United Nations Conference on Trade and Development (UNCTAD) highlights, the ICT sector itself is a remarkable source of innovation and economic growth, but there is strong evidence that ICT-enabled innovation in other sectors has an even larger impact on the overall economic situation.

Key factors identified by UNCTAD as part of this process are the commoditisation of software, along with open innovation approaches, based on OSS. While OSS itself has remarkable innovation benefits, it appears necessary to include ICT-enabled sectors into the assessment to understand OSS's full potential for European innovation and economic growth.

One usually look at OSS models in the pure Software space. But this is changing. In addition to software related business, more and more companies offer products and services which are not software but rely on software and on

Open Source Software in particular. Google is probably the most visible example. Software is not its primary source of revenue, but Google both uses OSS produced by others and releases its software as Open Source.

3.2.3. Company funded OSS support is gaining momentum

Having evolved from its original academia origin to a viable option for research and development, OSS has attracted more and more companies to fund and drive communities. The drivers for this are multiple (establish standards, share maintenance costs, gain visibility). This will definitely accelerate, primarily in the area of building eco systems, as we see in initiatives as e.g. Eclipse, Android, OW2, Limo

As existing projects demonstrate real returns on investment, companies will allocate more of their research and development spending in open source communities.

In addition, the "support for profitable business models" and "the prevention of vendor lock-in/the promotion of competitive choices" are also key drivers for why companies are funding and driving OSS communities.

3.2.4. OSS users: Combining software models based on requirements

Users of OSS include companies, administrations, public institutions, schools and universities, SOHO enterprises, end users. Depending upon factors such as availability of OSS solutions, the individual capabilities of the software and needs of the users, and pre-existing infrastructures, solutions often integrate both proprietary and OSS components.

It should be added, that the trend today is that OSS solutions get used in number of companies without the upper management being aware of this shift in the companies' "procurement strategy".

ECIS adds the following :

This is due to engineers which manage the companies' IT systems just download, test and - if it works - install different OSS solutions to complement the already installed IT base. This is possible due to the free access to the OSS without having to go through cumbersome and time consuming tendering processes. MySQL is an example of such a trend.

End of ECIS addition.

3.2.5. *Growth of the “Vendor” model*

Inspired by Red Hat, the OSS the “Vendor” model is being adopted by numerous companies in all domains (BI, ETL, CRM, ECM, ERP,...) .

3.2.6. *OSS contributes to Software Commoditisation*

Commoditisation trend : generic software follows an evolutionary trend toward commoditisation (due to intense competition that level functionalities and added value) and open source is generally a key factor of this evolution. Even domains with very hard constraints such as telecommunication systems or embedded systems requiring expertise and know-how is now subject to this commoditisation.

Commoditisation benefits users and integrators and challenges pure software vendors to innovate rapidly in order to differentiate their products from commodity versions: the opposition of these types of actors on the OSS subject is understandable.

Examples of sectors in which OSS is competitive:

- OS with Linux, Android, Symbian,
- databases with MySQL and PostgreSQL,
- office suites and desktop tools with Openoffice or Mozilla
- Internet tools such as servers, browsers, editors, Content Management Suites, blog and wiki engines,
- languages and IDE.

3.2.7. *Open source model is moving from “infrastructure” to “application” layers*

Mixed models are understood as combination of Open Source and proprietary software under a proprietary umbrella.

Open Source Software is however seen as making strong inroads in terms of customer adoption in areas previously thought as strongholds of proprietary software: business intelligence, high performance relational databases, ETL (ex: Talent), ECM (ex: Al Fresco), etc.

This movement “up the stack” is expected to continue in the future

3.2.8. OSS accelerates dissemination of de jure standards

Open source is a way to promote standards either de facto or de jure. A lot of de facto standards disseminated through open source implementation (early IETF standards, W3C, ...). Open source implementation can be a way to accelerate discussion and dissemination of de jure standards. An open source implementation can help consolidate a standard by pointing the inconsistencies or lack of precisions of some specifications (it's especially true for interoperability standards).

3.2.9. OSS contribute too improve the quality and security of software

Distribution of the source code of a piece of software and the right to improve and republish it, contribute to its incremental improvement ; when a large community of contributors is motivated and well organized, the resulting code may be considered the state of the art with respect to some functionality, the quality and dependability of the software, its intrinsic security. For some specific functions such as cryptography and e-voting algorithm, access to the source may be mandatory.

3.3. Barriers

3.3.1. Need for OSS European Digital Entrepreneurship

The very first step to capture the current Open Source trends is to have a coherent strategy and also a global vision. At the moment this is not always the case. Most of the proprietary software vendors do have a strategy, a roadmap and a vision (functional and technical).

Open source is often perceived mainly as an alternative to proprietary software. Hence the vision is reduced to an implementation roadmap, trying to compete with closed source software in terms of features to implement. One should think of OSS as a global phenomena to define a strategy in terms of impact and role of OSS in the service economy.

Instead of being perceived as “running after a proprietary solution” or as an alternative, Europe should try to lead and to push an innovative technical vision implemented in Open Source. As this implementation will be in Open Source, all IT players, promoting or not, using or not using Open Source, will then be able to use it as they want, without any business discrimination.

The Commission is not the owner of this vision. The various actors, creators, integrators, users, are. For it to grow it requires what we could call an “Open Source Digital Entrepreneurship” attitude, meaning that the various communities and actors could maybe better share a common roadmap of who does what for which goal in the three aspects (creators, integrators, users).

3.3.2. *OSS European space fragmentation*

Note: the following applies to European OSS communities not OSS vendors

The Open Source software communities do not have the critical mass and are not enough organized to cooperate and share issues, infrastructure, etc... In Europe there are a number of different Open Source communities or consortium. They all suffer the same issues: Lack of money, lack of reliable infrastructure, lack of European visibility, fragmentation of OSS foundations between countries.

Furthermore relationships between Communities and enterprises and among Communities are not always effective yet. In that respect the US show a better example. There is an understanding by US entities that supporting such entities is useful “ecosystem maintenance” for their commercial environment. Europe has a very healthy ecosystem of organisations, some of which are larger than their US counterparts, but there tends to be very little strategic understanding in European players that a focus on collaboration with these players would initiate a positive feedback cycle for the European area.

3.3.3. *“Technical” barriers*

Awareness and knowledge (of legal aspects) about open source software leaves much to wish for. Successful companies utilising open source in their business models have the knowledge of how to incorporate open source, and its legal obligations, in their proprietary software and services. Unless awareness of the included open source software and the effects thereof are known, a company would either be reluctant in using open source software or simply use it without any governance.

As the awareness and knowledge of open source software grows, the understanding of how to monetize open source will also evolve, with new business models and opportunities for companies.

Quality and security barriers :

In theory, the source code itself can be inspected for quality assessment and even processed by code analysis tools: this may requires specific skills and man power that may not be available in the organisation planning to use the software. Big companies may perform this kind of evaluation as part of their sourcing process. Open Source has a reputation for security and quality. Scientific studies show that software using an open development methodology has fewer defects than software following closed approaches. How can we quantify that perceived advantage, how can we measure the quality of OSS? If we take the point of view of the NESSI and Industry, quality is:

- Intrinsic quality of the software itself : functional and non functional characteristics, soundness of the architectural and implementation choices, value of metrics on quality and complexity.....

- Technical support and maintenance. Integrating or using Open Source in a critical environment, or application, comes with specific constraints such as the ability to react when a technical problem happens into the component. Who can bring the needed support? How the maintenance can be done?
- Security. Let's take the security as a whole without trying to come with a specific definition. When proprietary software is used, we need to trust what the editor will say. The security assessment of Open Source Components, need to be performed by independent third parties or the user themselves.

The above "Technical" barriers are already covered by those OSS vendors who have legal compliance guarantees and IPR risk management and protection as part of their offering, and sometimes as part of a global packaged service including certification, indemnification, support and service.

3.3.4. OSS is not part of education

Regarding the research and education, in Europe there is no real official programs where Open Source is specifically mentioned. The Open Source could be included in some technical, lawyer and business schools curricula.

There is a need to encourage greater use of OSS software in education in general and support OSS curricula definition to prepare students to support OSS engineering growth in IT industry and research.

3.3.5. Not best "capitalisation" of OSS delivered as part of EC R&D projects

From a funding point of view, the Commission already funded a large number of projects. What to do when the projects stop? What will be sustainability of all the productions (documents, and software)?

Is there a way to federate what was already achieved in order not to reinvent the wheel in each project?

3.3.6. Fair procurement

Experience suggests that lack of interoperability consumes around 30-40% of IT budgets in both the private and public sector (this is not limited to OSS but applies to software in general). Since procurement calculation generally does not account for "decommissioning" or "exit" costs from a particular solution, a procurement decision for a specific solution often establishes a strong bias in favour of the vendor of the first solution for all consecutive tenders. This

violates European legislation which mandates vendor neutrality based on transparency and non-discrimination.⁴

A recent study⁵ of Open Forum Europe (OFE), which scanned 136 tenders for trademarked names concluded that 25% of these tenders were specifically requesting trademarked products, violating the principle of vendor neutrality.

Experience suggests that many such cases remain undetected due to lack of translations, which themselves constitute a violation of EU procurement rules.

3.3.7. *Deployment and integration issues*

Deployment and integration of Open Source Software is nowadays provided by most established integrators. It is therefore possible to deploy OSS in very much the same way as software based any other software model. In this way, deployment and integration of OSS faces very much the same issues, in particular problems during the integration phase. These issues are caused by a variety of component specific factors, e.g. lack of professional roadmap, lack of a global approach, lack of modularity and interconnectivity. In order to increase efficiency and ease of integration, these factors should be addressed.

3.3.8. *IPR related issues*

ACT disagrees with the content of paragraph 3.3.8 and argues that RAND standards are functionally compatible with open source, even if they cannot be implemented in GPL code.

We invite the WG 3 to consult the WG 7 as a valuable source of input but hold our own informed views on IPR issues.

Exclusion from standards implementation (*SAP and CompTIA did not agree to this point on Exclusion from standards implementation*) : The procurement issue is aggravated by discrimination against OSS in the licensing conditions for some IT standards. Over the past years it has become clear that specific patent licensing schemes, most importantly the so-called “RAND”⁶ terms, discriminate against OSS implementation. This issue complicated the recent antitrust cases in

⁴ <http://www.osor.eu/news/hidden-cost-of-proprietary-standards-may-lead-to-illegal-tenders>

<http://www.osor.eu/news/it-open-source-group-protests-proprietary-software-deals>

⁵ See http://osacademy.hosting.amaze.nl:8060/repository/media-centre/articles/procurement/ofe_procurement_monitoring_report.pdf

⁶ RAND: ‘Reasonable And Non-Discriminatory’

Europe and was y “a patent embodied fully or partly in a Recommendation | Deliverable must be accessible to everybody without undue constraints.”

Examples of such exclusions can be found in various areas. One of these areas are the MPEG standards in multimedia, where innovation has been dramatically reduced before the recent development of the Dirac codec by the BBC as OSS provided a high-quality modern alternative that is not patent encumbered.⁷

Unsubstantiated use of IPR threats . It is important that effective measures are implemented to protect the interests of both open source and proprietary software both as a software development and as a business model. Governments should ensure a level playing field for both software development models.

While we recognise the legitimate rights of intellectual property rights owners, we regret recent incidents of patent holders abuse and unsubstantiated use of their rights against open source/free software developers.

A recent development, which deserves the careful attention from the Commission, is the use of unsubstantiated threats of intellectual property rights infringements against those who attempt to develop interoperable software products. As an example, a major software company has publicly stated that it believes Linux and other open source software infringes 235 of its patents, but has never identified any of these patents.

Vague claims by patent holders that open source software may infringe their patent rights should be obliged to identify supposedly infringed patents or cease to make unsubstantiated allegations. This would prevent patents from being invoked to spread fear, uncertainty and doubt (“FUD”) against open source software products in the minds of both developers and users. The behaviour of creating FUD against open source software solutions should not be tolerated, as it amounts to an anticompetitive strategy aimed at distorting conditions in the marketplace to the detriment of OSS products.

Mandates for OSS can harm OSS :

The following is a view specific to SAP and CompTIA

Open source has created an interesting opportunity for entrepreneurs as they can start a business on top of something that is already available. For example, many companies offer services and support around popular open source software packages.

Due to the mixed model growth, software vendors are combining open source with closed source, and as a consequence, the line between open source and closed source increasingly blurs. Therefore, any preferences or mandates favouring open source may be harmful for all software vendors including most open source vendors.

⁷ <http://www.bbc.co.uk/opensource/projects/dirac/>

For example, if an open source vendor monetizes its open source contributions by selling closed source add-on components and closed source enterprise editions, such a vendor will be discriminated or excluded during such public tenders. This is particularly true when the closed source “enterprise editions” have been productized under a different brand name and thus are not recognized as an open source product anymore. Thus, even though it might sound paradoxical, preferences or mandates for open source may harm open source, because they reduce the opportunities for the contributing open source vendors to get a return on their open source contributions. Therefore, open source preferences or mandates could be counter productive in growing the European software industry.

end of the SAP and CompTIA specific view.

3.3.9. Other barriers common for all software proprietary or OSS

This paragraph is based on a closer look at the Silicon Valley dynamics provided by some group members

The European market is still fragmented compared to the US market

It is often easier for software start-ups to succeed and grow in the US than in Europe. One of the reasons is the fact that the US offers a very coherent and homogeneous market whereas Europe is still very fragmented due to language, legislation and cultural issues. The introduction of the Euro as a common currency has definitely helped a lot, but compared to the US it is still more difficult for new software vendors to grow in Europe. Typically software companies with similar ideas grow much faster in the US than they do in Europe.

The success of the various social networking platforms might be an indicator considering that LinkedIn and Facebook are well known internationally whereas the XING platform founded in Germany seems to be known far less outside of Germany.

The Silicon Valley provides excellent networking opportunities

The Silicon Valley in California has become the place to be when it comes to networking and partnering in the IT industry. Most IT companies have an office in the Silicon Valley and therefore it is easy to connect with potential business partners. Europe does not have a similar “networking hub” and it is probably difficult to create one from scratch artificially.

Starting a new company seems to be easier in the US

In the US there seems to be a strong culture of entrepreneurship, and thus more people try to start their own business at some point in their life. In addition, the required processes for starting a new business seem to be more streamlined and automated in the US than they are in many places in Europe. Yet, we have that

many markets in Europe, including Denmark and Sweden are even better positioned than the US for innovation-based entrepreneurship. In fact, according to a study by the Information Technology and Innovation Foundation in Washington, there are some very promising trends for entrepreneurship in Europe. <http://www.itif.org/index.php?id=226>

Most venture capital firms are located in the US

Software start-ups often need external capital in order to grow. However, most venture capital firms are located in the US and thus also understand the US market much better than the European market. Therefore, US-based start-ups often find it easier to find investors than European software companies.

The US seems to be more attractive to immigrants from India, etc

Most larger software companies have development and support organizations in places like Russia, India and China. Apparently more people with IT skills from Russia, India and China are immigrating to the US than they are immigrating to Europe. As a consequence stronger ties seem to develop between these countries and the US than between Europe and these countries, which potentially gives US-based software vendors an advantage over Europe-based software vendors.

3.4. Benefits

3.4.1. OSS is a growth opportunity for the European ICT sector

There are substantial strategic, political and economic reasons for Europe to embrace and promote Open Source. These reasons include the development of a full-blown ICT industry. Lifting the barriers above will help Europe maximize its competitiveness arguments while developing a sustainable ICT sector.

The absence of the barriers mentioned above will also help the ICT sector gain an edge in key areas and create credible industry players as an alternative to the ones existing on the market today.

Software innovation can foster economic growth in Europe - New innovation in the software sector, including in the area of open source software, has the potential to contribute significantly to Europe's economic growth and job creation.

Innovation in the software sector can flourish, creating jobs, new start-up companies and underpinning economic growth in Europe if the right policies to promote ICT investment, skills development and competition will be put in place. As a natural consequence of market forces Open standards and open source software do and increasingly will play an instrumental role in facilitating the development of new products and arrival of new entrants into the marketplace.

Service economy is now a tendency for IT in general. Open Source fits very well in this paradigm and it has much to offer and contribute in software as a service domain. One concern, however, is that service-based ICT businesses are more vulnerable to the forces of globalization and competition from BRIC countries.

Global economical crisis represents an opportunity for Open Source, since it helps to reduce costs

Innovation and economic As demonstrated also in the UNCTAD Information Economy Report 2007-2008, OSS is an innovation enabler in the ICT sector, and even more so in the even larger ICT-enabled sector. As such, OSS provides opportunity for economic development which specifically countries in transition are getting ready to harness for their development to leapfrog their economic development based.

Not entirely unlike countries in transition, the European economy is based upon Small and Medium Enterprises (SME), which are key to innovation and employment. For this sector, OSS translates into ubiquity of cost-effective software that combines a high level of control for the company with rapid innovation and the ability to innovate in all parts of the value chain.

The software model of OSS is characterised by a high level of user control over the software in combination with freedoms to study and innovate upon the software, allowing for rapid incremental innovation.

These benefits can be particularly relevant to the public sector, which often has specific needs of sovereignty over its own infrastructure and strict auditing requirements for security and confidentiality reasons.

These strategic benefits are essential, and unique to OSS.

ACT disagrees with the above sentence and has provided the following

On the other hand, Europe has to be wary not to fund OSS loosely under schemes that would continue to result or even increase the problem of third countries being the ultimate beneficiaries.

For a broad range of innovations resulting from labour-intensive and costly research and development, proprietary or mixed models are and will continue to be more akin to contribute to Europe's competitiveness.

On the demand side, both private and public bodies in a majority of instances select commercial or mixed solutions, because they represent the best value-for-money proposition in response to their needs.

Public policy should avoid interfering with, and on the contrary encourage competition and choice among, all various market-based approaches and solutions.

End of ACT's view

Examples for OSS deployment on these grounds can be found in various public bodies in EU member states, e.g. Germany, where the agency for IT security (BSI) has been recommending OSS on these grounds for several years and worked on projects to address specific needs. Deployment has taken place not only in the BSI, but also the foreign ministry and is ongoing in the city of Munich. Another relevant source of reference is the UK's "Open Source, Open Standards and Re-Use" Government Action Plan:

http://www.cabinetoffice.gov.uk/newsroom/news_releases/2009/090224_opensource.aspx

3.4.2. Maturity of IT ecosystem

Growing maturity of the IT ecosystem can be observed in the form of commoditisation of software and a growing relevance of interconnectivity as demonstrated by the discussions around interoperability and Open Standards. As observed in other industries (e.g. car manufacturers), these trends will inevitably lead to an increased reuse and recombination factor, where only differentiating components are produced in-house while generic components are being reused or co-developed.

A well-developed OSS ecosystem is an ideal breeding ground for such an economy. The increasingly well-developed legal infrastructure around OSS, also thanks to initiatives such as the European Public License (EURL), provides a solid and reliable foundation for public and commercial activity with clearly established ground rules that fall into no more than three basic categories.

While these trends and their impact seem largely inevitable, Europe is in the uniquely favourable position of already having a healthy OSS ecosystem in place that it can build upon.

3.4.3. Growth of skilled labour pool

Whereas proprietary software education is necessarily restricted to schooling in the use of the particular product but is generally supported by education of programming languages and other basic IT skills, OSS allows deeper analysis, facilitating both traditionally education and autodidactic training. The strategic use of OSS for education in some EU member states⁸ is beginning to show first results, and provides good examples for increased social cohesion and equality of chances facilitated through OSS.

⁸ i.e. Spain

3.4.4. *Understanding integration costs*

More and more readily available economic analysis of the integration cost can help to avoid unforeseen complications and cost on the user side, while increasing demand for professional integration services for OSS, fostering growth of the commercial adoption in Europe.

3.4.5. *Standards increase interoperability*

Fortunately, the increasing standardization in the IT world creates a level playing field for all vendors. A good definition of standards and interoperability can be found in the following EICTA white paper:

http://www.eicta.org/index.php?id=242&id_article=81

As the IPR modes chosen at W3C and OASIS show, transparent and inclusive participation rules most times already lead to royalty free IPR modes:

OASIS IPR Mode	Number of OASIS TC's
Royalty-Free on Limited Terms Mode	57
Royalty-Free on RAND Terms Mode	13
RAND Mode	0

The more parties (including competitors and users) participate in a standardization effort, the more the different players push for royalty free terms because nobody wants to be put into a disadvantageous position. Therefore, open participation and transparent development processes are a base recommendation for standardization.

Since the reality shows that the large majority of technology standards is being defined under royalty free terms anyway (due to the negotiations of the involved parties) there is no need for regulatory intervention.

3.5. **Actions**

Foreword

The current market is already highly regulated through intellectual property laws. It is therefore important that the European Union is mindful of such regulation when considering further regulative steps. An over-regulated market tends to bring inefficiency, and there are indicators that the current market may already be over-regulated.

Any regulative action would therefore require appropriate change management to give established players sufficient time to adapt and grow. At the same time, European competitiveness depends upon reduced barriers to entry into the market in combination with specific support and incentives for new, innovative players.

3.5.1. European Digital Independence

Although this will be potentially very rare, there may be sectors where a key software plays an essential role in the European economy or security up to the point where authorities could consider that they need an alternative. Actions could be such as calling for the development of European OSS alternatives for some critical software functions.

As an example let's assume that PKI software products (Public Key Infrastructure) are all produced by non European companies (this is not the case as of today). PKI plays a key role in securing Web based transactions. Europe may consider that encouraging the creation of a European based OSS PKI solution would be safe measure to guarantee that Public bodies and Companies, if they wish, can have access to a Europe based solution.

3.5.2. Licensing and IPR

Lack of knowledge on OSS licensing still permeates parts of industry, creating barriers to adoption due to perceived insecurities.

The European Commission should support the building of knowledge in this area, and in particular provide European public institutions with information about the EUPL and/or CeCILL family of licences, which were written with the specific needs of European public institutions in mind.

Statements by the European Commission regarding the validity of these licences could also prove helpful to build confidence. Increased transparency of which licenses are most appropriate for certain contexts could be a useful measure to overcome lack of confidence – the Creative Commons approach whereby copyright (or “copyleft” licenses) are prepared for use following exhaustive legal analysis is an interesting example of what could be aspired to with open source licensing agreements.

IPR sanity checks

Setting a clear agenda on IPR sanity checks and the ability to deliver legally binding IPR compliance statements on OSS components by a transparent body is a much needed action item.

SAP disagrees with the following part of this proposition

On top of providing Compliance statements this body could have the following goals from which Open Source will strongly benefit

- push for ex-ante disclosure on patents
- call for transparency of the judiciary in charge of software IPR rulings
- promote acknowledgement and full integration of alternative IPR modes aside the RAND types by Standards Development Organisation, research projects, public procurement, and public/private European entities delivering IPR-related assets.
- promote alignment of e-procurement processes to ensure the risk of vendor lock-in is evaluated and part of the decision criteria.
- push for Systematic “prior art” research on open source projects as a step of new patent analysis

Voluntary Licences of Right regime

ECIS and FSFE suggestion

Furthermore, we believe that a balanced intellectual property system which accommodates the need for interoperable products in the software sector is a prerequisite to an effective European software strategy. We favour a licensing regime that would ensure wider access to technology essential to achieving software interoperability and that would sufficiently protect access to open standards, such as for example a voluntary Licenses of Right regime. The patent litigation system should in turn provide the appropriate safeguards to avoid the abusive use of injunctions by patent rights holders against other companies, which may effectively distort competition.

End of ECIS and FSFE suggestion

3.5.3. Interoperability and standards

Protect OSS implementation of Standards against abusive exercise of IPR

In addition, it is fundamental to ensure that open source/free software developers and distributors enjoy adequate protection that allows them to implement standardised technologies protected by patents in a way compatible with open source/free software licenses. The language of licensing terms and conditions for patents essential for the technical implementation of standardised technologies should be drafted in such a way as to ensure compatibility with open source/free software technologies and to prevent the abusive exercise of patent rights against open source software developers.

The barriers to entry are particularly harmful in the area of interoperability, where inability to implement standards leads to increased cost and reduces the reuse and recombination factor, which will be essential for the future IT industry.

The European Union therefore needs to decide which extent it can bring European standardisation bodies into line with the stated goals of the [Common Patent Policy](#) of ITU-T, ITU-R, ISO and IEC.

ECIS adds the following

For open source to exist as a method of creating software, people and companies must be able freely to share what they create, not as an obligation, but because they see this as a competitive advantage. If IPR licensing restrictions prevent things from being freely shared, competition is prevented. Open source does not need to be protected because it is “good”, but because it clearly can increase competition among companies. Of course, it is expected that companies will want to reduce the chance that others will compete against them, so some will fight any increase in competition. The EU should not fall into the trap of preventing competition among companies, so it must ensure that free exchange of source code by those that want to produce and use open source can always be an option in every standard.

End of ECIS addition

ACT does not fully agree with all the implications of the above.

Promote open source reference implementation of critical standards

SAP does not support this suggestion to promote OSS reference implementation of critical standards.

Promote the development of open source reference implementation of critical standards on architectures, data format or protocols : the implementation must validate the functional aspects of the standards but may not be usable regarding no functional requirements such as performance or resource optimisation.

Some (OFE, FSFE) suggest that “Promote” is not enough and that the implementation should be “Mandatory”

Promote the use of open formats for public administration

The Commission could make recommendations for the member states to make open formats mandatory for documents and data provided by administrations to the citizen especially when dealing with security, privacy, transparency of processes, and promote open source solutions to process these open formats.

ACT suggests that there is a less prescriptive alternative which is that document should be provided under formats including at least an open format.

FSFE, IBM and ECIS suggest that : while public administration needs to be available to all citizens without discrimination, providing a strong necessity for Open Standards, provision of vendor-specific formats should be left to the market in order to avoid market distortion by the Commission through provision in one vendor's format, but not in another's. This would also protect economic incentives in allowing additional value business models for the vendor specific environment.

Internal use of Open Format for public administration

Public administration needs to preserve the sovereign information on behalf of its citizens in a format for which archival and access will not depend on any particular vendor. With conversion always being a lossy and imperfect process, necessary provision of all data in Open Standards requires internal use of the same Open Standards.

Recognition of consortia-led standards

Standards (if defined correctly) can foster competition and innovation. As explained above, most technology standards are being defined under RF terms anyway and thus there is no need for regulatory intervention in this area.

However, it would be good if global standardization consortia like OASIS, W3C and WS-I were officially recognized in EU standardization policy. It would be good if from that starting point the list of recognized consortia would be regularly reviewed and updated by EU.

3.5.4. Procurement policy review

There is currently no reliable way to assess decommissioning or exit costs from an existing proprietary solution. Being able to calculate these costs would bring transparency and allow a truly non-discriminatory evaluation of the competing offerings.

Providing guidance and metrics on how to assess this cost in combination with recommendations on how to reflect strategic goals for the IT infrastructure in tenders would help reduce one of the largest barriers to OSS adoption.

Similarly the best practises for procuring Open Source Software differ in some areas from those for proprietary software. It would be beneficial to formulate such best practises and promote their use.(see § 3.5.8 on best practises)

Finally using labels in procurement processes would be beneficial and would in turn re-enforce the voluntary use of labels (see § 3.5.8 on labels).

3.5.5. Mandating Open Source

Governments or public bodies have the right to mandate Open Source for their own use. The Workgroup does not recommend that this freedom be limited. Conversely the Workgroup does not recommend that Open Source mandates become an obligation for public bodies internal use in Europe.

3.5.6. Promote OSS initiatives targeted to commoditize software products of interest to European industries

Through a careful examination of what are the main global players from Europe in the ITC industry, and their position in the different value chains where they are involved, the EC may support initiatives proposed by industry (not limited to European actors) targeted to develop OSS which may imply commoditization of designated nodes in the value chain, thus transferring attractive profits and potential for new innovation in adjacent areas where European players situate their core businesses. This action may bring ultimate benefit to end users and stimulate overall market growth.

SAP, ACT and ESA do not support the above action.

SAP believes that : increased collaboration among European software vendors (closed, mixed and open source) - potentially supported and fostered by the European Commission (as suggested in § 3.5.7 below) - will lead to creative new products and business models which might include a planned commoditization of a particular technology.

End of SAP's view.

3.5.7. Collaboration between communities

As mentioned above, Europe has already done valuable work in OSS, and the specific research and development efforts of DG INFSO in the field of OSS have contributed in various ways to the growth of a healthy European IT ecosystem.

This work should be built upon and intensified, as the public benefit from these projects both in form of available products and services, as well as increased reuse and recombination factor, are significant.

Europe and the European Commission should try to get things more organized and shared by and between OSS actors and communities. There are in Europe several OSS consortiums, foundations and communities. Most of the time, they are all sharing the same needs and issues but suffer from “fragmentation”.

They should be encouraged to operate in more global frameworks maybe by joining their efforts, goals and roadmaps. They could be used as well as a

vehicle to capitalise and build on top of Open Software resulting from Europe R&D projects.

3.5.8. European OSS “organization”

SAP does not support this action and suggests to concentrate on action in §3.5.7 above.

The European Commission could take or promote several actions to create an environment which would foster the use of open source. This environment could also be used for collaboration between communities as suggested in § 3.5.7.

Below are four main propositions :

The “European OSS forge”. All OSS communities have a forge, so a solution could be to federate all this infrastructure and to implement a more reliable one. This environment could act as the European OSS Forge. It would also give more European visibility to the OSS organisations. This “European OSS forge” could include the notion of “Open source Clearing house” as promoted (to be checked) by the government in Denmark. In other words software available in the forge would by definition comply with a number of criteria (IPR compliant, security checked, long term support guaranteed or accessible by contract, etc... to be defined). The European OSS forge could also provide users references, meaning that users of a particular OSS component could be listed and, when they agree, a contact person could be designated to provide feedback.

Best practices This could cover definition and promotion of best practises. Why not a European OSS Capability Maturity Model (eg inspired by the CMMi) which would cover good practises on how to use OSS in organisations (according to Gartner OSS governance in organisation is the n°1 issue (see Appendix 1)).

Labels : We suggest that voluntary labels could be designed to :

- certify that OSS components comply with a number of criteria (OS Software quality label)
- certify that OSS developers, vendors, integrators or communities comply with a number of criteria and good practices (OSS businesses quality label). This could be of particular importance to raise the degree of confidence in OSS developers, vendors and integrators. Particular this could help secure the deployment and integration issues mentioned in § 3.3.7.

Such labels could be used in OSS procurement best practises as pre-requisite for bidders and proposed solutions.

The European OSS test bed. Some OSS components need to be tested and/or validated. We could imagine having and sharing a test beds infrastructure

available for any components to be tested. Of course it will also be open to any software producer. This test bed facility could be used to perform the tests part of the OS Software quality label propose above)

3.5.9. Tax reduction similar to research foundations

Recommend member states to grant tax reduction for companies that participate or at least donate to open source consortia, similar to the ones that encourage the participation to research foundations

3.5.10. Encourage OSS education

Encourage education based on open source software that enable students to really understand the inner architecture of complex software systems and thus be able to innovate in their field (rather than be able to simply use complex software systems). Have software engineering schools and universities organise their student projects as open source forge and encourage them to support their best production to progressively transform them in OS products (to the educational benefits of the students involved in this kind of projects). Open source is a way to focus e-skills on real technical and scientific skills rather than a mere proficiency on some packaged software.

Any type of software vendor (including closed source and hybrid model vendors) would benefit if more students had knowledge in the following areas:

- Software licensing (including open source licenses)
- Collaborative development (including open source development)
- Community management (e.g. psychological and people management aspects)
- Popular programming languages (including open source programming languages)
- Participation in standard setting organizations
- Doing business in the OSS space
- Native languages (in order to foster mobility within Europe and to simplify collaboration within communities)

Such topics are primarily aiming at Computer Science students but some of them, with suitable adaptation could also be part of some Business students curriculum specialised in ICT business.

The Commission should lend its support to the further development and broad roll-out of concepts such as Computer Driving License based on Open Source

Software . This will provide governments, businesses, consumers, educators and students with an alternative open source IT certification

The Working Group noted the Issue Paper by the "Skills and Lifelong Learning" expert group, welcomes the e-Skills activities by the European Commission and EU Member States, recognizes the need of stronger involvement of OSS organisations in these activities to make their voice heard, and encourages OSS representatives to participate pro-actively in European e-skills initiatives, notably in the

- "European e-Skills Awareness Campaign 2009-2010" as well as the "e-Skills Week" at the CeBIT 2010, in March 2010, and the
- "European e-Skills Career Portal", presented at the EU e-Skills Conference, October 2008 in Thessaloniki (<http://eskills.eun.org/web/guest/home>)

3.5.11. Creating a SaaS platform based on OSS

Delivery of OS software as a service could be beneficial for two reasons.

- It would let new entrants concentrate on the service delivery using software provided by other organisations or communities.
- It would remove part of the lack of 'market confidence' since the software components management would not be the users ultimate responsibility

This participates to the commoditisation of middleware and generic software infrastructures that is a long term trend : accelerating it with regards to SaaS platform will benefit Europeans users and service providers. It will help preserve European position in the Future Internet services and platforms

However some barriers related to fragmentation remain which should be removed :

- European countries do not always allow individual or company data to be stored outside of the country. The Commission could recommend the member states to align their rules and allow for hosting anywhere within Europe, provided that some security and privacy criteria be met.
- There is also a business fragmentation and very few European actors are able to provide a credible pan-European infrastructure to host such SaaS services. Some mechanism yet to be designed could help the emergence of such actors.

The above is also linked to actions in § 3.5.12

3.5.12. Other actions common for all software proprietary or OSS

This paragraph echoes 3.3.10. It is based on a closer look at the Silicon Valley dynamics⁹ provided by some group members. In short the following propositions could be nick named as “let’s create a virtual silicon valley in Europe for software”.

Turning Europe into a larger, coherent market

Actions that will lead to a larger, coherent European market will make it easier for entrepreneurs to grow their businesses quickly within Europe. In addition, the easier it is for non-European investors to understand the European market, the more they will make investments in European software start-ups.

Making it easy to move between European IT vendors

In the Silicon Valley it is very easy to change jobs and to gain experience at a variety of IT vendors, because all the different IT vendors are in close proximity to each other. In addition, English is spoken at all the companies. In order to create a similar environment in Europe, it would be beneficial if students learned a number of European languages during school and university, so that employees were not limited to their home country and English-speaking countries, but could also easily take on a new opportunity in France, Spain, Italy, Germany or elsewhere. In addition, more and more jobs allow working part time from home, provided that a broadband Internet connection and an airport is available. Therefore, the European software industry would benefit if broadband Internet became ubiquitous throughout Europe. In addition, a better train and flight network including Internet connectivity on the trains and planes would increase job mobility within Europe.

Continued inclusion of IT topics in European research programs

In order to make the development of IT skills a priority for education, future research programs like the FP programs should continue to include IT research topics. In addition, the participation in European research programs should be easier (e.g. less paper work), so that small software companies can afford to participate as well.

Driving up demand for software within Europe

⁹ for further thoughts about the Silicon Valley key success factors one could explore AnnLee Saxenian’s work : (http://en.wikipedia.org/wiki/AnnaLee_Saxenian and <http://people.ischool.berkeley.edu/~anno/>) : and in particular the books *Regional Advantage* and *The New Argonauts* <http://www.hup.harvard.edu/catalog/SAXREG.html>

The EU can help to drive up the general demand for software for example as part of e-government strategies. At least in theory, European software vendors should understand the European requirements better than non-European vendors and therefore the (increased) European demand for software should also foster a European software industry.

Fostering networking by leveraging the existing European software vendors

For software start-ups it probably would be useful if the European Commission fostered networking between European software vendors and thus created something like a virtual “Silicon Valley”. The solution could be a combination of an online networking platform plus annual networking events. The platform could connect existing European software vendors, European software start-ups, non-European software vendors, hardware vendors, system integrators and venture capital firms.

Further simplifying the process for the foundation of a company

In order to encourage more entrepreneurs to start their own business, the initial company foundation process should be as simple and fast as possible. In addition, it would be helpful if software start-ups could be connected with venture capital firms, e.g. via a virtual platform.

Simplifying studying in and immigrating to Europe

Europe most likely would benefit if more IT experts and students would want to work in Europe, at least for a number of years. As explained above, employees from foreign countries often create interesting links to their countries of origin which then can be leveraged for partnerships etc. Therefore, it should become easier and more attractive for IT experts and students from non-European countries to live and work in Europe at least for a number of years.

4. APPENDIX 1 GARTNER'S REPORT ON OSS 2008 EXECUTIVE SUMMARY

Gartner Says as Number of Business Processes Using Open-Source Software Increases, Companies Must Adopt and Enforce an OSS Policy

STAMFORD, Conn., November 17, 2008 —

Adoption of open-source software (OSS) is becoming pervasive, with 85 percent of companies surveyed currently using OSS in their enterprises and the remaining 15 percent expecting to in the next 12 months, according to Gartner, Inc.

The Gartner survey was conducted in May and June 2008 and included 274 end-user organizations across various countries and markets in Asia/Pacific, Europe and North America. Respondents were evenly distributed across manufacturing, education, financial services and service companies and included a cross section of small, medium and large organizations. The survey was targeted at end users and excluded software vendors and external service providers (ESPs).

Gartner found that 69 percent of companies surveyed still have no formal policy for evaluating and cataloguing OSS usage in their enterprise, opening up huge potential liabilities for intellectual-property violations.

"Just because something is free doesn't mean that it has no cost," said Laurie Wurster, research director at Gartner. "Companies must have a policy for procuring OSS, deciding which applications will be supported by OSS, and identifying the intellectual property risk or supportability risk associated with using OSS. Once a policy is in place, then there must be a governance process to enforce it."

The Gartner survey results indicate that OSS in new projects is being deployed nearly equally in mission-critical and non-mission-critical situations. Although the adoption rate is higher for the more mature infrastructure OSS projects and components, more projects related to application software are in progress and are planned to start within the next 12 months.

Of the large number of application software projects, respondents indicated a higher rate of using OSS as a replacement for commercially available products while using mostly OSS components for their infrastructure development. In areas where OSS projects are most mature, IT departments appear comfortable with using OSS components to enhance existing infrastructure environments. However, in the less mature areas of application software, OSS is more readily used as a replacement for commercially available software, probably because of the cost and sophistication level required to customize many application products.

When respondents were asked to select the top three most important reasons for using OSS, they consistently said that lower total cost of ownership (TCO) and reduction in development of cost-prohibitive factors were major factors for selecting OSS. Another strong reason for using OSS was that it makes it somewhat easier to embark on new IT projects or software initiatives.

Some respondents indicated that they also use OSS as investment protection against a single vendor "owning" the entire IT department. Others said that the major business reason for using OSS projects and components was faster time to market, which better positions them to meet the unique demands and requirements of internal and external customers and, in many cases, provides them with the ability to avoid complex procurement rules and procedures.

Governance, or the lack of it, was the No. 1 challenge for OSS users in the survey, followed by conflicting terms and conditions and the availability of too many licenses types and forms.

"Understanding when and how an OSS alternative may be used is a frustrating process, especially when there are so many licenses types and forms from which to choose," said Ms. Wurster. "As time goes by, many of these concerns will be addressed, but this continues to be a slow process. Increases in OSS popularity and in the rate of OSS adoption will drive the required changes."

Customer service continues to be the leading business process for which OSS projects are used, followed closely by enterprise integration, finance and administration, and business analytics. Sales and marketing, customer analytics, field service, ERP and CRM solutions are also moving up the adoption ramp, further increasing the influence of OSS in many enterprises.

Additional information is in the Gartner report "User Survey Analysis: Open-Source Software, Worldwide, 2008". The report is available on Gartner's Website at

http://www.gartner.com/DisplayDocument?ref=g_search&id=757916&subref=simplesearch.

5. APPENDIX 2 GROUP MEMBERS

The OSS Worgroup had the following members : Patrick Anglard (Thales), Georg Greve (Free Software Foundation Europe), Gregory Lopez (NESSI, Thales), Hugo Lueders (CompTIA), Gunnar Nilsson (Ericsson), Clara Pezuela (Atos-Origin), Siada El Ramly (European Software Association), Valère Robin (France Télécom), Jonathan Sage (IBM), Charles Schulz (Open Forum Europe), Juanjo Hierro (Telefonica), Erwin Tenhumberg (SAP), Charlotte Thornby (ECIS, Sun), Jonathan Zuck (ACT).

This report reflects an intense and diverse debate among the working group. Being listed here does not constitute partial or entire endorsement for the entire document by any individual participant or organisation.

The views particular to some group members have been identified as such and can be easily located in the report itself where they are highlighted with a *yellow+italic* tag. Appendixes 3 to 8 include separate statements or contributions made by some group members to clarify their position regarding some or all the report content.

More about some of the organisations represented in this group:

5.1. Association for Competitive Technology (ACT).

The Association for Competitive Technology is an international ICT trade association, based in Brussels, focused on the needs of small business innovators from around the world. Our nearly 4000 members include software companies (proprietary, open and mixed source), systems integrators and eCommerce companies. We advocate for an environment that inspires and rewards innovation. We also provide resources like the Innovators Network to help our members leverage their intellectual assets to raise capital, create jobs, and continue innovating. ACT was started by a small group information technology entrepreneurs who felt their interests were not being represented in government. Today, ACT is still run by entrepreneurs from the industry who intimately understand the challenges of building a business from the ground up. Regardless of region or nationality, small business innovators have largely the same interests from governments and regulators: access, flexibility, and consistency. Small businesses are looking for a consistent, predictable regulatory framework that provides them flexibility in business models and access to government programs. ACT's public policy agenda throughout the world is derived from these core principles.

You can find out more at www.ACTOnline.org

5.2. The Computing Technology Industry Association (CompTIA).

CompTIA is the voice of the world's information technology (IT) industry. Its members are the companies at the forefront of innovation; and the professionals responsible for maximizing the benefits organizations receive from their investments in technology. CompTIA is dedicated to advancing industry growth through its educational programs, market research, networking events, professional certifications, and public policy advocacy. Companies represented at the CompTIA Board 2008-2009 include beside others: Siemens IT Solutions and Services, Inc.; New Horizons Computer Learning Centers Inc.; McAfee Inc.; Cisco Systems, Inc.; Autotask Corporation; NIIT Ltd.; Ingram Micro Inc.

For more information, please visit www.comptia.org.

5.3. European Committee for Interoperable Systems (ECIS).

ECIS is an international, non-profit association of information technology companies founded in 1989 that endeavours to promote a favourable environment for interoperable ICT solutions. The association seeks to support a competitive and innovative environment in the ICT sector by actively participating in the promotion of any initiative aimed at favoring interoperability, competition on the merits, innovation, and consumers' interests in the area of information and communication technology. ECIS has actively represented its members regarding issues related to interoperability and competition before the EU and other fora such as WIPO. ECIS' membership includes large and medium-sized information and communications technology software and hardware providers Adobe Systems, Corel, IBM, Nokia, Opera, Oracle, RealNetworks, Red Hat, and Sun Microsystems.

You can find out more at <http://www.ecis.eu>

5.4. European Software Association.

Created in October 2005, the European Software Association is the voice of the European Independent Software Vendor (ISV) community. ISV members of the association work with EU policy makers and other European stakeholders to foster an environment that supports innovation and competitiveness within the European software industry, and that supports the needs of other European business communities.

Current members include:

Acesso Software, Albany Software, 1C, Cegid, CODA, Dassault Systemes, Fenestrae BV, Future Route, Hogia, Lexware GMBH & Co KG, Logo Yazilim, Mamut ASA, Microsoft EMEA, Northgate Information Solutions, OpenTrust, Oracle, SAP, SkyRecon, Trimble, Unicorn, Unit4Agresso

5.5. Free Software Foundation Europe.

The Free Software Foundation Europe (FSFE) is a non-profit non-governmental organisation active in many European countries and involved in many global activities. Access to software determines participation in a digital society. To secure equal participation in the information age, as well as freedom of competition, the Free Software Foundation Europe (FSFE) pursues and is dedicated to the furthering of Free Software, defined by the freedoms to use, study, modify and copy. Founded in 2001, creating awareness for these issues, securing Free Software politically and legally, and giving people Freedom by supporting development of Free Software are central issues of the FSFE.

You will find further information about the work of the FSFE at <http://www.fsfeurope.org>

5.6. NESSI.

NESSI is the European Technology Platform dedicated to Software and Services. Its name stands for the Networked European Software and Services Initiative.

Information and Communication Technology (ICT) is an essential driving force for innovation and a core enabler of economic growth in the coming years. Enterprises in Europe (both private and public sector) are facing significant structural changes and will rely on software and services to support them in adapting effectively.

This represents a new opportunity for Europe and the NESSI initiative embodies the strategic mechanism through which this opportunity can be seized and exploited globally. Application of innovative technologies will benefit all economic sectors, not just the software and ICT services industry. Globally competitive businesses and efficient public services will benefit all citizens.

Europe faces a period of potentially profound changes: in social attitudes, economic conditions and the business environment. This makes the ability to evolve continuously essential for the users of services, and therefore also for the technology used to deliver them. Technology must be an enabler of change rather than an inhibitor. Enlargement of the European Union and the changing nature of trade with the rest of the world puts a strong emphasis on a multicultural approach to business.

This cannot be simply regarded as the need to use different languages, but rather there is a need to adapt more fully to the ways people behave and communicate in different countries and cultures.

The main focus of NESSI is that of service. There are many definitions of service used in different contexts. However, all are based on the same principle:

a service consumer does not own the service and therefore need not be concerned with all the aspects generally associated with ownership such as infrastructure, technology, integration and maintenance. Instead he/she has only to choose a service which meets his business needs.

Businesses are increasingly concentrating on activities where they can gain a competitive advantage. Supporting capabilities can be obtained as services from specialist providers.

In this context NESSI is about transforming the EU economy through Service Oriented business models.

NESSI do regroup now more than 500 IT key players

Further information on NESSI can be found at : <http://www.nessi-europe.com>

5.7. OpenForum Europe.

OpenForum Europe (OFE) is not-for-profit, independent of any organisation. and was originally launched in March 2002 to accelerate, broaden and strengthen the use of Open Source Software in business and government. OFE's role has now expanded and is a strong supporter of Open Standards and Openness and pursues the vision of facilitating open competitive choice for IT users. OFE is supported by major IT suppliers, user organisations and national partners.

More on OFE can be found at : <http://www.openforumeurope.org/>

5.8. SAP.

Headquartered in Walldorf, Germany, SAP is the world's largest business software company – with more than 51,500 employees at sales and development locations in more than 50 countries worldwide. SAP offers applications and services to companies of all sizes across more than 25 industries. SAP has approximately 82,000 customers in over 120 countries.

SAP's global development approach focuses on distributing development across the world in strategically important markets. A global network of SAP Labs spanning Bulgaria, Canada, China, Germany, Hungary, India, Israel, and the United States, enables SAP to operate locally, yet organize globally.

As the global technology research unit of SAP, SAP Research significantly contributes to SAP's product portfolio and extends SAP's leading position by identifying and shaping emerging IT trends through applied research and corporate venturing. SAP Research has highly skilled teams in 11 research centers worldwide, and has actively contributed to a large number of European research projects including a leading position in the FP7 program.

To ensure SAP's position as a technology leader, SAP Ventures invests in emerging entrepreneurial companies that are advancing exciting new technologies. SAP Ventures operates independently from the overall SAP strategy to discover and pursue opportunities for financial return. At the same time, the organization brings substantial benefits to its portfolio companies and SAP by facilitating interaction between innovative young companies and the SAP ecosystem. The current investment portfolio includes open source vendors like Alfresco, Groundwork, Intalio, JasperSoft, and Zend, and SAP Ventures had invested in Red Hat and MySQL before their IPO and acquisition respectively.

As a founding member of the Eclipse Foundation and an active code contributor, SAP is a key member of Eclipse open source project. In addition, SAP collaborates closely with many key Linux vendors and has been supporting Linux for more than 10 years.

SAP has been shipping the ABAP source code of its enterprise applications since the very beginning allowing customers and partners to inspect, debug, modify and extend the SAP applications. In addition, SAP collaborates and co-innovates with a large number of customers and partners via the SAP Community Network which includes the SAP Developer Network with its more than 1.5 million members.

In addition, SAP has contributed to the creation of jobs in the software industry globally. For example, the 20 largest SAP service partners alone account for more than 130,000 SAP consultants worldwide. However, this number does not cover the large number of small and medium size service and education partners offering services around SAP technology on a local basis.

<http://www.sap.com>

6. APPENDIX 3 PROVIDED BY ERWIN TENHUMBERG FROM SAP

This appendix represents views formulated by SAP which are not necessarily endorsed by other group members.

Summary

From SAP's point of view, all the analyst reports, studies, metrics and quotes provided below show a few things:

- As a code contributor and investor, SAP is a key player in the larger open source ecosystem.
- Open source is already ubiquitous both from a user and vendor adoption point of view, and thus does not need special treatment or support.
- The development of many popular open source projects is being funded by the sales of proprietary / closed-source extensions and commercial licenses (so-called mixed source or hybrid models) as well as hardware and advertising.
- The open source development model has advantages and disadvantages compared to the closed source model, just like mass production has advantages and disadvantages over customized production in many other industries. Thus, the vendor's choice to follow an open source development and licensing model is the vendor's decision to differentiate its solution from the solutions offered by competitors following a different development and licensing model.
- It becomes increasingly harder to discriminate between open source and closed source vendors, and there are even open source vendors these days saying that they do not really see a reason for treating the various development and licensing models differently anymore.
- Based on common dictionary definitions of the term "proprietary", open source software is proprietary software as well because the open source vendors use proprietary elements like exclusive copyright and trademark ownership to compete against other vendors.
- The standards system is not broken, and thus no government intervention is necessary. Based on SAP's experience, the industry should continue to voluntarily agree on setting reasonable IPR policies and balancing the needs of IPR holders and consumers in standards work. For example, the OASIS Open industry consortium has a framework of three different IPR modes and in practice, most working groups have voluntarily decided to use one of the royalty-free modes. Nevertheless, SAP believes that

RAND/FRAND commitments work well and thus RAND/FRAND should be the common denominator. (for more details and additional background information please consult the report of the working group 3 which focussed on IPR, standardization and interoperability topics).

From an SAP point of view there is no need for fostering or promoting open source just like there is no need to foster or promote a specific production method in the automobile industry. Instead, any actions by the European Commission should focus on areas that help to grow and strengthen the European software industry as a whole. Thus, the European Commission should focus on those action items of this document which actually have not caused any significant controversial discussions within the open source working group, as the comments and notes in the preliminary reports as well as the final report show (a number of these action items have also been discussed in detail in other working groups). From an SAP point of view the action items that have not caused significant controversial discussions are:

- Fostering and sponsoring networking and collaboration among open, mixed and closed source vendors as well as investors and open source communities (e.g. via a social networking platform and networking events)
- Making Europe a less fragmented and more coherent market
- Simplifying the immigration of foreign experts including students
- Increasing mobility between locations and companies within Europe and improving the availability of broadband Internet access
- Recognition of consortia-led standards (e.g. OASIS, W3C)
- Continued inclusion of software topics in European research projects
- Driving up demand for software in general within Europe
- Simplifying the process of founding a new company
- Fostering the growth of software skills by extending the curricula without promoting, preferring or discriminating particular products or business models (e.g. popular programming languages, collaborative development, community management, software related business models, software licensing, participation in standards setting)

SAP contributes to Open Source

SAP sees itself as a legitimate member of the open source ecosystem as SAP has been a founding member of the Eclipse Foundation, is an active contributor to the Eclipse project and helped open source vendors and their projects to grow and thrive via the provision of venture capital (Red Hat, MySQL, Alfresco, Intallio, JasperSoft, Groundwork and Zend). Here are a few quotes supporting this argument:

“As a founding member of the Eclipse Foundation in 2004, SAP has historically provided significant support for the Eclipse community,” said Mike Milinkovich, executive director of the Eclipse Foundation. “By empowering Eclipse developers with these new memory analyzer tools, SAP will help developers to more efficiently build commercial applications on the extensible Eclipse development and application framework. We’re pleased to see SAP continue to renew its commitment to the open source development community.”

<http://www.sap.com/about/newsroom/press.epx?pressid=8431>

“A major commercial-grade supplier of Linux scores a chunk of investment dollars from Germany's leading software company.

SAP today announced an equity investment of an undisclosed amount by the SAP Venture Fund in Red Hat Software, adding more support to the Linux bandwagon and the open source movement.”

http://news.cnet.com/SAP-invests-in-Red-Hat/2100-1001_3-223685.html

“MySQL AB has said that the company has completed an \$18.5 million Series C round of financing led by Institutional Venture Partners (IVP), the Menlo Park, California-based venture capital firm. Corporate investors in the round were Intel Capital; Red Hat; SAP Ventures, a division of SAP AG; and Presidio STX, the U.S.-based venture investment subsidiary of Sumitomo Corporation.”

<http://www.linuxelectrons.com/news/general/mysql-ab-secures-18-5-million-series-c-funding>

“Alfresco Software, Inc., the leader in open source enterprise content management (ECM), today announced the completion of a \$9 million Series C round of financing led by SAP Ventures, bringing total funding to \$19 million. Existing investors Accel Partners and Mayfield Fund also joined the round.”

<http://www.prnewswire.com/cgi-bin/stories.pl?ACCT=104&STORY=/www/story/01-22-2008/0004740027&EDATE=>

“JasperSoft, the market leader in open source business intelligence (BI), announced today that it has closed \$12 million in its fourth round of funding. Scale Venture Partners led the round and was joined by new investor SAP Ventures. Existing investors DCM, Morganthaler Ventures and Partech International also participated in the round. JasperSoft also announced that Rory O’Driscoll, a Managing Director with ScaleVP, joined the board.”

http://www.jaspersoft.com/nw_press_jaspersoft_12_million_funding.html

“Zend Technologies, Inc., creator and ongoing innovator of PHP, products and services supporting the development, deployment and management of PHP-based applications, today announced it has received strategic investments from both Intel Capital and SAP Ventures, a division of SAP AG. Zend will work with both companies to continue the momentum of open source and PHP

solutions for business-critical web applications in enterprise environments. Terms of the investments were not disclosed.”

http://findarticles.com/p/articles/mi_m0EIN/is_2005_Jan_24/ai_n8705812

In addition, although not related to open source in the strict, “Open Source Initiative type” sense, SAP ships its enterprise applications together with the ABAP source code in order to enable code inspection, debugging, customizations and extensions. Besides, SAP collaborates and co-innovates with customers via the SAP Community Network:

<https://www.sdn.sap.com/irj/sdn/go/portal/prtroot/docs/webcontent/uuid/2b24d395-0a01-0010-98a6-c4688d236ff6>

Open Source has become ubiquitous

The following two studies and Gartner and Forrester clearly show that open source has become ubiquitous:

"Eighty-five percent of companies are already using open-source software, with most of the remaining 15 percent expecting to do so within the next year, according to analysts at Gartner."

<http://news.zdnet.co.uk/software/0,1000000121,39554840,00.htm>

“Survey shows that Open source components are now ubiquitous. Users are well aware that commercial vendors are massively bringing Open Source into all enterprises, without even asking their customers, changing significantly from a complete commercial build to a mixed orchestration of Open Source and commercially licensed software.”

<http://biz.yahoo.com/prnews/081201/ukm003.html?.v=101>

A number of key open source projects depend on the contributions by mixed source / hybrid model companies

The next few statistics show that many key open source projects are funded by larger IT vendors who sell hardware, advertising, closed-source add-ons, closed-source extensions and commercial licenses. Thus, open source is not a purely support and services based business any longer. Instead, many organizations follow a so-called mixed or hybrid model.

Contributions to the Linux kernel:

Company Name	# of Changes	% of Total
None	11,594	13.9%
Unknown	10,803	12.9%
Red Hat	9,351	11.2%
Novell	7,385	8.9%
IBM	6,952	8.3%
Intel	3,388	4.1%
Linux Foundation	2,160	2.6%
Consultant	2,055	2.5%
SGI	1,649	2.0%
MIPS Technologies	1,341	1.6%
Oracle	1,122	1.3%
MontaVista	1,010	1.2%
Google	965	1.1%
Linutronix	817	1.0%
HP	765	0.9%
NetApp	764	0.9%
SWsoft	762	0.9%
Renesas Technology	759	0.9%
Freescale	730	0.9%
Astaro	715	0.9%
Academia	656	0.8%
Cisco	442	0.5%
Simtec	437	0.5%
Linux Networx	434	0.5%
QLogic	398	0.5%
Fujitsu	389	0.5%
Broadcom	385	0.5%
Analog Devices	358	0.4%
Mandrive	329	0.4%
Mellanox	294	0.4%
Snapgear	285	0.3%

<https://www.linuxfoundation.org/publications/linuxkerneldevelopment.php>

Contributions to Eclipse:

Company / Project Commit Details

This automatically collected information may not represent true activity and should not be used as sole indicator of individual or project behavior.

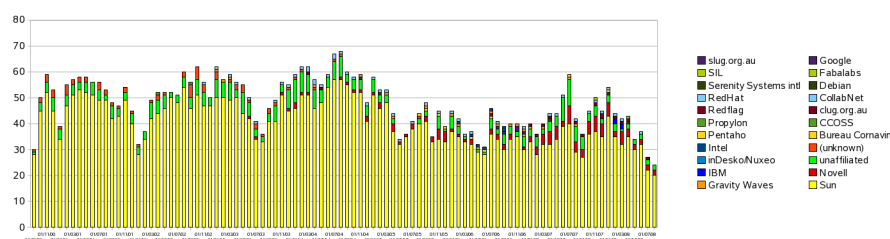
See the wiki page for known data anomalies. To report issues or request enhancements, see bug 209711.

Company	Active Committers	Inactive Committers	Total Committers	Percent Active	Commits (12mo)	Lines of Code (12mo)	Approx. LOC per Commit
IBM	163 (26.5%)	170 (37.04%)	333 (31.01%)	48.95%	510,803 (36.95%)	19,163,283 (42.77%)	38
individual	141 (22.93%)	159 (34.64%)	300 (27.93%)	47%	265,752 (19.22%)	4,987,952 (11.13%)	19
itemisAG	9 (1.46%)	1 (0.22%)	10 (0.93%)	90%	67,425 (4.88%)	2,852,680 (6.37%)	42
SpringSourceInc	2 (0.33%)	1 (0.22%)	3 (0.28%)	66.67%	11,835 (0.86%)	2,810,261 (6.27%)	237
STAROrganization	1 (0.16%)	0 (0%)	1 (0.09%)	100%	90,048 (6.51%)	2,807,574 (6.27%)	31
ActuateCorporation	33 (5.37%)	22 (4.79%)	55 (5.12%)	60%	35,413 (2.56%)	2,266,628 (5.06%)	64
BorlandSoftwareCorp.	12 (1.95%)	0 (0%)	12 (1.12%)	100%	54,478 (3.94%)	2,080,588 (4.64%)	38
InnooPract	10 (1.63%)	1 (0.22%)	11 (1.02%)	90.91%	32,591 (2.36%)	1,185,190 (2.65%)	36
OBEO	8 (1.3%)	0 (0%)	8 (0.74%)	100%	29,576 (2.14%)	917,331 (2.05%)	31
Oracle	36 (5.85%)	5 (1.09%)	41 (3.82%)	87.8%	49,884 (3.61%)	731,316 (1.63%)	15
KestralComputingPLformerlyJivaMe	3 (0.49%)	0 (0%)	3 (0.28%)	100%	11,018 (0.8%)	654,412 (1.46%)	59
Code9	3 (0.49%)	0 (0%)	3 (0.28%)	100%	17,798 (1.29%)	571,599 (1.28%)	32
EclipseFoundation	13 (2.11%)	0 (0%)	13 (1.21%)	100%	10,167 (0.74%)	519,926 (1.16%)	51
ZendTechnologies	9 (1.46%)	3 (0.65%)	12 (1.12%)	75%	11,859 (0.86%)	409,833 (0.91%)	35
TasktopTechnologies	3 (0.49%)	0 (0%)	3 (0.28%)	100%	25,019 (1.81%)	362,088 (0.81%)	14
WindRiver	11 (1.79%)	1 (0.22%)	12 (1.12%)	91.67%	18,474 (1.34%)	354,369 (0.79%)	19
compeopleAG	8 (1.3%)	0 (0%)	8 (0.74%)	100%	23,623 (1.71%)	284,532 (0.63%)	12
Sybase	9 (1.46%)	0 (0%)	9 (0.84%)	100%	5,763 (0.42%)	254,197 (0.57%)	44

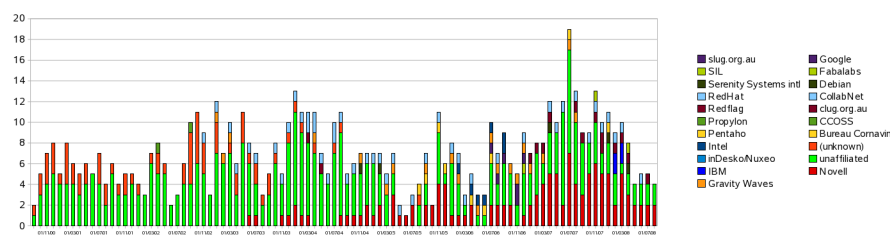
<http://dash.eclipse.org/dash/commits/web-app/commit-count-loc.php?&range=12mo&sortBy=loc&show=>

Contributions to OpenOffice.org:

Data pilot showing number of active developers aggregated by affiliation



Active external developers by affiliation:



<http://www.gnome.org/~michael/blog/ooo-commit-stats-2008.html>

Sponsors of the Mozilla Foundation:

“Today, the (for-now) non-profit Mozilla Foundation released its financial statements for 2007 (embedded below). Revenues for the organization behind the open-source Firefox browser were up 12 percent to \$75 million, with search-related royalties from Google accounting for 88 percent of the total, or \$66 million. (Another \$2 million or so came from other search engines). Those revenues come from Mozilla’s portion of the search advertising revenues generated by the default Google search box in the Firefox browser.”

<http://www.techcrunch.com/2008/11/19/google-makes-up-88-percent-of-mozillas-revenues-threatens-its-non-profit-status/>

The following data is based on an analysis done by Erwin Tenhumberg from SAP using the data available on the companies’ product web pages. Since sometimes the information on those product web pages is not very clear and the analysis below has not been verified with the various vendors and / or by an independent source, the European Commission is encouraged to verify the correctness of the information. In addition, a table provided by Mr. Carlo Daffara has been included as well in order to provide another view on the subject and to balance out any bias that the first table might have.

Vendor	Large contributor to	Sells / monetizes the following closed source products	Sells hardware	Sells commercial licenses
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				(dual-licensing)
IBM	Linux, Eclipse, Apache, OpenOffice.org, ...	Lotus Symphony, Lotus Notes, Rational Rose, WebSphere Development Studio, Tivoli products, etc.	Yes	
Sun	OpenOffice.org, NetBeans, OpenSolaris, Glassfish, MySQL, VirtualBox, Xen, Mozilla Lightning, Gnome, PostgreSQL, ...	Sun Ray, Sun Secure Global Desktop, Sun Java System Calendar Server, MySQL Query Analyzer, MySQL Enterprise Monitor	Yes	Yes
Novell	Linux, OpenOffice.org, Xen, Evolution, Gnome, KDE, ...	Groupwise, eDirectory, ZENworks products		
Google	Android, Linux, Samba, Firefox, ...	Google Search Algorithm, Google Apps, GMail, Google Maps		
Alfresco	Alfresco			Yes
JasperSoft	JasperSoft	JasperServer Professional		Yes
Pentaho	Pentaho	Pentaho Enterprise Edition		Yes
Compiere	Compiere	Compiere Professional Edition		Yes
SugarCRM	Sugar Open Source	Sugar Professional, Sugar Enterprise		Yes
EnterpriseDB	PostgreSQL	Postgres Plus		
Open-Xchange	Open-Xchange	Open-Xchange 5 including installation and management tools		
project-open	project-open	Several Enterprise Extension Modules		
SpringSource	Apache HTTP Server, Apache Tomcat, Spring Framework	SpringSource Enterprise, SpringSource Performance Suite		
Citrix	Xen	Large percentage of the Citrix portfolio		
SAP	Eclipse	SAP NetWeaver		

		Main Licensing model					Main revenue generation			
	Company	dual licensing	OSS and commercial versions	Badgeware	Pure OSS	multiple packages covered	selection	ITSC	Subscription	licensing
dual lic.	Funambol	•						•		•
	Lustre	•						•		
	MuleSource	•		•					•	•
	Mysql	•							•	•
	OpenClovis	•							•	
	Pentaho	•						•		•
	sleepycatdb	•								•
Split OSS/commercial releases	Adaptive Planning		•							•
	Alterpoint		•					•		•
	Altinity		•					•		•
	Codeweaver (WINE)		•							•
	Coupa		•							•
	Digium (Asterisk)		•						•	
	Enormalism		•							•
	EnterpriseDB		•							•
	GreenPlum		•							•
	GroundWork		•						•	
	Hyperic		•						•	
	JasperSoft		•							•
	KnowledgeTree		•	•						
	OpenCountry		•							•
	Open-Xchange		•							
	NoMachine NX		•							•
	rPath		•						•	
	Scalix		•							•
	Sendmail		•							•
	Smoothwall		•						•	
	Sourcefire (SNORT)		•						•	
	SSLExplorer		•							•
	SugarCRM		•	•						•
	TenderSystem		•	•						•
	VirtualBox		•							•
	Vyatta		•					•	•	
	XenSource (Xen)		•					•		
	Zend (PHP)		•							•
	ZIMBRA		•	•						•
Badgeware	1bizcom			•				•		
	CATS applicant tracking			•					•	
	EmuSoftware/Netdirector			•				•	•	
	Jbilling			•				•		
	OpenBravo			•				•		
	OpenEMM			•				•		
	OpenTerracotta			•					•	
	SocialText			•						•
product specialists	Alfresco				•			•	•	
	Babel				•			•		
	CentraView				•			•		
	CleverSafe				•			•		
	Compiere				•			•	•	
	Exadel				•			•		
	Jitterbit				•			•	•	
	Mergere				•			•		
	Mindquarry				•			•		
	Mirth				•			•		
	OTBIZ				•			•		
	Qlusters (OpenQRM)				•			•		
	Symbiot/OpenSIMS				•			•		
	Talend				•			•		
	UltimateEMR				•				•	
	VISTA				•			•		
vTiger				•			•			
Zenoss				•				•		
platf. provid.	Jboss				•	•		•	•	
	RedHat linux				•	•			•	
	Sourcelabs				•	•	•		•	
	SpikeSource				•	•	•		•	
	SUSE Linux				•	•			•	
	WSO2				•	•		•		
selection - consulting	ayamon					•	•	•		
	Enomaly					•	•	•		
	navica					•	•			
	openlogic					•	•			
	Optaros			•	•	•	•			
	x-tend				•	•	•	•		
Other	CiviCRM				•					
	Eclipse				•					
	Mozilla				•					
	OSAF Chandler				•					
	Sourceforge									

<http://guide.conecta.it/images/7/7d/Tabellona.jpg>

Hybrid / mixed source models seem to be a key element of the larger open source ecosystem

The following quotes found on the Internet try to illustrate that hybrid / mixed source models represent a key part of the larger open source ecosystem, i.e. many open source vendors leverage proprietary / closed source components as well as commercial licenses to generate revenue based on their open source investments:

“Note: MySQL Enterprise is our commercial subscription offering. And, MySQL Enterprise Monitor and MySQL Query Analyzer are only available with this commercial subscription.”

http://dev.mysql.com/tech-resources/interviews/interview_mark_matthews.html

“In response to my first question of the CommunityOne panel Marten Mickos, Senior Vice President of Sun's Database Group, declared, "I just want to say that the core of MySQL will always be 100 percent free and open source." The crowd loved it. Ian Murdock said roughly the same thing: The core will be open....

The periphery? Marten indicated that this would be subject to a corporate calculus designed to determine how much peripheral, closed extensions the company can make to encourage purchases without alienating its community.

Sun's future (and according to some, all of our futures) is hybrid.”

http://news.cnet.com/8301-13505_3-9936820-16.html

"So for us, the business goal is to optimize this hybrid mix of proprietary and open-source software to give our customers what they need."

Bob Sutor, Vice President of Standards and Open Source for the IBM Corporation

<http://m.linuxjournal.com/article/9797>

“I discussed how your software stack from operating system up through middleware to applications could be all open source, or closed source, or (most likely) a mix of the two. I then discussed how you might optimize this mix depending on what you were trying to accomplish. In this talk as in most of my talks, I tried to give the reasoning of why IBM does what it does in the open source and standards area and how our track record demonstrates our commitment (we’re not just now starting to dabble).”

<http://www.sutor.com/newsite/blog-open/?p=429>

"The Community needs a healthy and growing group of Commercial customers to both legitimize the open source code base and ensure necessary financial success so the on-going advancement of the products / projects are assured. And, Commercial customers need the Community for the breadth of ideas and energy

they represent, which helps the complete code base advance more rapidly and with higher quality than it ever could otherwise. Thus, the Community and Commercial customers form a necessary and symbiotic virtuous circle.

In this debate, some have claimed the only true and legitimate open source model is to provide identical community and commercial editions of the source code. The argument is that relying exclusively on services and support revenue will sufficiently sustain and that creating commercial extensions renders an open source company no different than a proprietary software company. Minimally, this argument misses a valuable history lesson. Most major software categories where open source has positively disrupted have required successful commercial open source companies to eventually use a model similar to open core, in order to continue growing. Think JBoss, Linux (Red Hat Enterprise Linux, Novell/openSUSE), SugarCRM, Hyperic, Talend, and of course, Jaspersoft. Done properly, the resulting broad use yields benefit and value to both the Community and Commercial customers. Accordingly, we at Jaspersoft take our community responsibilities as seriously as any commercial contract.

The pure open source model will continue to democratize software development and yield some commercial success. But to truly disrupt software categories where proprietary vendors dominate (and to deliver large new leaps in customer value), the open core model currently stands alone in its opportunity to deliver community progress and commercial success.

Brian Gentile
Chief Executive Officer
Jaspersoft"

<http://openbookonbi.blogspot.com/2009/02/open-core-model-offers-best-opportunity.html>

"Because the motivations of the Linux distribution companies often differ from those of the folks producing the software, they walk a tightrope between maximizing their own profit by being more closed and alienating the communities that produce the software they sell. The falls from that rope have been colorful.

The economics of Open Source don't work particularly well for distributions, because ultimately they're selling software that they don't own and that others give away for no charge, and their real product is integration - which is also available for free. Red Hat has been able to achieve financial success, but they are essentially alone in this, and more servers are running an "unbranded" no-charge version of Red Hat than their commercial product.

Having it Both Ways

The most successful Open Source projects have both "capitalist" and "Communist" elements to them."

Bruce Perens is the creator of the Open Source Definition

<http://itmanagement.earthweb.com/osrc/article.php/3809221/Bruce-Perens-Is-Open-Source-Capitalist-or-Communist.htm>

"What about Red Hat?"

So where does Red Hat fit in to all this? Surely it disproves the contention that pure open source doesn't scale, or that the hybrid model is the most appropriate for achieving exit-strategy revenue growth, or that embedding open source within proprietary products is the long-term future of commercial open source.

Well yes and no. The more you look at open source business strategies the more you realise that Red Hat is the exception rather than the rule. If you talk to any open source related vendor they will praise Red Hat's pure open source strategy but how many of them are attempting to replicate it? Very few.

I believe the success of Red Hat's strategy may be unique to the Linux distribution business based on a combination of complementary factors including: the fact that the company engages in both an existing developer communities (Linux kernel, GNU, et al) and its own (Fedora); the fact that the company's products appeal both to technology-loving individuals and huge corporates; brand; customer services; good leadership; pioneering entrepreneurs; the impact of the dot com boom; and a clever licensing tactic that is the closest you can get to proprietary while remaining true to the GNU GPL.

Making money from open source

So how do you make money from open source? Support and services will get you so far, and for many vendors that is far enough to build a long-term sustainable business. Proprietary services and features will get you a lot further, and will provide the growth necessary to reward investors via a lucrative merger or acquisition (and potentially IPO although that's largely unproven at this stage). In the longer-term my suspicion is that the vendor-dominated hybrid model will give way to the vendor community-dominated embedded approach."

<http://blogs.the451group.com/opensource/2009/02/23/on-open-source-business-strategies-again/>

"We're definitely seeing convergence in the market: proprietary vendors embracing open-source complements, and open-source vendors embracing proprietary complements." (Matt Asay, General Manager of the Americas and Vice President of Business Development at Alfresco)

http://news.cnet.com/8301-13505_3-10110902-16.html

"Proprietary vendors tapping into the benefits of open source development tend to generate revenue from other products or embed open source within larger commercial products, rather than building proprietary extensions on top of open source (think of IBM's use of Apache within WebSphere).

Clearly there is a fine line between the two (one takes a bottom-up approach to commercialization, the other is top-down), but the two commercial open source business strategies that I expect to show significant growth in terms of usage in the next couple of years are Open-Core and Embedded open source." (The 451 Group)

<http://blogs.the451group.com/opensource/2009/01/05/commercial-open-source-business-strategies-in-2009-and-beyond/>

"Here's hoping that in 2009, more open source vendors will ignore the cries of disapproval and adopt an "open core"-like business model. More paying users = more revenue = more development funding = more features and higher-quality products = happier users."

http://weblog.infoworld.com/openresource/archives/2009/01/will_you_pay_for_it.html

Open source development like closed source development has its pros and cons

The following resources look at the pros and cons of the open source development model compared to the closed source development model:

http://en.wikipedia.org/wiki/Open_source_software#Pros_and_cons

http://www.openadvantage.org/articles/c2b2_case_study

http://www.neilgunton.com/doc/open_source_pros_cons

"OSS and CSS are somehow complementary in their assets and drawbacks. OSS has weaknesses where CSS has strengths, and vice versa. This is true on an individual level as well as on social level (welfare aspects). Thus, the co-existence of OSS and CSS can be explained by the fact, that different individuals with different sets of tradeable rights, different resources etc., need different 'solutions'. Additionally, an OSS-CSSmix can be optimal from a social point of view: Whereas CSS is better in using the acquired resources efficiently namely via direct control, internalizing the positive effects, create user-friendly innovations (plug and play, easy installation routines and 'nice' graphical user interfaces) and radical innovations (because the positive effects of a paradigm change can be internalized, which enables to bear the costs of it) etc., OSS can

integrate human capital CSS can not acquire, create spillovers more individuals can benefit from, and is better in more incremental technical innovations and user innovations (von Hippel & Von Krogh 2003, von Hippel 2005) etc. It is possible, that these effects are really complementary to each other, thus that a co-existence of OSS and CSS is welfare optimal. Of course, the interesting question is, whether, or under which conditions, the 'optimal' OSS-CSS mix establishes, or not. Although an interesting topic, this is beyond the scope of this paper."

<http://econpapers.repec.org/paper/jrpjrpwpr/2008-047.htm>

It is very difficult to discriminate between open source and non-open source vendors any longer

"First off, Savio altered my definition slightly to ensure that the likes of Google and Amazon could not be considered "open source vendors". This is what he came up with:

"An 'open source vendor' is one that develops, contributes to, and distributes open source licensed products, which are integral to driving its revenue."

Which I think does a good job, although as Savio notes:

"The problem with this definition is how it applies to companies such as IBM, HP, and Accenture. They all contribute to and distribute Linux and other open source in order to generate revenue from servers or implementation services. As such, they would be considered "open source vendors" by my definition."

As I commented, The discussion around The five stages of community open source engagement considered the fact that different business units within the same company can exhibit different attitudes to open source."

<http://blogs.the451group.com/opensource/2009/02/09/further-thoughts-on-defining-open-source-vendor/>

"It's a phased approach, one that makes a lot of sense to me but which I doubt many of us have really thought about. It has simply happened naturally as we've sought to find ways to write more open-source software while still getting paid (and yes, I'm talking about "paid" in the sense that makes venture backers happy).

I'm not suggesting that this is The One True Way to make money with open source. But I am suggesting that it seems to make sense as a project trajectory. Done right, it preserves the value of the community while also preserving the value of the company.

In fact, it could actually augment value for the community, and not because of the stock open-source company suggestion that proprietary extensions pay for greater development in the core open-source project. This is true, but I think there's a better reason to tolerate proprietary extensions:"

http://news.cnet.com/8301-13505_3-9945870-16.html

"No one wasted more digital ink on the topic than I did, but even I don't care anymore. Open source is bleeding into the way everyone does software, including Microsoft. It remains critically important, but I suspect that it won't even be able to support a marketing campaign in the near future. Today we talk about Pentaho and Jaspersoft as "open-source business intelligence vendors," for example, but three years from now, I doubt that we'll call out the open-source aspect. It won't matter--or, at least, it won't matter nearly as much. Their competitors, from IBM's Cognos to SAP's Business Objects, will also incorporate aspects of open source into their businesses. They'll have to."

http://news.cnet.com/8301-13505_3-10159660-16.html

"When the ultimate decision is made, however, it won't be because the software is open source. It will be because the software has the right functionality, ease-of-use, and performance at the right price. The CIO won't buy it because it's open source. She'll buy it because it works.

It's time to stop calling out open source as a separate line item in these surveys. IT budgets don't do so, so why should surveys? CIOs are voting for the effects of open source in their IT environments, regardless of whether it's called out. Open source is furniture now: everyone has it, but perhaps they don't think about it."

http://news.cnet.com/8301-13505_3-10186430-16.html?tag=mncol;title

Open source software is proprietary as well

Since vendors and products are frequently categorized or labelled as being proprietary, it is important to look at the definition of the term "proprietary". Different online dictionaries / encyclopaedia define the term proprietary as follows:

"something that is used, produced, or marketed under exclusive legal right of the inventor or maker ; specifically : a drug (as a patent medicine) that is protected by secrecy, patent, or copyright against free competition as to name, product, composition, or process of manufacture"

<http://www.merriam-webster.com/dictionary/proprietary>

"The word proprietary indicates that a party, or proprietor, exercises private ownership, control or use over an item of property."

<http://en.wikipedia.org/wiki/Proprietary>

"manufactured and sold only by the owner of the patent, formula, brand name, or trademark associated with the product"

<http://dictionary.reference.com/browse/proprietary>

Based on these definitions, open source vendors requiring the signage of copyright agreements in order to maintain sole copyright ownership for GPL and LGPL licensed software so that they can sell commercial licenses and closed-source extensions seem to be proprietary as well. Thus, open source vendors leveraging the copyright ownership to make revenue based on their open source projects are proprietary as well. Based on the last definition provided above even open source vendors often being categorized as so-called "open source pure plays" (e.g. Red Hat) would have to be considered proprietary as they leverage the combination of certification and trademarks to make revenue based on a open source technologies that are not owned by one vendor. The following statement by Ian Murdock (founder of Debian Linux, former CTO of the Linux Foundation and Sun Microsystems employee) regarding Red Hat underlines that this view is even shared by key members of the larger open source community:

<http://ianmurdock.com/2004/07/20/red-hat-enterprise-linux-is-proprietary/>

Another example for leveraging a trademark as a proprietary component for differentiation is expressed in the following blog entry by Geir Magnusson from the Apache Harmony project about the OpenJDK (open source Java technology owned by Sun) project:

http://blogs.codehaus.org/people/geir/archives/001466_but_is_it_java_or_will_java_be_like_trains_in_europe_a_twoclass_system.html

The Iceweasel vs. Firefox debate is another example that illustrates that trademarks are a key proprietary element in the open source world even though it might have less commercial relevance (except maybe of any potential impact on Google's future funding / sponsoring of the Mozilla Firefox project):

http://en.wikipedia.org/wiki/GNU_IceCat

That copyright ownership is just one proprietary tool being used for product / business model differentiation is expressed in the following conflict among two open source vendors (Sun Microsystems and Novell in this case) about exactly this topic:

<http://blogs.zdnet.com/open-source/?p=1537>

And here is another past debate about copyright ownership (regarding the Evolution project and Novell):

<http://www.pronetworks.org/forums/bounty-stirs-gpl-concerns-t32725.html>

Based on the definitions provided above, only those companies offering services for open source under no particular brand would qualify as non-proprietary vendors, e.g. SME's integrating open source technologies not being developed and owned by them. Along those lines one could also say that open source projects for which only one single vendor holds the copyright are proprietary in contrast to open source projects where no single party owns the copyright over the full code base (the Linux kernel, the GNOME project as well as the OpenOffice.org build initiated by Novell at <http://go-oo.org/> probably fall into this category). The open source projects for which the copyright is owned by a foundation probably fall into some kind of grey zone depending on the bylaws of the organization.

Different business models and business interest lead to different positions regarding IPR, standardization and interoperability

“Another factor contributing to SSO tensions relates to the fact that firms involved in standard-setting often wear different hats corresponding to the fundamentally different business models they adopt.¹³ Consider a simplified categorization:

- (i) Pure innovators or upstream-only firms (i.e., firms that develop technologies and earn their revenues solely by licensing them);
- (ii) Pure manufacturers or downstream-only firms (i.e., firms that manufacture products based on technologies developed by others but that conduct no basic research of their own, limiting their activities to product development, and have no relevant IPRs);
- (iii) Vertically integrated firms (i.e., firms that develop technologies and manufacture products based on those technologies and the technologies of others); and
- (iv) Firms that do not create technologies or manufacture products, but buy products that are manufactured on the basis of patented technologies.

These different firms operate in the downstream product market, the upstream technology market, or both. Naturally their incentives are asymmetric and their behavior in the standard-setting context diverges accordingly. While there is a certain degree of fluidity between the categories, the following structure of incentives can be identified:

- Pure innovators are entirely dependent on licensing revenues to continue their operations. Licensing revenues must be sufficient to cover the costs incurred in developing the technologies they seek or hope to license (including the costs of failed projects), as well as to give them sufficient incentives to engage in complex and risky projects.
- Pure manufacturers have converse incentives. As royalties represent a cost of production they have every incentive to reduce them. The lower the level of royalties payable to holders of IPRs essential to the standards they practice, the higher their potential level of profits.
- Vertically integrated firms that both develop technology and sell products have mixed incentives. On the one hand, they can draw revenue from their IPRs if they so choose. On the other hand, they will have to pay royalties to other firms holding IPRs essential to the standard for the products they manufacture. Since the bulk of the revenues (and profits) of these firms is usually made downstream through product sales, they are much less dependent than pure innovators on revenues generated by royalties.¹⁴ In their licensing negotiations with other firms, they may well be more interested in protecting their downstream business from litigation than in charging royalties. They therefore tend to have stronger incentives to cross-license their own essential IPRs in exchange for essential IPRs held by other firms, instead of seeking royalty income.¹⁵
- The immediate incentives of buyers of products implementing standards relying on patented technologies are generally in line with manufacturers. They may consider that the royalties that manufacturers pay to IP holders will increase the price of the products they buy from such manufacturers. Generally, however, royalty payments and other direct licensing costs represent a small share of the total cost of production. Moreover, reducing royalty rates on some products might not necessarily lead to cheaper prices. As will be seen below, the extent to which royalty savings are passed on to buyers will vary depending on the state of competition in the downstream market. If that market is not competitive, royalty savings will not necessarily be passed on.”

<http://www.cerna.enscm.fr/images/stories/file/iprstrust/The%20Logic%20and%20Limits%20of%20Ex%20Ante%20Competition%20in%20a%20Standard-Setting%20Environment.pdf>

7. APPENDIX 4 UNDERSTANDING HOW OSS WORKS. PROVIDED BY JUANJO HIERRO FROM TELEFONICA

This appendix was suggested by Juanjo Hierro. Its content is not necessarily endorsed by other group members.

Open standards, when driven by traditional software vendors, do not lead to commoditization of software products. When there is risk of commoditization, because suppliers proliferate, vendors usually jump into a “new standard” which deprecates the existing one. Users then have no other choice but migrate.

An OSS reference implementation of a standard accelerates its definition because it enables open, democratic debate around specifications and also because no gaps or ambiguities in specifications is derived (you always have the chance to inspect the source code of the open source reference implementation of the standard and check what the actual behaviour is.)

However, even more important, OSS fosters commoditization of products (standard-compliant or not). Actually, transformation of open source reference implementations into actual fully-functional products is short, if not null. In addition, perdurability of the product does not depend on vendors’ will, but true acceptance.

The ability to boost commoditization of products, combined with Clayton Christensen’s law about “Conservation of Attractive Profits”¹⁰, helps to explain how companies can make business or leverage their core businesses using OSS. Christensen’s law states that when attractive profits disappear at one stage in the value chain because a product becomes modular and commoditized, the opportunity to earn attractive profits commercializing proprietary products (or services) will usually emerge at an adjacent stage.

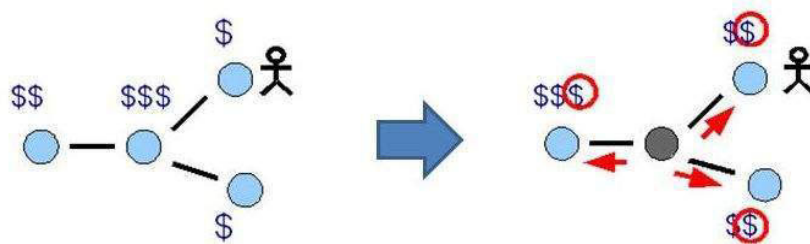


Figure 1: Illustrating how Christensen’s Law works

Some derivatives of Christensen’s Law reveal how OSS may play a relevant role driving the value chain and stimulating market growth. Thus, for example, the price a software vendor wants to apply for a component in the value chain

¹⁰ Harvard Business Review, February 2004.

implies that the overall cost of the solution is too high so that the end customers cannot afford it (see Figure 2). This circumstance leads to a lock in market growth to the detriment of actors in adjacent activities. In some cases, the price of the conflicting component cannot be lower because the software manufacturer's ROI only relies on incomes derived from selling the software. Here, OSS helps as an instrument to unblock the situation: by commoditizing the conflicting software element, the problem goes away because the overall cost of the solution becomes reasonable, market demand gets activated and adjacent actors start to earn profits.

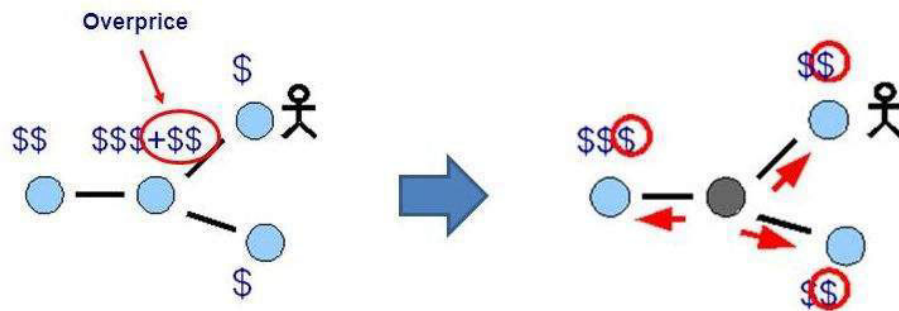


Figure 2: Overcoming market deadlocks

Last but not least, transforming a component in the value chain into a commodity do not only transfer attractive profits to adjacent areas, but fosters innovation in those areas. Actually, new attractive profits attract competition and push actors in adjacent stages to innovate as a way to gain differentiation. On the other hand, perdurability of commoditized elements (thanks to Open Source) also stimulates innovation because investment made in such innovation is better protected (does not rely on a product that may get deprecated because of the will of vendors). Again, this innovation may lead to more attractive products for the end customer, at reasonable prices which in turn may lead to a jump in market demand and the growth of the whole sector involving higher profits for adjacent actors (see Figure 3.)

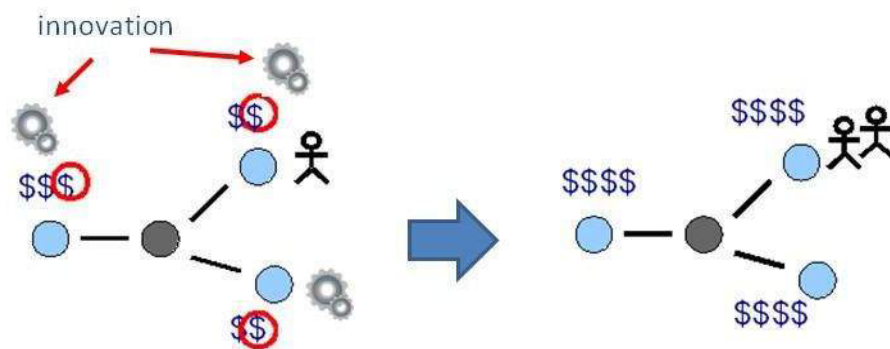


Figure 3: Fostering innovation

Different business models around OSS may be explained using Christensen's Law. Device manufacturers may find it attractive to support Linux on their devices so that profits otherwise captured by operating system vendors stay with

them and, at the same time, applications on top of their devices proliferate stimulating sales. Some companies may focus their business in commercializing support services around OSS (either single products or integrated packages), capturing part of the profits alternative proprietary software products would capture. Even proprietary software vendors may push for OSS in adjacent layers to commoditize that part of the stack on which their product relies. Interestingly enough, although not yet very well exploited, different actors in a value chain may jointly develop OSS with the intent to commoditize a given product of the value chain they don't sell but may be interested to commoditize so that attractive profits get transferred to the activities (commercialization of products or services) that are core to their business. That's why OSS development may become a strategic weapon for companies whose business core does not rely on selling software.

8. APPENDIX 5 PRINCIPLES FOR THE EUROPEAN SOFTWARE STRATEGY. PROVIDED BY HUGO LUEDERS FROM COMPTIA

This appendix represents views formulated by CompTIA which are not necessarily endorsed by other group members.

CompTIA suggests that the four following principles should be used to baseline the European Software Strategy.

A - Procure software on its merits, not through categorical preferences

All software products offer varying benefits and costs. Public entities should procure the software that best meets their needs and should avoid any categorical preferences for open source software, commercial software, free software, or other software development models. Governments are best served when they can select software from a broad range of products based on such considerations as value, total cost of ownership, feature set, performance and security. Governments should let the marketplace continue to encourage innovation in software development and should avoid intervening through preferences or procurement requirements that would discriminate in favour of one model over another.

B - Promote broad availability of government funded research, for all kind of software development models

For many years, governments have made important contributions to technology by funding basic software research. When public funds are used to support software research and development, the innovations that result from this work should be licensed in ways that take into account both the desirability of broadly sharing those advances as well as the desirability of applying those advances to commercialized products. The dissemination of results broadly in this manner contributes to a sustainable cycle of innovation in which government funding for basic research advances the set of knowledge available to the public while helping spur advances in commercial products. These products in turn create the jobs, profits and tax revenue necessary to fund future rounds of public research.

C - Promote interoperability through platform-neutral standards, without any preference for one or the other software development model

Voluntary, industry-led standard setting is the most effective way to develop platform-neutral and market-based standards. When these standards are open and available to all through reasonable and non-discriminatory licensing they help developers to create products that can interoperate with each other. It is important that government policy recognize that open standards - which are available to any software developers - are not synonymous with, and do not require, open source software either for their adoption or utility. Developers of commercial software that may not typically publish their source code often contribute technology and intellectual property needed to develop new standards. Governmental policy on software standards should not discriminate in favor of or against any particular software development model.

D - Maintain a choice of strong intellectual property protections, as widely used by all kind of software companies, including SMEs

Policymakers should not make rigid intellectual property licensing choices a precondition for eligibility for procurement, nor should they discriminate between developers that choose to license their intellectual property on commercial terms, and developers that choose not to charge licensing fees. Commercial and community-based software developers both typically rely on intellectual property rights, though some seek compensation for their exercise of intellectual property rights while others refrain from charging fees. Allowing rights holders to offer a range of intellectual property licenses promotes choice and furthers innovation.

9. APPENDIX 6 ASSOCIATION FOR COMPETITIVE TECHNOLOGY (ACT) COMMENTARY TO OSS WG

This appendix represents views formulated by ACT which are not necessarily endorsed by other group members.

ACT believes that open source software can and should play a powerful role in the evolution of the European software industry, the European economy, and the global software ecosystem. The Free and Open Source software community has proven its ability to produce software that can meet or exceed the quality and security of the best proprietary competitors. Open source software has also provided a commoditizing effect on the rest of the software industry driving down prices and pushing firms to innovate proprietary software more quickly in order to differentiate from the commodity versions. Open Source licenses can provide purchasers with additional flexibility in modifying software to specific needs, and enable vibrant, innovative communities of developers to build up around projects.

ACT's more than 1000 European members provide services for, contribute to, and develop open-source, mixed source, and proprietary software. The vast majority of our members are SME's that work with software under several different forms of license, pragmatically choosing the right software and right license on a case-by-case basis. While our members use, develop, and contribute to open source software projects, they do not subscribe to the Free Software Foundation's ideology that proprietary software is somehow "unethical." They believe that a wide range of software licensing models is necessary to create the vibrant, competitive, and innovative software industry we all want.

Like our members, therefore, we advocate a pragmatic approach toward the promotion of the open source software that takes into account the interests, needs, and value of proprietary and mixed-source developers. This working group is part of a broader European Software Strategy and therefore should be focused on what Open Source can do for Europe, not what Europe can do for Open Source.

As Alexandre Dumas wrote, "All generalizations are dangerous, including this one" and we believe broad generalization about software based on licensees are dangerous for Open Source and an effective European Software Strategy. As this has noted in the barriers section, myths about Open Source being less secure and less reliable are still being perpetuated in some circles. Yet, success of projects like Apache, MySQL, and Linux prove otherwise.

The Commission should be focused on ways to remove those generalizations and be careful not to simply replace them with new ones. In the end, there is very little you can tell about software or the people who created it simply based

on the license that is currently used to distribute that software. A proprietary license does not guarantee that the software is any more enterprise ready than an open source license. And an open source license doesn't guarantee that that more users and developers have examined the code for bugs than proprietary software.

So, rather than trying to make broad generalizations, this policy should be focused on removing them. The goals should be both nurturing the open source sector of the European software industry, in parallel the proprietary, and ensuring that open source software is able to compete on the same field with proprietary. In this context, we believe that the Commission should target the significant barriers to open source growth, competitiveness, and adoption.

We think the group has offered some very good ideas for nurturing Open Source communities in Europe and removing barrier to the growth and adoption of Open Source software. **However, there are several instances where the group has proposed ideologically based solutions that are simply not necessary from a practical point of view.** Notable examples include:

The Assertion that OSS Cannot Work With RAND Standards. The FLOSS community has recently argued that they cannot implement an open standard that has IPR restrictions of any kind (either in terms of royalty payment or field of use restriction). They argue that this prevents them from implementing the standard in open source code, which prevents them from interoperating with that standard, which in turn means they can't effectively compete.

While this may be ideologically correct for them, it is patently false in practice. There are endless examples of open source technologies interoperating with royalty-bearing open standards and even fully proprietary standards/protocols in the market today. Most Linux distributions include proprietary binaries for interoperating with GPU's and other hardware components, as well as external protocols such as WIFI and Bluetooth. Google's Open Source Android mobile phone operating system interoperates flawlessly with royalty-bearing standards like GSM, Bluetooth, and WiFi.

Can this always be done in GPL-compliant code? No. But, interoperability can and has been achieved between open source software and both RAND and proprietary standards. Mixing open and non-open source code may not be ideologically acceptable for some in the FLOSS community, but it is both legal and done regularly.

Therefore, there is little need for governments to get involved in the IPR policies of standards bodies. Additionally, pushing these bodies toward IPR-free policies would have the negative effect of keeping many of the best technologies on the sidelines in standards bodies. If the patents involved are core to the business of that company, they are unlikely to join the process knowing they will have to give up all rights to their inventions.

Mandate the Use of ONLY Open Formats For Internal and External Use By Governments.

ACT supports the concept that government's can mandate all public documents must be available in at least one open document format. This will ensure that even those who are ideologically pure to Free Software can open, read, and manipulate those documents without having to pay for or use software that offends their sensibilities. However, governments should also be able to provide in government documents in whatever other formats they see fit in order to maximize interoperability with the installed software of their citizens. Furthermore, there are instances where the only option for more accessible content involves the use of the proprietary format. Given that there will be multiple options and most document editing tools support multiple formats, the government's choice of formats will not have any significant market skewing effect, despite the assertions of the Free Software Foundation Europe. The additional demand that governments use a single open format throughout the document's lifecycle, in order to avoid "lossiness," ignores the realities of government computing. Very little government information stays in a single format throughout its lifecycle, so format changes are a fact of life. Most government records are maintained in massive databases and the public records are reports created from those databases.

Additionally, we see a potential problem with the License of Right proposal. This is a darling of both the open source community and many large firms. But, as the lone representative of patent-holding SMEs on this working group, we want to voice concerns about the way this would be implemented:

License of Right Could Create Patent Ghetto. While ACT is not inherently against a License of Right regime, we do have some concerns about how it may be implemented. Under existing proposals, where the system is voluntary and the incentives for its use are primarily financial, it has the potential to create a Patent Ghetto for SMEs.

Under this voluntary system, large firms like IBM, Microsoft, Oracle and Sun would likely only use the License of Right regime for strategically insignificant patents and continue to use full patent rights for most if not all of their patent applications. By focusing on creating financial incentives to take this lesser form of patent, the only companies that are likely to use it with any regularity are those for whom the current system is extremely expensive: SMEs.

Under current proposals, SMEs will be giving up an immense amount of leverage against larger competitors by forgoing their ability to get an injunction. The ability to gain an injunction is often the most important tool in the innovative SMEs arsenal for bringing large firms to negotiating table. And, that is why so many large firms support this concept. By encouraging innovative SMEs to voluntarily give up their most important leverage, large firms are able to mitigate their potential risk from those patents and shift the balance of power in negotiations.

The License of Right regime may provide some collateral benefits to SMEs, but current proposals would do little to protect SMEs from large patent holders, who are unlikely to voluntarily use the system. The majority of the benefit of this

system therefore would be targeted at large firms, who are looking to mitigate their risk from small innovative firms with patents. The incentives for the use of such "soft ip" need to be expanded beyond the arbitrary discount of price and involve an actual increase in IP value in some other way so that larger firms are more likely to participate. Otherwise, the License of Right regime could turn into a Patent Ghetto for innovation-creating SMEs.

10. APPENDIX 7 ECONOMIC FREE SOFTWARE PERSPECTIVES¹¹ PROVIDED BY GEORG GREVE FROM FSFE

This appendix represents views formulated by the Free Software Foundation Europe (FSFE) which are not necessarily endorsed by other group members.

Introduction

“How do you make money with [Free Software](#)?” was a very common question just a few years ago. Today, that question has evolved into “What are successful business strategies that can be implemented on top of Free Software?”¹²

In order to develop business strategies, it is first necessary to have a clear understanding of the different aspects that you seek to address. Unfortunately this is not made easier by popular ambiguous use of some terms for fundamentally different concepts and issues, e.g. “Open Source” being used for a software model, development model, or business model.

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

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

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

The **business model** axis describes what kind of revenue model was chosen for

¹¹ Data and text was partially adapted from the results of the EU projects FLOSSMETRICS and OpenTTT (open source business models and adoption of OSS within companies), COSPA (adoption of OSS by public administrations in Europe), CALIBRE and INES (open source in industrial environments).

¹² Free Software (defined 1985) is defined by the freedoms to use, study, share, improve. Synonyms for Free Software include Libre Software (c.a. 1991), Open Source (1998), FOSS and FLOSS (both 200X). Following scientific tradition, FSFE prefers the first established term, which is used in this appendix. For purposes of this document, this usage is synonymous with “Open Source” by the Open Source Initiative (OSI).

the software. Options on this axis include training, services, integration, custom development, subscription models, “Commercial Off The Shelf” (COTS), “Software as a Service” (SaaS) and more.

These three axes open the space in which any software project and any product of any company can freely position itself. That is not to say all these combinations will be successful. A revenue model based on lock-in strategies with rapid paid upgrade cycles is unlikely to work with Free Software as the underlying software model. This approach typically occurs on top of a proprietary software model for which the business model mandates a completed financial transaction as one of the conditions to grant a license.

It should be noted that the overlap of possible business models on top of the different software models is much larger than usually understood. The ex-ante grant of the Free Software model makes it generally impossible to attach conditions to the granting of a license, including the condition of financial transaction. But it is possible to implement very similar revenue streams in the business model through contractual constructions, trademarks and/or certification.

Each of these axes warrants individual consideration and careful planning for the goals of the project.

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

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

The number of possible combinations is almost endless, and the choices made will determine the individual character and competitive strengths and weaknesses of each company. Thinking clearly about these parameters is key to a successful business strategy.

Strategic use of Free Software vs Free Software companies

According to Gartner, usage of Free Software will [reach 100 percent by November 2009](#). That makes usage of Free Software a poor criterion for what makes a Free Software company. Contribution to Free Software projects seems a slightly better choice, but as many Free Software projects have adopted a collaborative development model in which the users themselves drive development, that label would then also apply to companies that aren't Information Technology (IT) companies.

IT companies are among the most intensive users of software, and will often find themselves as part of a larger stack or environment of applications. Being part of

that stack, their use of software not only refers to desktops and servers used by the company's employees, but also to the platform on top of which the company's software or solution is provided.

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

What makes these enterprises proprietary is that for the parts where they are not primarily users of software, but suppliers to their downstream customers, the software model is proprietary, withholding from its customers the same strategic benefits of Free Software that the company is using to improve its own competitiveness.

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

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

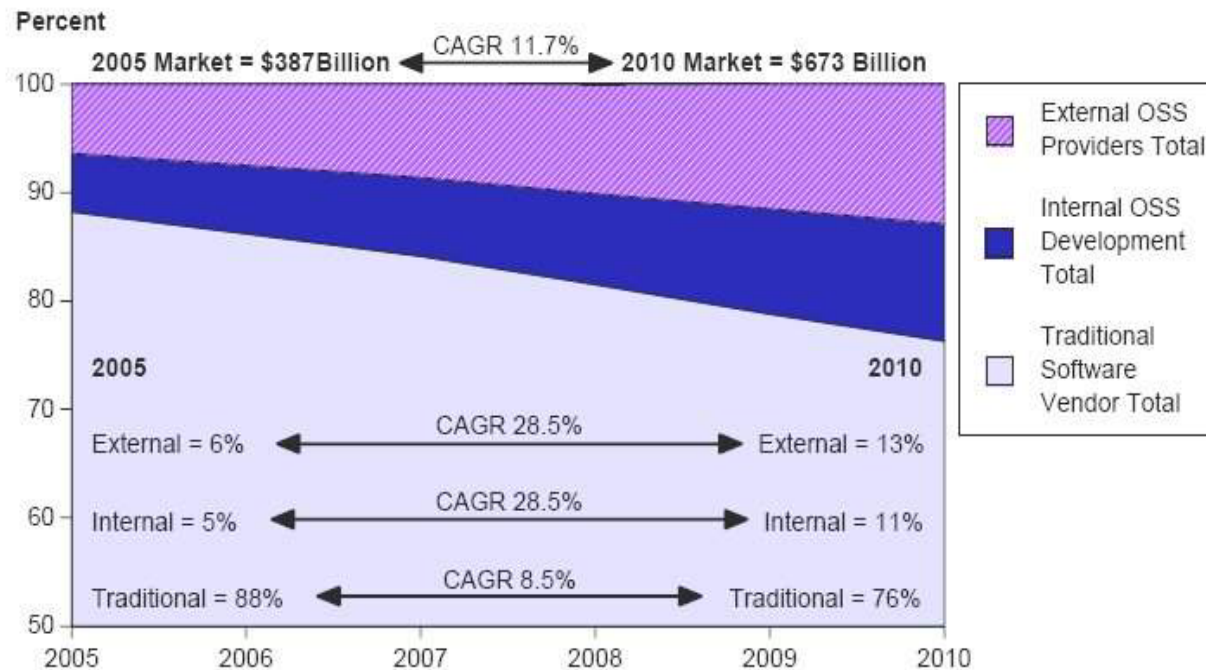
Strategically speaking, any company that includes proprietary software model components in its revenue model should be aware that its revenue flow largely depends upon lack of Free Software alternatives, and that growth of the market, as well as supernatural profits generated through the proprietary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

So usage of and contribution to Free Software are not differentiators for what makes a Free Software company. The critical differentiator is provision of Free Software downstream to customers. In other words: *Free Software companies are companies that have adopted business models in which the revenue streams are not tied to proprietary software model licensing conditions.*

Economic incentives of Free Software adoption

The broad participation of companies and public authorities in the Free Software market is strictly related to an economic advantage; in most areas, the use of Free Software brings a substantial economic advantage, thanks to the shared development and maintenance costs, already described by researchers like Gosh, that estimated an average R&D cost reduction of 36%. The large share of

“internal” Free Software deployments explains why some of the economic benefits are not perceived directly in the business service market, as shown by Gartner:



Gartner predicts that within 2010 25% of the overall software market will be Free Software-based, with roughly 12% of it “internal” to companies and administrations that adopt Free Software. The remaining market, still substantial, is based on several different business models, that monetize the software using different strategies.

A recent update (february 2009) of the FLOSSMETRICS study on Free Software-based business model is presented here, after an analysis of more than 200 companies; the main models identified in the market are:

- *Dual licensing*: the same software code distributed under the GPL and a proprietary license. This model is mainly used by producers of developer-oriented tools and software, and works thanks to the strong coupling clause of the GPL, that requires derivative works or software directly linked to be covered under the same license. Companies not willing to release their own software under the GPL can obtain a proprietary license that provides an exemption from the distribution conditions of the GPL, which seems desirable to some parties. The downside of dual licensing is that external contributors must accept the same licensing regime, and this has been shown to reduce the volume of external contributions, which are limited mainly to bug fixes and small additions.
- *Open Core* (previously called “split Free Software/proprietary” or “proprietary value-add”): this model distinguishes between a basic Free Software and a proprietary version, based on the Free Software one but with the addition of proprietary plug-ins. Most companies following such a model adopt the Mozilla Public License, as it allows explicitly this form of intermixing, and allows for much greater participation from external contributions without the same

requirements for copyright consolidation as in dual licensing. The model has the intrinsic downside that the Free Software product must be valuable to be attractive for the users, i.e. it should not be reduced to “crippleware”, yet at the same time should not cannibalise the proprietary product. This balance is difficult to achieve and maintain over time; also, if the software is of large interest, developers may try to complete the missing functionality in Free Software, thus reducing the attractiveness of the proprietary version and potentially giving rise to a full Free Software competitor that will not be limited in the same way.

- *Product specialists*: companies that created, or maintain a specific software project, and use a Free Software license to distribute it. The main revenues are provided from services like training and consulting (the “ITSC” class) and follow the original “best code here” and “best knowledge here” of the original EUWG classification [DB 00]. It leverages the assumption, commonly held, that the most knowledgeable experts on a software are those that have developed it, and this way can provide services with a limited marketing effort, by leveraging the free redistribution of the code. The downside of the model is that there is a limited barrier of entry for potential competitors, as the only investment that is needed is in the acquisition of specific skills and expertise on the software itself.
- *Platform providers*: companies that provide selection, support, integration and services on a set of projects, collectively forming a tested and verified platform. In this sense, even GNU/Linux distributions were classified as platforms; the interesting observation is that those distributions are licensed for a significant part under Free Software licenses to maximize external contributions, and leverage copyright protection to prevent outright copying but not “cloning” (the removal of copyrighted material like logos and trademark to create a new product)¹³. The main value proposition comes in the form of guaranteed quality, stability and reliability, and the certainty of support for business critical applications.
- *Selection/consulting companies*: companies in this class are not strictly developers, but provide consulting and selection/evaluation services on a wide range of project, in a way that is close to the analyst role. These companies tend to have very limited impact on the Free Software communities, as the evaluation results and the evaluation process are usually a proprietary asset.
- *Aggregate support providers*: companies that provide a one-stop support on several separate Free Software products, usually by directly employing developers or forwarding support requests to second-stage product specialists.
- *Legal certification and consulting*: these companies do not provide any specific code activity, but provide support in checking license compliance, sometimes also providing coverage and insurance for legal attacks; some companies employ tools to verify that code is not improperly reused across company boundaries or in an improper way.
- *Training and documentation*: companies that offer courses, on-line and physical

¹³ Examples of RedHat clones are CentOS and Oracle Linux.

training, additional documentation or manuals. This is usually offered as part of a support contract, but recently several large scale training center networks started offering Free Software-specific courses.

- *R&D cost sharing:* A company or organization may need a new or improved version of a software package, and fund some consultant or software manufacturer to do the work. Later on, the resulting software is redistributed as open source to take advantage of the large pool of skilled developers who can debug and improve it. A good example is the Maemo platform, used by Nokia in its Mobile Internet Devices (like the N810); within Maemo, only 7.5% of the code is proprietary, with a reduction in costs estimated in 228M\$ (and a reduction in time-to-market of one year). Another example is the Eclipse ecosystem, an integrated development environment (IDE) originally released as Free Software by IBM and later managed by the Eclipse Foundation. Many companies adopted Eclipse as a basis for their own product, and this way reduced the overall cost of creating a software product that provides in some way developer-oriented functionalities. There is a large number of companies, universities and individual that participate in the Eclipse ecosystem; as an example:



As recently measured, IBM contributes for around 46% of the project, with individuals accounting for 25%, and a large number of companies like Oracle, Borland, Actuate and many others with percentages that go from 1 to 7%. This is similar to the results obtained from analysis of the Linux kernel, and show that when there is an healthy and large ecosystem the shared work reduces engineering cost significantly; in [Gosh 06] it is estimated that it is possible to obtain savings in terms of software research and development of 36% through the use of Free Software; this is, in itself, the largest actual "market" for Free Software, as demonstrated by the fact that the majority of developers are using at least some Free Software within their own code (56.2%, as reported in [ED 05]).

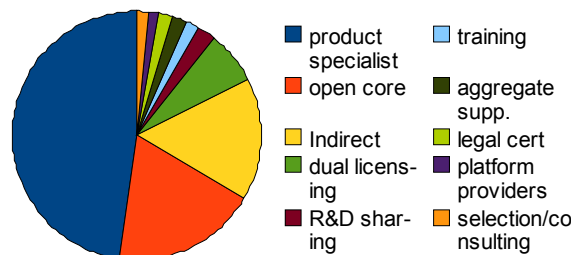
- *Indirect revenues:* A company may decide to fund Free Software projects if those projects can create a significant revenue source for related products, not

directly connected with source code or software. One of the most common cases is the writing of software needed to run hardware, for instance, operating system drivers for specific hardware. In fact, many hardware manufacturers are already distributing gratis software drivers. Some of them are already distributing some of their drivers (specially those for the Linux kernel) as Free Software.

The loss-leader is a traditional commercial model, common also outside of the world of software; in this model, effort is invested in a Free Software project to create or extend another market under different conditions. For example, hardware vendors invest in the development of software drivers for Free Software operating systems (like GNU/Linux) to extend the market of the hardware itself. Other ancillary models are for example those of the Mozilla foundation, which obtains a non trivial amount of money from a search engine partnership with Google (an estimated 72M\$ in 2006), while SourceForge/OSTG receives the majority of revenues from ecommerce sales of the affiliate ThinkGeek site

We found (confirming previous research from the 451 group) that at the moment there is no “significant” model, with companies more or less adopting and changing model depending on the specific market or the shifting costs. For example, during the last years, many companies shifted from "open core" to a pure "product specialist" one to leverage the external community of contributors. Also, after publication of the GPLv3 license there has been an overall adoption of the latest GNU General Public License instead of several, ad-hoc licenses; the most visible shift was from "badgeware" to a pure GPLv3 license.

According to the collected data, among Free Software companies the “Fully Free Software” approach is still prevalent, followed by the “Open Core” and the “Dual Licensing” mode:



Model name	# companies
product specialist	131
open core	52
Indirect	44
dual licensing	19
R&D sharing	6
training	5
aggregate supp.	5
legal cert	5
platform providers	4
selection/consulting	4

Some companies have more than one principal model, and thus are counted twice; in particular, most dual licensing companies are also selling support services, and thus are marked as both. Also, product specialists are counted only when there is a demonstrable participation of the company into the project as “main committer”; otherwise, the number of specialists would be much greater, as some projects are the center of commercial support from many companies (a good example is OpenBravo or Zope).

Another relevant consideration is the fact that platform providers, while limited in number, tend to have a much larger revenue rate than both specialists or open core companies.

Many researchers are trying to identify whether there is a more “efficient” model among all those surveyed; what we found is that the most probable future outcome will be a continuous shift across model, with a long-term consolidation of development consortia (like Symbian and Eclipse) that provide strong legal infrastructure and development advantages, and product specialists that provide vertical offerings for specific markets. This contrasts with the view that, for example, “mixed” models provide an inherent advantage; for example, Matthew Aslett of the 451 group (one of the leading researchers in Free Software business models) wrote:

“The Open-Core approach is mostly (though not exclusively) used by vendors that dominate their own development communities. While this provides benefits in terms of controlling the direction of development and benefiting from the open source distribution model there are also risks involved with promoting and managing community development - or not. In fact, many of these companies employ the majority of the developers on the project, so they are actually missing out on many of the benefits of the open source development model (more eyeballs, lower costs etc).

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

While Open-Core is definitely the commercial open source strategy of the day and is effective in building the revenue growth required to fuel an exit strategy, I have my doubts as to whether it is sustainable in the long-term due to a combination of the issues noted above.”

The fact that Free Software is in a sense a non-rival good also facilitates cooperation between companies, both to increase the geographic base and to be able to engage large scale contracts that may require multiple competencies. Three main collaboration strategies were identified among smaller companies: geographical (same product or service, different geographical areas); “vertical” (among products) or “horizontal” (among activities). Geographic cooperation is simpler, and tends to be mainly service-based; an example is the Zope Europe Association, that unites many service providers centered on specific Zope and Plone expertise. Vertical cooperation is done by companies that performs an integrated set of activities on one or more packages. Multiple vendors with

overlapping products can collaborate on a single offer (eg. operating system and Groupware), that may form a more interesting or complete offer for the selected customer segment.

OSS Vendor Business model	Vendor example	Number of covered products	Economic advantage for the vendor	Economic advantage for the adopter
Dual licensing	MySQL	single or few	Dissemination for the product with reduced costs, creation of external ecosystem of add-ons (outside the source), visibility, self-segmentation of the market	The adopter may opt for the open source edition if it is deemed sufficient; for the proprietary part, reduction in cost may give better price/quality ratio
Open Core	Zimbra	single or few	Reduction of R&D, reduced maintenance costs, visibility, increased dissemination, external ecosystem of add-ons, self-segmentation of the market for the proprietary add-ons	The adopter may opt for the open source edition if it is deemed sufficient; for the proprietary part, reduction in cost may give better price/quality ratio
Product specialists	Alfresco	single or few	Reduction of R&D, reduced maintenance costs, visibility, increased dissemination, external ecosystem of add-ons	Reduction in cost may give better price/quality ratio for the adopted software, stability, integrated support reduces external costs
Platform Providers	RedHat	many	Reduction of R&D, reduced maintenance costs, visibility, increased dissemination, external ecosystem of software and additions	Reduction in cost may give better price/quality ratio for the adopted software, stability, integrated support reduces external costs, legal protection is included, easy to find trained personnel, availability of long-term options
Software Selection	Navica	many	Cost of software certification and selection can be partially shared across customers, as most adopters have a large share of common needs	Reduced selection costs; reduced risk of wrong choice
Aggregate support providers	OpenLogic	many	Cost of support can be partially shared across customers, economies of scale	A single point of control and cost for a large number of project, reduced negotiation efforts for large number of individual vendors, simplified management and governance
Legal certification and insurance	Palamida	many	Cost of legal certification and secondary-level insurance can be shared across the most used OSS projects	Equivalent to insurance; provides a materialized and stable costs against uncertain, difficult to quantify negative events
Training and documentation	Gbdirect	many	A significant portion of training development costs can be shared across customers, economies of scale, reuse of community-developed material	Lower cost for training compared to self-managed training (from source code, publicly available documentation)
R&D cost sharing	Eclipse	single or few	Reduction of R&D, reduced maintenance costs	(same as vendor- in this case, vendor and adopter coincide)
Indirect revenues	Firefox	single or few	Source availability reduces engineering costs and increase visibility on multiple platforms	Adopters obtains a quality product at no cost; potential large ecosystem for extensions

OSS Vendor Business model	Potential disadvantages of the model	Sale condition	Freeriding protection	External ecosystem
Dual licensing	Low external participation (limited code contributions)	Integration of the product with non-OSS components in externally distributed products	license choice	limited (very little external contributions, mainly debug activity and external products)
Open Core	Difficult to estimate the right balance between open and closed parts, external groups may create substitutes for the proprietary parts	Need for the proprietary additions or need of support	license choice, segmentation on features	potentially large, depending on the balance open/proprietary
Product specialists	Low barrier of entry for third-parties	Value perceived by user must be higher than the cost of going to an unsupported recompilation (eg. CentOS); usually mission-critical environments, need of support or lack of internal expertise	license choice	yes
Platform Providers	Platform engineering requires large R&D efforts even with shared resources	Value perceived by user must be higher than the cost of going to an unsupported recompilation (eg. CentOS); usually mission-critical environments, need of support or lack of internal expertise	license choice, copyrighted and trademarked elements included in the product	yes
Software Selection	Limited market, difficulty in following rapid evolution of the products covered (evaluation costs)	Complex requirements, many areas or strict vertical requirements to match, possibly large company size	Selection documents are usually proprietary; selection requires human intervention (non-replicable)	no
Aggregate support providers	Limited market, may be perceived as in partial competition with existing specialists	Large number of managed projects, use in mission-critical infrastructure	Inherent in the non-transferability of support contracts	no
Legal certification and insurance	Limited market, difficult to estimate risk probabilities, need to cover separate legal frameworks across the world with different rules	Potential legal risk	Inherent in the non-transferability of certification and insurance	no
Training and documentation	May be perceived as in partial competition with existing specialists, human intensive, most of it cannot be replicated at low cost	Lack of internal experts (or too high cost for creation of internal skills), complex configuration and setup of OSS product	Training material are usually non-public, trainers are inherently non-replicable	no
R&D cost sharing	Establishing the management and contribution structures may be complex and costly, requires constant effort	Significant R&D costs, higher than the cost of management of the shared community	license choice	yes
Indirect revenues	Requires a large external market for incentives, may be dependent on a single (or small number) of actors increasing risk	There should be an external source of revenue linked to adoption (eg. Ecommerce sales of related products, search engine back-payments, etc.) Usually linked to high adoption numbers	license choice, copyrighted and trademarked elements included in the product	yes

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11. APPENDIX 8 POINT OF VIEW OF THE EUROPEAN SOFTWARE ASSOCIATION

This appendix represents views formulated by ESA which are not necessarily endorsed by other group members.

The European software Association believes that it is essential that a pragmatic approach is taken and that there is no bias in opportunities offered to a company based on the business model chosen by a software company. It is essential that the interests as well as the needs and value of open source as well as proprietary and mixed source developers is taken into account. We therefore would like to reinforce that:

- Software should be procured on its merits, not through categorical preferences.
- Government funded research, for all kind of software development models should be promoted
- Interoperability should be promoted through platform-neutral standards, without any preference for one or the other software development model
- Ensure that a choice of strong intellectual property protection, as widely used by all kind of software companies, including SMEs is available in Europe