

Phenomena of Open Source and Slovenia's Adaption

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Summary

Although free open source libre (FLOSS) software is increasing its presence in the media and in debates between IT professionals, and although even citizens in general are starting to talk about it, FLOSS is still in general quite an unknown quantity. But this is changing. There is more and more interest in open source software by general users and also its influence on the public and business sector is undeniable. What is open source? Where did it all start? How is Slovenia using open source? What have we learned? Where are the opportunities for FLOSS? These are the sort of questions we will try to answer in this document. Slovenia implemented some of the important steps in introducing open source, however we are still far behind in terms of open source adoption and great opportunities exist for its better use in future.

Keywords

open source, free software, proprietary software, public administration, adaption

1. Introduction

Although open source phenomena is not very old (the term was defined in 1998), the history of open source is quite long. The open-source began in the academia with first computer centres by research when development of software was all about collaboration and knowledge sharing. However with the arrival of personal computers this philosophy changed in terms of software protection laws, and by the beginning of millennium with spread of internet the collaboration and knowledge sharing again became an important factor in software production and its innovation.

Slovenia is still far behind in terms of open source adoption, however we have some excellent predispositions that show that there are good opportunities for Slovenia to catch up and use all the possibilities and advantages of this phenomena. Firstly, from a social perspective, open source software development is about collaboration and knowledge sharing, which are both on the rise in our culture. Secondly, open source software eliminates a significant proportion of licence costs, which could improve the competitiveness of the small to medium sized companies that dominate in Slovenian economy. Thirdly, there is an increasing acceptance of open source in the public sector through establishment of open source policies in European Union. And last but not the least, whilst open source may not have a long history, it is set to make an important contribution to the future of

computing in Slovenia. In the following section we will enlight some of these claims and will present some of the facts implemented in Slovenia.

2. A Brief History of Software

The global software industry has evolved in four distinct eras: invention of computer (1945-60), the beginning of software industry and emergence of independent software vendors (1961-75), the popularisation of personal computer with new market and (1995 present) Internet with web-based applications. During the first era the IT panorama was dominated by large computers, mainly installed in companies and governmental institutions. IBM was the leading manufacturer, way ahead of its competition. The software was never considered as a standalone commercial good or service but is was mainly carried out by the manufacturers and was customized for each specific machine. It was common for knowledgeable users to write their own software for a specific purpose. However with the release and astonished success of IBM mainframe computers System/650 and System/360 there was an increasing demand for standardised software for their machines. As IBM decided to specialize in making hardware, they unbundled their software components and created a market for third party software what resulted in the second era of global software industry. In the second era software industry became more mature and it started to supply software directly to the users. With the rise of personal computer in the third era, the packaged software product became popularised. Access to computers was no longer

limited to large companies and governments and this created a growing demand for variety of commercial software applications. The fourth era began with the boom of Internet and the software companies start develop web-based applications without worrying about deployment or installation.

During the first and the beginning of second era only a few people in corporate research laboratories or academia were developing software. The software was neither patented or considered patentable as its development was mostly subsidized by computer manufacturers like IBM. It was common practice to exchange and share source code and researchers and developers were able to work collaboratively to improve software without worrying about violation of intellectual property rights. However this changed substantially with the rise of commercial software and the arrival of personal computer. The formal intellectual property rights such as copyright and patent were central to the new business models that were developed by software firms. Licence holders could install and use the software but they were unable to make any alteration to it or redistribute to others. This constrained the scope for follow-on innovation and was viewed by some as limiting the rights of software users. The Free Software Foundation (FSF) was established in the 1980 by a programmer at Massachusetts Institute of Technology (MIT) named Richard Stallman. Activist and supporters of the "original" software development culture started to participate in project belonging to FSF. In the same time The General Public Licence (GPL) was created to promote a culture of sharing where the key message was that the software users should always be able to learn, create, modify and circulate software without having to pay anything.

In 1991, Linus Torvalds, a computer science student from Helsinki, sent an online invitation to anyone who might be interested to work with him on developing his Linux kernel project into a real operating system. All the source code was made public under the GPL. The project was an enormous success. Not only that kernel had been developed, but numerous utilities and innovations had been created on top of Linux to enrich the usefulness and competitiveness against commercial software. The adoption of a version of Linux by Google as the operating system of their gigantic search engine provided a solid statement about the quality of software.

By the 1990 the term open source was adopted by a group of supporters who strongly believed in

collaborative software development but did not completely reject the role of proprietary software on the market. In the mid-1990s, free software already offered complete environments that supported the daily work of many people, especially software developers like distributions of GNU/Linux and BSD Systems. There were still many pending assignments. The main one was to have a better graphical user interfaces at a time when Windows was considered the standard. However there were already several thousand people worldwide who used exclusively free software for their day to day work and more open source projects appeared on the web such as Apache and GNOME.

The situation of open free / open source programs in relation to proprietary ones is not very different: they are both distributed under a licence. The difference lies in what the licence allows. In general there are two different types of open source licences: copyleft or strong types of licences and permissive licences that are more flexible and easier to integrate with a commercial model. The most known is GPL (General Public Licence) licence. The GPL, known as copyleft, requires all derived work or enhancement of the software to be freely modifiable, distributable and usable under the same licence as the original. Developers have a legal obligation to release the source code if they make changes to some GPL licensed software and intend to commercialise the modified version as a product. This prohibits integration of GPL licensed software into proprietary software. Permissive licence such as Berkley Software Distribution (BSD) impose less strict conditions on what can be done with software. Integration with proprietary software or modifying it without releasing is possible. Broadly speaking, the restrictive licenses tend to protect the freedom of the developers whereas the permissive licences focus on the freedom of the users. The various existence of open source licences make open source software more friendly and approachable to the business world. It is possible for software firms to adapt, collaborate or even commercialise open source software as a viable form of business.

The majority of open source software developers are volunteers. They are not being sponsored or subsidised by manufacturers or corporate labs. However, many open source software projects have huge commercial value. The Apache web server, for example, is being used to host more than 50 percent of all websites in the world (The Apache Software Foundation, n.d.).

The Sun's MySQL is one of the most popular systems for database management with more than eleven million installations (Gartner, 2006). As we have seen in the last few years, this examples and many more has not only given rise to totally different development methods, but also to practically opposite ways (in many aspects) of understanding IT what breaks many conventional assumptions about nature of software business and challenges traditional business models.

3. Slovenian Adoption

The Linux User Group of Slovenia (LUGOS) was launched in July 1997 (Lugos, 2007) and was organised as an online forum open for everyone. The main ongoing tasks of LUGOS were the spread of Linux in academic sphere and educational organizations, as well as among other potential users in organizing courses, conferences and workshops, publishing magazines and brochures with information and instructions for users of Unix and Linux systems and their applications, translation of certain parts of Linux and anti-monopoly activities for the Slovenian market of computer operating systems.

However, the first visible contribution in introducing open source was the project OKO, which was supported by Ministry of Education, Science and Sport, the former Ministry of Information Society and LUGOS, which started in 2003. The main goal of OKO was to introduce the use of open source software to educational organisations. One of the major challenges in the use of open source software was the lack of knowledge in educational institutions. Thus, the fundamental task of OKO project was to train teachers so they could make use of the open source didactic-based applications (OpenOffice, 2004).

The OKO project group consisted of students, teachers, experts from different companies and independent researchers. Together with the Ministry of Education, Science and Sport which initiated the project, many institutions, such as different educational institutions, Slovenian universities, former Government Centre for Informatics, Agenda company and independent associations of professional experts, collaborated by selecting open source software. The result of the group was the Slovenian distribution of Linux based on Fedora Core 2.0 which had graphical desktop, Web browser, e-mail and Office Suite. All software was available in the Slovenian language including extensive literature in the Slovenian language available in electronic and printed form.

Although the OKO project was important in open source introduction in Slovenia, the lack of knowledge in educational institutions remains. After the termination of OKO, the open source software based on the OKO project was preinstalled on virtually all computers in the educational institutions, however only as an alternative to well known commercial software. Due to the lack of knowledge of open source and its possibilities, open source alternative was not widely used at that time and Slovenia today faces similar challenges.

The next important step was taken in 2007 at the Ministry of Higher Education, Science and Technology, when they announced a tender, for the first time, for a selection of a contractor that will establish and develop Slovenian Open Source Centre (COKS, n.d.). Selected was a group of commercial companies and non-profit organizations under the leadership of company Agenda d.o.o was selected and Slovenia got its first Open Source Centre for the users. The Centre provides assistance and support services and solutions for public and private sectors. All services carried out by COKS are implemented under the selected group of organizations. The main objectives of the Centre were to encourage development, dissemination and use of open source software and solutions. Therefore COKS provides systems support, call centre and development of current open source solutions. The Centre acts as a national coordinator of the strategies for open source and encourages cooperation between the various non-profit organizations, businesses, and individuals (COKS, n.d.). COKS is a part of FLOSS centre networks around the world (FLOSS Competence Centers, n.d.).

In 2009 Free Software Foundation Europe Fellowship Slovenia was established (FSFE, n.d.). The FSFE Slovenia promotes the use of open-source and open standards, and implements important events and conferences on the advantages and the use of open source in public sector. It also cooperates with the FSF Europe and contributes to the awareness about the importance of introducing the acts and policies that direct the use of open source and open standard in Slovenia and Europe.

The FSFE Slovenia awarded the The Supreme Court of the Republic of Slovenia that decided to adapt the open-source solution based on OpenOffice.org in its new information system. OpenOffice.org was selected based on the software

requirements of The Supreme Court and the cost of the alternative proprietary solutions. Due to free licensing model by OpenOfce.org, it has showed that in the long term the free licensing solution costs less than the proprietary one, although in the first two years the costs were approximately same. But with OpenOfce.org there were no additional costs for licences after this period. The Supreme Court of the Republic of Slovenia become the first example of Slovenian public governmental organisations that chose open-source. In this way Slovenia took the initiative of France, Finland, Austria and Germany. Primarily this was possible because of the Court's specific situation of previous having the information system based on the old IBM terminals.

However, Slovenia is still behind in terms of open source adoption and promotion. There is no "open source" schools in Slovenia although the OKO initiative, where we learned some important lessons. In Austria, for example, there was a complete transition to open source alternative OpenOfce.org (Hillenius, 2009). The pilot example of The Supreme Court of the Republic of Slovenia is small system (appx 4000 workstations). Much larger size of other Slovenian public administration systems tells us there are still large open-source potentials and possibilities, especially in the context of the reform of the national public administration system as described in Rodic et al. (Vukovic, Završnik, Leskovar, Rodic, & Miglic, 2009). In this sense we can follow initiatives similar to those in Finland or France (Monaldi, 2009).

4. Conclusion

The COKS and FSFE Slovenia bring an important value for future development of open source in Slovenia. Due to this fact, the term of open source is becoming increasingly known and used in public which causes a rise in awareness of this phenomena in our country. This fosters the integration of open-source into public sector and could potentially increase Slovenian competitiveness in open-source solutions. Open-source is also gaining importance as an opportunity for the business. This had significant added value because the small

to medium sized companies (SMEs) dominate Slovenian economy. The Faculty of Information Studies in Novo mesto in partnership with the COKS and the Chamber of Commerce in Dolenjska introduces the ICT Business Forum that promotes open-source and explains its opportunities for regional SMEs. Such activities are important for economy growth and innovation.

Although Slovenia is behind Europe in terms of open source adoption and promotion, we see that with the organisations such as COKS and FSFE Slovenia the open source has better future. Slovenia could take initiatives from the government similar to those from 2003 and 2007, that would minimize the costs for the public sector in the appropriate areas of ICT in the future. Due to global financial crisis, this has not happened yet, however this could be a wise decision of the Slovenian government for the future, as was proved in France, Finland, Austria and other countries.

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