Comparative Study between Omeka, DSpace and E-Print: A Special Reference with Plugin Features

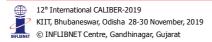**S Ravikumar**   **Hirak Jyoti Hazarika**

Abstract

Open-source software helps libraries mainly in lowering initial and recurring costs, eliminating vendor lock-in and allowing greater flexibility. DSpace, E-Prints are very popular among academic community and Omeka open source software which is widely used in archival and museum space. Role of Digital Library system used to capture, store, index, preserve and redistribute all scholarly research material in digital formats. This paper explains the open-source digital repository software with special reference to the availability of plugin features in Omeka which is not available with others two IR Software. This paper describes the feature of plugins, strengths, and weaknesses of Omeka as a software platform for creating and managing digital collections on the web. This paper also explains, how plugin features easier for users to add features to their repository without knowing a single line of code.

Keywords: Plugins, Digital Repository, DSpace, E-Print Archives, Omeka, Open Source Software

1. Introduction

Setting up a Digital Repository can be a daunting task. There are many software packages out in commercial packages and open-source environment, all of which offer different kinds of features and functionality. Digital Repositories represent the logical convergence of faculty-driven self-archiving initiatives, library dissatisfaction with the monopolistic effects of the traditional and still pervasive journal publishing system, and the availability of digital networks and publishing technologies. Institutional repositories have roles beyond disseminating and managing the works of individual's scholars that are part of the discussion of scholarly communication and it is also a place where we can put much of the material that research

libraries identify as worth collecting and they offer a framework for organized stewardship and accessibility of these materials (Devi, Hosamani, & Murthy, 2004). Digital Repositories aims to preserve, store and make accessible digital content on a long-term basis. Providing long-term access to digital items in the repository needs considerable planning and resource commitments. The institution needs to balance the wish to accept the mixture of file setups popular with various disciplines, in order to simplify content submission and inspire faculty participation, with the difficulties that migrating some of those formats or media might present as new standards evolve. While it is possible for an institution to prescription digital formatting standards for students in the submission of electronic theses and dissertations. The digital revolution has affected how scholars generate, communicate and store new knowledge. While the technologies exist for scholars to manage their own

digital content, faculty are typically best at creating, not preserving, new knowledge (Davis & Connolly, 2007).

In this study, we are trying to compare three open-source Digital Repository software plugin features. This paper also tries to identify the extent of adoption of open source digital library software packages in various organizations. We also try to compare and classify with the plugins features of popular OSS digital library software i.e. Omeka, DSpace and E-Print.

2. Objectives of the Study

❖ To Compare Omeka Plugins Features with others Open Source Digital Repository Software.

❖ To utilization of Omeka Plugins Features with others Open Source Digital Repository Software.

3. About the Digital Repository Software:

3.1 Omeka

Omeka is a free, open-source digital publishing platform from the Roy Rosenzweig Center for History and New Media at George Mason University. Digital collections, archives, oral histories, and essays can be organized and shared as online exhibits, tagged with standard archival metadata. According to the Omeka website, "Omeka is a Swahili word meaning to display or lay out wares; to speak out; to spread out; to unpack". Archivists, librarians, educators, historians, curators, and others will find the platform user-friendly, flexible, and collaborative, while instructors can use Omeka to create class projects and allow students to experience both source analysis and web design. Premade design themes may be used, and customized themes can be created

from scratch or by modifying existing ones. The basic functions of Omeka are uploading digital objects, adding metadata, and organizing objects into collections or exhibits for public display. An object usually consists of an image with its associated Dublin Core metadata, but Omeka can be used to exhibit almost any kind of digital object: image, sound, video, text (such as a portable document format [PDF] file), or others, with a 2 MB size limit per file. Any Omeka item may include multiple files. Files are described by Dublin Core metadata, with elements customizable on a site-wide basis and by item type. The default item types (image, text, person, physical object, website, data set, and many others) cover most use cases, but new types can be added. Visual elements can be customized, including colours, design, fonts, and header images; using preinstalled themes can simplify the design process.

As with WordPress, Firefox, or Chrome, plugins Features can extend the functionality of Omeka. For example, plugins can connect Omeka to other sites, allowing you to upload audio files to SoundCloud, import images from Flickr, or auto-post to Tumblr. Other plugins provide additional metadata-related features like controlled vocabulary enhancements, metadata harvesters data to allow saving items to Zotero, or Dublin Core extended properties. Still, others add visual enhancements like slideshow carousels, simple web pages, and more extensive exhibit creation.

3.2 DSpace

DSpace was developed by the Massachusetts Institute of Technology (MIT) libraries and Hewlett-Packard (HP), as an open-source application that institutions and organizations could run with

relatively few resources. It is to support the long-term preservation of the digital material stored in the repository. DSpace is designed to operate as a centralized, institutional service. Different communities within the institution such as labs, centers, schools or departments can have their own separate areas within the system. Members of these community's deposit content directly via a Web user interface designed to make this depositing as simple as possible. Instead, the system features a batch item importer for the bulk loading of content. Each community may also appoint people as "Modarator", who may review and edit submissions before their inclusion in the main repository. The DSpace system then indexes the metadata submitted with the digital item and makes it available according to the access privileges determined by the community. In order to provide a workable service in the available time, DSpace was developed 'breadth-first'. Each of the basic requirements of an institutional digital repository system was addressed in a comparatively simple way, so that functionality can develop with the service already in production. In India, there are lots of universities and institutes using DSpace for Digital Library cum Institutional Repository as like INFLIBENT, NISCAIR, IITs, IIMs, etc.

3.3 E-Print

E-Prints is free open-source digital repository software developed by the "University of Southampton, England". E-Prints collects preserves and disseminates in digital format the research output created by a research community. It is allowed the community to deposit their preprints; post-prints and other academic publications using a web interface and organizes these publications for easy retrieval. E-Print used MySQL database system and Apache webserver. MySQL is the most popular open-source database. E-prints is programmed by using the script Perl language. E-Print is fully interoperable with Open Archives Initiative Protocol for Metadata Harvesting. OAI-PMH has enabled the sites to programmatically retrieve the metadata from several sources, and offer services using that metadata, such as indexing or linking services. Unicode is used throughout the software is allowing any language to be processed in a consistent manner.

4. Comparison between Omeka, DSpace and E-Print Plugin

A plugin features is a software add-on that is installed on a software enhancing its capabilities. Plugins are a way to make functionality easy to maintain and transfer. If you make any customizations to your repository other than metadata and appearance changes then you will probably want to write a plugin. For example, if you wanted to watch a video on a website, you may need a plugin to play it because your browser doesn't have the tools it needs. The Plugin feature has been substantially redesigned to be more useful throughout the platform, and on a larger scale, than the first proposal. Its feature set has been reduced to just what is needed at the present time. In this paper, we are going to discuss the plugin compression with Open source Digital Library Management software i.e. Omeka, DSpace and E-Print. In this case, we have classified d into 7 type Plugin Group to compare i.e. Library Administration, Customization of Omeka, Integration Viewer with Omeka, Searching the Resource in Omeka, Data Export/ Import in Omeka, Media Plugin for Omeka,

and Others. Plugin progress is happening at a rapid rate with a growing community of developers actively contributing new plug-ins and improving the existing ones. In fact, at the time we were compiling this report, a new Social Bookmarking plug-in became available and we added it to digital METRO in less than five minutes. There are a number of additional Omeka plug-ins that will be of particular interest to libraries, archives, and museums including the OAI-PMH Harvester (OAI Harvesting Support) and the Geolocation plug-in (adds location information and maps to Omeka). We have classified the Omeka plugins system below as per feature.

Table 1: Classification of Plugin Features for Digital Repository

Sl.	Library Administration	Plugin for Customization Plugin	Plugin for Integration Viewer	Plugin for Information Searching	Plugin for Data Export / Import	Plugin for Media File	Others Plugin
1	Bulk Metadata Editor	Admin Images	Docs Viewer	Avant Search	Batch Uploader	Exhibit Annotation Image	Element Manager
2	Default Dublin Core	CSS Editor	HTML5 Media	Avant Common	CSV Export Format	Embed Codes	Job Diagnostics
3	Dublin Core Extended	IIIF Toolkit	PDF Embed		CSV Import	Exhibit Builder	Locale Switcher
4	LC Suggest	Podcast Feed	Universal Viewer		Dropbox	Exhibit Image Annotation	Maintenance
5	OAI-PMH Repository	Posters	Vimeo Import		Export	Heist	Project Guide
6	OAI-PMH Harvester	Select2	YouTube Import	Flickr Import	Item Order	Short code	Carousel
7	Simple Vocab Plus	Simple Contact Form			Import	Item Relations	
8	VRA Core	Simple Pages			METS Export	Redact Elements	
9	Elastic search	Sitemap2			API Import	Record Relations	
10	PDF Text	User Profiles			Vimeo Import	Scripto	
11	Search By Metadata	Timeline Short Code			YouTube Import		
12	Taxonomy	Neatline					
13	Zotero Import	Neat line Features					
14	Annotator	Neat line Widget ~ SIMILE Timeline					
15	Report	Neat line Widget ~ Text					

16	Scripto	Neat line Time					
17	Text Analysis	Neat line Widget ~ Waypoints					
18	Text Annotation	Ngram					
19	Bulk Metadata Editor	Short code Anyfile					
20	COinS	Social Bookmarking					
21	Contribution	Avant Relationships					
22	Contributor Contact	Blogger					
23	Corrections	Blog Shortcode					
24	Editorial	Collection Tree					
25	Hide Elements	Commenting					
26	Guest User	Connected Carousel					
27	History Log	Disqus Engage					
28	Item Review						
29	Timeline Shortcode						
30	User Profiles						

4.1 Library Administration Plugins

Library Administration plugin features is basically deal with Institutional Repository Metadata. In Omeka, there are thirty types of the plugin available for library administration. DSpace and E-print do not have these kinds of Plugin but DSpace and E-Print following Dublin Core metadata format for cataloging. E-Print has some of the plugins which basically develop for ORCID ID integration with the software and for the integration with the software. In Omeka, don't need to expert on technical skills to integrate any plugin within the software. Users can directly upload the plugin file to the plugin file location. In DSpace or E-Print do not support Library of Congress FAST (Faceted Application of Subject Terminology) authority file and Library of Congress Subject Heading. Manually we need to create an authority dataset in DSpace or E-Print. In Omeka, LC Suggest, VRC Core, Simple Vocab plus plugin help for upload all authority file from Library of Congress and subject heading from Library of Congress which is very helpfull the LIS professional to make and design good database for Digital Library.

4.2 Plugin for Customization

There is no plugin features available for customization DSpace Home interface or E-print Home interface page. For customization interface page, which is very time consuming and very difficult to do? In Omeka, there are different types of

Customization plugin available i.e. Admin Images, CSS Editor, IIIF Toolkit Podcast Feed, Posters, Select2, Simple Contact Form, Simple Pages for designing the Home page or Interface page. In DSpace or E-Print users cannot create extra pages and contact form on the interface without technical expertise. But Omeka provides the simple plugin tools through that users can create different types of pages in the home interface. So users don't need any technical skills to develop and design the interface page.

4.3 Plugin for Integration Viewer:

Till Now, "There is no Document viewer with DSpace." DSpace and E-Print basically using Google Chrome and Mozilla Firefox Browser Web Viewer to view the documents. If you uploaded more 10 MB large file into DSpace or E-print and it is not visible in the browser. In this case, users need to download the file and users need to view cum read this file through adobe document reader. To Integrate document viewer with DSpace or E-Print we have to use Java Programming and one open-source PDF Document Viewer web-based software which is very difficult to do as LIS Professionals. (Hirak Jyoti & Ravikumar, 2019) has developed the concept of integration document viewer with DSpace in his recent article. But Omeka there are many types of viewer plugin available for Documents and Media files i.e. Docs Viewer, HTML5 Media, PDF Embed, Universal Viewer. It's easy to integrate the viewer with Omeka.

4.4 Plugin for Information Searching

Information searching is the skill of searching for information in a document, searching for documents and also searching for the metadata that describes data, and for databases of texts, images or sounds. In DSpace or E-Print, users can search for data

through the default metadata schema. In Omeka, users can search for documents through a different process. For this Omeka has different plugin for retrieving the information i.e. Avant Search and Avant Common. Users can customize the metadata as per needs.

4.5 Plugin for Data Export/ Import

The import and export of data is the automated or semi-automated input and output of data sets between different software applications. In DSpace or E-print, users can import the data. By default, this facility available in DSpace or E-Print but the Data Export option is not there. Users can not integrate the backup system with the cloud without technical expertise. But Omeka has different types of plugin which are very helpful for Import and Export data without any technical skills. i.e. Batch Uploader, CSV Export Format, CSV Import, Dropbox, Export, Flickr Import, Import, METS Export, Omeka API Import.

4.6 Plugin for Media File

Media are the communication channels or tools used to store and provide information or data. DSpace and E-Print supported various types of image format, text format or video format. But users cannot input media metadata and cannot view the video in DSpace or E-Print. Omeka Media Plugin allows administrators to upload images not attached to items, for use in carousels and pages. Users may need to embed static images in the HTML of your Omeka site and this plugin allows you to host those images on your Omeka installation without creating empty Item records to contain the static image files. In Omeka, users can create a metadata structure for images, video and other file formats with the help of the plugin. Omeka open-source digital repository software basically develop for preserving Images.

4.7 Others Plugin: Omeka Plugin which allows site managers to configure a link to an external custom project guide. For example, the plugin could be used to link to a document on Google Drive or any other type of document accessible via a URL. The link displays at the admin item view level and on the admin dashboard. The link is configured to open within a new browser tab. If users working one data backup or other customization work on Omeka and users can configure the site as a maintenance mode through maintenance plugin. These kinds of facilities others Digital Library Software cannot provide.

5. Discussion and Conclusion

From the study, it is found that Omeka has great potential to effectively and efficiently support for digital collection building and online exhibitions for libraries and archives. The Omeka is well compatible to enable librarians, archivists, and curators to work effectively in the context of their disciplines. The Omeka software architecture and strategy are well-suited to allow the software to scalability and improve as the user community grows. Omeka search and retrieval capabilities also need to improve for it to become a more fully realized digital collection management tool. There are 93 no's plugin available in Omeka Site https://omeka.org/classic/plugins/. All plugin features help to library professionals to create and customize digital repository without any technical expertise. Omeka scalability and flexible approach to metadata representation. Libraries can work with either the default Dublin Core set, import other metadata sets of their choosing, or create their own customized metadata vocabulary with the help of plugin system. Omeka offers cultural institutions and individuals with easy-to-use software for publishing collections and creating attractive, standards-based, interoperable online exhibits (Kucsma, Reiss, &

Sidman, 2010). Omeka open-source digital library software is designed to satisfy the needs of institutions that lack the technical staff and large budgets. From the comparison, it is seen that Omeka has more plugin features system and more features than other digital library software like DSpace and E-Prints.

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