Abstract

Three years ago IUPUI University Library decided to move from a static website to a content management system (CMS). Many proprietary and Open Source systems were investigated. In the end, the Drupal Open Source CMS project was selected for development of a new library website. We have learned many Drupal lessons along the way and I would like to share some of what we've discovered. This will include a look at several of the modules available for Drupal, including library specific ones, which can greatly expand Drupal's capabilities. However, since not all modules are created alike, I would also like to point out what to look for when examining a module to see if it will fit your needs. Another very powerful aspect of Drupal is its themes. Through the use of template files, the look and feel of an entire website can be easily maintained. With a little PHP programming and some detective work in the Drupal forums, we have created several themes for special purposes. While modules and themes are great, the true value of a website comes from its content. Allowing quick and easy editing of pages for a multitude of users was a primary consideration when choosing our CMS. For this task, we have taken advantage of Drupal's taxonomy system. While not the only way to control editing rights in Drupal, taxonomy terms combined with a couple of modules has worked well for us. Finally, code only last so long; bugs and security holes will crop up. As with all Open Source projects, Drupal's updates and upgrades are in the hands of its development community. I will conclude with a description of how University Library handles updates and what challenges are ahead of us in making a full system upgrade.
What is Drupal?

"Organizations using Drupal include the United Nations, the Walt Disney Company, SonyBMG, Virgin Radio and the US government, which relies on Drupal to power recovery.org, the Obama administration's website for its economic recovery efforts."


- Open-Source Content Management System Others
  
  **Others**
  
  - Joomla
  - Plone (Zope/Python)
  - OpenCMS (Java/XML)
- Database Driven
- PHP Powered
- Pull not Push
- Modular / Theme-able / User-based

Our Drupal Websites :

- LAMPS and a WIMP
- Internet / Intranet
- Versions 5 & 6
Modules

'Modules allow you to turn on and off functionality within your Drupal website. There are two types of modules: "core" modules, which come with Drupal itself, and "contributed" modules, which are provided for free by the Drupal community and available for download from Drupal.org.'


Useful Core Modules:

Drupal 5 has six required core modules and 23 optional core modules.

We currently use 12/13 of these optional modules.

<table>
<thead>
<tr>
<th>Enabled</th>
<th>Name</th>
<th>Version</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>✓</td>
<td>Block</td>
<td>5.14</td>
<td>Controls the boxes that are displayed around the main content.</td>
</tr>
<tr>
<td>✓</td>
<td>Filter</td>
<td>5.14</td>
<td>Handles the filtering of content in preparation for display. Required by:</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>InsertNode (enabled), Collapse Text (enabled)</td>
</tr>
<tr>
<td>✓</td>
<td>Node</td>
<td>5.14</td>
<td>Allows content to be submitted to the site and displayed on pages.</td>
</tr>
<tr>
<td>✓</td>
<td>System</td>
<td>5.14</td>
<td>Handles general site configuration for administrators.</td>
</tr>
<tr>
<td>✓</td>
<td>User</td>
<td>5.14</td>
<td>Manages the user registration and login system.</td>
</tr>
<tr>
<td>✓</td>
<td>Watchdog</td>
<td>5.14</td>
<td>Logs and records system events.</td>
</tr>
</tbody>
</table>
### Useful Contributed Modules:

*Drupal.org* houses 4061 (!??!) contributed modules.

We use ~38 Contributed modules:

- Increase Drupal's capabilities
- Fulfill "users" request
- Solve issues quickly
- **Warning:** some times too quickly !!!

### Library Specific Modules:

See lists of library specific modules at [drupallib](https://drupallib.com) and [groups.drupal](https://groups.drupal.org).

We are using the Bibliography Module as an **eShelf Replacement**.

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<table>
<thead>
<tr>
<th>Enabled</th>
<th>Name</th>
<th>Version</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>✔️</td>
<td>Aggregator</td>
<td>5.14</td>
<td>Aggregates syndicated content (RSS, RDF, and Atom feeds).</td>
</tr>
<tr>
<td>✔️</td>
<td>Blog</td>
<td>5.14</td>
<td>Enables keeping easily and regularly updated user web pages or blogs.</td>
</tr>
<tr>
<td>✔️</td>
<td>Blog API</td>
<td>5.14</td>
<td>Allows users to post content using applications that support XML-RPC blog APIs.</td>
</tr>
<tr>
<td>✔️</td>
<td>Book</td>
<td>5.14</td>
<td>Allows users to collaboratively author a book.</td>
</tr>
<tr>
<td>✔️</td>
<td>Color</td>
<td>5.14</td>
<td>Allows the user to change the color scheme of certain themes.</td>
</tr>
<tr>
<td>✔️</td>
<td>Comment</td>
<td>5.14</td>
<td>Allows users to comment on and discuss published content. Required by: Forum (disabled), Tracker (enabled)</td>
</tr>
<tr>
<td>✔️</td>
<td>Contact</td>
<td>5.14</td>
<td>Enables the use of both personal and site-wide contact forms.</td>
</tr>
<tr>
<td>✔️</td>
<td>Drupal</td>
<td>5.14</td>
<td>Lets you register your site with a central server and improve ranking of Drupal projects by posting information on your installed modules and themes.</td>
</tr>
<tr>
<td>✔️</td>
<td>Forum</td>
<td>5.14</td>
<td>Enables threaded discussions about general topics. Depends on: Taxonomy (enabled), Comment (enabled)</td>
</tr>
<tr>
<td>✔️</td>
<td>Help</td>
<td>5.14</td>
<td>Manages the display of online help.</td>
</tr>
<tr>
<td>✔️</td>
<td>Legacy</td>
<td>5.14</td>
<td>Provides legacy handlers for upgrades from older Drupal installations.</td>
</tr>
<tr>
<td>✔️</td>
<td>Locale</td>
<td>5.14</td>
<td>Enables the translation of the user interface to languages other than English.</td>
</tr>
<tr>
<td>✔️</td>
<td>Menu</td>
<td>5.14</td>
<td>Allows administrators to customize the site navigation menu.</td>
</tr>
<tr>
<td>✔️</td>
<td>Path</td>
<td>5.14</td>
<td>Allows users to rename URLs. Required by: Pathauto (disabled)</td>
</tr>
<tr>
<td>✔️</td>
<td>Ping</td>
<td>5.14</td>
<td>Alerts other sites when your site has been updated.</td>
</tr>
<tr>
<td>✔️</td>
<td>Poll</td>
<td>5.14</td>
<td>Allows your site to capture votes on different topics in the form of multiple choice questions.</td>
</tr>
<tr>
<td>✔️</td>
<td>Profile</td>
<td>5.14</td>
<td>Supports configurable user profiles.</td>
</tr>
<tr>
<td>✔️</td>
<td>Search</td>
<td>5.14</td>
<td>Enables site-wide keyword searching. Required by: Views FastSearch (enabled)</td>
</tr>
<tr>
<td>✔️</td>
<td>Statistics</td>
<td>5.14</td>
<td>Logs access statistics for your site.</td>
</tr>
<tr>
<td>✔️</td>
<td>Taxonomy</td>
<td>5.14</td>
<td>Enables the categorization of content. Required by: Content Taxonomy (enabled), Forum (disabled), Taxonomy Access Control (enabled), Taxonomy Theme (enabled)</td>
</tr>
<tr>
<td>✔️</td>
<td>Throttle</td>
<td>5.14</td>
<td>Handles the auto-throttling mechanism, to control site congestion.</td>
</tr>
<tr>
<td>✔️</td>
<td>Tracker</td>
<td>5.14</td>
<td>Enables tracking of recent posts for users. Depends on: Comment (enabled)</td>
</tr>
<tr>
<td>✔️</td>
<td>Upload</td>
<td>5.14</td>
<td>Allows users to upload and attach files to content.</td>
</tr>
</tbody>
</table>
Solve Issues

**Issue**: Need to authenticate and authorize users without requiring a new set of users and passwords.

**Solution**: CAS Module and Taxonomy Access Module (What's taxonomy?)

**Issue**: Easily add and display Flash tutorials for tutorials, tours, and interviews.

**Solution**: Flash Node Module (What's a Node?)
Increase Capabilities

Two modules that greatly increase the capabilities of a Drupal website are CCK and Views. These are considered power houses in the Drupal module world. Many other modules either require or can work with them.

Examples:

- Subject Guides
- Database Listings
- Upcoming: Digital Scholarship
  - Check out Civil War: Governor Morton Telegraph Books
  - Displays CCK / Views / Filters / jQuery
Fulfill "User" Request

By "users" I think in two categories: Content Editors and Website Viewers.

Content Editor Request:

- WYSIWYG text editor (TinyMCE)
- Profiles
- Permissions

Website Viewer:

- Navigation / Sitemap
- Search Box
Modules Warnings

Sometimes grabbing a module and just slapping it in place (How do you add a module?) without doing your homework can lead to future problems.

It is a good idea to check the project page including the support request.

Case in Point: Sidecontent Module used on several pages.
“Blocks contain information or related data that is visible in various places around the site—depending on where you choose to show them. Blocks are often generated by modules, but it is also possible to create them manually.”


- Blocks are produced by many core modules
  - Menus
  - User
  - Statistics
- Many contributed modules produce blocks
  - Nice Menus
  - Views Ticker
- Blocks can be created by hand
  - Example: German subject Guide
    - German Date
    - Research Navigation
- Blocks are assigned to an area in a template / theme
  - Location
  - Weight
- Visibility can be controlled
  - User
  - Page URL
  - Custom PHP Code

Screenshot: Configuration of Blocks
<table>
<thead>
<tr>
<th>Block</th>
<th>Region</th>
<th>Weight</th>
<th>Operations</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Frontpage left</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Research (Nice Menu)</td>
<td>frontpage left</td>
<td>0</td>
<td>configure</td>
</tr>
<tr>
<td><strong>Frontpage middle</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Services (Nice &amp; Menu)</td>
<td>frontpage middle</td>
<td>0</td>
<td>configure</td>
</tr>
<tr>
<td><strong>Frontpage news</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>News_Ticker</td>
<td>frontpage news</td>
<td>0</td>
<td>configure</td>
</tr>
<tr>
<td><strong>Frontpage other</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NR_Global_Issues</td>
<td>frontpage other</td>
<td>0</td>
<td>configure</td>
</tr>
<tr>
<td>Other Libraries</td>
<td>frontpage other</td>
<td>2</td>
<td>configure</td>
</tr>
<tr>
<td><strong>Frontpage right</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Information (Nice Menu)</td>
<td>frontpage right</td>
<td>0</td>
<td>configure</td>
</tr>
<tr>
<td><strong>Left sidebar</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Book navigation</td>
<td>left sidebar</td>
<td>0</td>
<td>configure</td>
</tr>
<tr>
<td>About Us Navigation</td>
<td>left sidebar</td>
<td>0</td>
<td>configure</td>
</tr>
<tr>
<td>Information:Maps-Tours</td>
<td>left sidebar</td>
<td>0</td>
<td>configure</td>
</tr>
<tr>
<td>Research_Guide</td>
<td>left sidebar</td>
<td>0</td>
<td>configure</td>
</tr>
<tr>
<td>Find Articles &amp; More</td>
<td>left sidebar</td>
<td>0</td>
<td>configure</td>
</tr>
<tr>
<td>Services:Additional</td>
<td>left sidebar</td>
<td>0</td>
<td>configure</td>
</tr>
<tr>
<td>Computers/Technology</td>
<td>left sidebar</td>
<td>0</td>
<td>configure</td>
</tr>
<tr>
<td>Navigation</td>
<td>left sidebar</td>
<td>5</td>
<td>configure</td>
</tr>
<tr>
<td>Who’s online</td>
<td>left sidebar</td>
<td>10</td>
<td>configure</td>
</tr>
<tr>
<td><strong>Right sidebar</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Side content</td>
<td>right sidebar</td>
<td>0</td>
<td>configure</td>
</tr>
<tr>
<td>German Date</td>
<td>right sidebar</td>
<td>10</td>
<td>configure</td>
</tr>
<tr>
<td><strong>Top nav bar 1</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Navigation Bar (Nice Menu)</td>
<td>top nav bar 1</td>
<td>0</td>
<td>configure</td>
</tr>
<tr>
<td><strong>Disabled</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Author information</td>
<td>&lt;none&gt;</td>
<td>0</td>
<td>configure</td>
</tr>
<tr>
<td>CAS User login</td>
<td>&lt;none&gt;</td>
<td>-10</td>
<td>configure</td>
</tr>
</tbody>
</table>
Digital Scholarship Rotating Image

A brief description of your block. Used on the block overview page.

The title of the block as shown to the user.

The content of the block as shown to the user.

- **Input format**

The content of the block as shown to the user.

- **User specific visibility settings**

- **Role specific visibility settings**

- **Page specific visibility settings**

**Show block on specific pages:**

- **Show on every page except the listed pages.**
- **Show on only the listed pages.**
- **Show if the following PHP code returns TRUE (PHP-mode, experts only).**

**Pages:**

digitalscholarship/collections/*

Enter one page per line as Drupal paths. The "*" character is a wildcard. Example paths are blog for the blog page and blog/* for every personal blog. <front> is the front page. If the PHP-mode is chosen, enter PHP code between <php >. Note that executing incorrect PHP-code can break your Drupal site.
Filters

"The good news is that Drupal uses prebuilt routines called filters to make data entry easy and efficient. Filters perform text manipulations such as making URLs clickable, converting line breaks to <p> and <br /> tags, and even stripping out malicious HTML.... Filters are almost always a single action such as "strip out all hyperlinks," "add a random image to this post," or even "translate this into pirate-speak""


Besides the core HTML filter, some modules either solely or as an extra feature provide filters.

Most inline filters use a [filtername:argument] sort of syntax.

Some filters we use:

- Collapse Text
  - [collapse collapsed] <h1-6>Title</h1-6> Content [/collapse]
- Insert View
  - [view:viewname==argument]
  - Example: New Sociology Guide
  - How it was done
How it was done

Finding Articles:

Indexes to Articles

Indexes which contain citations, abstracts, and/or full text of journal articles.

[view:InsertDB==Sociological Abstracts (CSA)]
[view:InsertDB==America: History and Life (EBSCO)]
[view:InsertDB==EBSCOhost Databases]
[view:InsertDB==ERIC (Wilson)]
[view:InsertDB==ERIC (EBSCO)]
[view:InsertDB==Ethnic NewsWatch (ProQuest)]
[view:InsertDB==Expanded Academic ASAP (Gale)]
[view:InsertDB==GenderWatch (ProQuest)]
[view:InsertDB==Historical Abstracts (EBSCO)]
[view:InsertDB==ICPSR: Inter-University Consortium for Political and Social Research]
[view:InsertDB==PAIS International (CSA)]
[view:InsertDB==Social Sciences Citation Index (Thomson Scientific / ISI Web Services)]

Journals

- Insert Node
  - Example: Filters
"When we talk about theming, we are talking about Drupal's presentational layer. It is where the site developer is able to take complete control and specify what goes onto the page. All CSS, JavaScript, images, and HTML can be rearranged and overridden by a Drupal theme. Drupal's theme system can provide special formatting of the site for mobile devices, reformat content for display in RSS feeds, display a thumbnail of the user's image whenever the username is shown, completely change the default output provided by a module, and much more."


- There are hundreds of 'starter themes' available through [Drupal's Theme Project](http://proquest.safaribooksonline.com/9780596157937) or you can start from scratch.
- Themes can be assigned to an entire site or different themes can be assigned to certain pages or certain taxonomy terms (Using Taxonomy Theme Module).
- Themes can alter the entire site through style sheets and template files.
- Template files are written in html and PHP
- Templates can control:
  - Layout of the pages
  - Sections available for the page header, body, footer
  - Sections available for blocks (Example: Home Page)
  - Layout for different types of nodes including CCK (New Subject Guides)
  - Layout for Views (Example: Database List, New Digital Scholarship Collections List)
"Drupal’s Multisite feature sounds like the Holy Grail for whenever you want to run multiple Drupal sites. However, the answer to “Should I use Multisites?” is best discovered by knowing what Multisites is and how it might benefit or hinder your objectives."


There are a lot of options for running multiple Drupal sites:

- Use only one site with multiple themes for the appearance of multiple sites.
  - Examples: Special Collections, Payton Philanthropic Studies Library
- Install Multiple sites.
- Run multiple sites from same base code, but different databases.
  - Requires a "[sub]-domain specific" directory.
  - Each site requires its own settings.php file.
  - Example: Common Reader
- Run multiple sites from same base code sharing all or some of the database tables.
  - Example: Share user tables.
- It is also possible to combine static content and Drupal content on the same site.
  - Static content can be placed inside the Drupal root directory.
  - If static page exists, Drupal will serve it out first before generating a page.
Adding Code

We have added code and scripts on our website in a variety of ways:

- Module Development (Example: Bibliography Module)
- Adding PHP Code in a Template File (Example: Last updated)

**Code: Added to node.tpl.php**

```php
<div class="update_info">
  <?php
  // Code from http://drupal.org/node/81242
  // Link to user profile removed.

  // Display a more Wiki like information blurb
  // about who last edited and when for this node.

  $nodeid = $node->nid;
  if (isset($nodeid)) {
    $result = db_query("SELECT u.name AS last_editor, u.uid AS the_uid
                        FROM node_revisions nr, users u
                        WHERE nr.uid = u.uid
                        AND nr.nid = " . $nodeid . ",
                        ORDER BY timestamp DESC
                        LIMIT 1");
    $resultset = db_fetch_object($result);
    print "Last updated by " . $resultset->last_editor . " on ";
    print strftime("%m/%d/%Y", $changed);
  }
  ?>
</div>
```

- Adding PHP Code to a Page / Block
  - Using PHP Filter
  - Can also use include files
  - Example: Mushroom page
- Javascript using jQuery
  - Restricted to version jQuery used by Drupal code
  - In our case that is 1.0.1
  - Example: New Subject Guides, Profile Messages
- Javascript through scripts
  - Example: Feed2JS use on Business Guide
Updates / Backups / Upgrades / Caching

Updates:

The Drupal community regularly updates the code base for the currently supported versions. Modules are often updated as well (usually for security reasons). If using Drupal 5, best to get on the Drupal security email list to be alerted when updates are out. Drupal 6 has a new feature to alert you of updates within the administration pages. Updates, however, are still a fairly manual process.

Backups:

Our strategy includes:

1. Nightly backups including database dump sent to mass store service.
2. Instant database replication to backup server.
3. Rsync of code and user files on 5 minute cycles to backup server.

Upgrades:

Our library's website is kinda in a pickle when it comes to upgrading to Drupal 6!!!

Caching:

We tried to stay away from caching, preferring instant gratification on page edits, until the site crashed a couple of times.... We are now using caching with a minimum page refresh of ten minutes.
Things Not Yet Right

- Need to get out of our pickle.
- Need Better Revisioning / Workflow.
- Need Better Search capabilities, including non-drupal content.
- Printer Friendly Option

Example of Future Projects:

- Proxy checkbox for resource/database node.
  - Easy change to node.
  - Requires rewriting of View and Node display.
  - Would make maintenance of records much easier.
- Dashboard page: Each dashboard box would be a node with automatic or manual data entry options.
# Resources

| Drupal Community       | drupal.org [Projects | Handbooks | Forums] |
|------------------------|----------------------|
| Best E-Mail List       | DRUPAL4LIB@LISTSERV.UIC.EDU |
| Drupal Videos          | http://gotdrupal.com/ |
| **Drupal**             | http://www.drupalove.com/ |
| Drupal Library Groups  | http://groups.drupal.org/libraries |
|                        | http://drupalib.interoperating.info/ |
|                        | http://groups.drupal.org/node/1845/libraries |

## Books

**Books from my LibraryThing**

[LibraryThing](http://www.librarything.com)