

Connecting Communities

The International Open Source Network: A Case Study

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Bangkok, Thailand

September 2005

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ABBREVIATIONS

APDIP	Asia-Pacific Development Information Programme
CMS	Content Management System
CSS	Cascading Style Sheets
DCEMS	Dublin Core Metadata Element Set
FOSS	Free/Open Source Software
FTP	File Transfer Protocol
GNU	Gnu is Not Unix
GNU-FDL	GNU Free Documentation License
GPL	General Public License
ICT	Information and Communication Technologies
IOSN	International Open Source Network
IRC	Internet Relay Chat
LAMP	Linux, Apache, MySQL, PHP/Python/Perl
LDAP	Lightweight Directory Access Protocol
MAMPU	Malaysian Administrative Modernisation and Management Planning Unit
MNCC-OSSIG	Malaysian National Computer Confederation – Open Source Special Interest Group
MyOSS	Malaysian Open Source Community
RDF	Resource Description Framework
RSS	RDF Site Summary
SQL	Structured Query Language
UNESCO	United Nations Educational, Scientific and Cultural Organization
W3C	World Wide Web Consortium
WebDAV	Web-based Distributed Authoring and Versioning
WSIS	World Summit on the Information Society
WYSIWYG	What You See Is What You Get
XHTML	Extensible Hypertext Markup Language
XML	Extensible Markup Language
XML-RPC	Extensible Markup Language – Remote Procedure Call

EXECUTIVE SUMMARY

"I applaud the U.N.'s (IOSN) initiative in backing and promoting Linux – or more generally Open Source - as a way to help development...I would welcome a similar initiative in South America,"

John Coppens,
Argentina (September 2004)

The maturing of information and communication technologies (ICT) has changed the way government, business and education operate on national and global levels. While promoting new opportunities for economic and social development, access to the use of ICT is severely limited in developing countries not only due to its costly infrastructure, applications and hardware, but also because other needs such as health-care, shelter and electricity take precedence on the national development agenda.

Given the potential of FOSS in the area of human and social development, this study seeks to highlight IOSN's evolution and its best practices that may be emulated by other development programmes seeking to refine their own management of information and community outreach. These practices include the use of FOSS-based knowledge management software, non-restrictive publishing licenses and community involvement.

In terms of software, Free/Open Source Software (FOSS) provides a financial and functionally viable alternative to expensive proprietary applications. More than that, it presents an opportunity for developing countries to adopt affordable access solutions towards achieving economic and social development and thus, equalize the balance of economic, educational and technological power within societies.

The International Open Source Network (IOSN) is an initiative of the Asia-Pacific Information Development Programme (APDIP), supporting the strategic and effective use of ICT for poverty alleviation and sustainable human development in the Asia-Pacific region since 1997.

IOSN serves as a Centre of Excellence for FOSS, seeking to facilitate further understanding of the benefits, policy implications and resources available to governments while building networks of FOSS advocates and human resources in the region. Apart from reinforcing current FOSS capacities, IOSN also assists in developing toolkits and resource materials, and helps coordinate FOSS information sharing, programmes and initiatives.

The initiative works primarily through its portal at <http://www.iosn.net>, using an online network that includes governments, organizations, individuals, advocates and those interested in FOSS-related information, tools, resources and discussions.

This study investigates the methodologies and best practices used by IOSN that have helped it achieve its current status of advocacy within the worldwide context of FOSS.

INTRODUCTION

“Members of the IOSN team have done excellent work in raising awareness and understanding of open source with UN agencies and more broadly within government and civil society in Asia.”

Ian Pringle, UNESCO Communication and Information Sector,
Asia Pacific Regional Bureau for Communication and Information,
New Delhi, India (September 2004)

IOSN's activities cover four areas, namely: acting an open source information resource facility, creating a database of open source experts and human resources in the Asia-Pacific region, coordinating training and workshops for the use of open source, and providing a medium for collaborative research and development of FOSS itself. More recent developments include moving into areas concerning open standards, open content and open access, conducted or disseminated through IOSN's web portal.

PURPOSE OF THE STUDY

“The United Nations Development Programme funded International Open Source Network have published their Free and Open Source Software Localization Primer. This should further encourage the uptake of FOSS throughout minority-language speaking communities across the globe.”

Stuart Yeates,
University of Oxford, United Kingdom (June 2005)

Given the potential of FOSS in the area of human and social development, this study seeks to highlight IOSN's evolution and its best practices that may be emulated by other development programmes seeking to refine their own management of information and community outreach. These practices include the use of FOSS-based knowledge management software, non-restrictive publishing licenses and community involvement.

This case study begins by introducing the criteria and tools used by IOSN during the initial stages of the programme, its progressive change of FOSS content management platforms and the reasons for doing so. It also explains the subsequent outcomes, and concludes with some future goals of IOSN. This life-cycle structure of IOSN's experience will provide guidelines for individuals and communities who wish to imitate the IOSN model and practices in building a portal, networks and organizing knowledge for their programmes and projects.

POSTNUKE

“...I'm ready to create the same (IOSN) initiative in France based on your model.”

Roger Essoh
atosorigin.com, France (October 2004)

Postnuke was the initial software tool chosen to achieve the original goals of IOSN. A child of FOSS itself, Postnuke was, at the time of implementation, a web based content management system running on the LAMP (Linux, Apache, MySQL, PHP) platform: highly popular, affordable and provided by numerous hosting companies. Its installation required some additional knowledge of setting up a web server and a database. Postnuke could also run on multiple operating system platforms if required.

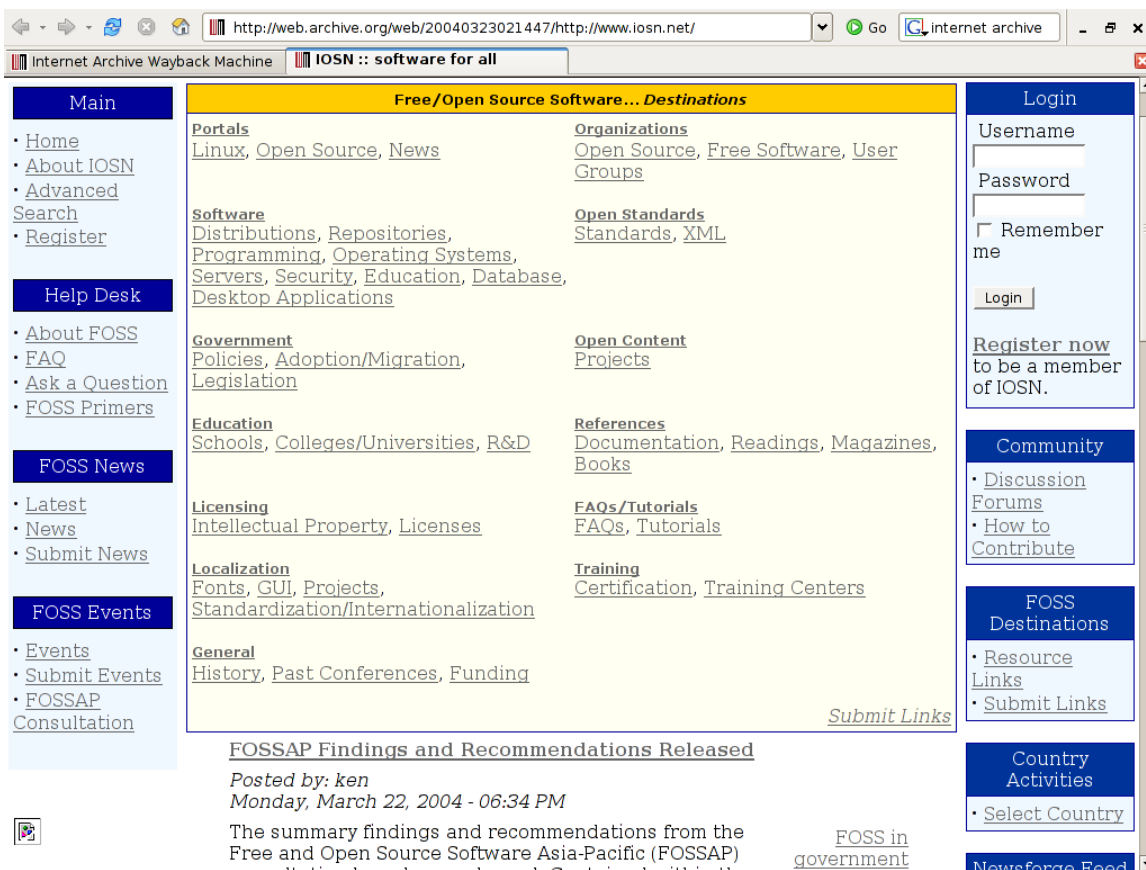


Fig.1: IOSN portal using the Postnuke platform

The outcomes of using Postnuke, however, proved less satisfactory than anticipated. These included a relatively small number of resources being submitted or posted, an average of 60 visitors daily and an online community of 150 registered members. Moreover, the existing policy and technical stipulations of Postnuke did not allow the delegation of resource management, resulting in only a few top site-wide managers to add new content for end users, and obstructing the flexibility of end users to contribute and manage content for their individual needs.

For the purposes of IOSN, Postnuke did not provide sufficient hierarchical management of users and content, both being managed by the use of “modules” that were available at the top level of the website. If a user were to add news content at “/news”, for example, it could not be further categorized as “/india/news” or “india/bangalore/news” but only as predefined categories of news items. As such, content could not be categorized flexibly enough to facilitate more precise information retrieval or creation of local spaces that provided other types of content such as events or files.

Also, in terms of information retrieval, Postnuke provided limited extensibility for knowledge management. It did not support the widely used Dublin Core as a base for metadata and had no designated keywords relating to content, resulting in inconsistency and the inability to search by keyword, author, date and other such categories across all website and database content.

IOSN did not find Postnuke sufficiently practical for website creation or the migration of content from one website to another. Such tasks required prior understanding of databases and the creation of multiple databases. Different modules or content types such as news, links, databases and wikis sometimes had different user management options, or required editing the database structure. At the time of implementation, there were only two work flow states, submitted and published for public viewing. This did not allow for project and group workspaces where additional work flow states and permissions are needed.

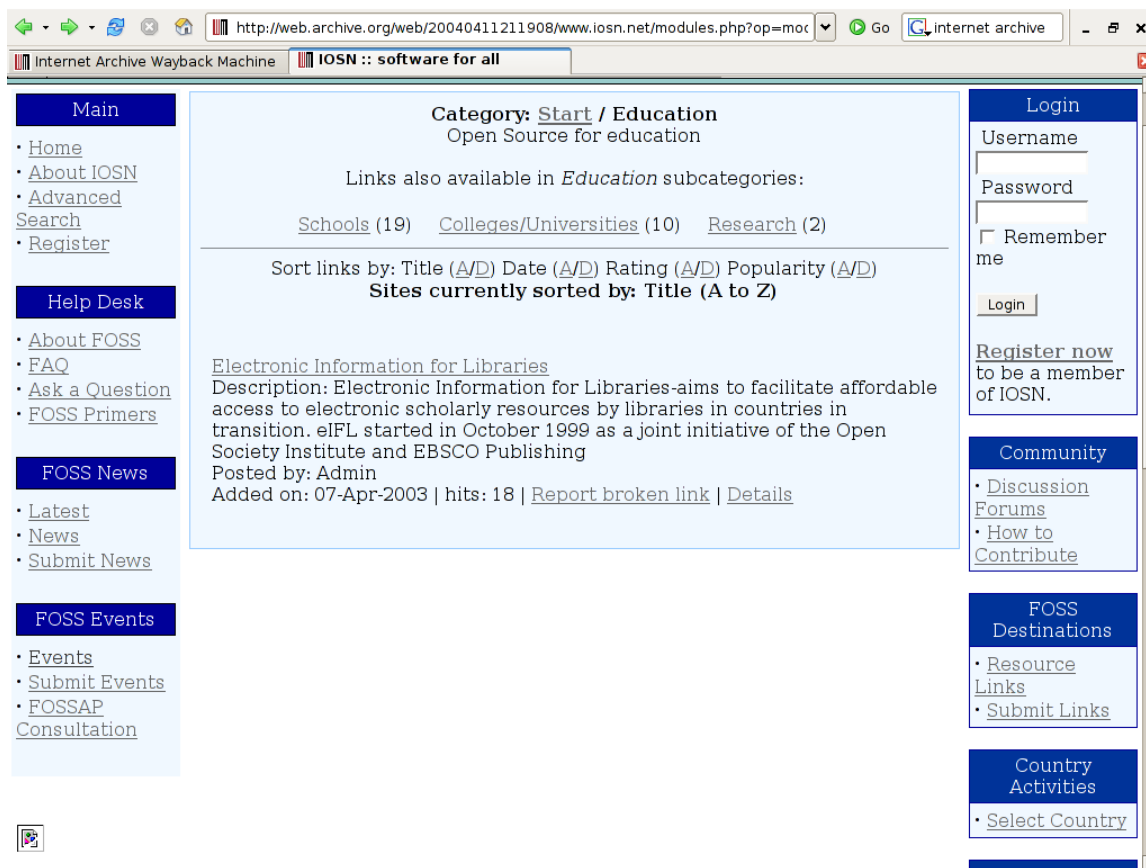


Fig. 2: IOSN portal using the Postnuke platform, displaying links

Despite Postnuke supporting RSS/RDF, this was also restricted to specific content, further limited by the fact that RSS/RDF output was not XHTML (Extensible Hypertext Markup Language) compliant. Postnuke was also not compliant with other W3C (World Wide Web Consortium) standards. Such traits, therefore, made Postnuke a weak base platform for IOSN to develop new features or extend existing ones because of its limited base standards.

Given the disadvantages posed, a decision was made to migrate the IOSN website content to a system that would better serve its purposes. This led to the selection of the Plone content management system (CMS).

PLONE

"I would welcome the opportunity to Manage an existing (or new) section of the IOSN. I appreciate what the UNDP is trying to achieve here and it appears that there is a momentum developing in SE Asia as indeed there is in Australia to use OSS.

Stuart McIntyre, Principal Lecturer, IT Studies, Adelaide Institute of Technical and Further Education, **Australia** (November 2004)

Also a member of the ever-expanding FOSS stable, Plone was an ideal candidate for IOSN's purposes, providing the highly important feature of clear division between elements such as content, presentation, workflow, templates, task and content delegation, security, information search and retrieval, and content review.

Plone itself is a self-contained platform built on the free Zope Application server. (Zope has a built-in web server and uses an object-oriented database, which the user sees as folders and content types through the Plone user interface.) Plone also uses the LAMP platform, and is therefore, able to run on multiple operating systems but does not require users to have the additional knowledge of setting up supplementary databases or web servers.

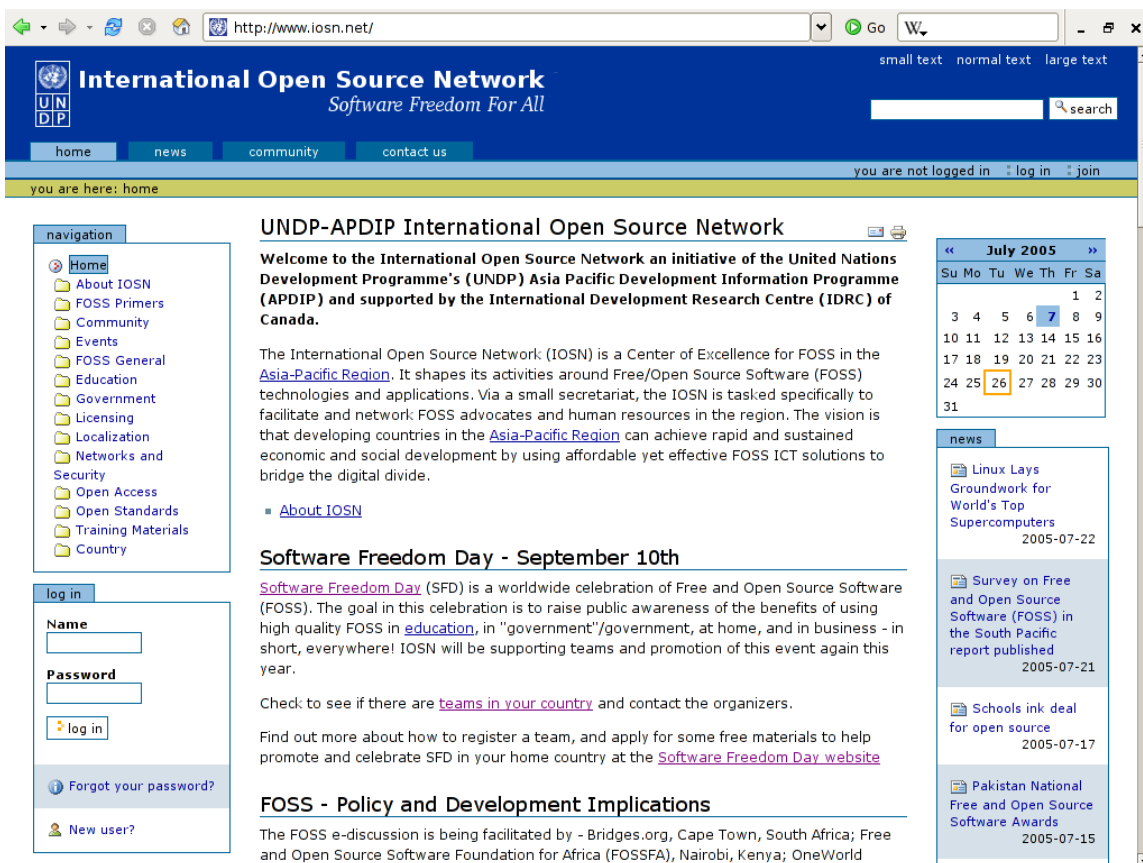


Fig 3: IOSN portal using the Plone platform

Being open source under General Public License (GPL) allowing anyone to use the application for free, Plone also allows its code to be studied and altered to suit individual requirements.

One of its greatest strengths is the hierarchical management of users and content, and its versatility of handling different content types ranging from simple HTML pages, documents and news items to more complex types such as forums, blogs, wikis and so forth. While PostNuke's themes were organized by news submissions, tools such as web links, forums and others were organized only at the top level. Through the use of Plone, management of content can be divided at different levels and with the use of keywords, allows administration and members to oversee the areas in which they are best qualified to do so. For example, IOSN itself oversees top-level management over all users, administration and site management in general. Community managers, however, are delegated to manage content within country, themes or project areas. This is especially useful when management requires knowledge of a local language, culture or resource. For example, a manager in Myanmar is likely to know more about local resources in order to manage and review items for Myanmar as well as develop the community there. Also, Multilanguage support of Plone is important, as the IOSN managers themselves may not be able to review content submitted in languages with which they are unfamiliar.

Plone also features an individual registration function that allows the customization of user interfaces and, with add-ons, the use of information from relational databases, Lightweight Directory Access Protocol (LDAP), Active Directory and others. This is especially useful for IOSN since it allows the flexibility to integrate with other systems and websites in the future. At present, RSS integration is done using feeds from other sites. Plone's robust base application framework facilitates the ease of extending existing content or creating new content types while retaining consistency in design and use of the interface. Content is organized using folders that can be arranged to suit individual users.

Plone also provides a strong platform for knowledge management, using Dublin Core as the base for all content metadata. This allows members of the IOSN community to carry out standardized searching across all content with the use of all content sharing keywords and Dublin Core metadata. Functionality can also be extended to support Open Archives Initiative standards.

The XHTML base that Plone uses together with its compliance with Unicode is especially interesting for IOSN since this feature permits the localization of software applications into other languages such as Khmer and Mongolian, be they logographic or in the Latin alphabet. At present, Plone conforms to web and accessibility standards sufficiently to allow the localization of more than 20 languages.



Fig. 4: IOSN portal in Farsi, displaying external feeds

MIGRATION

"I had a look at the page of Interactive FOSS User Guide and it is really impressive. It's really good for new linux users. I would like to know if we can join your team to translate the guide into Vietnamese and (freely) distribute it to Vietnamese users?"

Do Hoang Son,
HPT, Vietnam (December 2004)

Plone proved itself easy to install and manage, via a web administration interface. New content types, including online forums and wiki blogs, can be simply added at any level of folder hierarchy without the need to manage databases and database structures.

The migration of the PostNuke-based site was done mostly through the File Transfer Protocol (FTP) uploading the files onto the new Plone-based IOSN website. Previously files were stored externally from the PostNuke portal and linked by an external manager. Once these were imported into Plone, they were integrated immediately and were made searchable, protected and assigned keywords to enable retrieval. The migration of links and news was done by manually creating new link items on Plone.

The appearance of the new IOSN website was also made similar to that of the APDIP website <http://www.apdip.net> template.

Currently, IOSN is managed largely through a web interface from secretariats in <http://www.fosssl.org/> Malaysia and India. For different sections such as Themes (Primers) or Countries, additional managers and contributors manage their respective sections. Management by theme, for example: <http://www.iosn.net/education> is done from Australia. After a primer is published to the web, there is a section that builds on additional information regarding the subject-matter of the primer. In terms of management of Country information, this is done by country itself. For instance <http://www.iosn.net/country/iran>, is run by IOSN members in Iran. An example of a larger Country community is <http://www.iosn.net/country/malaysia>.

Despite its compatibility and suitability for IOSN activities, there are, however, several challenges that pose themselves through the use of Plone. Among these are:

Plone's workflow user interface, which includes creating, submitting, reviewing and publishing, is generally unfamiliar to new users of the CMS. Documentation is required to be added on-site. For example, users are more accustomed to a central news submission process and link options than the folder/workflow layout that Plone uses.

Not all features for a web community are available. One example is the lack of a feature that facilitates creation and coordination of meetings and events, allowing users to create information on events online, send out invitations and facilitate replies from invitees.

While the growing number of add-ons increases features that contribute towards the functionality and diversity of the website, there is currently a lack of knowledgeable support in the Asia-Pacific for Plone. What this means for user groups recently migrated to Plone, such as the Philippine Linux Users' Group at <http://linux.org.ph/>, is the difficulty in getting technical community support from the Asia-Pacific region. Happily, however, this disadvantage is slowly decreasing as more and more users become familiar with Plone.

These challenges, however, have not deterred the number of forums, user groups and other communities hosted by IOSN. While not all forums use the same formats and features currently supported by Plone, they enjoy a fair amount of success in terms of participation and functionality.

Standard Plone features allow useful information exchange for community purposes through the use of folders, mailing lists, forums for feedback, mailing lists and discussion channels. One example of this is the User Guide to Using the Linux Desktop (www.iosn.net/training/end-user-manual/) written collaboratively by IOSN community members and posted online for the use of the community and other interested parties.

Sections dedicated by country also help in the categorizing and organization of information while being open for general reference. The Myanmar FOSS resource page is one active example that lists organizations and community groups, news and events together. Also listed are user forums that discuss, among others, Linux and Linux Certification Examinations while providing a network of communication among users and user groups in the country. Country profiles and FOSS research and practice organizations are also highlighted on the same page. In doing so, country sections help not only to provide resources and network FOSS users, but build an active base for support, research and development for FOSS in their respective countries.

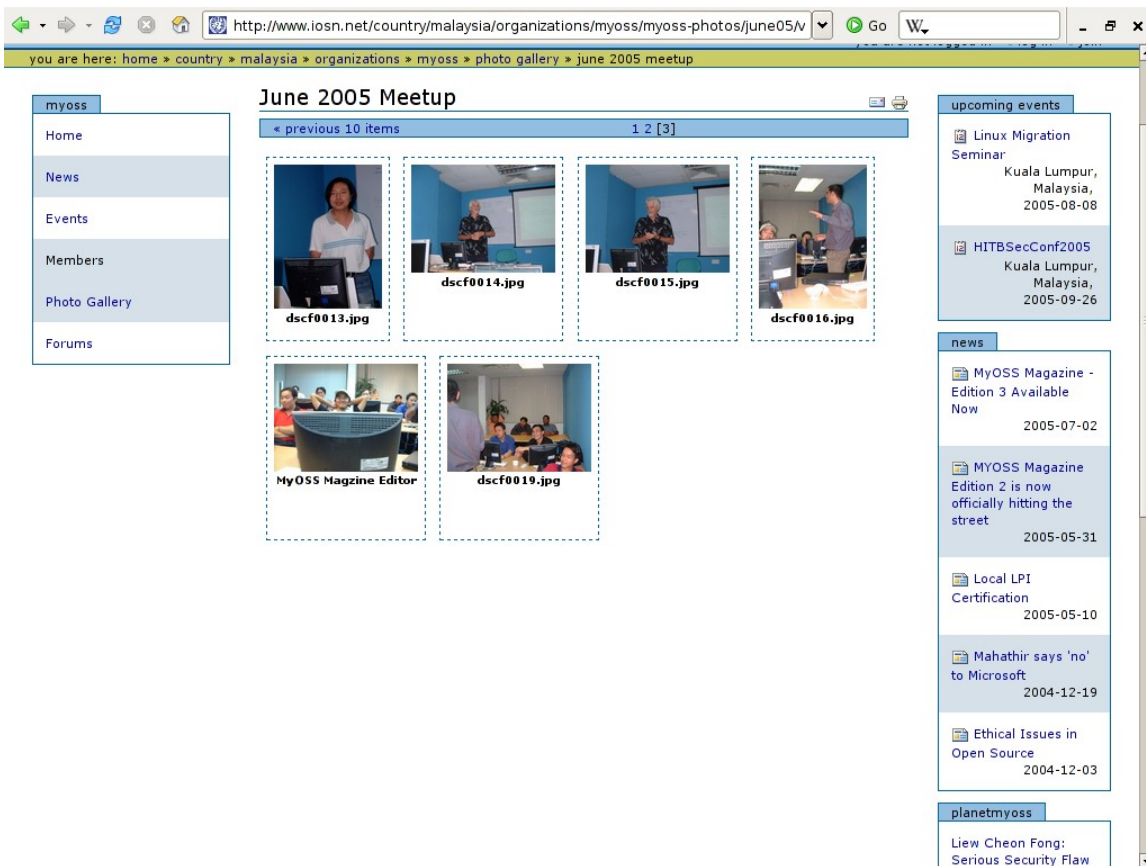


Fig. 5: Example of the Malaysian community page on IOSN portal using Plone

IOSN's regional portal has also spurred community groups to organize local activity based on FOSS. Forums hosted on IOSN bring together enthusiasts and groups to pool knowledge and resources. In Malaysia, for example, groups such as the MNCC-OSSIG (Malaysian National Computer Confederation), MySIG Linux SIG, PHPmy and MyGentoo are highly active. Individuals have also come together to form MyOSS (Malaysian Open Source Community, which could lead to more awareness and participation of the FOSS movement locally.

APDIP (www.apdip.net) itself is an excellent example of a website powered by the Plone CMS, with content being constantly updated, added, sorted and archived. Other websites using Plone include OpenSource CentroAmerica (www.opensource-ca.org/home), Oxfam America (www.oxfamamerica.org) and the Brazilian Chamber of Deputies (<http://www2.camara.gov.br/>).

OTHER CMS ALTERNATIVES

“An excellent primer (IOSN FOSS Education Primer) on open-source in the education arena by the International Open Source Network (IOSN.) Plenty of great information and examples, including infrastructure, administration, teaching, open content, research, training, and policy issues.”

Saugus Union School District, **United States** (January 2005)

There are also other software platforms that may be more suited for individual purposes.

CivicSpace was also considered as a platform for IOSN. Its CMS comes with a WYSIWYG (What You See Is What You Get) editor allowing easy submission and editing of website content. Its website management provides sample themes but allows individual appearance and layout customization. For organizational purposes, the community tools offer blogging and forums for online social and developmental networks while providing users with file storage and photo galleries. CivicSpace also offers event-organizing facilities that include invitation tracking and staff management as well as a feature for collecting information from users using polls and surveys.

Currently, CivicSpace is developing its contact management, mailing list features, and third party donation services. CivicSpace, which presents itself as a FOSS platform for grassroots organizing and civic activity, is successfully in use by communities such as Spread Firefox at <http://www.spreadfirefox.com>.

MediaWiki is FOSS licensed under the GNU General Public License*, written in PHP (PHP: Hypertext Preprocessor), using the MySQL (Structured Query Language) relational database management system. MediaWiki is able to work with other optional programmes, and allows users to personalize their own features and programme interfaces.

Successful wiki technology-based website communities such as Wikipedia (<http://www.wikipedia.org>), Wiktionary, Wikisource and Wikibooks are open knowledge bases that allow contributions and editing by anyone registered with those community networks.

One proprietary CMS offering is **SharePoint Portal**, which was created by Microsoft. Created for as a business enterprise solution, SharePoint carries similar features to its FOSS counterparts allowing communities to network, publish and update information, integrate with existing software and manage content.

OPEN STANDARDS

Knowledge Management Technologies

Dublin Core

“Free & Open Source Software Foundation of Pakistan shapes its activities around FOSS technologies and applications according to the vision set forth by the International Open Source Network”

Dr. M. Anwar-ur-Rehman Pasha, Chairman, Governing Body
Free & Open Source Software Foundation of Pakistan, Pakistan (May 2005)

The DCMES (Dublin Core Metadata Element Set) uses a set of 15 common elements that may be applied to describe the metadata of any information entity such as “creator”, “title”, “description”, “format”, “date”, etc., providing traditional card catalogue-type definitions to describe properties of objects for Web-based resource seeking. It supplements existing Web-based metadata search and indexing methods, by virtue of being straightforward enough to be generated by Web authors, but also able to be expanded to incorporate controlled vocabularies and more specific information for each element.

Dublin Core can be used across a wide range of disciplines, industries, and areas of study and research that are likely to find these core elements useful. This also allows it to be used within any type of organization and in the case of IOSN, Plone allows information to be searched easily as it is embedded internally and externally via RDF (Resource Description Framework) and XHTML (Extensible Hypertext Markup Language).

As such, anyone can do a search on the IOSN website, using common straightforward elements and drill down into different areas of the website to find the required information.

RSS Feeds

“We have seen your “Linux End User” manual and we are amazed by your work. We’d like to translate it in Italian and distribute the translated version on our web site...”

Fabio Rotondo,
OS3 - Open Source Software Solutions, Italy (August 2004)

RDF Site Summary (RSS) is a method largely employed by news websites and weblog communities to deliver selected information to third-party systems. RSS uses XML file formats that allow content syndication under mutual agreements among related parties. RSS provides items containing brief descriptions of web content together with a link to the complete version of the content. This is delivered as an XML file known as an RSS feed and is generally recognized by the red/orange rectangle with “RSS” or “XML” that is a clickable link. Web-based feeds do not need software installation and are available as long as there is Web access.

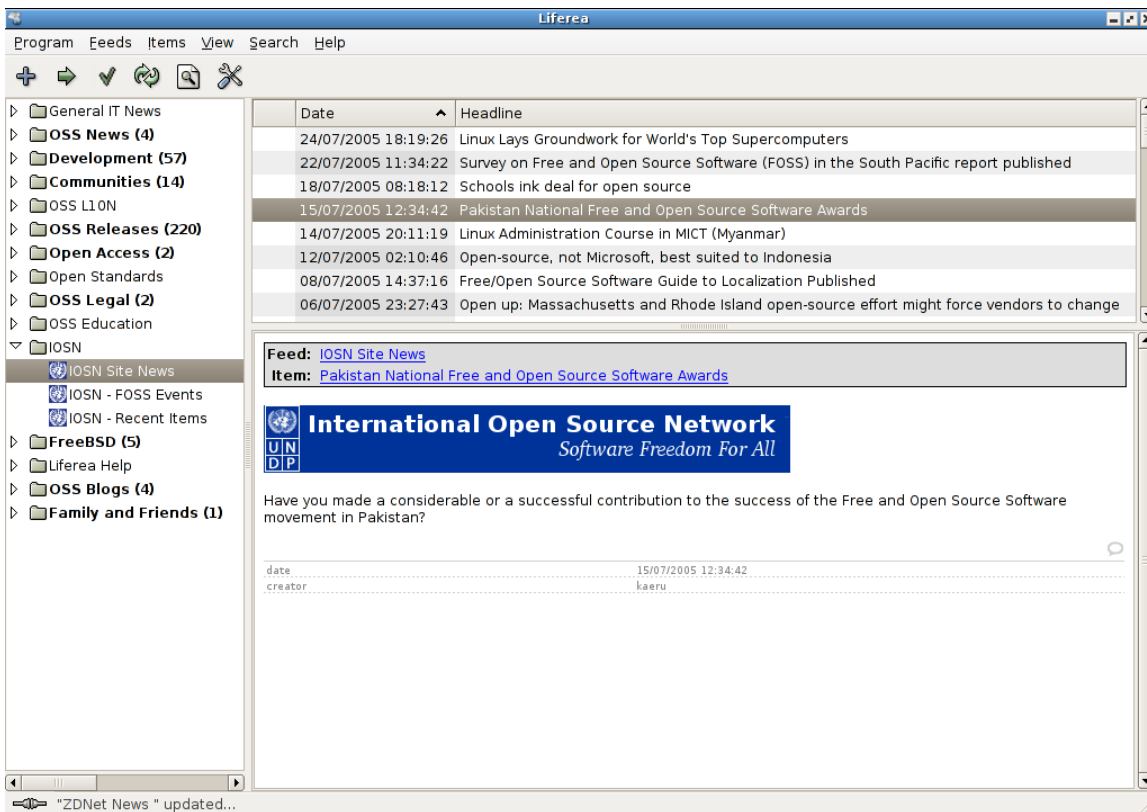


Fig. 6: IOSN portal on Plone, displaying RSS feeds

Due to Plone's content/knowledge base design, there is also the advantage of using Resource Description Framework (RDF) embedded within RSS that allows the use of metadata from several schemes at the same time, broadening the range for better semantic organization or searching, and can be used for open archives as well.

Through the use of RSS, IOSN is able to deliver select information such as updates, news headlines, supplementary information, multimedia files, etc. to its community managers, contributors and members. Other websites can also publish and share information on IOSN either through custom feeds provided by IOSN or by the users themselves.

Accessibility and Web Standards

"I read the manual (User Guide to Using the Linux Desktop) and it seems very clear... it focuses strictly on relevant issues related to the daily use. Good Job!"

Matteo Paiato
China, September 2004)

The World Wide Web Consortium (W3C) develops technologies and standards for interoperability on the Web. The development of standards is done on a volunteer basis and currently includes 450 member organizations worldwide.

Standards on accessibility developed by the W3C are pertinent to the work of IOSN in order to make content accessible for users with disabilities, those who work in disabling environments and user agents. These include users with low vision, limited hearing ability, colour-blindness, and so forth. Accessibility in this context generally refers to providing the user with enough information required to understand the content or facilitate navigation.

Using W3C guidelines on providing accessibility to web content bring all developers and users in the IOSN community to a level in which as many can participate as is possible. Among measures taken to ensure accessibility are assistive technologies or adaptive soft/hardware, and adaptive strategies. The former is often used together with graphical desktop, text, and voice browsers, multimedia players and/or plug-ins. Certain operating systems have built-in solutions that allow configuration of font sizes, multiple keystroke commands, etc.

The use of web standards guides the design of a website, generally to ensure the smooth transformation between platforms, and making content clear and easy to navigate.

IOSN uses open standards such as CSS (Cascading Style Sheets) and XHTML (Extensible Hyper Text Markup Language) for page formats, FTP (File Transfer Protocol) and WebDAV (Web-based Distributed Authoring and Versioning) for file transfers, and XML-RPC (Extensible Markup Language-Remote Procedure Calling) to markup structured documents. This allows all users to meet on a neutral platform that is accessible regardless of individual operating platform, web application or disability, thereby contributing to the ease of accessibility as well.

OPEN CONTENT APPROACHES

GNU Free Documentation License (GNU-FDL)

"I've been reading the Free/Open Source Software: Localization Primer, as was mentioned on OSDir.com, and am really glad that this was done and also done under a Creative Commons license. The UNDP seems to have a winner here."

Taran Rampersad,
Digital Divide Network, Trinidad and Tobago (June 2005)

While GNU-GPL provides free open source software licenses, the GNU FDL (or GFDL) provides its counterpart for open content and documentation. Also a copyleft (as opposed to "copyright") license, GNU-FDL is designed to accommodate text-based documentation such as reference and instructional materials, regardless of subject matter. It does, however, require that any copy of the material, original or modified, carry the same license. These may be made commercially available but, if produced in quantity, be put in a form that allows further alteration. While the retention of the same license may be an advantage, it may also prove a disadvantage from a commercial point of view.

Creative Commons

"I found your website a very precious tool for me as an end-user and someone interested in Open Source as a tool for educational development, capacity building and social inclusion ... This message is, basically, to congratulate your initiative and thank you for the privilege to access the wealth of information which you are offering to the excluded people."

Silvio Marquardt,
GSID/Nagoya University, Japan/Brazil (July 2005)

Founded in 2001, the Creative Commons is a non-profit corporation that offers licenses free-of-charge for "creative works" that include websites, music, film, academic research, photography and literature. Operating generally on the "Some Rights Reserved" principle, Creative Commons provides different licensing options that allow authors and creators to specify the extent to which their works are freely available for access, modification or derivation in the public domain. Users can easily select those that suit their purposes. IOSN itself uses the "By Attribution" license whereby other users may copy, distribute and

display its original material and derivative works as long as the original copyright is cited. Such works may be used commercially and with other licenses if so chosen.

The suitability and choice of license varies in relation to individual preference or work that is being licensed. The GNUFDL is specially tailored for software documentation, while Creative Commons licenses extend over a wider range of works. Wikipedia (www.wikipedia.org), for example, may use the GNUFDL for documentation and content on its website in conjunction with Creative Commons licenses for the photographic images, music, audio and video clips, etc. in its central repository.

COMMUNITY PARTICIPATION

“Member States from the Asia-Pacific region have been at the forefront of the trend towards more use of OSS. They have benefited from the very active IOSN programme run by UNDP/APDIP which, besides fostering awareness raising and information sharing about OSS policies within the region, made a valuable contribution through training and provision of OSS modules.”

Joint Inspection Unit, United Nations (June 2005)

The bricks and mortar of IOSN rest largely on its network of communities and individuals. These range from non-governmental organizations, educational institutions, government agencies policy-makers, FOSS advocates and users. They include educational institutions such as the International Islamic University and Kolej Yayasan UEM in Malaysia, Lorma Colleges in the Philippines, University of Karachi in Pakistan, Florida State University, Indiana University and Cornell University in the United States; as well as government and government agencies such as the Malaysian Administrative Modernisation and Management Planning Unit of the Malaysian Government (MAMPU), Government of the Republic of Slovenia, the Parliament of New Zealand, the National Telecommunications Agency of Brazil, and the Information Management Office of the Government of Australia.

Collaborative and participatory website management

“I am the president of Linux Australia, and I wanted to congratulate you on this excellent (IOSN) initiative and (web)site”

Pia Smith,
Australia (October 2004)

Participatory management of the website also builds a network of responsibility and accountability within the IOSN community. Members are initially given access to the website as contributors who may add and submit, but not publish content. Those who are interested in contributing to particular sections of the website complete and submit an online form for consideration of the IOSN secretariat. Often these are distributed by country or topic or project theme.

Tools for information exchange and outreach

"I am interested in translating the training material into kannada language and also where possible would like to develop some training content"

Shivakumar
GN, Siemens, (August 2005)

One of the most popular and effective ways of communication and information exchange was the mailing list consisting of participants of the annual FOSS Asia-Pacific seminar. Its popularity, however, extended far beyond participants and organizers, and building on that, IOSN created a larger mailing list including general IOSN members and members of the IOSN Policy Development and Implications international policy discussion forum. The use of IRC (Internet Relay Chat) is also available but appears to be used most by technical FOSS developers, including contributors from the MyOSS community and serious Plone enthusiasts.

Through existing community channels such as newsforge.com and osdir.com, outreach through the FOSS community is also facilitated. By submitting information through these channels, IOSN items also gain exposure through dissemination by various sites as well as community members themselves. Examples include end-user training materials in the form of wikis or html, or by the addition of links to related topics or items on sites with heavy user-traffic such as Wikipedia (http://en.wikipedia.org/wiki/Internationalization_and_localization), which carries the IOSN Localization primer.

IOSN also opens more doors to building the FOSS community by providing greater exposure to activities and events such as Software Freedom Day (<http://www.iosn.net/events/sfd-2004/>) and upcoming workshops, meetings and conferences.

The use of personal folders is slowly gaining popularity, allowing members to put up text articles and blogs, among others. To accelerate its use, however, it may be useful to produce a "how to" document for contributors and other users. Feedback and comment facilities are available throughout the website, allowing all community members to provide feedback.

FINDINGS AND OUTCOMES

"...congratulations on the excellent e-primer series. I am writing to you because I am currently writing a course on ICT for Development, which will form part of a Masters degree in Sustainable Development, offered by Distance learning. Our programme has about 800 registered students...I would very much like to include the following material(s) that you have made freely available on your website.

Jon Gregson, Manager: Learning and Development,
Distance Learning Programme, Wye Campus, Ashford Imperial College,
London, United Kingdom (January 2005)

To date, the shift to Plone has proven highly positive for IOSN and its work. At least 4,000 new resources, including web documents, links, news and discussion items, images and photographs, files, blogs and wiki pages, have been added. The number of participants currently registered on the IOSN network has risen almost to 1,500. Visitors to the website have increased from an average of 400 to a thousand per day, hitting a peak of 20,000 in a single day. Since the launch of the website, there have been over 1.2 million pages served by almost 150,000 visitors. At present, the most active contributors in terms of added or enhanced content to IOSN based on country of origin, information from member pages or through e-mail conversations with IOSN include Bangladesh, Iran, Malaysia, Myanmar and Sri Lanka.

Feedback from members on the use of Plone and the IOSN website is highly laudatory, especially from the perspective of users who are unfamiliar with software development or content management systems. The IOSN website has been rendered more usable, accessible, and structured sufficiently while retaining flexibility. Contributors and managers who have recently joined the open source movement have commented that the IOSN website is an excellent resource for FOSS material and how it is “becoming the focal point for many FOSS communities by providing them a web presence for their activities.”

The use of Plone has also, for IOSN, enhanced the concept of collaborative community as it allows anyone to register and contribute to the FOSS movement, though this may be an area that requires monitoring and approval during the initial stages. In addition, alternative content types such as wikis, calendar events, images and forum folders also promote collaborative documentation from a wide range of contributors.

There are, however, several features within the IOSN website that might be better utilized and altered to suit purposes of community building.

One feature of Plone is the use of precision searches called “Topics” which group items or pages throughout the database following specified search criteria. This grouping is done without physically reorganizing content. Examples of this are events for IOSN at <http://www.iosn.net/about/rss/iosn-events> and APDIP at <http://www.apdip.net/projects/prog/policy/projects/>. The use of this feature can automatically generate pages by individual search criteria, and not only by fixed themes already on IOSN itself. While this is a new feature that was not previously available on the PostNuke-based website and could prove highly useful to community members, it is relatively little used.

Users new to Plone may take time to properly understand the CMS publishing workflow, which includes submission and approval before actual publishing can take place. It has also been suggested that a guideline on the various content types available, taxonomies and naming conventions throughout the website would be useful for a new user.

Suggestions have been made that IOSN’s main page be used to better highlight major FOSS activities in the Asia-Pacific region. Website usability could be improved to ease user navigation while other aspects of information architecture such as layout, breadcrumb trails and images could be reworked to ensure attention is given where it so merits.

User guides and help services on the IOSN website would also prove highly useful to users. While the mission of IOSN and the purposes of the portal are clearly stated, and the invitation to participate welcoming, first timers may require some guidance in setting up their homepages, and understanding and using the features of the website. An online *Help* feature would also be useful for those who have questions from both user and developer. There have also been suggestions that documentation for the use of Plone be updated and complete as far as possible.

CONCLUSIONS

“The International Open Source Network of the United Nations (IOSN) actively promotes open-source software as a component of developing world ICT infrastructure development. At the end of August, I was working with an east African university when IOSN's 'Software Freedom Day' erupted around me; there were suddenly more open-source CDs around than machines on which to run them, and I found myself in great demand for ad hoc talks on the subject.

Felix Grant,
Scientific Computing World, United Kingdom (January 2005)

At present, IOSN fulfills much more than FOSS advocacy and networking. With its status as the United Nations Development Programme resource for open source and FOSS in the Asia-Pacific region, it handles requests for assistance and support from numerous countries worldwide while providing the exposure and promotion for various FOSS initiatives in the Asia-Pacific itself. Work themes are largely based on the primers on FOSS produced under APDIP-IOSN. As these are published online, related resources are added and expanded to enrich the pool of available information. Two examples of these are the IOSN primers on localization and education.

Communities and support networks are burgeoning through the IOSN portal with Malaysia, Myanmar and Sri Lanka currently the most active. Localization is the hottest topic at present due to the release of the localization toolkit project which involves many participants and contributors, and will continue as an ongoing project.

Reorganization of Content and Presentation

The near future of IOSN includes the reorganization of content presentation and the use of keywords. It now has thousands of entries with cross-practice relevance to various initiatives worldwide. These would be better integrated through the use of the Topics feature, and the use of keywords to be highlighted, providing better visibility and increased use of these resources. Consolidated news and events on the IOSN main page will also give content to categories by case study, by theme such as gender or access, by type, etc. The use of Plone's keywords and metadata will allow the generation of pages that highlight particular issues through this merging of content.

One of Plone's abilities to do so is through its reorganization of search content. For example, IOSN could have a page dedicated to WSIS (World Summit on the Information Society) FOSS where varied content comprising countries and themes could be automatically generated and re-organized in terms of WSIS Action Plans instead of by given IOSN themes or countries. Another good instance in which this feature is useful is a similar search through APDIP's policy and access topics.

With the high traffic on the IOSN website and the continuous addition of content, the user interface is becoming crowded and increasingly difficult to navigate. The creation of graphical buttons that take users directly to high-profile sections such as the FOSS primers (<http://www.iosn.net/foss-primers/>) may be necessary to encourage usability and direct users to particular areas of the website.

There is also the possibility Plone's default template used by IOSN at present may not be suitable for the website's presentation much longer. A new presentation template will then need to be designed and implemented. The flexibility of Plone is highly important here, as it allows the separation of content from presentation with little programming or changes to the underlying software. While the current interface is adequate for IOSN's purposes, a more suitable interface will be required in the near future to better highlight the latest news and events.

Internationalization

IOSN will also be taking advantage of Plone's multiple language support (<http://plone.org/products/linguaplone>) for all content. This feature will allow users to access IOSN's website for pages and files translated seamlessly into local and preferred languages.

Web Content

Plans to upgrade IOSN to the newest version of Plone in the second half of 2005 are currently in the process. These aim to provide a far friendlier user interface including the WYSIWYG (What You See Is What You Get) editing of web content by default. This upgrade also takes advantage of the FOSS platform whereby continuous upgrades are possible without additional licensing costs.

While IOSN already supports a wide variety of content types, more may soon be needed depending on different user needs and requests. One example is a poll/vote content type that was recently added to the Malaysian open source community folder. As such, new content types based on existing third-party FOSS add-on features and other custom features are also scheduled to be included in the near future.

IOSN will continue to develop in its areas of awareness raising, facilitation and coordination of FOSS activities and networking in the Asia-Pacific region. While it still contends with the problems that face young programmes in establishing themselves, efforts to increase the quality of the tools and on-line facilities for members of the FOSS network continue in order to acquire the coherency, coordination and a thorough in-depth understanding of the specific needs and resources of the region, an ongoing process that will continue to encourage and challenge FOSS endeavors both regionally and internationally.

GLOSSARY

CSS (Cascading Style Sheets)

A computer stylesheet language used to describe the presentation of a document written in a markup language.

Dublin Core

A metadata standard used to describe digital objects such as web pages, often expressed in XML.

DCMES (Dublin Core Metadata Element Set)

Consists of optional metadata elements such as title, creator, subject, date and description, and is used to describe and classify digital objects.

FTP (File Transfer Protocol)

A software standard for transferring computer files between machines with different operating systems.

GPL (General Public License)

A FOSS license that generally grants recipients of a computer programme certain rights to run the programme, study how it works, modify it, redistribute or improve it.

LAMP

The acronym LAMP refers to a set of free software programs commonly used together to run dynamic Web sites or servers:

- Linux, the operating system;
- Apache, the Web server;
- MySQL, the database management system (or database server);
- Perl, PHP, and/or Python, scripting languages.

RDF (Resource Description Framework)

A group of specifications for a metadata model often implemented as an application of XML.

RSS (RDF Site Summary)

RSS, a group of XML based web-content distribution and republication (Web syndication) formats primarily used by news sites, weblogs (blogs), and podcasts. RSS formats provide web content or summaries with links to full content versions and related metadata.

W3C (World Wide Web Consortium)

An independent international consortium that publishes open standards for the development of protocols and guidelines on technologies and applications. These facilitate interoperability of hardware and software used on the World Wide Web.

WebDAV (Web-based Distributed Authoring and Versioning)

A working group and protocol providing functionality to create, change and move documents from different server locations.

XML-RPC (Extensible Markup Language-Remote Procedure Calling)

A protocol encoded in XML that allows a computer program running on one host to run on another host without altering the code or requiring additional software support.