



A STUDY OF OPEN SOURCE SOFTWARE AND ITS EFFECTIVENESS

Chavan Ashwini M.
Research Scholar Kalinga University
Dr. Rupak Sharma
Asst. Prof

Declaration of Author: I hereby declare that the content of this research paper has been truly made by me including the title of the research paper/research article, and no serial sequence of any sentence has been copied through internet or any other source except references or some unavoidable essential or technical terms. In case of finding any patent or copy right content of any source or other author in my paper/article, I shall always be responsible for further clarification or any legal issues. For sole right content of different author or different source, which was unintentionally or intentionally used in this research paper shall immediately be removed from this journal and I shall be accountable for any further legal issues, and there will be no responsibility of Journal in any matter. If anyone has some issue related to the content of this research paper's copied or plagiarism content he/she may contact on my above mentioned email ID.

ABSTRACT

Open source software is one of the effective tools that can make the world self-dependent. It facilitates the design and use of your own software. This can also lead to economic liberty as the OSS is available at a very low cost. This software's are also more secure as the users can report the threats or bugs to the developers and developers can update the software to make it more reliable for the future users. The domain of proprietary software (PS) cannot ignore the impact of Open Source software (OSS) because of various effects introduced since the beginning of the Software movement. It is evident in many occasions how proprietary software has been affected and had made changes or adaptations to face these effects. The motivation for this paper is to look into these situations where it has been affected with and what these effects are in detail. We searched for past researchers work in the area and looked at what they have discovered. We identified if they are about PS in competition or in collaboration with OSS. And in each situation how it has affected the profitability and the quality of the PS. We saw that the past researches reveal that the profitability and quality is decreased in PS in most situations of competition within OSS and a PS can benefit from OSS by collaborating with it. However, there are special circumstances where this may be turned around. These observations will contribute to the academia and PS industry in providing background for considerations when working with the Open Source (OS) counterpart

KEYWORDS: *Open source software, effective tool, self-dependent, economic liberty, secure, reliable*

INTRODUCTION

This paper will give an overview of what is open source software and will mainly concentrate on its uses in various fields with some of its effects on our society Open source software development is progressing

rapidly and this can be easily understood as being open provides access to source code, redistribution, bug fixing to all the people around the globe (O'Reilly, 1999). The expertise of people around the world makes

the OSS better in quality and other perspectives in general. OSS has always been in either in competition or in collaboration with a PS. Contributions to OSS are done without the incentive to gain revenues but is done for “career concerns” (Lerner & Tirole, 2000). OS communities develop the product with both public and private side of the features with the involvement of users, customers and other developers (Xing, 2013). The increase in success of OSS has led to many collaborations and increased competition with closed source software and the interest and strategies for the business to gain benefits from them is also increasing. One example that we can see is Linux that has gained significant market share as compared to PS. OSS usually threatens the existence of PS (Meng & Tom Lee, 2005), to win this battle between these two sides, the effects of the collaboration and competition can be a very important tool for the businesses. At first glance, OSS doesn't quite provide anything beneficial to PS but actually threatens it when it come to the competition and can provide a lot of benefits when it come to the point of view of collaboration between them. But if we dig deeper we can find different perspectives and use that to gain benefits. There has been research done on both the competition and collaboration between an OS and closed source software, but not as much on the collaboration as compared to the research in the area of competition between the two. In this article, we will be collecting the data and conclusions from the research already done and based on those we will be summarizing

the effects for competition and collaboration between OS and PS.

OPEN SOURCE SOFTWARE: Open software is a term coined by Richard Stallman, programmer in MIT Artificial Intelligence Lab. According to him software means the freedom one can get from using this software's. This software's could be used modified, redistributed without any permission required.

Open source software is basically the same in which the source codes of the software are available nominal cost so one can install it and use it.

Software's should satisfy the following criteria in order to be called as software. These features are laid down by Richard Stallman creator of GPL (GNU General public License)

- A. The freedom to run the program for any purpose.
- B. The freedom to study how the program works and modify it.
- C. The freedom to redistribute copies.
- D. The freedom to distribute the modified copies so as to help the entire community.

SOFTWARE DEVELOPMENT MODEL

The OSS development model is based on information, comments, test results, features, and requests exchanged between the developers and users. The participants in the OSS are motivated by the exchange of knowledge to achieve Recognition from

their peers. Also, the technology transfer improves when the flow of information is two-way among producers and consumers, which can be achieved through the model adoption. The purpose of citing the above developmental model was to show that how user can help in developing new product Proprietary Software in Competition with Open Source

Competition between OSS and the counterpart PS is evident in situations where both the software offers the same set of features in the same domain. For an example, Linux and Windows are competitor OS and PS. This competition is more apparent when the OSS is commercial too. Because then the market share is in demand by the two competitors. The competition between a PS and an OSS is usually not in control of PS holders and can affect it in many ways, mostly in the area of product quality and profitability. We can see OS in competition with the PS in nearly every area including operating systems (Linux, Windows (Libre Office, Open office, Microsoft Office) and many more. The increased adoption of OSS has been explained by R. Sen stating that the reason is because “user-license characteristic and the fact that the OSS is available for free” (Sen 2007). Some evident examples of OSS that have s5. Proprietary Software in Collaboration with Open Source Collaboration between and OSS and PS can be considered in many different ways, PS using OS in its source code, PS using and taking part in contributions for the OSS, proprietary applications of OSS and so on (Sen 2007) (Economides &Katsamakas,

2006). We can see some examples for proprietary companies adopting collaboration to keep themselves in the market and coping with the effects of increasing adoption of OSS (West, 2003). Some papers discuss PS organizations which are known to use a lock-in strategy. A lock-in strategy is when the PS will use ways to retain its customers by introducing switching costs. When a lock-in strategy becomes ineffective when faced with competition with OSS, the proprietary firms will look for collaboration with OSS as well. So as to be cost effective in the attraction of customers. This has been evident with the Microsoft OS project and similar projects by Oracle (Zhu & Zhou, 2012). There has been research done on the collaboration between proprietary and OSS. A study done in 1998 with IBM reported that IBM wanted to integrate their machine to support e-commerce and intranet process. Unfortunately, the machine had been built using Web Sphere product which was built in Apache web server OS. After having failing deal with the proprietary web server Netscape, they looked for opportunities to collaborate with Apache by funding them. Besides giving sponsorship to Apache, IBM involved their engineers to develop a code that will having collaboration with large scale OS group gives more adjustability rather than with proprietary services (West, 2003).uccess over their proprietary competitions include Apache, Linux, Sendmail (Sen 2007).

APPLICATION OF OPEN SOFTWARE:

The main application of open source software is due to the fact that it is available at very low cost, other applications are from research and training where young minds are taught about the working of software. So that they can build new products OSS has found a wide application in many of the business rms. As this software are available cost so companies can gain huge profits by using them. Whereas the proprietary software require huge capital investments. One of the essential features of the Open source software is that it can be changed as required. Using this feature they can customize the software as required .So now they need not to be dependent on the vendors for any update or change in the software .Below given are some of the OSS that can be used in

IMPACT OF OPEN SOURCE SOFTWARE:

OSS is available with nominal cost so the firms using these software can get huge profits in their balance sheets. The OSS is updated periodically to incorporate new changes that were suggested by ethical users .So many Companies update their software without any extra cost. They also get the improved security from the updated versions. It is due to the efficiency of OSS that today about 40% of the servers use Linux. Below given are some details of an Indian firm that got huge benefits while switching to open source software. The name of the firm is Life Insurance Corporation of India. It was needed to

connect its 2048 branches across the country to make all the divisional offices achieve the 100% branch computerization. All the branches were connected to the zonal and divisional offices through Wide Area Network

(WAN) while the offices in the same city are connected via a Metropolitan Area Network (MAN). Each branch has one dedicated server while the divisional and zonal offices had about 10 servers each and the central corporate office had about 50 servers. Thus, in total, the server count was close to 3500. Each branch had about 20 to 30 workstations business houses Other impacts of OSS are that now more people have become computer literate. Generally the proprietary soft wares are developed in the western countries so all of them support only the main languages of the world and ignore other languages. OSS has helped them to make the software available in their own local language Example-BOSS (Bharat Operating System SVI.

CONCLUSIONS

The conclusion that can be drawn from the above text that open source software are the cheapest, secure and customizable software that has wide application in making the world less dependent of the proprietary software and to innovate new products to help the mankind solutions) this research, we looked at finding how PS is affected by OSS and find past research on the area. We looked to categorize and look for variations of these effects when these two types are in competition and collaboration with each

other. While there are many effects we scoped our research on the effects on quality and profitability of the PS. Our findings conclude that quality is decreased when in competition with a stable OSS of high quality and a more solid user base. OSS is considered and found to be of less quality than Proprietary counterparts to begin with. And we can also conclude that the profitability of PS is directly affected by the competition with OSS. But there are cases where the profits can be increased. Which are by pricing decisions of applications distributed for OS platforms or in the presence of a low quality commercial OSS in the market which has higher quality than the OS version. Usability and profitability are related with each other too. Usability affects demand, and demand affects the market share which affects the profitability.

REFERENCES:

- [1] DrNic Peeling and Dr Julian Satchell (2001) "Analysis of the Impact of Open Source Software" QinetiQ ltd
- [2] Gaudeul, A. (2004). Competition between open-source and proprietary software: the (LA) TEX case study. Unpublished working paper, Universities of Toulouse and Southampton.
- [3] I. Gorton and A. Liu. (2002). "Software component quality assessment in practice: Successes and practical impediments," in Proc. 24th Int. Conf. Software Engineering, Orlando, FL, pp. 555–558.

- [4] J Jaisingh, EWK See-To, KY Tam (2008). "The Impact of Open Source Software on the Strategic Choices of Firms Developing Proprietary Software" Journal of Management ..., Taylor & Francis
- [5] J West (2003). How open is open enough? Melding proprietary and open source platform strategies - Research policy, Elsevier
- [6] Jean-Michel Dalle, Nicolas Jullien (2001). "Open-Source Vs. Proprietary Software" ESSID Cargèse Summer School
- [7] Lerner J., TiroMingqing Xing (2014). "The impact of open source software on proprietary software firms' profit and social welfare" Journal of Industrial Engineering and Management
- [8] Mingqing Xing, (2013). "Competition between Free Open Source, Commercial Open Source and Proprietary Software" Journal of Communications Vol. 8, No. 10.
- [9] Mishra, Birendra; Prasad, Ashutosh; and Raghunathan, Srinivasan, (2002). "Quality and Profits Under Open Source Versus Closed Source". ICIS 2002 Proceedings. Paper 32.
- [10] N Economides, E Katsamakas (2005). "Linux vs. Windows: A Comparison of Application and Platform Innovation Incentives for Open Source and Proprietary Software Platforms" NYU, Law and Economics, papers.ssrn.com
- [11] N Economides, E Katsamakas (2006). "Two-Sided Competition of

- Proprietary vs. Open Source Technology Platforms and the Implications for the Software Industry” Management Science, pubsonline.informs.org
- [12] R Sen (2007). “A Strategic Analysis of Competition Between Open Source and Proprietary
- [13] Srinivasan Raghunathan, Ashutosh Prasad, Birendra K. Mishra, and Hsihui Chang, (2005). “Open source versus closed source: Software quality in monopoly and competitive markets” IEEE TRANSACTIONS ON SYSTEMS, MAN, AND CYBERNETICS—PART A: SYSTEMS AND HUMANS, VOL. 33, No. 3, pp. 373-383, 2003.
- [14] Zhou, Z. Z. (2012). Research note-lock-in strategy in software competition: Open-sourceso
- [15] Vidyan and Choudhary and Zach Z. Zhou. (2007). “Impact of competition from open source software on proprietary software” INFORMS Annual Meeting software vs. proprietary software. Information Systems Research, 23(2), 536-545.5,