

**CalOHI**  
**Content Management System Review**

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# Document Overview

The purpose of this document is to describe the differences between potential Content Management Systems (CMS) for the CalOHI's public web site. There are hundreds<sup>1</sup> of CMS solutions available. This document describes a subset of available solutions for CalOHI to consider. Each CMS will be evaluated on the following topics:

- **Installation/Maintenance** – How easy the CMS is to install, configure and maintain.
- **Documentation** – How well documented the CMS is.
- **Usability** – Overall usability for the CMS. This includes the administrative functions. The usability will be discussed from the editor's and publishers perspective.
- **Development** – The potential to expand the CMS to fit future needs.

After these topics there will be an overall summary of the CMS being reviewed. At the end of the document is a comparative analysis of the products followed by our recommendation.

There are some things that are common to most if not all content management systems and will not be covered in this document; you can assume that the following systems all support these features.

- Presentation Templates – The separation of presentation from the data/content
- Compatibility with the eServices<sup>2</sup> templates.
- User Account management – Access control to vital CMS features
- Rich Text Editors / WISYWIG<sup>3</sup> – Eliminating the need to know XHTML markup language or programming languages
- Site Level Administration- The ability to configure the site without accessing the server configuration after initial setup.

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1 <http://www.cmsmatrix.org/> Comparable list of popular systems

2 <http://www.eservices.ca.gov/> CA eServices

3 <http://en.wikipedia.org/wiki/WYSIWYG> WYSIWYG (What you see is what you get)

# DotNetNuke

## Overview

DotNetNuke was originally built in 2002 on the ASP.NET (VB.NET) Platform. Its current release number is 4.5.3 and it sees updates to the code at a minimum of once a year. There are hundreds of add on modules that are available either for free or for a fee. DotNetNuke is regarded as one of the top content management systems available for the .NET platform, and has been around since shortly after .NET was released.

DotNetNuke is developed around three key components. There is the portal, which is essentially just the site or a group of sites. This is valuable if you are planning on maintaining more than one site with one content management system, such as a public (Internet) and private (Intranet) site. The next component is a page. Pages are just like they sound except with one distinct difference over other content management systems; DotNetNuke allows you to copy settings from other pages like it allowing for the easy propagation of pages that have similar properties. The third component is a module. Each page has modules inside of it; these modules are the containers for different types of content. This is important because each piece of content is essentially contained in a module allowing for the ability to change modules on a global basis. An example of this would be if you had large text blocks on multiple pages and it was decided that each page should have the content arranged in tabs. You could change just the module so that it took each paragraph for example and put it in its own tab.

DotNetNuke utilizes an in-line editing system to modify pages. This type of system allows for an editor to browse to the page that they want to edit using the sites normal navigation and then if logged in with the proper permissions the user can modify the content on the page. This provides great functionality for the general editor but also removes some functionality from the site administration. In other content management systems a administrator can get a feel for the site structure as a whole and then move pages around within that context. However with a in line type editing system you are looking at the page as is and can not move whole sections or groups of pages, like you could normally in a back end administered system.

For more information on DotNetNuke: <http://www.dotnetnuke.com/>

## ***Installation / Maintenance***

DotNetNuke comes packaged in either a compiled solution or source distribution making it easy to either just install it or modify the code and then install it. There is some minimal configuration that needs to take place in order to make DotNetNuke talk to the SQL server database and some site configuration but there is no major drawbacks to the setup in general.

## **Documentation**

This is where DotNetNuke really shines for an open source solution. Due to its popularity and its open source nature, DotNetNuke is well supported by the community. It has many commercially available books and other material for use in training and development in DotNetNuke. It has a comprehensive user guide that would be a good start to any customized user guide for CalOHI's needs.

If there is one area it is lacking it is on installation of the core DotNetNuke system. However this could be due to the ease of setup in general and not due to lack of attention.

## **Usability**

Although not the traditional style of administering content, DotNetNuke provides a user friendly interface for editing content on pages. As mentioned earlier in this document DotNetNuke adopts a in-line editing style that allows a user to browse to a page and edit it without the need for logging in on the back end and editing content out of context like most content management systems. If there are a lot of content editors who may not be concerned with the overall architecture of the site and just care about content being current, this method is very user friendly. The method is a drawback however if you have a few system administrators who fundamentally view a site in its entirety and not on a page by page basis. The specific scenario of the CalOHI, however, leans more towards the many content editors and few administrators therefore this type of editing best suits the needs of the department.

DotNetNuke also has many other features that make it stand out from other systems. Along with having the standard Rich Text Editor that most CMS have, it allows for the dragging and dropping of containers and modules so that the page can be easily edited in a way that is familiar to most users. Containers and modules can be added or removed for use on sites, giving or limiting the ability to provide different tools for editors to use. The editor also allows for cutting and pasting from other editors such as Word and the basic formatting will be kept.

## **Development**

DotNetNuke is an open source system. This makes development of add on modules and customized functionality a lot easier than other compiled or proprietary systems. This transparency also brings more security concerns than other systems, however this is not a large issue on an enclosed intranet.

DotNetNuke provides extensive documentation for building custom modules and containers within the system. Using the eServices templates already lays the groundwork for the templates to be easily created for use with DotNetNuke but it also allows for containers to strip some of the “widgets” out of the templates such as the many different tab interfaces and develop them as containers or modules in DotNetNuke thus allowing the content editor to use that functionality without having to know a markup language.

There is a downside to a non commercially developed system, that is that in general the code for open source projects are not as well commented or documented. DotNetNuke seems to do this better than most, but it is still lacking when it comes to developer documentation.

## **Overall**

DotNetNuke would be a good option to implement for the CalOHI. One concern is that DotNetNuke is a large system, though there is an adequate amount of documentation with DotNetNuke it is relatively complex.

A substantial gain in using this solution is that DTS is partial to IIS based environment and are therefore fully equipped to allow CalOHI to use an instance of their servers. Stanfield Systems is also developing DotNetNuke solutions for other departments. If and when developed, modules can be easy shared in between each of these. Overall development cost would decrease and service will be simplified.

For more information: <http://www.dotnetnuke.com>

## **CMS Made Simple**

### **Overview**

As the very name states, CMS Made Simple is one of the easiest environments to navigate and deploy. While fully compliant XHTML/CSS compliant, this particular content management system originally went in to beta in 2005 and has continued to be maintained by the open source community for the last two years. The current production 1.1 version is maintained by 6+ core developers that have kept up with user demand by adding a modular environment with flexible template selection.

Being that it is not a large production environment, workflow is not one of the key features. Publishing changes to the site can be done quickly in an atmosphere that allows multiple modifications to a page to be done simultaneously before publishing.

Administration of the site can be performed by a number of registered users, each with user group settings which would allow/deny access to specific sections of the site.

CMS Made Simple is by far one of the simplest site management tools available.

### **Installation / Maintenance**

Installation of the product is relatively simple. A PHP environment with a mySQL server is necessary. The installation package is deployed in the proper directory and at first access, the product installs itself. The proper FTP and mySQL administrator access is necessary for this installation to be successful.

Maintenance packages are deployed just as easily.

## **Documentation**

Sufficient documentation can be found on their website. Modules are build by individuals and responsibility for those items is their responsibility. Sadly, no major publications have written any tutorial based books about this but this could also be due to its simplicity.

## **Usability**

The simplest form of content management is performed by accessing a “Pages” panel which details a hieratical list of all content pages featuring a parent-to-child relationship through expandable tree-like panel. Unlike the Teamsite environment, these pages do not contain any equivalency to DCRs. Editing a page will post the entire page’s content into a dynamic rich WISYWIG text editor which can be used by users that are either unwilling to use core HTML or have little knowledge of it.

Each page can be styled differently through the selection of either previously packaged or customized templates. The editor’s panel allows the user to preview the page before it is published while other visible options allow the selection of content type, title, menu text and parent page.

Additional modules can be installed quickly; each of these can provide a considerable amount of flexibility to the site that range from site management to blogging capabilities.

## **Development**

Little development needs to take place due to the modular environment and the considerable cooperation of the development community. Customized modules can be created if necessary while the primary developers are available for assistance. Additional contractor fees may apply depending on complexity of the product. This effort, however, may be unnecessary as there are many stand alone products that can be easily added to the flow of the general CMS after skinning.

## **Overall**

CMS Made Simple would be an excellent choice due to the straight forward design the original developers have continued to enforce. The growth over time and the development community’s interest have increased its capabilities in to a modular system that can scale easily without much complexity. Novice users can be brought up to speed on regular use in minutes rather than days.

Installation available for testing:

<http://www.stanfieldsystems.com/CalOHI/cmsmadesimple/admin/login.php>

Username: admin

Password: 7XaImb3q

# Joomla 1.0.12, Beta 1.5

## **Overview**

Joomla! is a community favorite that has been around for quite some time. As a spin off from Mambo, an older product, this General Public Licensed CMS has had many contributions by the open source community with hundreds of plug-ins and additions to its core deployment.

Key pre-installed features commonly used are RSS feeds, a polling system, embedded search engine, News section and default layout. While the HTML based Joomla 1.0.12 has been available since 2005, the 1.5 XHTML version continues to be in beta as of now and remains unstable.

Installation available for testing:

<http://www.stanfieldsystems.com/CalOHI/joomla/administrator>

Username: admin

Password: 7XaImb3q

## **Installation / Maintenance**

Being that it is a PHP/mySQL product, it is relatively simple to deploy. The main distribution is available through a zip file that is extracted in the location which will be used for general hosting. Updates are performed quickly with minimal downtime.

## **Documentation**

A number of articles, tutorials and forums are freely available on-line. The user base has grown so much that major publications have started to compete by publishing the most up to date information on usability and product development. This is a definite advantage as there would be little need to write a manual of our own.

## **Usability**

The general flow of the tool remains relatively simple while managing the regular content of the site. Changes can be made by authorized personal directly from the pages or via an administrative panel. Further administration of the content may require some training. The beta product has received some improvements in navigation and administration that may make the overall maintenance staff suffer less through the increasingly complicated UI.

Modules and extensions can be extremely helpful and depending on how they are developed, these could redirect content editing to their built-in components. Shopping carts, management tools, editors and video publishing can be easily added to the entire site through any one of these. Due to constant update and submission of these, the possibilities are almost limitless.

While the HTML version can be skinned to the proper look and feel, some of the content that is generated through the WYSIWIG editor may continue to be table based and without the proper tagging system. Fortunately there are several amendments that help format the content properly. The full XMHTML version continues to be without a release date.

By default, the primary page is structured in a multi column news format but this can be changed quickly through proper configuration.

## ***Development***

There would be little necessity to customize any development for any tools. Some energy, however, will have to be spent on the skinning process to get these to working correctly with the rest of the CMS environment.

## ***Overall***

Joomla is an excellent tool to use as it is deployed extremely quickly. Fine tuning this specific CMS will take some work as it is not specifically intuitive to the beginner. Published books can be used as our core documentation while videos and specific directions can be provided for general use. A release date for the XHTML compatible version of this product is not available yet.

For more information: <http://www.joomla.org>

## **Drupal**

### ***Overview***

An intensely well known open source product with over 400 developers, Drupal first began its journey as a blogging tool and has since become one of the most stable and expandable CMSs available. Several well know, highly visited sites have been working with the Drupal core for several years now. Also containing a modular and pluggable environment, Drupal core maintains stability throughout the deployable system by providing a number of hooks and call backs to ensure data persistence. This product is typically used to build user community sites but is fully expandable as a development environment is exposed directly through the CMS. The only common concern is the level of training required to start using this product.

### ***Installation / Maintenance***

As with most other CMS, this PHP/mysql CMS is easily deployable. First access to the unzipped directory in the PHP engine generates all necessary tables, user data and startup environments. The Drupal core contains few editors or functionality that can be used for a production site. This, however, is not a problem due to the full availability to all the modules through the site. Downloading and integrating these are relatively simple.

Updates are performed just as quickly.

## ***Documentation***

Drupal has no trouble with documentation. Having such a large user base has worked towards everyone's advantage. This however, doesn't mean that we won't have to write maintenance documentation since it is fully customizable.

## ***Usability***

As previously noted, Drupal may not be as intuitive to the common user as other CMSs might from the start. It is fully capable of using several templates and a vast amount of content can be managed easily after the proper modules have been installed. Usability depends fully on how it is built from the ground up.

## ***Development***

Drupal is known as an extremely powerful and robust development environment. Those developers that have taken the time to immerse themselves in this tool swear by its flexibility and functionality.

## ***Overall***

It would be exciting to work with this particular CMS due to the yield that it promises with proven stability. The expandability that it offers would be something ideal for any organization.

For more information: <http://www.drupal.org>

## **Plone 2.5.3**

### ***Overview***

Plone is a unique CMS that targets out of the box ease of use. With integrated modules that include file management and image processing, the overall solution becomes an ideal environment for any corporation. Workflow and user policies have recently been developed to make this product a robust solution.

### ***Installation / Maintenance***

One of the drawbacks about Plone is that it is deployable only on a Python server with a Zune engine. The overall install is made simple through pre-compiled executables for several different platforms but Unix platform is likely to need a development environment to compile and install certain peaces.

Modules are easily installed while difficulties with updates may vary depending on the platform in which it is hosted.

### ***Documentation***

The Plone home page provides sufficient documentation and several "definite guides" are available on the market that may assist in any necessary application development.

## **Usability**

One word describes the usability: simple. Plone is relatively intuitive there is very little left to be desired.

## **Development**

The fact that Plone is CSS/XHTML compliant out of the box is a big plus. Major development tasks may require some effort due to the use of the Zune rule engine on the python base. These can be avoided by using pre-existing modules that enhance the product's capabilities. There are however no guarantees that such development peaces won't require some work.

## **Overall**

Plone is an excellent CMS and a pleasure to work with. One of the major drawbacks is the basic requirements. While DTS and other service providers are starting to become more open to allow PHP/mysql environments, having to convince them that a Python/Zune is necessary may be extremely difficult. Some of the major drawbacks may include possible problems with the deployment on platforms that don't already have a compiled installation executable and regular maintenance due to our lack of core knowledge of the underlying components. Time would have to be dedicated and a developer would have to be trained to make sure the system remains in oprimal conditions.

On another note, Plone appears extremely robust and it also has a large community base. The product is available free of charge under the GNU General Public License.

For more information: <http://www.plone.org>

## **Other CMS Solutions**

### **Type 3**

The actual name to this is "Typo 3." It was evaluated because DTS members were talking about offering this as a CMS solution in the near future. Unfortunately it was found to be flat and unimpressive. One of the possible strengths is its ability to host many portals under the same base deployment. A source control based history has also been implemented to the core. Even so, the implementation leaves a strong impression that it functions similar to Teamsite. This CMS is also PHP/mysql and distributed under General Public Licensing. It also has strong community collaboration.

For more information: <http://typo3.com/>

### **MODx 0.9.6**

Considered a Content Management Framework, MODx is one of the strongest AJAX Management systems out there. It supports XHTML/CSS out of the box but it is currently in beta. Development seems to be slower as it is relatively new to the Market.

For more information: <http://www.modxcms.com/>

## **e107**

This CMS was a large disappointment. The interface was not as intuitive as the rest of the CMSes we reviewed and for that same reason, it is being ruled out.

Installation available:

[http://www.stanfieldsystems.com/CalOHI/e107/e107\\_admin/admin.php](http://www.stanfieldsystems.com/CalOHI/e107/e107_admin/admin.php)

Username: admin

Password: 7XaImb3q

## Product Matrix

System Requirements	CMS Made Simple	DotNetNuke	Drupal	e107	Joomla!	MODx	Plone	TYPO3
Application Server	PHP 4.3.3+	IIS	PHP 4.3.3+	Apache recommended, IIS	Apache recommended, any server that supports PHP and MySQL	Apache recommended, any server that supports PHP and MySQL	Zope	PHP 4.3.0+
Approximate Cost	Free	Free	Free	Free	Free	Free	Free	Free
Database	MySQL, Postgres	MSSQL 2005/2000, MSSQL Express 2005, MSDE	MySQL, Postgres	MySQL	MySQL	MySQL 3.23.23 or later	Zope	MySQL, PostgreSQL, Oracle, MSSQL
License	GNU GPL + optional Commercial license	BSD (Modified)	GNU GPL	GNU GPL	GNU GPL	GNU GPL	GNU GPL	GNU GPL
Operating System	Any	Windows	Any	Any	Any	UNIX, Linux, FreeBSD, OS X, Windows	Any	Any
Programming Language	PHP	ASP.NET 2.0, VB.NET	PHP	PHP, Javascript, XML, XHTML 1.1	PHP	PHP4 or PHP 5	Python	PHP
Root Access	No	No	No	No	No	Yes	No	No
Shell Access	No	No	No	No	No	No	Yes	No
Web Server	Any php enabled server	IIS 5.0 & IIS 6.0	Apache, IIS	Apache, IIS	Apache	Apache	Apache, IIS, Zope	Apache, IIS
<b>Security</b>	CMS Made Simple	DotNetNuke	Drupal	e107	Joomla!	MODx	Plone	TYPO3
Audit Trail	Yes	Limited	Yes	Yes	No	Yes	Yes	Yes
Captcha	Free Add On	Yes	Free Add On	Yes	Yes	Yes	Free Add On	Free Add On
Content Approval	No	Limited	Yes	Yes	Yes	No	Yes	Yes
Email Verification	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Granular Privileges	No	Yes	Yes	Yes	No	Yes	Yes	Yes
Kerberos Authentication	No	Free Add On	No	No	No	No	Free Add On	Free Add On
LDAP Authentication	No	Yes	Free Add On	Yes	Free Add On	No	Free Add On	Free Add On
Login History	No	Yes	Yes	Yes	Yes	Yes	Free Add	Yes

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NIS Authentication	No	No	No	No	No	No	Free Add On	Free Add On
NTLM Authentication	No	Yes	Free Add On	No	No	No	Yes	Free Add On
Pluggable Authentication	No	Yes	Yes	Yes	No	Yes	Yes	Free Add On
Problem Notification	No	Yes	No	Yes	No	No	Free Add On	Yes
Sandbox	Limited	Yes	No	Yes	No	Yes	Yes	Yes
Session Management	No	Yes	Yes	Yes	Yes	Yes	Free Add On	Yes
SMB Authentication	No	No	No	No	No	No	Free Add On	Free Add On
SSL Compatible	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes
SSL Logins	No	Free Add On	No	No	No	Yes	Free Add On	Yes
SSL Pages	No	Free Add On	No	No	No	Yes	No	Free Add On
Versioning	No	Limited	Yes	No	Yes	No	Yes	Yes
<b>Support</b>	<b>CMS Made Simple</b>	<b>DotNetNuke</b>	<b>Drupal</b>	<b>e107</b>	<b>Joomla!</b>	<b>MODx</b>	<b>Plone</b>	<b>TYPO3</b>
Certification Program	No	Yes	No	No	No	No	No	No
Code Skeletons	Free Add On	Yes	Yes	Yes	No	No	Yes	Free Add On
Commercial Manuals	No	Yes	Yes	No	Yes	No	Yes	Yes
Commercial Support	No	Yes	Yes	No	Yes	No	Yes	Yes
Commercial Training	No	Yes	Yes	No	Yes	No	Yes	Yes
Developer Community	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Online Help	Yes	Yes	Yes	Yes	Yes	No	Limited	Yes
Pluggable API	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Professional Hosting	Yes	Yes	Yes	No	Yes	No	Yes	Yes
Professional Services	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Public Forum	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Public Mailing List	No	Yes	Yes	Yes	No	No	Yes	Yes
Test Framework	No	Yes	Free Add On	No	No	No	Yes	Free Add On
Third-Party	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes

Developers								
Users Conference	No	Yes	Yes	No	Yes	No	Yes	Yes
<b>Ease of Use</b>	CMS Made Simple	DotNetNuke	Drupal	e107	Joomla!	MODx	Plone	TYPO3
Drag-N-Drop Content	No	Yes	No	No	No	No	Free Add On	Free Add On
Email To Discussion	No	Costs Extra	Free Add On	No	Free Add On	No	Free Add On	Free Add On
Friendly URLs	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Image Resizing	Yes	Free Add On	Free Add On	No	Yes	Yes	Yes	Yes
Macro Language	No	Yes	Free Add On	Yes	Yes	No	Yes	Yes
Mass Upload	No	Yes	Free Add On	No	No	Yes	Yes	Free Add On
Prototyping	No	Yes	No	No	Yes	Yes	Free Add On	Free Add On
Server Page Language	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Spell Checker	No	Free Add On	Free Add On	No	No	No	Free Add On	Yes
Style Wizard	No	Yes	No	No	No	No	Free Add On	Yes
Subscriptions	No	Yes	Free Add On	No	No	Yes	Free Add On	Free Add On
Template Language	Yes	Yes	Limited	Yes	Yes	Yes	Yes	Yes
UI Levels	No	Yes	No	Yes	No	Yes	Yes	Yes
Undo	No	Limited	Limited	No	No	No	Yes	Yes
WYSIWYG Editor	Yes	Yes	Free Add On	Yes	Yes	Yes	Yes	Yes
Zip Archives	No	Yes	No	No	No	No	Free Add On	Free Add On
<b>Performance</b>	CMS Made Simple	DotNetNuke	Drupal	e107	Joomla!	MODx	Plone	TYPO3
Advanced Caching	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Database Replication	No	No	No	No	No	No	Yes	Free Add On
Load Balancing	No	Yes	Yes	Yes	No	No	Yes	Yes
Page Caching	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Static Content Export	No	Yes	No	No	No	Yes	Free Add	Free Add On

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<b>Management</b>	CMS Made Simple	DotNetNuke	Drupal	e107	Joomla!	MODx	Plone	TYPO3
Advertising Management	Free Add On	Yes	Free Add On	Yes	Yes	No	Free Add On	Free Add On
Asset Management	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Clipboard	No	Limited	No	No	No	No	Yes	Yes
Content Scheduling	No	Yes	Free Add On	Yes	Yes	Yes	Yes	Yes
Content Staging	No	Yes	No	No	No	No	Free Add On	Free Add On
Inline Administration	No	Yes	Yes	No	Yes	Yes	Yes	Yes
Online Administration	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Package Deployment	No	Yes	No	Yes	No	No	Yes	Yes
Sub-sites / Roots	No	Yes	Yes	No	Yes	Yes	Yes	Yes
Themes / Skins	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Trash	No	Yes	No	No	Yes	No	Free Add On	Free Add On
Web Statistics	Free Add On	Yes	Yes	Yes	Yes	Yes	Free Add On	Free Add On
Web-based Style/Template Management	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Web-based Translation Management	Yes	Yes	Yes	Yes	Free Add On	No	Free Add On	Yes
Workflow Engine	Limited	Free Add On	Limited	No	No	No	Yes	Limited
<b>Interoperability</b>	CMS Made Simple	DotNetNuke	Drupal	e107	Joomla!	MODx	Plone	TYPO3
Content Syndication (RSS)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
FTP Support	No	Yes	Limited	No	Free Add On	Yes	Yes	Yes
UTF-8 Support	Yes	Yes	Yes	Yes	Limited	Yes	Yes	Yes
WAI Compliant	No	Limited	Limited	No	No	No	Yes	Free Add On
WebDAV Support	No	Limited	No	No	No	No	Yes	No
XHTML	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes

Compliant								
<b>Flexibility</b>	CMS Made Simple	DotNetNuke	Drupal	e107	Joomla!	MODx	Plone	TYPO3
CGI-mode Support	No	No	Yes	No	No	Yes	No	Yes
Content Reuse	No	Yes	Limited	Yes	Yes	Yes	Yes	Yes
Extensible User Profiles	No	Yes	Yes	Yes	Yes	No	Yes	Free Add On
Interface Localization	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Metadata	Limited	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Multi-lingual Content	No	Free Add On	Yes	Yes	Free Add On	Yes	Yes	Yes
Multi-lingual Content Integration	Free Add On	Free Add On	Free Add On	Yes	Free Add On	No	Yes	Yes
Multi-Site Deployment	No	Yes	Yes	No	Free Add On	No	Yes	Yes
URL Rewriting	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes
Wiki Aware	No	Yes	Free Add On	Yes	Free Add On	No	Free Add On	Free Add On
<b>Built-in Applications</b>	CMS Made Simple	DotNetNuke	Drupal	e107	Joomla!	MODx	Plone	TYPO3
Blog	Limited	Yes	Yes	Yes	Yes	Yes	Yes	Free Add On
Chat	Free Add On	Free Add On	Free Add On	Yes	Free Add On	No	Free Add On	Free Add On
Classifieds	No	Free Add On	Free Add On	Yes	Free Add On	No	Free Add On	Free Add On
Contact Management	No	Yes	Free Add On	Yes	Yes	No	Free Add On	Free Add On
Data Entry	No	Yes	Free Add On	No	Free Add On	No	Free Add On	Limited
Database Reports	No	Yes	No	Yes	Free Add On	Yes	Limited	Free Add On
Discussion / Forum	No	Yes	Yes	Yes	Free Add On	No	Yes	Free Add On
Document Management	No	Yes	Limited	No	Free Add On	No	Yes	Free Add On
Events Calendar	Free Add On	Yes	Free Add On	Yes	Free Add On	No	Yes	Free Add On
Events Management	No	Yes	Free Add On	No	No		Free Add On	Free Add On
Expense Reports	No	Costs Extra	No	No	Free Add On	No	Free Add	Free Add On

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FAQ Management	Free Add On	Yes	Yes	Yes	Yes	No	Free Add On	Free Add On
File Distribution	Free Add On	Yes	Free Add On	Yes	Free Add On	Yes	Yes	Free Add On
Graphs and Charts	No	Costs Extra	No	No	Free Add On	No	Free Add On	Free Add On
Groupware	No	Free Add On	Free Add On	No	Free Add On	No	Free Add On	Free Add On
Guest Book	Free Add On	Yes	Free Add On	Yes	Free Add On	No	Free Add On	Free Add On
Help Desk / Bug Reporting	No	Costs Extra	Free Add On	Yes	Free Add On	No	Free Add On	Free Add On
HTTP Proxy	No	Free Add On	No	No	No	No	Costs Extra	Free Add On
In/Out Board	No	Costs Extra	No	No	No	No	No	No
Job Postings	No	Free Add On	Free Add On	No	Free Add On	No	Free Add On	Free Add On
Link Management	Free Add On	Yes	Free Add On	Yes	Yes	No	Free Add On	Free Add On
Mail Form	Free Add On	Yes	Free Add On	Yes	Yes	Yes	Free Add On	Yes
Matrix	No	No	No	No	No	No	Yes	Free Add On
My Page / Dashboard	No	Yes	Free Add On	No	No	No	Limited	Free Add On
Newsletter	Free Add On	Yes	Free Add On	Yes	Free Add On	No	Free Add On	Yes
Photo Gallery	Free Add On	Yes	Free Add On	Yes	Free Add On	Yes	Yes	Free Add On
Polls	Free Add On	Yes	Yes	Yes	Yes	No	Free Add On	Free Add On
Product Management	No	Free Add On	Free Add On	Yes	Yes	No	Yes	Free Add On
Project Tracking	No	Costs Extra	Free Add On	Yes	Free Add On	No	Free Add On	Free Add On
Search Engine	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Free Add On
Site Map	Yes	Yes	Free Add On	Yes	Free Add On	Yes	Yes	Yes
Stock Quotes	No	Costs Extra	Free Add On	No	No	No	Free Add On	Free Add On

Surveys	No	Yes	Free Add On	Yes	Free Add On	No	Free Add On	Free Add On
Syndicated Content (RSS)	Free Add On	Yes	Yes	Yes	Yes	Yes	Free Add On	Free Add On
Tests / Quizzes	No	Costs Extra	Free Add On	Yes	Free Add On	No	Free Add On	Free Add On
Time Tracking	No	Costs Extra	Free Add On	No	No	No	Free Add On	Free Add On
User Contributions	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Weather	No	Free Add On	Free Add On	No	No	No	Free Add On	Free Add On
Web Services Front End	No	Free Add On	No	No	Free Add On	No	No	Free Add On
<b>Commerce</b>	CMS Made Simple	DotNetNuke	Drupal	e107	Joomla!	MODx	Plone	TYPO3
Affiliate Tracking	No	Yes	Free Add On	No	Free Add On	No	No	Free Add On
Inventory Management	No	Costs Extra	Free Add On	No	Free Add On	No	Free Add On	Free Add On
Pluggable Payments	No	Costs Extra	Free Add On	No	Free Add On	Yes	Free Add On	Free Add On
Pluggable Shipping	No	Costs Extra	Free Add On	No	Free Add On	Yes	Free Add On	Free Add On
Pluggable Tax	No	Costs Extra	Free Add On	No	Free Add On	Yes	Free Add On	No
Point of Sale	No	Costs Extra	No	No	Free Add On	No	Free Add On	No
Shopping Cart	No	Free Add On	Free Add On	Yes	Free Add On	Yes	Free Add On	Free Add On
Subscriptions	No	Yes	Free Add On	No	Free Add On	No	Free Add On	No
Wish Lists	No	No	Free Add On	No	Free Add On	No	No	Free Add On

## Recommendation

On a final note, there is no easy way recommend a single CMS but the following seem extremely apparent.

We would recommend DotNetNuke because other departments, for which we are developing, are using it for both their intranets and general sites. Portals can be easily spun off from a single installation and documentation for development is already commercially available. Communal modules can be developed and shared between all department that we are converting (Fish and Game, DCSS and others). This will obviously enhance CalOHI's ability to expand with little effort. Possible drawbacks are the complexity and size of the product but manuals can be used to handle this. The overall implementation is .NET.

In case we don't want to try a .NET environment:

- For the simplest and least process intensive, I'd recommend CMS Made Simple. The drawbacks may include lack of expandability.
- If we have lots of time to get acquainted with our environment and want to create a robust site over time, Drupal would be the choice.
- If we want risk trying to get a python server running on a foreign environment, Plone would be a great solution.