Evaluation and Adaptation of Open Source software for Distance Learning in Asia

Subtheme: Promoting Education for All

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Abstract

Commercial software for DE are not appropriate for the needs of institutions in the region due to High cost, insufficient flexibility in terms of customization and the non availability in languages of developing countries in the Asian region

Many OSS platforms for DE are not appropriate for needs of the DE institutions in the region because they require heavy customization to meet specific needs and as technical documentation is not readily available and non existent in local languages. Many DE institutions do not have the capacity to customize such software to meet their needs. On the other hand some groups who have the technical capacity seem to be replicating the customization without being aware of the work that other groups are engaged in.

Another important aspect is that the performance of DE software in low bandwidth connectivity was never taken into consideration by their developers in the developed countries.

Considering above mentioned problems faced by the DE institutions in the region IDRC, Canada has initiated "Evaluation and Adaptation of OSS for Distance learning in Asia" project. In this paper, we will explore project overview and its methodology.

Introduction

Many public and private organizations around the country of all sizes might be talking about the benefits of open source software (OSS), then actually what is the real benefits of OSS? Open source software is here to stay. A properly implemented approach that addresses application ownership and copyright issues will help drive productivity, reduce risk and save money. (Cyndi, 2004) There are hundreds of tools and middleware in the OSS toolkit that are ready for primetime use in the enterprise IT environment. Depending upon specific requirements, OSS can be used to create a complete enterprise solution, or mixed and matched to complement commercial software. In either case, there is no reason to wait. OSS is already an essential part of providing the fastest and most efficient enterprise solutions, and this trend will continue well into the future. Organizations that take time today to select, evaluate and apply OSS to their specific requirements will realize widespread benefits that are immediate, ongoing and lasting.

The ownership cost of any commercial software for distance learning is higher as compared to that for the open source software. Moreover the degree to which an open source software tool can be utilized and customized becomes limited only by the knowledge, learning, and innovative energy of the potential users; not by exclusionary property rights, prices, or the power of countries and organizations (Webe 2003). The partner countries in this project share an interest in the development of distance learning software using open technologies. The Mongolian and Vietnamese teams have already been developing course management systems using their own OS applications; and programming methods, and the Indonesia team has been testing a range of leading international OS applications. The Sri Lanka team is an Asian leader in the development of educational computing applications generally. Combining this with open source distance learning software tools creates the possibility of an interesting kind of comparative advantage that will result benefits to the distance learning institutions of the participating countries.

Over hundreds of commercial and non-commercial distance education software are available on the internet. Leslie (2004) has identified over 50 such systems based on open source software alone. This number would drastically increase if we add the number of software developed locally for particular institution and that had not gone popular on the internet to win appreciation of open source community. Farrell (2003) highly ranked Atutor and ILIAS for distance learning purposes amongst 35 open source LMS systems. Even though these softwares are freely available, however, there are always hidden costs when one decides to take advantage of them. Limitations common to many open source software are lack of interoperability and integration, lack of support for localization, and lack of true ownership. They also tend to have unclear user, developer and administration manuals and bandwidth implications for individual students, often not taken into account. This is an obvious problem in

developing countries. At present, even highly ranked distance learning systems such as Atutor and ILIAS lack important features (Hotrum, Ludwig & Baggaley, 2005).

"Evaluation and Adaptation of Open Source software for DL in Asia" project

This project is supported by the Pan Asia Networking program initiative of the International Development Research Centre of Canada. It expects to evaluate with small-group student samples, existing distance learning software both commercial and open source, in order to identify a suitable software that can be customized to meet specific needs of educational institutions in the Asian region.

Specific objectives

1. Using recognized standards, evaluate existing OS software for DE in the areas of performance, customization cost and various features as required by the users in the region.
2. Using recognized standard, evaluate existing commercial software for DE. In terms of performance, customization cost, various features and other associated costs
3. Perform needs analysis of learning management systems for PAN-dora (Pan Asia Networking, Distance and Open Resource Access) network member countries. It is expected that a dozen of the most highly reviewed LMS (learning management system) products will be compared.
4. Determine required modules, specific features and performance for the customization of the OSS.
5. Identify the DE OSS that is capable of accommodating the needs
6. Customize the selected DE OSS for the needs.
7. Prepare comprehensive manual for the end users and developers for the customized OSS.
8. Localize into languages of PAN DLT member countries.
9. Disseminate the DE OSS under GNU/GPL license

Project duration

The project started on May 2005 and to be completed by June 2007. During this period project teams from participating countries viz., Indonesia, Mongolia, Sri-Lanka and Vietnam are to meet thrice during the project implementation.

Beneficiaries:

The beneficiaries of the project activity include the government and non government organizations, academic institutes and the public and private organizations in the region.

Direct beneficiaries will be
1. DE institutions in the region
2. Educational institutions
3. Software teams of the partner institutions
4. Project personnel
5. PAN-dora network members

Project partners
1. Mongolia (InfoCon, website: http://www.infocon.mn)
2. Sri-Lanka (University of Colombo School of Computing, website: http://www.ucsc.cmb.ac.lk/)
3. Indonesia (ASEAN Foundation, website: http://www.ict4dasean.org/)
4. Vietnam (Institute of Information Technology, website: http://www.netnam.vn/unescocourse/ioit99/)

Methodology
As the project team consists of four smaller teams from Indonesia, Mongolia, Sri-Lanka and Vietnam, the project teams from participating countries are collaborating with the help of mailing list, a portal site www.pandora-asia.org (see figure-1) and other means of ICT. Three project team meetings are scheduled for the joint discussions during the implementation of the project.
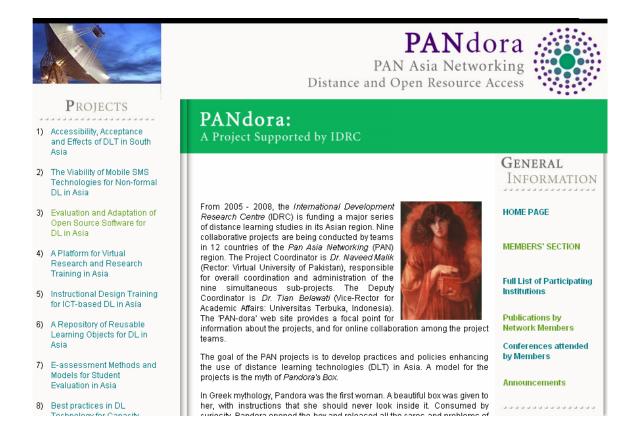
Figure-1. (http://www.pandora-asia.org)

In the first instance, all participating institutions will contribute towards collecting information on current availability of commercial and Open Source Software for use in distance education. In this respect the partners will agree on a set of parameters to be used to specify the requirements for DE in the Asian Region.

The selected software will then be evaluated by using recognized standards such as that used at Commonwealth of Learning (www.col.org) and ASTD (American Society for Training and Development) in each of the participating institutions using their own resources, thereby eliminating to provision of project funds for hardware.

At this stage the project partners will request all PAN-dora network member countries to identify and submit their software needs for distance education, based on the parameters and details provided. This information would be collated and used in the evaluation of the software.

A single product will then be identified based on the performance of the software with respect to the identified needs. This result would be disseminated to all members of the network for feedback.

On receipt of feedback, the selected software will be customized to suit DE needs, initially in the English version. Having successfully customized the English version, the software would be localized to each of the local languages of the network members, with priority given to participating countries. In this respect it is expected to use UNICODE standards and other standard localization tools as is used by the IDRC localization project (http://www.panl10n.net/).

The necessary user manuals and technical guides will be prepared after successful customization.

The finalized product would be offered to the public under GNU/GPL license and thereafter the PAN-dora OSS will be disseminated.

Outputs

At the end of the project, it is expected that the following outputs would be available:

1. Evaluation results of existing OS and commercial software available for DE in performance, compatibility, security, scalability, adoptability and cost, and other standard measures.
2. Results of the analysis of the needs of the participating member institutions,
3. The comparative analysis of the performance of the software with respect to these needs and identification of relative advantages and disadvantages of OS software in meeting the needs of Asian DE institutions.
4. Recommendation on OS software that is suited to meet most needs of the DE institutions in the region
5. Technical and user manuals in English for future customization of the recommended OSS.

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About the author

Mr. B.Batpurev is the Executive Director of the InfoCon ICT consulting company, one of the leading ICT consulting companies in Mongolia. InfoCon has implemented "Internet based distance education" project in Mongolia in 2002 with support from IDRC. Recently he has been selected as short term national consultant for UNDP local office to undertake assessment of Aid Management database in Mongolia. He had led the ICT team for developing distance education tool for Mongolian medical professionals. He can be contacted at **batpurev@infocon.mn** email address.

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