

UNDERSTANDING, SERVICE, MAINTENANCE AND TRAINING FOR OPEN SOURCE SOFTWARE'S: A LIBRARIANS VIEW

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ABSTRACT

The purpose of this paper is to study the librarians perception towards migrating to the open source software's in higher academic institutions and to find out the understanding about the OSS, mode of service they will get, training required by them and maintenance of OSS. OSS is the pathfinders to small and medium sized libraries of the developing countries while adopting the technology into the libraries. The study revealed there are lacunas in understanding the OSS by the users in total and need to get clear insight about the OSS. The training, service and maintenance problems have been solved through the commercial vendors and in recent days the professionals are developing positive mindset for migrating to OSS.

Keywords: Open Source Software, Proprietary Software, Installation, Technical Support.

INTRODUCTION:

During the last decade there is enormous change in the libraries and open source software's are created trend in the library science research. During this decade many libraries and information centres have adopted the OSS in one or other areas of library services. The prominent areas of adopting OSS are library automation, institutional repositories and content management. In India, still the OSS adoption has to grow because of false assumptions and reluctant to adopt due to lack of service providers, maintenance, and up gradation of the software. The institutional repositories systems like Dspace and E-Prints are adopting by large number of libraries in Indian sub-continent and also content management systems like WordPress, Joomla, and Drupal are using by the large number of libraries. It is not enough to identify the which software is most appropriate to the particular library but it is also very important to identify the problems, misconceptions and best practices for adopting the OSS. The librarians shared their experiences like there are no consolidated resources for using the OSS and there should be resource which has to give the details of OSS like installation, maintenance, migration, updation, and solutions

to common problems etc. The professionals should have the perceptive of OSS before using them. The main philosophy behind the open source is sharing of knowledge, expertise and skills for mutual exchange. The paper explores what is the understating about the OSS, training required by the professionals, service, maintenance, support, and open source software versus commercial software. This type research helps the professionals by empowering them with the information they need and also it helps to understanding of the current status of OSS.

RESEARCH METHODOLOGY:

Researcher used survey method for the present study and data has been collected through questionnaires for quantitative and qualitative analysis. The questionnaires are sent through the local discussion forums and by personal e-mail to the respondents of different sizes and types. Personal interviews are also been conducted to collect the primary data in order to gather rich information and observation of libraries has been conducted. The collected rich has been analysed by using statistical methods.

REVIEW OF LITERATURE:

There is no comprehensive literature on OSS because most of the literature is based on the case studies, single step process, practice based and covered the few concepts of the OSS only. Adoption of OSS in Pakistan is in beginning stage and only few organizations have made move in this direction. The major issues like social, conceptual confusions, digital divide, and lack of technological, financial and human development are affecting the adoption of OSS in Pakistan libraries (Muhammad Rafiq & Kanwal Ameen, 2009). Most libraries in UK are breaking the barriers in implementation process and they are migrating to open source software's by utilizing the proprietary vendors for the OSS (Nick Dimant, 2010).

There is limited use of OSS in public sector of Botswana and including South Africa when compared to developed countries. However, government of Botswana and South Africa demonstrate positive attitude toward OSS (Stephen Mutula & Tumelo Kalaote, 2010). The open source model discusses the merits and drawbacks of using this model and discusses the advantages and disadvantages of applying the model in higher education (Guohua Pan & Curtis J. Bonk, 2007).

The different librarians have provided the insight into the process of adoption of open source ILS and were used to develop the guidelines. These guidelines can help the libraries prepare themselves for research and adoption of OSS and these guidelines are based on the real life adoption experiences of librarians. (Vandana Singh, 2013). The open source movement can be explained using recent developments in the theories of collective action of co-ordination in the absence of a central authority and of the diffusion of technologies in the presence of network externality (Andrea Bonaccorsi & Cristina Rossi, 2003).

ANALYSIS AND DISCUSSIONS:

Questionnaires were distributed to the libraries of higher academic institutions of Bangalore region, personal interviews were also conducted to get more accurate data, the collected data has been analysed and the results were presented as below. The respondents are Male 76.7% and Female is 23.3%. The Age group of the respondents are 25-35 is 34.4%, 36-45 is 21.7%, 46-55 is 29.1%, and 56-65 is 14.8%. Categories of respondents are Librarians 88.2%, Deputy

Librarians 6.3% and Assistant Librarians 5.4% of the Higher Academic Institutions. Higher Academic institutions libraries covered for the study is under graduate and post graduate colleges of Engineering, Arts, Science, Commerce and Management, Medical and Universities.

Table 1: How did you know about open source software?

	Frequency	%	CP
Conference / Workshops	119	23.4	23.4
Internet	151	29.7	53.0
Journals	66	13.0	66.0
Newspapers	59	11.6	77.6
Professional Friends	114	22.4	100.0
	509	100.0	

We have asked to tick the applicable for the question, How did you know about open source software? Most of the respondents ticked more than one and the 151 respondents said that, they have known the open source software through Internet (29.7%) followed by 119 (23.4%) conference/workshops and 114 (22.4%) through professional friends, 66 (13%) through Journals and 59 (11.6%) through Newspapers.

Table 2: Understanding about Open Source Software:

	Yes	No	Not Always	Not Sure	%
It is available free of charge to anyone	147 (77.8%)	9 (4.8%)	28 (14.8%)	5 (2.6%)	100%
It provides access to source code	136 (72.0%)	5 (2.6%)	43 (22.8%)	5 (2.6%)	100%
It allows users to modify the source code	101 (53.4%)	15 (7.9%)	54 (28.6%)	19 (10.1%)	100%
It allows users to redistribute the modified software to others	101 (53.4%)	5 (2.6%)	50 (26.5%)	33 (17.5%)	100%
Open source and Free software are same	65 (34.4%)	29 (15.3%)	62 (32.8%)	33 (17.5%)	100%

Generally we say OSS is available for free and source code is available for editing, modifying and redistribute. So we wanted to know what is the understanding and opinion of users about the OSS. 147 (77.8%) respondents said that open source software is available for free of charge to anyone but 28 (14.8%) of the respondents said that it is not always because of the involvement of costs of the hardware, supporting software tools, maintenance of the software and other expenses. 9 (4.8%) of the respondents said that open source software's are not available for free of charge and 5 (2.6%) of the respondents said that they are not sure about it.

136 (72%) of the respondents said that open source software's provides source code for access, edit and modify and 43 (22.8%) of the respondents said that it is not always because some of the free/open source software's are not providing the source for modify, edit and to redistribute. 5 (2.6%) said that it will not provide that source code and 5 (2.6%) said that they are not sure about it.

101 (53.4%) of the respondents are said that open source software's allows users to modify the source code and 54 (28.6%) said that it is not always allow user to modify the source code

because of few open source software’s will not provide the source code. 15 (7.9%) of the respondents said that it will not allow users to modify the source code and 19 (10.1%) of the respondents are not sure about it.

101 (53.4%) said that open source software’s allow users to redistribute the modified software to others but some of the software developers policy is to distribute through them only and 50 (26.5%) of the respondents said that open source software’s are not allow users to redistribute the modified software to others. 33 (17.5%) of the respondents said that they are not sure about this and 5 (2.6%) of the respondents said that it will not allow the users to redistribute the modified software to others .

65 (34.4%) of the respondents said that open source and free software are same but 62 (32.8%) of the respondents said that it is not always open source and free software are same. 33 (17.5%) of the respondents said that they are not sure about it and 29 (15.3%) of the respondents said that open source software and free software’s are not same.

OPEN SOURCE SOFTWARE VS PROPRIETARY SOFTWARE:

104 (55%) of the respondents said that open source is not a substitute for commercial software’s but 85 (45%) of the respondents said that open source software’s are good substitute for the commercial software’s.

Reasons:

If Yes, why:

- Proprietary software’s having advanced features and compatibility standards are maintained.
- There is vendor services are available if any technical problems and database problems arises on annual maintenance cost.
- Installation, maintenance, services, training is available onsite.

If No, What are the reasons?

- There is no-vendor lock in and source code is available for editing and it can be redistributed.
- There is no cost for OSS but we need to spend money on depending software’s and on hardware.
- The biggest problem of OSS is service and maintenance but few of the problems can be solved through professional friends, forums, wikis and discussion lists.
- Training can get through workshops or training programmes conducted by reputed organizations and much focus should be given on practical sessions.

Table 3: Using of Open Source Software as compared to Commercial Software:

	Frequency	%	CP
Difficult to Use	36	8.6	8.6
Easy to Use	101	24.2	32.9
Less Useful	42	10.1	42.9
More Useful	88	21.1	64.0
Time Consuming	96	23.0	87.1
Time Saving	54	12.9	100.0
	417	100.0	

Table 3 depicts that, 101 (24.2%) respondents said that it very easy to use the open source software's and 36 (8.6%) respondents said that it is very difficult to use the open source software's. 96 (23%) respondents said that it is very time consuming because the users has to learn by themself or by consulting the forums, documentation, tutorials and other sources, so it takes lot of time to get conversant with the software and 54 (12.9%) respondents said that time is saved by using open source software's. 88 (21.1%) respondents said that open source software's are more useful and 42 (10.1%) respondents said that they are less useful.

Table 4: Installation, Documentation, Training, Support, Maintenance:

	Frequency	%	CP
Internal Staff	38	20.1	20.1
External Vendor/Contractor	23	12.2	32.3
Both	108	57.1	89.4
Don't Know	20	10.6	100.0
	189	100.0	

The major task of open source software's is installation, documentation, training, support and maintenance. There are some questions will come to mind who will provide the installation? Who is going to train the users? Who provides support and maintenance of the software? If the user or librarian has good knowledge about the technologies and techniques, he can solve the problem by himself and he is not well versed with the technologies he has to take the some sort of support from the internal staff or an external vendor. The table 4 state that, 108 (57.1%) respondents said that they have taking the support from both internal staff and through external vendor for installation, training and maintenance of the software and 38 (20.1%) respondents said that only internal staff can provide these kind of services and 23 (12.2%) said that they are getting the support and maintenance from the external vendor or contractor. One of the interesting thing here we can notice that 20 (10.6%) respondents said that they don't know from whom they have to get the maintenance and support because they are not aware of who provides the support services.

The professional vendors are providing the services in the following areas

- Installation and configuration
- Interface customization
- Integration with the library systems and other enterprise systems
- Comprehensive training and help desk support
- Data migration
- Hosting and Software maintenance on cloud environment

Table 5: Business Models for Professional Vendor Support for adopting Open Source Software

	Frequency	%	CP
Cloud Hosting	29	13.6	13.6
Local Hosting	102	47.9	61.5
SAAS (Software as a service)	52	24.4	85.9
Consortia model for resource sharing	30	14.1	100.0
	189	100.0	

Table 5 states that, 102 (47.9%) respondents preferred the local hosting as their business model and 52 (24.4%) respondents preferred SAAS (software as a service). 30 (14.1%) of the respondents said that consortia model for resource sharing and 29 (13.6%) respondents are said that cloud hosting business model. Cloud hosting model is growing like anything and it is best model for hosting but some of the users are not satisfied with the security and continuity of the services by the cloud hoisters.

TRAINING OR ATTENDING WORKSHOPS

Training is to get acquainted with the unknown techniques and technologies. Training can be given in two ways viz. from vendors on purchase or internally (With who are well versed with the particular OSS). Dennison and Lewis found that having staff work on the system together first and then try it independently was most successful. Demonstration system practice also helped and onsite module training also helps the staff to train on relevant and needed for them. The reputed institutions in India are conducting the workshops, hands on sessions which help most of the librarians to get well versed with the OSS. 169 (89.4%) respondents said that they needed training or workshops to acquire more knowledge about OSS but 20 (10.6%) respondents said that training and workshops are not required by them.

LENGTH OF THE TRAINING PROGRAMMES:

We asked them if they required training or workshops what is the length of the programme?. 114 (67.4%) respondents said that they required the training for a week and 34 (20.2%) respondents said that they required the training for 2 weeks. 10 (5.9%) respondents said that 3 weeks training is required them and 6 (3.6%) said that they required 5 weeks training. Only 5 (2.9%) respondents said that they required 1 day training. So training is essential to get knowledge and expertise for using the OSS and the respondents recommended for at least a week's training programme.

Table 6: Mode of Training:

	Frequency	%	CP
E-Learning	57	14.4	14.4
Part of course curriculum	60	15.1	29.5
Onsite training	96	24.2	53.7
Hands on workshop	122	30.7	84.4
Technical guides / Handbooks	62	15.6	100.0
	397	100.0	

Table 6 depicts that, 122 (30.7%) respondents said that they required hands on workshop which give insight about the particular OSS and they will get the practical experience about the individual modules and 96 (24.2%) respondents said that onsite training is required to solve the problems. 62 (15.6%) respondents said that technical guides and handbooks will help them to get trained and 60 (15.1%) and 57 (14.4%) respondents said that training can be given at the time of study as a part of curriculum and through by e-learning respectively.

Table 7: Attending Training Programmes/Workshops Organized by Various Organizations:

	Frequency	%	CP
Very Important	100	52.9	52.9
Important	43	22.8	75.7
Somewhat Important	31	16.4	92.1
Not Important	15	7.9	100.0
	189	100.0	

Training is the most important task to get knowledge about the open source software's and the respondents are also given the same opinion. 100 (52.9%) respondents said that attending the training programmes or workshops organized by various organizations is very important and 15 (7.9%) respondents said that it is not important because they can get trained with some other mode. 43 (22.8%) respondents said that it is important to get trained by programmes or workshops and 31 (16.4%) respondents said that it is somewhat important to get trained on OSS.

DISCUSSION AND CONCLUSION:

The librarians from different settings have provided the insight about the process of OSS adoption and requirements. They have given the clear insight about the OSS and most of them have the misconceptions and they don't have the clear understanding about the OSS. Most of them are interested in proprietary software due to the service and accountability for the issues but even then with all these OSS are migrating into the minds of the librarians and they have developed the positive attitude for using the OSS for their routine activities of the library. The problems like installation, training, service and maintenance are also been solved by the professional vendors and also the younger generations of the librarians are well equipped with the OSS technology and techniques. Cloud Computing given pathway to the librarians while adopting OSS in their organizations without any hindrance. Most of the librarians are also expecting the training programmes from the reputed organization to get knowledge and technical capabilities of the OSS. These real life experiences can help the librarians who are in the need of migrating to the OSS.

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