

From Mess to CMS: the transformation of a library website

Michelle McLean
Information Librarian
Casey-Cardinia Library Corporation
michelle.mclean@cclc.vic.gov.au

Linda Burridge
ljburridge@gmail.com

Abstract:

Casey-Cardinia Library Corporation undertook to transform their website from an overburdened, highly unmanageable mess to a site that would meet both the users' and the site creators' needs. This transformation was made possible through the use of Drupal, a web content management system. This paper outlines the processes involved, the challenges, the lessons learnt and the final result of the transformation.

Introduction

One of the contributing factors for a successful website is usability (Nielsen, 2006). To provide a usable website for Casey-Cardinia Library Corporation (CCLC) (Casey-Cardinia Library Corporation, 2009), we needed one which was flexible and customisable, that anyone could edit, could be changed quickly and easily as the need arose, but could handle the breadth and presentation of content we had already adopted. Although our website had been successful over many years, it was no longer meeting the users' or the library's needs as well as it could.

Literature Review

Although the number of libraries using the Drupal (Drupal, 2009) content management system is increasing, the literature on how it is being used in libraries is only just starting to grow.

Ann Arbor District Library was the first and most celebrated library service to utilise Drupal as a content management system (Blyberg, 2007). They did so with a difference, basing their website on a series of Drupal based blogs. Their experiences were documented in a paper presented at the American Library Association conference in 2007.

Idaho Libraries created an e-branch and website where their library services are accessed. (Samuelson, 2007). They discussed their vision for 2020, the criteria for their web presence and the use of Drupal to make this happen.

How libraries use Drupal as a content management system for their website was considered by Meredith Farkas (2008). She investigated the abilities and features of Drupal and how they could be utilised to manage library website content.

Creating a website using Drupal, with some extra features of particular benefit to a library environment, was the focus of a Library Technology Report. (Austin, 2008). It covered a wide range of Drupal questions, from the initial installation to additional modules and case studies.

Why the redevelopment?

By late 2008, our existing website had a series of limitations we were no longer willing to work with, especially the homepage. The banner was over-crowded with items we wanted to feature, there wasn't enough space for the blog feeds, event information was time consuming to create and monitor for currency and the drop down menus were despised by all (Wayback Machine, 2009).

Editing and uploading the site was cumbersome, as we constantly had to work around the awkward content management system, meaning that our skills were not readily transferable to others. We were also cobbling together applications from several sources to perform new tasks, such as the catalogue interface and blog feeds.

A plan to move to a new web-based product offered by our (Integrated Library Management System (ILMS) vendor was abandoned when we discovered that they had no long term plans to support it.

The decision

A meeting of relevant Senior and Information Services staff was held to determine the direction for a new website. CCLC had worked with a website development company in the past, but the resulting restrictions on administrators were undesirable, so this was eliminated as an option. Building it in house was an option, but only if there was a way to manage the content more easily and by more people.

A content management system (CMS) seemed to be the best option from a website administration point of view, leaving the choice between purchasing a package from one of the many vendors offering such, or using an open source CMS.

Cost was not a limitation, as a budget for a new website was available. However, our experiences with straight HTML and proprietary products in the past had been less than positive. We felt that a proprietary product would end up restricting any future developments we wanted to include. An open source content management system such as Drupal, with its add-on modules would enable us to do so more quickly and with more flexibility.

We also wanted to avoid the 'out of the box' look that seemed to come with many proprietary content management systems. Our investigations of websites built with open source products such as Joomla (Joomla, 2009) and Drupal demonstrated the potential range of looks that could be created with such products.

Linda and Michelle, the in-house staff responsible for the library website indicated that they thought it could be done. We expressed a shared vision for the outcome and were given approval by senior management to go ahead.

There are many open source content management systems available, but we restricted the choices to Joomla and Drupal. As with many organisations, we wanted the security that comes with a well-known and well-supported product. Both of these systems fulfilled this criterion and were being used by libraries.

After much research, including comparisons with each other and investigations of their use by libraries and other organisations, the decision was made to go with Drupal. The key reasons for this choice were:

- greater flexibility
- webpages loaded faster (Reynoso, 2009)
- large library community (even though it was US based)
- wider selection of modules for improved website functionality
- local expertise available through personal connections

This was despite the fact that Drupal was considered to be harder to learn and that there were no other libraries in Australia that we knew of that had used it for their website.

What is a Content Management System?

There are many different types of content management systems, also known as CMSs. A Web CMS is *“software, usually implemented as a Web application, for creating and managing HTML content. It is used to manage and control a large, dynamic collection of Web material (HTML documents and their associated images). A WCMS facilitates content creation, content control, editing, and many essential Web maintenance functions.”* (Wikipedia 2009)

The main appeal of a content management system for us was its ease of use. Once setup and properly configured, creating and editing content is relatively easy and does not require knowledge of HTML or other web editing skills.

How does it work?

Drupal consists of a set of core modules and a further, much larger set of optional modules. The core modules must be installed and decisions made about what, if any, optional ones to use. A basic website can be constructed using only the core modules. The extra modules act as extensions to the software, similar to the plug-ins and add-ons used by web browsers. These enable administrators to add more functionality to their Drupal websites. All this software is free and developed by a community of programmers, who either see a need and create a module to fit, or create one to fit their own need and then make it available to all Drupal users.

Once set up, it is a simple matter to login to the software and create content, work on particular pages, customising, adding content, creating views, drawing in content from other sources to display on your site and much more. Once installed, it is a very easy interface to work with, even for a novice web content creator.

The initial process

We discussed our proposed directions with our Internet Service Provider (ISP, Vicnet, in November 2008 (Vicnet 2009) and they agreed to host a Drupal site for us. They installed the software on their development server in December 2008 and we began experimenting with it. Our existing website was able to continue running on our usual server space, without us having to worry about some error with our Drupal work affecting it. The other advantage of using Vicnet's development server was that they managed updates to server-based software that were necessary for some of the features we planned to include in the Drupal website. These updates were not available on our home (production) server at that time.

In house, we began looking at how we would reorganise our site content, we surveyed our users and looked for inspiration at a range of other Drupal library sites (Drupal Libraries 2009).

The survey

We conducted a nine-question online survey, using the free online application Survey Monkey (Survey Monkey 2009). We asked our website users for information about their Internet habits, their comments on and satisfaction with the current library website and suggestions for the new. We received 100 responses. The results showed that users had fast Internet connectivity and a high level of satisfaction with the existing site, but low use of interactive Web applications. Our users generally did

not distinguish between the library website and the library catalogue. The overall messages we took from the survey were that:

- the existing site organisation and homepage layout were familiar and worked reasonably well for our sometimes unsophisticated Internet users“
- we needed an updated, less cluttered “look”
- they didn't like our drop-down menus, which got stuck in the down position when you moused over the link, thereby blocking other items on the webpage

As we had been waiting for a new website for quite some time, we had already refined our ideas, with the support of user and staff feedback over the years, as to the requirements for the new website.

Creating users

Drupal offers extensive user management capabilities. Initially we only used the administrator login that was created when Drupal was installed, but subsequently created separate logins for ourselves as site administrators. This was done as a matter of urgency, when we noticed that our login names were attributed to content we created on the site.

Whilst the experts recommend that administrators address the question of user categories as part of the site setup, we decided against this. Many Drupal examples are for groups that have a structure with many “creator” users such as families or clubs. Our previous website arrangement did not have this middle tier of users; we had only administrator (full authorisation) and user (viewing only). We knew that these were the levels necessary to get started. We envisioned a “staff” level of user who could edit certain pages and create blog entries and established several of these once the original structure was in place. A “high-end” user category that can upload content to site is a possibility down the track.

Creating the Drupal website

We had been unable to source Drupal training in Melbourne, so we began experimenting with our installed product – treating it as a sandbox - with a view to starting again once we were confident with our skills. Our project timeline called for an initial period of learning about Drupal, followed by moving content from the old website, creating new content and building new features. We quickly changed this to a learn-and-build-as-we-go-strategy.

Our first great discovery was the speed in which content could be created in Drupal. On our old website, we had to create an HTML page, add the content, upload it to our ISP, generate it and then see how it looked. If you needed to edit an existing page, you had to edit the page in an HTML editor, upload it, generate it and then check it. Although it was not necessarily a difficult process (besides the HTML editing), it was a long and fiddly one.

In Drupal, the procedure is to log in, create a page, add the content and save; the page is immediately available. Editing was even easier. Once logged in and viewing the page you wish to edit, it is simply a case of clicking the edit tab (which only appears to logged-in users), make the changes and save. This made the whole process so much easier.

Despite our general satisfaction with the structure of our existing website, we were not going to miss the opportunity to make a few changes. This included having more access points to key user needs (as confirmed in the user survey), making selected features more obvious, breaking up long pages into more readily readable chunks and including sub-menus in a consistent placing on the right sidebar. We also decided, with some qualms, to leave out some of the existing content.

The look and feel of the homepage was a crucial element that we considered in detail, as, for the majority of our users, this would be the first port of call. Also, the layout and look of the homepage would carry on throughout the rest of the website, as far as possible. We decided on a three-column layout to provide maximum use of the space available. The content in the centre would be dynamic, while the left and right sidebars would be relatively static. The centre column would contain a slide-show of featured events and services, and the latest items from our library blogs. The right sidebar would contain a search box and login box to our catalogue, a book slide-show and a news and weather widget. The left sidebar would begin with a menu of key activities that our users would undertake on the website: an “I want to...” list, followed by upcoming events (focusing on adult/teen events) and then direct links to our library blogs. It was later decided to include links to our Councils in the left sidebar. Although it sounded like a lot of content, once in place it did not go beyond two screen lengths, even with the variable length blog posts in place in the middle.

On secondary pages, the slide-shows and news widget would be absent. The centre column would become the content container for the page, the left sidebar would remain constant and the right sidebar would maintain the catalogue boxes and include the submenu relevant to that page's content, as appropriate.

Our Publicity Officer worked with us and our senior management on a new graphic header for the new website and, after a trying out a range of different ideas, came up with an appealing image that satisfied all the decision-makers involved. This then helped us to determine colours to be used throughout the website, again with the aim of consistency. The header contains the site search box but no other functionality. This means that in the future we could readily use a new header to change the look of the site without affecting other operations.

Drupal's look and layout is determined by its theme. As with blogs, this is one you either choose from those already designed, or one you can create yourself. We decided on Zen Classic for our theme, an improved version of the default Zen on which a lot of other Drupal themes are built. Zen Classic gave us the three-column layout we wanted, as well as the flexibility to experiment with colours and the layouts within the three columns.

Once these decisions were made, we started moving the content over from the old website into our new structure. This involved a lot of cutting and pasting and then editing to remove old coding and tags. This was time-consuming and, at times, mind-numbing work. However, it gave some continuity to the project when we had stalled in other areas.

Creating Drupal 'pages' (equivalent to straight HTML files) is straightforward, but most of the other Drupal content types were unfamiliar to us. Fortunately, with the assistance of a good book, some vodcasts, the Drupal forums and quite a bit of trial and error, we slowly learnt the intricacies of Drupal and how to do things other than create static pages. We worked through step-by-step guides for particular features and, in the process, gradually learnt the general principles of the system.

Early on, we installed the Clean URLs module, which enabled us to name our own pages, rather than use the default Drupal naming process. We utilised this feature so that we could create URLs that were easy for people to remember and easily access in future.

The site progressed; we tinkered with page widths and fine-tuned language and information for users. The blocks feature of Drupal was very helpful, as it enabled us to create small pieces of functionality which we could then place where we wanted on the website. The blocks feature was used to populate the sidebars of each webpage with the planned content. The beauty of Drupal was further revealed when we installed the site search module: it was easy (took minutes) and it worked beautifully. The website came together and was nearing completion, but two features remained elusive.

In the past, a lot of our web maintenance time was spent creating content about events and keeping the information current. We knew of library event calendars that were huge, one problem being that adult events in need of highlighting are overwhelmed by the sheer volume of children's activities. We discussed the features of several Drupal modules that handle events but none provided the overall product we wanted. In the end, our solution involved the creation of two Google Calendars (Google Calendar 2009), one for children's events and one for adult events. Using the Google Calendar embed feature, we combined both calendars' feeds into the CCLC Events calendar, which displays a conventional but complete day-by-day list on our "What's On" (Casey-Cardinia Library Corporation 2009) page. We used the agenda format, which was much easier to read in the limited space we had on our website. Then, we configured an Upcoming Events feature with only the data from the adult calendar fed into it. We set the number of events to display to five. This block now displays 5 upcoming adult programs, dropping off past events automatically and thereby saving a lot of staff time in website maintenance.

We had envisioned a slide-show for the middle of the homepage to feature selected events and services news, having seen similar functionality on numerous other library websites. In addition to maximising the use of the prime "real estate", the graphic display created a balance in the image to text ratio. Creating the slide-show was difficult, because we needed to understand the different ways that Drupal handles images. After several false starts and attempts to follow instructions in our book, we finally sat down together one day and determinedly worked our way through the process, step-by-careful-step and got it working, much to our great relief and delight.

Once we had figured out how to create the Event slide-show, we quickly adapted the process to create the New Book slide-show. This consists of up to ten slides featuring covers of new books. In addition to the image, the "book cover" content

type can also contain text, such as the book blurb, and links, such as a catalogue link to check availability and place reservations. The new book slide-show was intended as a statement that “we are library”, to provide more imagery and to promote new material. Both slide-shows were relatively labour intensive to create and to continue updating, but worth the effort, and (surprisingly) one of the more enjoyable parts of managing the website.

Incorporating other Web 2.0 features

CCLC utilises Web 2.0 technologies to engage our users, encourage interaction and help establish the library as knowledgeable in internet technologies.

As already discussed, Google Calendars was the first Web 2.0 tool that we successfully integrated into the new Drupal website, but there was more we wanted to incorporate.

In our old website, we had an embedded Word Press (Word Press 2009) blog for library news and had summary RSS feeds to our library's other three blogs – local history, adult and teens, on our homepage. We also used Google Maps (Google Maps 2009) for our branch locations page and linked to photos on our Flickr (Flickr 2009) account. We wanted to continue these, but if possible to improve their usability.

Drupal makes blogging easy. With any login, a blog is made available. So, for Invisible Ink, our main library blog, it was just a matter of creating an Invisible Ink login and we could start creating blog posts immediately, and these then fed straight into the homepage. Our other 3 blogs were hosted at Blogger (Blogger 2009) and each had developed a readership there. In addition, each had multiple editors and contributors who were familiar with the Blogger format. Because they fed well into the Drupal site, we decided to leave them at Blogger and not move them to the new platform. Drupal was helpful here too, with a module that enabled us to feed the content from the blogs into our website, including a summary of each post to our homepage. These posts included links to the full blog post – as it has been loaded onto our website, as well as a link back to the original blog. This feature has been a boon, as we are able to expose our users to the content of our blogs and entice them into reading more, in a way that is not possible with just a link to the original off-site blog.

We continued just to link to our Flickr account, until such time as our collection of photos there expanded and was of wider interest than just particular issues, such as Library renovations or new buildings. We would then look at how we could incorporate more of these images into our website.

We continued to use Google Maps, with a map of our region embedded in a library branches page. On each individual branch page, we included a simple graphic of the library's location, but also highlighted a link to the Google Map for the library, to make the most of Google's directions feature.

Getting staff editing

It was determined early on that we wanted to have distributed authorship on the site, to eliminate the problem of having only two “gatekeepers”. This concern was brought more to the fore when Linda resigned two months after the site went live. Suddenly the site had only one editor and that was not good either for the library or for Michelle.

Drupal gives you the ability to create users at a variety of levels. Users can interact with our content anonymously, via comments, or can be assigned user, editor or site administrator access. Site administration access has still been limited to two people, now Michelle and Linda's successor, but to enable other staff to access and administer content on the site, it was decided to add them as editors.

We had already installed a WYSIWYG editing module for our own convenience, which gave the interface a look and feel similar to blogs or other Web 2.0 tools. We found that staff who were familiar with the Learning 2.0 (Blowers 2006) program, or were regular blog contributors, could readily grasp the process of updating and adding pages to the website.

Testing and Launch

We intended to launch the site in Library Week in May 2009, but it was effectively ready at the beginning of May. As we had time for testing, we posted the URL for the development site on our live site and our main library blog and invited comment from both library users and staff. The feedback was very positive – we acted on several good suggestions immediately. This included removing the news widget from the children's webpages.

Our CEO advised us against a “ribbon-cutting” type launch to avoid embarrassing teething problems. Consequently, we soft launched on a Thursday morning with both of us on hand to deal with any issues that might arise. The site went live smoothly. There were some minor problems with links and images that we spent a little time addressing, which was easy with Drupal's editing capabilities. We continued to clean up and modify minor issues in the following weeks and dealt with a nagging incorrect time display from one of the Google Calendar feeds.

We offered our users, including library staff, the opportunity to request ‘missing’ content – information that had not been carried over from the old website, but nobody did. Instead, we had requests for further content which, again, was easy to do.

Tools that helped

In the absence of formal training that we could attend locally, we leaned heavily on specific resources as the need arose. These included a series of vodcasts at Learn by the Drop (Safuto, 2009) and Drupal Therapy (Effel, 2009), the book “Using Drupal” (Byron et al, 2008) and of course the Drupal website and Drupal Forums (Drupal Forums 2009). We have since discovered a wealth of online resources and help.

Our best tool, however, was the willingness to take risks, to try things out and to learn from our mistakes and then try, try again. That, more than anything, got us through the most difficult parts of this process.

And Now

We have been reminded how good Drupal is, when training another site administrator in its use. It has been gratifying to see how easily he has taken to the system and the ease with which he is using it within a very short time, even doing some of the more complicated updating tasks.

We are at the early stages of adding further staff users. Our library will be instituting RFID in mid 2010 and we are already seeking interest from staff, who may have more time to spend on other tasks, once they are freed from some circulation duties. Fortunately, we are already getting some interest from staff in coming on board our developing Web Team.

We are still adding new content to the site and hope to integrate our library website more fully with our ILMS, at least from the user's perspective. This will be assisted by upgrades from the vendor side, but there are options on the Drupal side as well, which we hope to investigate more fully soon.

The banner developed for the website has been very widely accepted. It has now also been installed into our OPAC header, further cementing the link between website and ILMS and will be used for new signage going into our branches.

Big picture – the staff involved in creation and administration, library management, library staff in general and most importantly, our online users, have taken to the new website with enthusiasm and are very happy with the results, as indicated in feedback received through the new website. It has been a very satisfying process and although the bulk of the work is done, it will be ongoing, as we continue to develop our site to meet our users' needs, the most obvious one being full integration of our website with our catalogue.

Lessons learned

Backups are important. You will have to work out how you will do this, but we have a copy of all the modules and themes from our Drupal installation on our intranet, and periodically we copy the entire site back to our intranet, so that we are protected against a server crash or loss of data. Although backups are also done by our ISP, we have found it beneficial to have an immediate copy at hand, especially when dealing with issues arising from module updates.

You do not have to be a graphic artist to create interesting web images. With the help of our internal marketing and some great Web 2.0 tools, we have been able to create our own slide-show images, without the graphics skills or graphics software usually considered necessary. Our favourite tools in this process had been MS Paint, Picnik (Picnik 2009) and Online Image Editor (Online Image Editor, nd), but ended up using Photoshop Elements (Photoshop Elements, 2010).

On the other hand, your graphics artist person is a great content provider, assistant and ally in your website look and content. Our Publicity Officer has provided us with a wealth of great images to use in our slides, as well as great advice on look and feel and useful suggestions for content and arrangement. We have been sure to make the most of her knowledge and experience.

A site administrator who is tech-savvy is essential, not only for the tweaking that needs to be done, but also to deal quickly with unexpected issues with upgrades or content placement.

Key points to consider

Drupal requires two roles at a minimum: site administrator and content administrators. Content administration is relatively straightforward, and if you are using a WYSIWYG module, it can be done by virtually anyone. Site administration requires some knowledge of systems, HTML and FTP, etc, to keep it running securely.

Drupal requires maintenance of both software and content. The core software, theme and optional modules periodically require updating. This involves downloading the zip file of the upgrade, extracting the contents, then uploading it to our ISP. Although it is irregular, it has worked out that at least one module needs updating every week. It is not a difficult or lengthy process, but one that needs to be allowed for in the upkeep of the website. As our website is hosted by an external ISP, we do not need to be concerned about server software upgrades, unless it conflicts with a proposed functionality improvement on our site; this has yet to happen.

HTML skills also still come in handy for working with Drupal, as they also do with our blogs. Sometimes you just need to know a bit about the code, to be able to tweak it just a little bit, so that it behaves exactly as you want it to.

Clean URLs is a great module to use, but it may also cause problems down the track. We have used it to create a totally flat structure, with 95% of our content available at a URL one step below the homepage. This works fine on a smaller site, but could become problematic if the site gets too big. Fortunately, if we decide to change this in future, although it may be time consuming to do so, it will not be difficult.

It is also an ongoing learning process. We have managed to get our heads around most of how Drupal works, but as it is very much built and residing in the world of programmers, some things still take a bit to take in.

Conclusion

We could honestly say that moving our website to a Drupal installation, with the changes and added functionality we have been able to incorporate as a result, has been a success.

Our users and staff are very happy with the new layout, the new look and the new functionality. Our growing web team is also thrilled with the ease of use, ability to make our site more interactive and more responsive to user needs.

Our website is a mess no longer. As its use continues to grow and our users' needs change, we will be able to adapt and change our site to meet requirements as they arise. A content management system has been the best choice we could have made and we are more than happy with how Drupal has meet our requirements of meeting both our users' and owner's needs.

Appendix A - Drupal Modules Used

CCLC is currently using version 6.15 of Drupal. Aside from the core modules, we are also using the following modules for various purposes (some of which we are still unsure of, but the site works and we are not going to change it too much).

Core-Optional Modules

Blog: user generated blogs
Color: enables colour changes on selected themes
Comment: allows users to comment on content
Contact: creates contact forms
Database logging: logs system events
Menu: customise navigation menus
Path: rename URLs
Search: site-wide keyword searching
Statistics: logs access statistics
Taxonomy: enables categorisation of content
Update status: checks for updates

Optional Modules

Administration: gives comprehensive drop-down administrative menus
CCK: enables you to create your own content types
Ctools: APIs and tools to help interact with Ajax, forms and other functions
Date/Time: defines time to work with calendars, posting dates
Feed API: enables feeds to become content in your website
Image and Image Cache: image handling
Mail: enables HTML mail
Other: including

- Advanced Help
- Custom Search Box
- FCKEditor (WYSIWYG)
- Feedburner
- Global Redirect
- IMCE
- Pathauto
- Search 404
- Select or Other
- Theme Settings
- Token
- Webform

Panels: enables administrators to create customised layouts for multiple uses
Printer, email and PDF versions: enables you to provide printer friendly and email-able pages
Statistics: allows Google Analytics access
Views: create customised queries and lists

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