Plone: Suitability as a repository for pod casts as learning objects

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This report looks at the suitability of the Plone content management system (CMS) in the context of supporting a learning object (LO) repository. A required functionality list was formulated from discussions with the Streamline project members. This was as follows:

1. The CMS provides support for versioning of objects
2. Content can be made public or private
3. Content can be uploaded and a publication date set to control the release of content to other users
4. Content of any type can be linked to other content
5. There is extensive facility for search and browsing using metadata
6. The CMS is supported by a large multi-media database (DB) with no file size restrictions.
7. Standards compliant

This report is structured as follows: Section one briefly describes Plone and its installation process; Section two demonstrates how Plone best fits the functionalities required; Section three presents other interesting Plone features in comparison to other CMSs

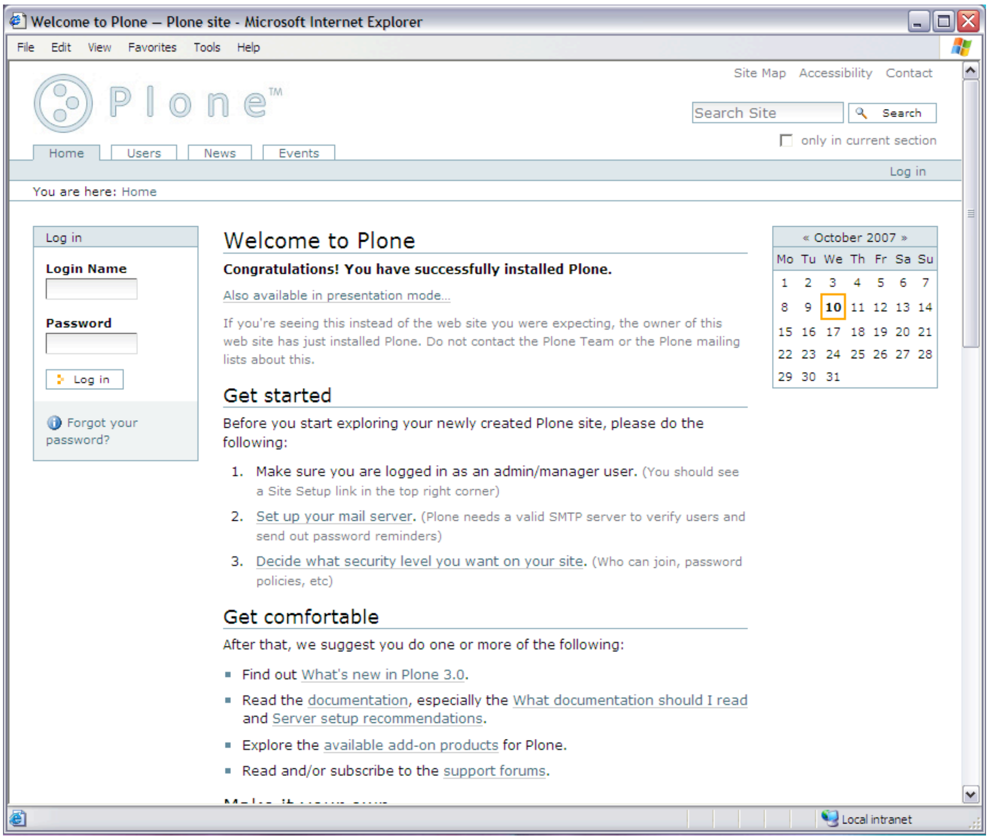
1. Plone

Plone is an open source CMS, with a web based interface, shown in Figure 1. It is based on Zope (http://www.zope.org/) and written in Python. The current version is 3.0.1 available for download from http://plone.org/. Installation is fairly straightforward and includes everything to get started. Zope is packaged with the installation, as is a basic Python command prompt. Downloads are available for all major platforms, Windows, Mac and Linux.

The initial installation (about seven minutes) is fairly light weight, with the majority of Plone's functionality available as add-ons. These are available at the Plone site with instructions for installation and use. The site also provides full documentation for the CMS and several video tutorials that show key features and how to use them. There is also a free download of a book on Plone, though it does not cover Version 3.

A detailed description of Plone's functionalities can be found here: http://www.cmsmatrix.org/matrix/cms-matrix?func=viewDetail;listingId=1002.

A control panel enables Plone to be turned on and off. This also provides a link to view Plone via local host in the web browser, and access to the Zope management interface. Port settings can also be adjusted here. An initial user and password are set at installation, with administration access. An emergency user can be created and used via the control panel if required.


Welcome to Plone — Plone site - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Plone™
Site Map Accessibility Contact
Search Site
Search
□ only in current section
Home Users News Events
Log in
Log in
Login Name
Password
Log in
Forgot your password?
Local intranet

You are here: Home

Welcome to Plone

Congratulations! You have successfully installed Plone.

Also available in presentation mode...

If you're seeing this instead of the web site you were expecting, the owner of this web site has just installed Plone. Do not contact the Plone Team or the Plone mailing lists about this.

Get started

Before you start exploring your newly created Plone site, please do the following:

1. Make sure you are logged in as an admin/manager user. (You should see a Site Setup link in the top right corner)
2. Set up your mail server. (Plone needs a valid SMTP server to verify users and send out password reminders)
3. Decide what security level you want on your site. (Who can join, password policies, etc)

Get comfortable

After that, we suggest you do one or more of the following:

- Find out What's new in Plone 3.0.
- Read the documentation, especially the What documentation should I read and Server setup recommendations.
- Explore the available add-on products for Plone.
- Read and/or subscribe to the support forums.

« October 2007 »

Mo	Tu	We	Th	Fr	Sa	Su
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

Figure 1. Plone welcome screen

Basic functions

Each user has a profile, dashboard and document space. The profile consists of personal details including an image. The dashboard allows users to load *portlets* for quick access to such services as calendar, RSS feeds, search and many others. The range of *portlet* services can be expanded via add-ons.

The general process is to choose the contents location, identify the contents type via the *add new content* menu, and use the internal editor to type the content or add media, links and files. This completed, several options menus are available, enabling the user to categorise their content, set publication and expiration dates, detail the ownership and other settings relating to site appearance and functionality.

An external editor option is available, providing it is turned on in site administration and the user's profile. On the client side a small application needs to be installed to enable linking between content type and application that is required to edit it (Application name: External Editor Client 0.9.4-ar).

Another feature of the site is workflows. This enables the tracking of content through a defined process before being published to a live audience. The site default consists of private, submitted for review and published. Users are assigned the role of reporter (author), editor and copy editor, to determine at what level they are able to correct content.

There is also an add-on that allows for the development of other workflows, which can be assigned to the site as a whole or as individual objects.

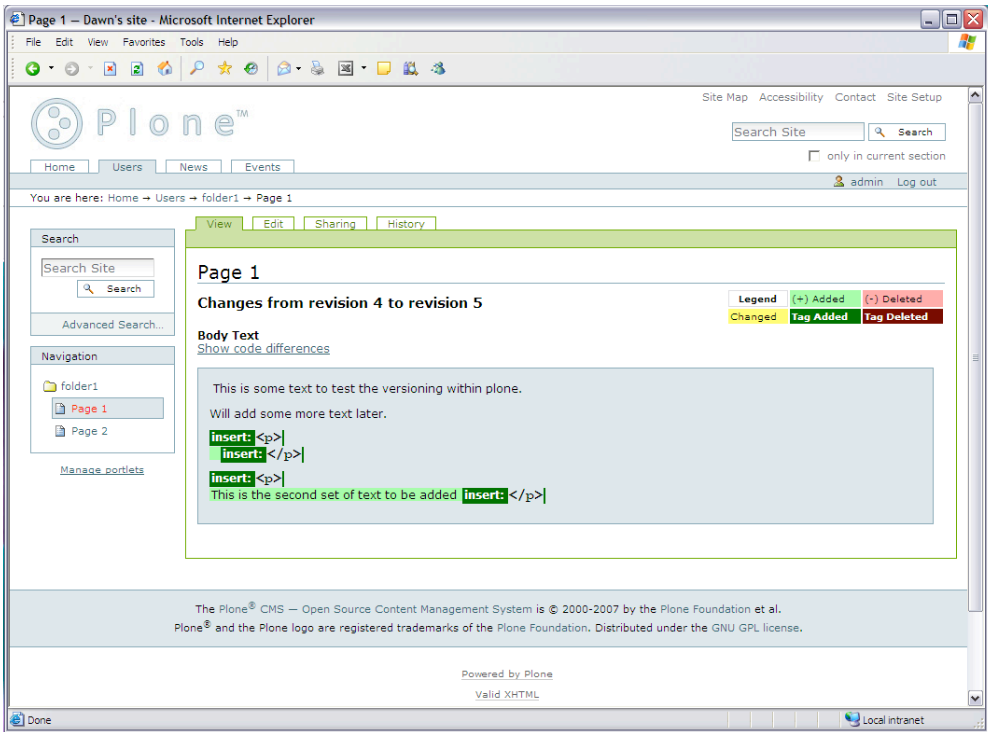
2. Required functionality

The following section identifies those functions within Plone that satisfy the required functionality list.

Versioning

A basic content history is produced for all objects and is accessed via the *History* tab on the objects pane. This lists all the versions of the object with the option to revert the current version back to the selected one, or compare the selected one to the previous or next most recent versions. The comparison screen, Figure 2, shows which bits have been changed in the document. It also identifies changes in categories.

A *checkout* feature is also available. It requires installation but comes with main Plone package, and enables content to be locked while it is being edited. Available under the *actions* menu this enables collaborative work to be undertaken without version problems.


Page 1 — Dawn's site - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Plone™
Site Map Accessibility Contact Site Setup
Search Site
Search
only in current section
Home Users News Events
admin Log out
You are here: Home → Users → folder1 → Page 1
View Edit Sharing History
Search
Search Site
Search
Advanced Search...
Navigation
folder1
Page 1
Page 2
Manage portlets
Done
Local intranet

Page 1

Changes from revision 4 to revision 5

Legend	(+) Added	(-) Deleted
Changed	Tag Added	Tag Deleted

Body Text
Show code differences

This is some text to test the versioning within plone.

Will add some more text later.

insert: <p>|
insert: </p>|

insert: <p>|
This is the second set of text to be added insert: </p>|

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Powered by Plone
Valid XHTML

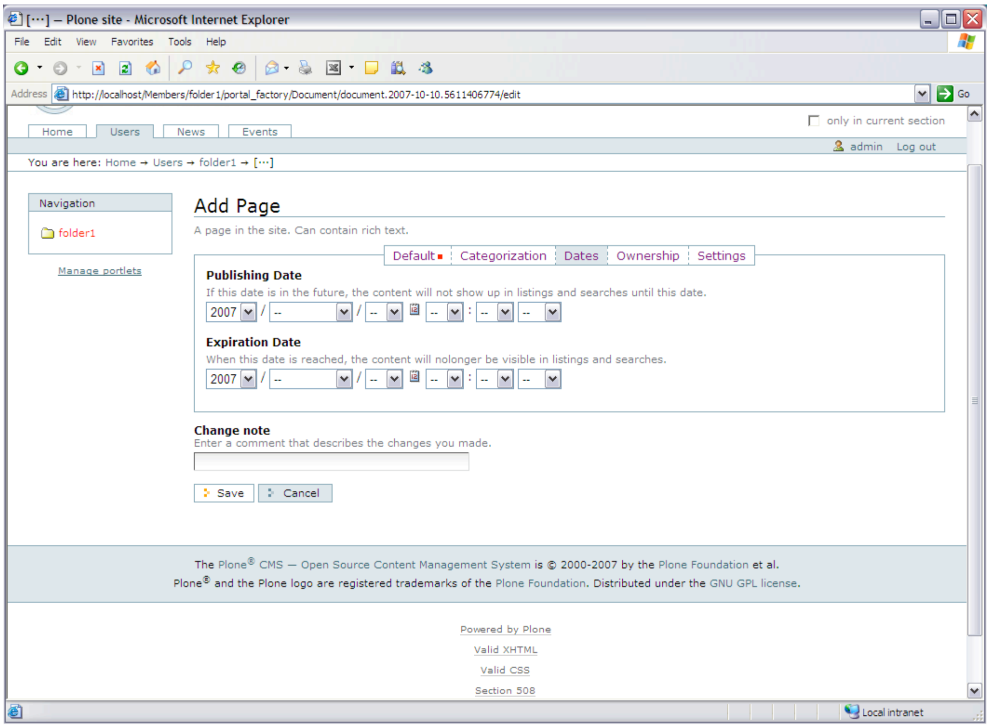
Figure 2. Comparison screen showing changes made to content

Content access

Content access can be controlled in several ways. Each user is assigned a private folder at registration, which only they and administrators can view and change. Other folders, such as news and events are public access, but may contain unpublished content. Individual and group permissions for view and write and also be set on individual object regardless of their publication state.

Content control

Each piece of content can be managed with a release and expiry date. This can be set at any point in the content's life. Figure 3, shows the layout of this function. It requires a date and time at both points, using a twelve hour clock.



[···] – Plone site - Microsoft Internet Explorer

Address http://localhost/Members/folder1/portal_factory/Document/document.2007-10-10.5611406774/edit

You are here: Home → Users → folder1 → [···]

Add Page

A page in the site. Can contain rich text.

Publishing Date

If this date is in the future, the content will not show up in listings and searches until this date.

2007 / -- / -- -- : -- --

Expiration Date

When this date is reached, the content will nolonger be visible in listings and searches.

2007 / -- / -- -- : -- --

Change note

Enter a comment that describes the changes you made.

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Figure 3. Layout of content control features

Content linking

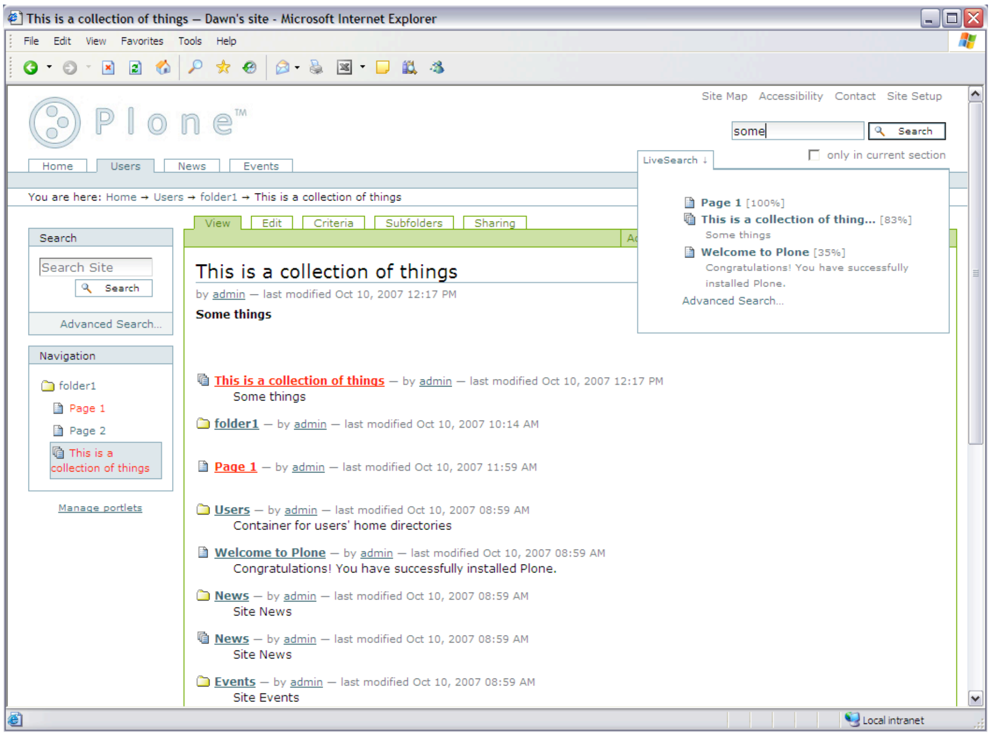
Content can be linked to many other content items. This is done simply via the categorisation tab in the edit section. Each item has to be added to the category page and then selected, via a tick box, as being linked to the current page. When the details of the current page are view links to the linked content appear at the end of the page. For extensively linked material a collection object may be more efficient and less time consuming to implement. It will also give the option to sort the objects by specific criteria.

Metadata and search

A search box is accessible as standard in the header sections. Live search is available (though needs to be turned on) which produces a drop down menu of relevant items as text is entered into the search box. An add-on for advanced search is available; currently this has not been reviewed. A recent beta version of a tag cloud has been developed, which produces a browse effect of related keywords.

Each item can be categorised by a series of keywords entered during the editing process. Dublin Core is used to generate the basic metadata, such as author and title. Most of this is entered via the natural editing process, or as a few extra fields in the categorisation tab. Collections provide a more structured way of grouping related items via the Dublin Core tags. They are also searchable as objects in their own right.

Other add-ons are currently being developed to extend the metadata use within Plone. These include Dublin Core extensions, IMS and LOM compliance and a metadata tool kit.


This is a collection of things – Dawn's site - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Plone™
Site Map Accessibility Contact Site Setup
some
Search
□ only in current section
Home Users News Events
View Edit Criteria Subfolders Sharing
Search
Search Site
Search
Advanced Search...
Navigation
folder1
Page 1
Page 2
This is a collection of things
Manage portlets
Local intranet

LiveSearch ↓

Page 1 [100%]
This is a collection of thing... [83%]
Some things
Welcome to Plone [35%]
Congratulations! You have successfully installed Plone.
Advanced Search...

You are here: Home → Users → folder1 → This is a collection of things

This is a collection of things

by admin — last modified Oct 10, 2007 12:17 PM

Some things

This is a collection of things — by admin — last modified Oct 10, 2007 12:17 PM
Some things

folder1 — by admin — last modified Oct 10, 2007 10:14 AM

Page 1 — by admin — last modified Oct 10, 2007 11:59 AM

Users — by admin — last modified Oct 10, 2007 08:59 AM
Container for users' home directories

Welcome to Plone — by admin — last modified Oct 10, 2007 08:59 AM
Congratulations! You have successfully installed Plone.

News — by admin — last modified Oct 10, 2007 08:59 AM
Site News

News — by admin — last modified Oct 10, 2007 08:59 AM
Site News

Events — by admin — last modified Oct 10, 2007 08:59 AM
Site Events

Figure 4. Live search box

Database

There does not appear to be any direct link to a DB. However there are add-ons for various methods of content and metadata organisation. An add-on is available for linking to content in DSpace (http://www.dspace.org/), an open source multi-media repository. Reflecto (various versions) is an add-on providing a file system browsing tool allowing access to content. The eXist open source DB is used by the metadata tool kit noted previously.

Standards compliant

The Plone site itself is produced using valid XHTML and CSS which is reported to be search engine optimised. All the objects within Plone are described using Simple Dublin Core metadata. This is evident when creating a collections object, which uses the metadata to determine which items belong to the collection and how they are to be sorted.

There is also an IMS content import add-on which enables IMS packages to be imported from various sources such as WebCT. Add-ons are available for extended DublinCore and LOM.

Comparison

The following site, (http://www.cmsmatrix.org/), compares many content/document management systems. These are user rated on several aspects. Compared to the top user rated CMS, some of which are not open source, Plone ticks more boxes, or has add-ons for the listed features. Plone was compared to: AutoWebBuilder 1.2, Daisy 1.5, Near-time, SiteCM3 and SiteFinity v3.0.

Views and demos of other CMS can be found at http://www.opensourcecms.com/index.php . This does not include Plone, only sites written in PHP and MySQL.

Conclusion

This is a very flexible system with lots of adaptive features. The use of add-ons developed by various sources allows for a variety of solutions to common requirements. The downside to this is that many are not compliant with the latest release of Plone or are reliant on other software that is no longer available. Some add-ons are extremely easy to install, while others require knowledge of Zope and python libraries.

Overall this could be a very good solution for the Streamline project's needs, but will need time invested if adaptation beyond the basics is required. This report shows how Plone satisfies the requirements gathered from general discussion. The next step would be to look at the requirements in more detail, with specific scenarios in mind and re-evaluate from a detailed development perspective.