OPEN SOURCE AND OPEN STANDARDS in e-commerce

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Review

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The demand for ICT solutions is growing by the day in all segments of the global society. With a global population estimated to be over 7 billion people the demand software solutions continues to grow. The proprietary software provides cannot serve the needs to all the segments of the global community due to the cost and distribution challenges. This therefore provides a healthy platform for open source software authors to come up with software solutions to serve the various needs in the society. Open source software refers to any programme whose source code is made available for use or modification by anyone. One of the key reasons for promoting open source systems is due to cost effectiveness mainly due to lack of licensing fees and the initial capital outlay is quite minimal compared with proprietary systems. Open source software has the advantages of; security, quality, customizability, freedom, flexibility, interoperability, audit-ability, support options, cost and trial-ability. Open source has some pitfalls like the difficult to engage support of vendors with practical experience in supporting the application; often they have retired or left the agency and difficult for smaller organizations to afford the resources individually may require sophisticated professional guidance on licensing issues and the preparation of contracts. The findings of this paper illustrate the difficulty in determining what is meant by both open source and open standards and their distinctions put forward. The future of both open source and standards is dependent on its adaptation to new software models and its ability to take over several of the more popular software domains currently held by proprietary software vendors. The arena of mobile phone software solution providers cannot go unnoticed due to the availability of many open source systems that have enabled access to mobile telephony by the low income groups. The biggest advantage of these systems is that they can be rapidly customized and extended.

Keywords: open source, systems, software, open standards

INTRODUCTION

There are several definitions of Open Source Systems (OSS) but in general, open source software refers to any programme whose source code is made available for use or modification by anyone. Apart from having the source code free, the distribution of open source software is not restricted to particular parties and it can be sold to any willing buyer. License for open source software is not restricted to any particular royalty fee payments like it is the case with propriety software. Makers of proprietary software never make their source code public (Appelbe, 2003).

Supporters of open source emphasize that the developers’ rights are disadvantageous to the software industry since they to not empower the equitable distribution and development of the programmee although the distribution of open source software is not absolutely free. Some of the ordinary features of OSS are that the open source license must: allow the author to distribute the program freely, can levy fees against the programmee; allow access to program source code; allow program modification; provide distribution rights or license; allow access with very few agreements; allow distribution with any other software and in allow different forms of distribution (Hoepman and Jacobs 2007).

Osterloh and Rota (2007) argue that proprietary systems (PSs) have several shortcomings like; regular payment for updates and customer support after initial purchase of the software. Proprietary systems are normally developed by few people and have limited access even by the authors themselves. There is existence of bureaucracy in decision making and centralized decision making is common which leads to inefficient allocation of costs. In OSS decisions on cost allocation and resource usage is decided by few people for maximum efficiency and thus lowering transaction cost. Quick decision making and response timing is short in PSs development. Open systems can even be developed by one individual or even by a group of people in different parts of the world with similar interests. In some instances organizations can develop an OSS by
appointing a team to work on a system.

One of the key reasons for promoting open source systems is due to cost effectiveness. This is mainly due to lack of licensing fees and the initial capital outlay is quite minimal compared with proprietary systems. Due to the low cost factor many countries encourage open source as a way of promoting technology deepening in a country. More costs may be involved in training and after sale support. Open source development has also been promoted due to lower entry barriers especially by green developers who normally have brilliant ideas by lack in cash-flow to pursue their ideas (Asiri, 2003).

Asiri (2003) further put forward that copy right, patents and licensing makes working with proprietary software much more cumbersome than OSS. The operating conditions are quite restrictive. Open source software can be transformed and developed to suit local needs including changing to a local language. Proprietary systems normally support some few international languages. Most of the propriety software companies are located in a small number of countries all over the world. The developing countries have to spend lot of foreign exchange for purchasing these technologies even after such companies open offices in the developing countries.

Benefits of Open Source Software Products
According to Noyes (2010), with the many business and government organizations that now use open source software such as Linux, it's becoming increasingly clear that price is not the only advantage such software holds. If it were, companies that adopted it during the great recession would surely have switched back to the expensive proprietary stuff as soon as conditions began to ease, and that's clearly not the case. Open source software (OSS) holds numerous other compelling advantages for businesses, some of them even more valuable than the software’s low price.

Security
Proprietary software details are not open to public. This also means that those products are closed from public view; no one outside the companies that have a share of them has the slightest clue how many bugs they contain. In addition to that there’s no possible way the limited set of developers and testers within those companies can test their products as well as the worldwide community constantly scrutinizing OSS can. The bugs in open source software get fixed immediately. Microsoft, for instance, on average takes weeks or even to patch vulnerabilities (Noyes, 2010, Thorbergesson et al., 2007).

Quality
There are as many developers who are working to improve security of open source software just as there are many innovating new features and enhancement to those products. Open source software gets closest to what users want because those users can have a hand in making it so. It's not a matter of the vendor giving users what it thinks they want - users and developers make what they want and they make it well (Noyes, 2010).

Customizability
Business users choose open source software that suits their need. This is made possible by the code being open which they later modify it and add the functionality they want. This is an added advantage to the business users (Noyes, 2010).

Freedom
When business chooses open source software they liberate themselves from sales person that trouble the users of proprietary packages. Customers of such vendors are at the mercy of the vendor’s vision, requirements, dictates, prices, priorities and timetable, and that limits what they can do with the products they’re paying for. On the other hand, OSS users are in control of their decisions and what they want with their software. In addition they have a global society of developers and users for help (Noyes, 2010, Thorbergesson et al., 2007).

Flexibility
Open source software is less resource intensive which means you can run it on older hardware so it’s up to the vendor to decide when to upgrade it. Unlike proprietary software such as Microsoft Windows and office which you have to update both software and hardware (Noyes, 2010, Thorbergesson et al., 2007).

Interoperability
Open source software is much better at adhering to open standards than proprietary software is. If you value interoperability with other businesses, computers and users, and don't want to be limited by proprietary data formats, open source software is definitely the way to go (Noyes, 2010).

Audit-ability
With closed source software, you have nothing but the vendor's claims telling you that they’re keeping the software secure and adhering to standards, for example. It's basically a leap of faith. The visibility of the code behind open source software, however, means you can see for yourself and be confident (Noyes, 2010, Thorbergesson et al., 2007).

Support Options
Open source software is generally free, and so is a world of support through the vibrant communities surrounding each piece of software. Most every Linux distribution, for instance, has an online community with excellent documentation, forums, mailing lists, forges, wikis, newsgroups and even live support chat. Businesses that
want extra assurance, there are now paid support options on most open source packages at prices that still fall far below what most proprietary vendors will charge. Providers of commercial support for open source software tend to be more responsive, too, since support is where their revenue is focused (Noyes, 2010).

Cost
Proprietary software is very expensive. The expenses include virus protection, software charges, ongoing upgrade expenses and other costs associated with being locked in. This explains that’s proprietary software takes more out of the business (Noyes, 2010, Thorbergsessson et al., 2007).

Pilot eting
It’s advised when you consider to use OSS it will cost you nothing at first this is due to software’s free price and due to existence of Live CDs and Live USBs for many Linux distributions (Noyes, 2010, Thorbergsessson et al., 2007).

Pitfalls of Open Source Software Products
Computer programming takes long time of research and constant effort of many people or firms. Monetary benefit out of the successful development is the main attraction for companies established mainly for profit making. The proprietary software is marketed under strict and different conditions throughout the world. A proprietary license prohibits modification, copying, or redistribution without the provider’s permission. Thus it permitted only the proprietary owner to further modify or do developmental works on the software like the Microsoft do. For all the companies developing proprietary software, the source code becomes the company’s intellectual property and asset. The drawbacks of PSs would be: once a consumer purchases proprietary software, they must pay for updates and customer service support. In PSs, only one or a small group of peoples those who have pecuniary interest in the project will work on the software and develop it. It is highly centralized and decisions of cost allocation and resource usage is decided by few people for maximum efficiency and thus lowering transaction cost. Quick decision making and response timing is short in PSs development. On the other hand, OSS is developed by a single person or mostly by a group of people in different parts of the world with same interest collates and collaborates together for developing an OSS. Even companies interested in developing OSS may appoint people to work and release it in the market without any motive of pecuniary compensation (Tiemann, 2006).

The ownership retains the copyright of PSs sold in the market. In the OSS, the software is free and the source code is distributed with the software. The holder can modify it and further distribute it. Any modification to the OSS will fall under the same category and cannot be made proprietary. The economic part of the development of an OSS can be recovered from subsidiary additional services such as software training, supply of complementary proprietary programs that run on the open source programme. However, under whatever the policies adopted by OSS companies the sustainability is always uncertain.

The popular argument in favour of promoting OSS is its lesser cost. There are no licensing fees and the initial investment is minimal. The low cost investment is attractive to most of the developing and less developed world to enter into technological changes in their domestic market. However, the actual cost involved in training and support service is not clear. The argument of economic development through OSS is not proved by empirical data. It is a common fact that any industry development needs proper investment and development of a product with proper services. The sustainable profit making is absent in the OSS set up. This is evidenced by the closure of many OSS companies in the US (Stallman, 2007).

Other pitfalls of the OSS are, difficult to engage support of vendors with practical experience in supporting the application; often they have retired or left the agency and difficult for smaller organizations to afford the resources individually may require sophisticated professional guidance on licensing issues and the preparation of contracts. The open source solution may not be certified by the originating agency and this may provide challenges, especially if the user is seeking grant funding that requires, as a condition of funding, that the software to be acquired is certified (Ceri and Fuggetta, 2007).

Emergence and Impact of Open Standards
According to Edward (2003) there is reason to audit the processes which empower the growth of infrastructure in order to influence the extent to which infrastructure developed. Although software may expire in its relevance, their infrastructure should continue to live and grow and hence the need for open standards. Standards play a crucial role in the process of building infrastructure. On the technical level, information infrastructures demand standards that enable interconnectivity of multiple technologies, or gateways (Hanseth and Monteiro, 1997). Creating gateways includes designing communication and technical interface standards, testing and adapting these to a wide range of different use situations, and ensuring that the standards are developed according to the procedures of recognized standardization bodies, if such exist (Lyytinen and Fomin, 2002).

Geels (2002) asserts that standards align diverse interests of participating groups. Interests of groups like: government organizations, engineers, entrepreneurs and consumers must be aligned if the development of the technological system is to proceed (Lyytinen and Fomin, 2002). Standards provide a means for system builders.
and entrepreneurs to share their perspectives, and to gain understanding how the technological potential can be made to meet diverse ends. By doing so, participating groups can better negotiate the desired technical and economic properties of the technology (Bekkers and Liotard, 1999). Therefore, standards inscribe and embed large socio-technical networks of developers, users, and government institutions, and provide a powerful means to create relational aspects of infrastructures.

Also technologies with a high momentum attract a lot of attention for technical solutions leading to competition from solution providers. In such a case, standards are both necessary and helpful in that they early on limit the technical design space and help obtain a sufficiently fast implementation of a working design with a large enough user base. This is critical for the emerging markets; where chaotic competition needs to be organized relatively quickly around a relatively stable set of system concepts otherwise the technology may lose its momentum (Edwards, 2003). Standards thus help reduce the risk of entrepreneurs as well as consumers thereby increasing the momentum behind an emergent system solution (Edwards, 2003).

Due to changes in the operations of markets there is need for open standards developed in open environments that allow for the evolution of specifications (Schoechle, 2005). Open standards, such as the Structured Query Language (SQL), have proven to have higher durability over time than proprietary solutions (Sliman, 2002). A situation should always be pushed to ensure that no single proprietary vendor has a control over the standard's specifications. This means that no one should have enough power to force the adopters replace/upgrade (as it is common with e.g., new versions of Microsoft Office Suite) the standard-based product, the end-user can continue to use the standard-based technology until something else has proven to meet her requirements better (Sliman, 2002).

According to Kesan and Shan (2008) open standards should be publicly available at a minimal cost. Second, no entity should control the standards and the standards should be licensed on reasonable and non-discriminatory terms. Third, the development process for creating the standard should involve public participation. One of the principles of open standards is that there is little to no ownership and there is a great deal of public involvement.

Therefore OS software does not have to utilize open standards but it is of great benefit if they are able to do so as OS software can miss interoperability completely. Open standards encourage this competition as it is likely to bring about the best possible system, which is the objective of OS in the first place. Therefore whilst neither has any legal requirement to each other the benefit from the relationship allows both to achieve their primary goals.

Future of Open Source Software Products Watson (2009) argues that open software is breaking down more and more barriers and is actually becoming the preference over proprietary software rather than being considered the cheapest option. It is likely therefore that more OS software will climb its way to the top of other domains. Campbell (2008) identifies that the most prominent software development methods are those that seem to work best with the contemporary technological and economic constraints. Interoperability is likely to underpin the future building of open source software. Trumba (2007) describes software models as having increased interoperability leading to rapid evolution in software development.

CONCLUSION

The findings of this paper illustrate the difficulty in determining what is meant by both open source and open standards and their distinctions put forward. The future of both open source and standards is dependent on its adaptation to new software models and its ability to take over several of the more popular software domains currently held by proprietary software vendors. The demand for ICT solutions is growing by the day in all segments of the global society. With a global population estimated to be over 7 billion people the demand software solutions continues to grow. The proprietary software provides cannot serve the needs to all the segments of the global community due to the cost and distribution challenges. This therefore provides a healthy platform for open source software authors to come up with software solutions to serve the various needs in the society. The arena of mobile phone software solution providers cannot go unnoticed due to the availability of many open source systems that have enabled access to mobile telephony by the low income groups. The biggest advantage of these systems is that they can be rapidly customized and extended. The release of an open source version would require a significant investment of time initially and licensing and hosting costs could deter interested parties. But time and money permitting the potential exists to release an open source systems and leap benefits sooner.

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