

Who pays for Open Source Software and why?

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Abstract

This paper discusses the motivation for Open Source Software and looking at different products of this kind of software and finally evaluates their success. This paper identifies potential investors and the reasons for their contributions. In this paper the open source phenomenon will be discussed from different angles. Also, seeks the present it has offered to the development of software. Finally, conclude whether it is a right move toward the software development.

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1 Introduction

The movement of Free Software (FS) goes back to 1983. The term free software because of its ambiguity was replaced by Open Source Software (OSS) in 1998 by a group of individuals.

Open source software is computing software which its underlying code has been made available to the general public in a readable and understandable form. Software is considered an open source when it is available under a copyright license and meets Open Source Definition (OSD).

The criteria to comply with the Open Source Definition are as follow:-

1. Free distribution: software can be shared or sold without any charges.
2. Source Code: must be delivered in source code (or other means in which the code can be understood and reproduced at a reasonable reproduction cost) as well as the compiled form.
3. Derived Works: the license must allow redistribution of modified form under the same license.
4. Integrity of the Author's Source Code: the license must be acquired if modifications are redistributed only as patch files.
5. No Discrimination Against Persons of Groups: no one must be blocked to use the source code.
6. No Discrimination Against Fields of Endeavour: same as above but the intended users are firms.
7. Distribution of License: the rights attached to the program must apply to all to whom the program is redistributed to without the need for execution of an additional license by those parties.
8. License Must not be Specific to a Product: the software cannot be licensed only as part of a larger distribution.
9. License Must not Restrict Other software: the licence cannot force any other software to be open source.
10. License Must be Technology-Neutral: no provision of the license may be predicted on any individual technology or style interface.

The above definition and the subsequent criteria of Open Source Definition illustrate the openness and freedom in this field. The Open Source Definition clearly focuses on some aspects of software such as usage, modification and redistribution of open

source software. The most eminent example is the trendy GNU General Public License (GPL).

Typically, an open source project is initiated either by code that was commercially developed, or as a collaborative effort in which programmers sometimes spread across the world, improve the code and share the changes within a community and welcome anyone to contribute, or alternatively, by whoever generated the idea and has access to a team or an individual developer who has the ability to implement the idea.

Open source enables anyone to make a new version of the software and bind it to new operating systems. It also allows sharing and marketing of the final product. In summary, the aim is to let the product be more understandable, modifiable, replicable, reliable and simply accessible, while there is still market for it. On the other hand, anyone can sell open source program while the seller cannot stop the buyers from reselling the program.

The message that the open source community and initiatives strive to convey is that you cannot make monopoly profit out of your code. But the question is “who can make money if anyone can sell my code?” The short answer is, you can sell your time, the future versions, print documentations and license the trademark. Even if you cannot make money from your software, you might make money with your software.

2 Example of Open Source Software

Amongst many websites that host open source software, the most highlighted one is “The Free Software Directory”¹ which lists around 5,000 packages. Similarly sourceforge.org currently hosts 172,136² projects that are in different stages of development. freshmeat.net lists over 60,000 new releases of open source packages.

The aims of open source communities are neither out beat nor overtake their giant competitors. If not all the time, 99% of the time you are guaranteed to find alternative open source software to the major software vendors like Adobe, Microsoft, Oracle and Symantec. When many people hear “open source”, they think about Linux. While Linux is an absolute outstanding product of an open source

¹ <http://directory.fsf.org/>

² Total number of registered packages by 15 March 2008

project, it is a small segment of the movement. Table [1] shows a flavour of the alternative open source software.

Application Type	Commercial Software	Open Source Equivalent
Office Productivity Suites	Microsoft office	OpenOffice
Home entertainment	Microsoft Windows Media Centre	MediaPortal
Video Player	Windows Media Player	VLC media player
File Compression	WinZip	7-Zip
Graphics and Image Editors	Adobe Photoshop	GIMP
Instant Messaging	Windows Live Messenger, AIM, Yahoo! Messenger	Pidgin
CD / DVD burning	Nero Burning Rom, Adaptec RecordNow	InfraRecorder
Web Browsers	Internet Browser	Mozilla Firefox

Table 1: Alternative open source software³

3 Potential Users

Open source software does not have any particular users. Everyone is welcomed to experience the freedom of choice.

There are many firms across the world that according to ZDNet UK article on “Why open source projects are not publicised?” do not talk about open source software freely.

In summary the article says, firms are reluctant to publicise their move toward open source. For instance, Erwin Tenhumberg, a product marketing manager at Sun's Client Systems Group, in Organization for the Advancement of Structured Information Standards (OASIS) conference in Oct 2005 expressed that organizations are moving toward using Open Office, but "people do not want to talk about it". Similarly, Eva Brucherseifer, general manager of Basyskom, a German consultancy confirm this by unveiling a news about the biggest migration that they had been

³ CNET.co.uk - Open-source software rated: Ten alternatives you need

involved in, which was migrating 12,000 desktops to open source. Dave Neary, the director of GNOME Foundation verifies that private sector just doesn't want to discuss open source openly. Shaun Connolly, the vice-president of product management at open source software firm JBoss explains "*If a company uses a lot of IBM products and migrates to another application server, then a political thing comes into play. Whether they are switching to BEA or JBoss doesn't matter? They are reluctant to publicise as they still have to maintain a relationship with IBM.*"⁴

4 Why Support OSS?

The most common question is that “Why we should care about open source software?” The short answers as it discussed earlier, is that, we should not lock ourselves with giant vendors’ products. Moreover, by moving using open source software we (as individual home users) can save hundreds of pounds. By making a project open source, the overall cost of software will be reduced and turn the software into a commodity from which nobody can profit.

4.1 New Methodology

Apart from all above short answers, open source introduced a model as Mitchell Baker, the chairwoman of the Mozilla Foundation, describes as a “fashion”. She believes that they could not succeed in any other fashion⁵.

The word “fashion” that she referred to as their key to their achievement was explained in more detail by Eric Steven Raymond, a computer programmer and a number one representative of the open source software who authored a book called “The Cathedral and the Bazaar”.

In his book, he introduces a word "Bazaar model" in order to model the development of Open Source Software. He simulates the traditional development of software to the methodologies to build a cathedral as carefully crafted by either individual wizards or small bands of professionals who create a magnificent architecture. What he is suggesting in this book is that all software should be developed using Bazaar style, which he described as "a great babbling bazaar of differing agendas and approaches."⁶

⁴ ZDNetUK November 25, 2005 – “Why open source projects are not publicised”

⁵ Click, a BBC television programme, on 29 Feb 2008

⁶ Open source software – Wikipedia

His suggestion was not the first or the last. Other people have identified the possible hitch with this suggestion and have begun improving the model with their ideas to simplify and speed up the process of software development. They have identified that the traditional model may not fulfil the integrity of a system. Fred P. Brooks in his book, “The Mythical Man-Month”, advocates that the system design should be done by as few architects as possible. Gregorio Robles goes beyond the Bazaar model and defines patterns which if software exhibits them, the software will be considered as it was developed using the Bazaar Model.

When an open source project grows, it is common that it will be split in subsystems which have their own supervisors, therefore introducing two kinds of contributors: ordinary contributors and co-developers. Development, design and planning seem to be entirely decided on by the owner eventually in cooperation with the co-developers, and with suggestion from the ordinary contributors. Looking at the way these two types of contributors are connected, inheritance can clearly be observed in the management level. In order to break this pattern Gregorio Robles has suggested that users should be treated as co-developers. Other patterns were suggested include aspects such as, early release of software, frequent integration, several versions, etc.

4.2 Freedom

Amongst many strong reasons on why the open source project should receive special care, the word “freedom” is always highlighted. In an era when almost nothing can be obtained freely, why software that developed by a number of people efforts should be offered free of charge?

Freedom of speech makes the speech interesting and hence persuades more audiences, this is because everyone can take part in it quite easily. It also makes almost equal opportunities for everyone to collaborate. Obviously, the more audience the talk can attract the more ideas can be captured at the end. Moreover, an indispensable reason that makes a freedom of speech interesting is the fact that no particular pre-setup is needed for such talk. The freedom of speech can be translated into the open source software development where freedom of alteration in the code and make the software behaves as to meet the end users’ requirements. This is a winning point of OSS which makes it much respectable.

4.3 Moral and Ethical Side

Apart from all of the above reasons, there is a moral and ethical side to the support of open source project. Matt Asay whose predominate field of interest and work was involved in open source, raised a valid point which is looking at open source software from a different angle. He was inspired the point in his business trip to Venezuela. He believes that poor economy has suspended many opportunities in South America. From what he felt, open source is one of the approaches that can help developing countries to reach a stabilised global economy. Open source is essentially a way to transfer wealth to these nations without them shipping dollars back to the US and Europe in return.

4.4 Economic Impact

Deploying open source software is not only around developing nations but countries such as the UK is looking toward moving to open source software. As the UK government's school computing agency, Becta suggests, "*schools could save costs by switching to what is known as open source software*". This is because it can develop their information and communication technology (ICT) without worrying about their budget of licenses.

Similarly, in a study that was conducted by EU Commission, it was clearly concluded that "*in almost all the cases, a transition toward open source reports of savings on the long term...⁸*"

5 Who supports OSS?

5.1 Businesses

There is always an impression on how companies are justified to invest on a project that has either a Return On Invest (ROI) of zero (not surprisingly) or if it returns some money, the money will be so little that cannot be considered as an attractive investment for firms. However, the truth is different. Companies make money in three different ways⁹:-

- By distributing the open source software

⁷ BBC News – 1 July 2005 - <http://news.bbc.co.uk/1/hi/education/4642461.stm>

⁸ Economic impact of FLOSS on innovation and competitiveness of the EU ICT sector - <http://ec.europa.eu/>

⁹ O'Reilly, 1998

- By adding an additional proprietary product to the open source software
- And finally, by relating to open source software in different ways such as combining it with their own products.

The first way to make money on open source is to package the free software in a presentable way to people who may not have expertise to work with a core of the software, and then sell it together with books, manuals, training and support under a trusted brand name. In fact this is one of the main drawbacks of open source products, that is, they do not offer support. This is where the companies advertise their winning point.

Red Hat Software is the best example of open source which was later commercialised.¹⁰ Red hat put software in different packages, including the Linux operating system and tool sets, under the GPL licence. They also offer different support packages. Therefore the main focus of Red Hat was on the services and support and not the product sales itself. In this way customers pay for three things: means of delivering the source code (i.e. CD), a commitment to support the distributed software and more importantly, the company's stamp of approval on the code as the latest and most stable version, on the other hand selling the brand name and their credit.

As the open source product becomes popular, it finds its place in the market and obviously more customers. The more customers, means more needs, and hence more features to be added to the original open source software. This will generate new business opportunities¹¹. In order to link the world of open source developers and the commercial customers a hybrid business model has been used.

The hybrid business model for open source is to develop proprietary products that add value to the open source software. These products are mainly sold to firms, and since they are proprietary they are not contributed back to the open source community. This model brings value not only to the open source software and the additional proprietary product, but also more credit to the open source communities and their final product as their work is being accredited in the commercial market.

¹⁰ Young, 1999

¹¹ Osterhout, 1999

Sendmail Inc¹² is an example of the second way of firms generating money. The founder of the open source program Sendmail, needed more resources to develop the software. Knowing the market, the software, and the factor that proprietary mail formats undermined the open SMTP email forced him to establish a company. What Sendmail Inc. did essentially was to fill in the gaps of the open source model by providing their product and services.

The third model which was described as “make your money on the side strategy”, does not focus on software nor the additional software. These companies are related to open source and taking more care of customers already relying on open source software. Examples of this model are IBM and Netscape.

IBM ships the Apache web server with its own WebSphere Application Server. The same as the first model, they provide support for the Apache server. IBM’s strategy is to let their product gain credibility by combining with the market leader.

Netscape’s strategy was to make most of the speed of open source development. To achieve this, Netscape released its Communicator’s source code with the hope of accelerating the future versions of the products.

5.1.1 Corporations Contributions

There is a question remained to be answered, “Who pays for the developers time?” The answer could be divided into two groups. The first group is “enterprise customers” who contribute through subscriptions, the second group is “investors”, for those that have not possessed the position the Red Hat is holding.

Companies such as, MySQL (now owned by Sun), Greenplum, SugarCRM, Qlusters, Xensource, JasperSoft, Black Duck, Zimbra, ActiveGrid, SpikeSource, Astaro, Scali, SWsoft, Zend, Groundwork, Alfresco, JBoss, Collax, Univa, EnterpriseDB, Optaros, Trolltech, Funambol, Gluecode (now owned by IBM), Pentaho, OpenLogic, and SourceLabs are the companies actively working on open source software. Amongst their investors, companies such as, Index Ventures, Accel Partners, Benchmark Capital, and New Enterprise Associates can be found.

Major software companies such as Sun, IBM, Hewlett Packard, Apple, Oracle, etc. make open source development a key part of their strategy.

¹² Mail delivery system Sendmail - www.sendmail.com

Amongst the list of giant non software vendors Intel and AMD stand out. The world's largest microprocessors company, Intel, has invested in Black Duck, SpikeSource, Scali, SWsoft, Zend, JBoss, and Collax through its Intel Capital arm. The significant fact is that not only the software producers have realised the great benefits of open source software but also clearly the chip giant's influence stretches far and wide into open source software.

Matt Asay and Robin Vasan in one of their collaborative researches in Feb 2006 on how much money has been invested in open source start-up, found \$1.3 billion (£650m) from 2001 to 2006. According to them, they have taken into account only Initial Public Offer (IPO) for Red Hat, Sourcefire, Sleepycat, JBoss and Zend acquisition, therefore the real money is still to be unveiled.

5.2 Individual Contribution

In spite of all the above funding which does not seem to generate an awful lot of income for a developer, “What does indeed motivate them to collaborate with the open source community?”

Individual contribute to open source projects for private reasons, in the hope of gaining something in return, or because this activity yields private indirect returns. The other notable motivation for developers is that the end product will be used by a number of people and this will bring some sort of recognition to their work. This could not be achieved in any other form to this extent.

For instance, open source processes may give a talented system administrator at a small academic institution a unique opportunity to show their talent to colleagues, and prospective employers.

The reputation that the contributor gains from contributions to a successful open source projects appear to have real effects on the developers.

The Apache project provides a good example of this. The project recognised all contributors on its website, even those who simply identified a problem without proposing a solution. Similarly, the organisation highlights its most committed contributors, who had the most control over the project. It appears that many of the skilled Apache programmers have benefited from their association with the organisation. Numerous contributors have been hired into Apache development groups within companies such as IBM, become involved in process-oriented

companies such as Collab.Net which seek to make open source projects more feasible, or else moved into other Internet tools companies. Meanwhile, many of the new contributors are already employed by corporations, and working on Apache development as part of their regular assignments.

There is also significant evidence that open source work may be a good stepping stone for securing access to venture capital. For example, the founders of Sun, Netscape, and Red Hat had shown their talent in the open source world.

Companies as part of their strategy to hire talented developers produce an API for their application so that people can start showing off their expertise working with the application that the company has produced. Example of this can be found in huge corporations such as Google and Yahoo!.

5.3 Education

Academic institutions have played a substantial role in the open source development. The history of open source movement goes back to MIT and Berkeley. These institutions are still actively pursuing their development in open source. These days in some universities such as University of Aberdeen using free software for BSc honours project is vital.

5.4 Online Donation

Online donation can often be found on the internet. Open source communities set a target and a deadline for their donation. Depending on their target and their connection with other open source communities as well as firms, they succeed to reach their target. NetBSD is one of the many successful examples of fundraising campaigns. Generous donations by Google and individuals have enabled the open source operating system projects to fund development in the area of symmetric multiprocessing (SMP).¹³

5.5 Online Shops

Open source websites often have online shops. Although online shops may not generate huge revenue for their communities but it can help to promote their products and persuade developers to contribute to their community. Ubuntu and Mozilla provide good examples of online shop.

¹³ Press Release: Results of NetBSD's 2007 Fundraising Campaign

5.6 Examples of Open Source Projects

5.6.1 Ubuntu

Linux distribution for desktop, laptop and server, ubuntu, is commercially sponsored by Canonical Ltd. The company was founded and owned by South African entrepreneur Mark Shuttleworth. The name “Ubuntu” comes from the southern African concept which means "humanity toward others".

Ubuntu is developed and supported by the community. Team members include leaders from the Gnome, KDE, Linux, Debian and Bazaar open source projects. The main advantage of ubuntu is its user friendliness and can be run on the least-expensive popular hardware configurations.

Apart from many software partners which have played a significant role in software development, ubuntu has established a good connection with the third giant computer retailer, Dell, and the third largest retailer in the world, Tesco. These companies are now offering ubuntu on their laptops and desktops.

According to the founder of ubuntu, there are 8 million users by the end of 2006. This means 1% market share of the total number of PC users in the world. This figure clearly illustrates the level of success reached by ubuntu from their first release on 20 October 2004.

5.6.2 Mozilla Foundation

Open source web browser, Mozilla, is the second most popular web browser in the world. Mozilla is developed by Firefox community which they share their open source. There are many reasons why Firefox is preferred over the first dominant web browser, Internet Explorer (IE), and that is, adware and spyware are targeting mainly IE. An important and ongoing issue with web browsers is the security. In 2006 for a total of 284 days Internet Explorer was unsafe because of the flaw found in the software so users must rely on the other software to protect their computer and their personal information, however, the same flaw was fixed within only 9 days in Firefox and publicly published.¹⁴

The other good thing in Firefox is that anyone can write add-ons and enhancements and share them with the Firefox community. There are currently 2,000 approved add-ons to choose from. Add-ons are important as they give flexibility to an end user to

¹⁴ http://blog.washingtonpost.com/securityfix/2007/01/internet_explorer_unsafe_for_2.html

change the look and behaviour of the browser. Microsoft has strived to replicate the same idea but they ended up, "pay \$30 to register this", "pay \$50 to register that"¹⁵ and at the end they have not reached the level of success that Firefox possesses.

Firefox makes money from every search conducted through Firefox's default search page which just happens to be Google. By the end of 2005, Firefox announced that they earned \$55 million from Google¹⁶.

The question could be "Does Mozilla feel under the thumb from search giant?" According to Mitchell Baker, they do not talk about their product with Google. Mozilla does the product discussion and planning in public, news groups and public discussion lists and Google does not design our product.

6 Conclusion

This paper illustrated the strengths of open source communities by looking at some of their end products and the level of success they have achieved. It also showed the business models around open source software and the flavour of the money these businesses are involved in.

Open source has introduced a new methodology to software development and more importantly they are becoming commodities which the developing nations can benefit from. It also saves the overall cost of software development.

There are obviously many challenges that would need to be overcome and they are things such as documentations, supports, having more user friendly interface and backward compatibility.

But in general open source is a right move and as it has been shown, they are holding a good position as they are aligning with software vendors.

¹⁵ http://apcmag.com/6039/how_firefox_earns_us55million_a_year

¹⁶ http://apcmag.com/6039/how_firefox_earns_us55million_a_year

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