Need of Open Source Software for the Public Administration

Harshavardhana Doddamani[1] Dr. Shantakumar B. Patil[2] Dr. Premjyoti Patil[3]
[1]*Research Scholar Nagarjuna College of Engineering & Technology, Bengaluru.*
[2&3]*Professor Department of Computer Science & Engineering*
Nagarjuna College of Engineering & Technology, Bengaluru.

***Abstract*- Open Source Software (OSS) getting to be more and more used worldwide in Public Administration (PA). As PAs are among the biggest computer- and software consumers, thus they should be very careful what to use, how to use. PAs spend every year a huge amount of money for commercial off-the-shelf software licenses. By using appropriate technologies, such expenses might be either reduced, or re-routed to further develop local business[1]. This paper aims at introducing, analyzing, and supporting the use of OS software. The Government of Indian has recently proposed to go the open source way in its e-governance projects, and the Department of Information Technology has issued a Draft Policy in this regard. This move has been welcomed by the IT industry. However, some implementation issues need to be addressed.**

***Index Terms*- Software, Public, Administration, licenses, e-governance.**

I. INTRODUCTION

Software plays a major role in various fields like education, IT sector, Finance, Medicine, Bio-informatics, animation etc. Two major terms that need to be known regarding software are Open source and closed source software (also called proprietary software).

Open Source software: is the one, which is available for use by general public without payment of any licensing fees. Even its source code is available for free of cost. Source code can be studied, can even be modified based on the needs of user and such open source software can be redistributed to others for free of cost.

Closed source software, however, is the one which needs to be purchased from a vendor. Here users can use only executable code and cannot view the source code of the software at all. In recent years there is a huge shift from the usage of proprietary software to open source software among the public and industrial users due to many reasons like non dependence on any specific vendor, low cost / free of cost, copy left license agreement, security and so on.

There are currently a number of initiatives aimed at introducing OS software in India PAs, but they are mainly performed at local levels, with no coordination, no sharing of knowledge or practices and no rigorous cost/benefit analysis. In particular, the introduction of OS software might be hampered by:

- Data migration cost;
- Integration and interoperability with the present solutions;
- Training to new technology;
- Concerns about support, maintenance, sustainability and future proofing.

Our work aims at building a leading, effective and visible success case for the introduction of OS solutions in the PA by:

• deploying OS desktop software solutions in India's PAs, and benchmarking their effectiveness through a cost/benefit analysis;

• building an Indian, multilingual, freely accessible knowledge and experience base (KB and EB) by comparing and pooling knowledge, and by building on and complementing current activities in the field;

• disseminating the results and the experiences of the study through leaflets, several publications, using university education and other Open Source Software abilities including a series of workshops at regional level.

The motivation for using OS software is mainly given by their extreme versatility, adaptability, transparency of functioning, and by the savings on software licenses.

II. WHAT IS OPEN SOURCE?

Open Source Software is computer software whose source code is available under a license or some other arrangement that permits users to use, change, and improve the software, and to redistribute it in modified or unmodified form. It is developed in a public and collaborative manner. The best known examples of Open Source Software are the various distributions of the Linux operating system, such as Red Hat, SuSE and Ubuntu, Fedora, Mandrake and the Apache web-

server application that runs on many of them. The popular Firefox Internet Browser, Thunderbird e-mail client and AVG anti-virus package, all of which run on Windows, are also examples of Open Source Software.

- The software must sold without restriction, or be freely given away i.e., the distributor is should not restrict who receives it.
- Modifications of redistribution must be allowed, to allow distribution of modifications and repairs.
- Licenses may require that modifications are redistributed only as patches, so that the original author's source code is left unaltered, or that modified software be distributed under a new name, to protect the original author's trademark.[2]

III. IS OPEN SOURCE SOFTWARE DIFFERENT?

Developers programmers, whether employees or contractors. The source code developed is usually kept under tight control and released to third parties only reluctantly. In the past, most of the major software development companies - Microsoft, Lotus, Adobe etc. – have utilized this model.

The open source model does away with the centrally planned model, replacing it with open networks of individuals and organizations. Every participant can build on the work that has been done by others in the network, which can lead to greater innovation and faster development times. The greatly diminished proprietary element of the software, it is argued, also leads to a much more efficient marketplace for the software. It has also been pointed out that flaws and vulnerabilities in Open Source Software are corrected or patched much more quickly than proprietary systems. This is because there are generally far more developers looking for such vulnerabilities and working on ways to fix them. There are certain disadvantages to the model, include the following:

1. While some of the more established Open Source Software projects, such as the Linux distributions or the Open Office initiative (an alternative to Microsoft Office), have governing bodies guiding and sponsoring their development, other less well supported development initiatives can simply die and fall out of support, which can cause major problems for organizations relying on them.

2. At one end of the problem, the open model means that all open source development in a particular area can become focused on a single application (for example the Apache web-server). The application becomes so complex that it is difficult for a parallel group to develop a different 'product' performing the same function.

3. It is an unfortunate fact that, largely because it is developed by highly skilled IT enthusiasts, Open Source Software is often more difficult to implement and use than conventional software.

4. Without the commercial backing of the large software development companies, it is more difficult to obtain training in the use of Open Source Software operating systems and applications than proprietary ones.

IV. NEED FOR AN OPEN SOURCE POLICY

The developed countries have benefited the most whereas the developing economics have to shell out a part of their foreign reserves, both at government and personal level, to procure the proprietary software. Further, they have to continue to pay for system maintenance, up-gradation of software and skilled manpower to manage these systems.

Every country has established an existing ICT infrastructure. A huge amount of investment goes into procuring hardware, and developing skills sets. Since there is an already existing infrastructure, organizations hesitate to switch over to another operating system, which greatly affects future procurements of new software, or operating systems. As decision makers in any organization have a tendency to conform to system they are familiar with, the manpower to support those systems is another consideration. Therefore, after tracing all the benefits Open Source Software offers, there is a clear need for governments to formulate policies that will give the right momentum on the uptake of Open Source Software in the local economies and, in turn, allow them to take advantages of the resulting benefits.

V. PURPOSE OF OPEN SOURCE SOFTWARE POLICY

The main aim behind the formulation of an Open Source Software policy should be clearly outlined and should be in conformity with the national policies. Specific motivations behind a policy would greatly affect the approach towards its execution. For instance, if the aim of a policy formulated by a country is to reduce imports and save foreign exchange, then the obvious approach would be to convert existing

infrastructure to Open Source Software. If the intention is to build local capacity, then the obvious choice would be to promote education so that the country can groom its local talent for future. Governments must set definite targets, which will provide the right pace and direction to the policies it wants to formulate. There are three significant reasons for government support of Open Source Software [3]

i) Cost Reduction
ii) Preservation of foreign currency reserves
iii) Government endorsement

VI. BENEFITS OF OPEN SOURCE SOFTWARE

The governments of countries around the world have either started to adopt, or have started to feel the need for, specific policies on Open source Software. In order to understand the reason to develop an Open Source Software policy, it becomes essential to understand its importance or benefits. Open Source Software has strategic, economic and social benefits which are listed below:

Strategic Benefits

i) Local industry can be developed.
ii) Discourages an import.
iii) National security Enhances
iv) Copyright infringements reduces
v) Enables localization

Economic Benefits

i) Competition Increases
ii) Total cost of ownership reduces
iii) Enhances security
iv) Achieving vendor independence
v) Organizational needs can be customized.
vi) Professional expertise
vii) Cater to professional requirements

Social Benefits

i) Enhanced access to information

All countries have different reasons to promote Open Source Software, which are peculiar to their country.

VII. INDIA

There is no specific legislations in India dealing with Open Source Software though Free Software Foundations of India, submitted an opinion in the year 2003 under 87(2) of the Information Technology Act 2000 to the Department of Information Technology, Government of India. In spite of no specific government policy, Open Source Software has been able to make significant inroads in the country. Certain state governments have been entering into agreements with private companies, for instance, the Centre for Development of Advanced Computing (C-DAC), IIT Bombay and IBM India have signed an agreement to institute an Open Source Software Resource Centre (Open Source Software). C-DAC, IIT Bombay and IBM would jointly undertake activities to foster Open Source Software development and facilitate the understanding of Open Source Software by imparting training. Even, the state government of Madhya Pradesh has also decided to use Linux software in its official IT program, which includes its e-governance (Gyandoot) and computer-enabled school education (Headstart) initiates, to bring the benefits of IT right to the doorsteps of the people. Indlinux.org – an organization of software technicians, who are motivated for the cause of computer literacy and have the talent for writing scripts and have access to know-how for free Open Source Software technologies, have joined hands to create a national level, collaborative effort for localizing Linux to Indian languages. In pursuance of this endeavor, Indlinux.org launched its very first Gnome CD that supports most of the major Indian languages. Punjabi, Marathi, Bengali, Malayalam, Hindi and Guajarati among others, are supported in this freeware version of Gnome. In 2003, the Government of Maharashtra (GoM) introduced Open Source Software for e-governance in areas like treasury management, citizen facilitation centers, document journey management system and the land records management system. The state of Uttaranchal signed an e-governance Memorandum of Understanding (MoU) with IBM in February 2004 to focus on Open Source Software technology, as well as a university program MoU to develop local IT talents. The state government has focused on evolving a strategy to make available more resources for critical sectors like infrastructure, education, and health and employment generation. Some of the applications that IBM would help develop and deploy, based on the IBM e-governance framework are:

i) Municipal services applications for birth and death records, property tax, water tax;
ii) Smart card based application for the Food and Civil Supplies Department and the Social Security Department;
iii) Health services applications to integrate government hospitals in the state.

Under the University Program MoU, IBM will help in developing a platform for providing technical education that would aid the government in establishing a pool of high quality people in software technologies. This program has been implemented in select colleges with the primary objective of training engineering and technically qualified students to become IBM certified professional. Shiksha India Trust, an initiative of Confederation of Indian Industry (CII) has recently signed a MoU with Red Hat Inc, the world's leading provider of Open Source Software solutions to modernize the Indian education system. Under the agreement, Red Hat and Shiksha will make the latest in IT and educational content available to educational institutions Open Source Software India. The former President of India. Dr. Abdul Kalam Azad is also a supporter of Open Source Software. In a speech delivered at Navy's Weapons and Electronic System Engineering establishment in July 2004 in New Delhi, he called for the usage of non-proprietary software especially by the military to ward off cyber security threats. He urged the defense engineers to work as much as Open Source Software available on an Open Source Software platform. The emphasis was on the Open Source Software platform. The emphasis was on the fact that India should strive for self-reliance in software required for the development of critical weapon systems reminding that technology embargos were imposed on India when nuclear devices were tested. [3]

VIII. CONCLUSION

The paper reports on a new project which aims at examining the Open Source Software abilities of Open Source Software in the Public Administration of India. Some preliminary results of surveys and our first results already prove that the goals of the project are realistic and it is worthwhile to go ahead with Open Source Software.

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