

# Powering Higher Education with Drupal



## Company Summary

- Organization: Bentley University
- Industry: Higher Education
- Type of Drupal Site: Communications/Reference
- # of Drupal Sites: 30+
- Total site pages: 70,000+
- Acquia Services Used: Consulting

## How Open Source Social Publishing Helps Bentley University Reach Its Audience

Bentley University is one of the nation's leading business schools, dedicated to preparing a new kind of business leader and one with the deep technical skills, the broad global perspective and the high ethical standards required to make a difference in an ever-changing world. Serving over 4,000 students annually, Bentley relies heavily on its online resources to communicate to students, faculty and many key stakeholders. From course descriptions and event sites to student organizations and media newsrooms, Bentley manages over 75,000 pages of unique content.

## Feeling the Weight of Manual Site Building

The Bentley site was managed using a combination of Cold Fusion pages and a proprietary content management system (CMS) product. Because of the manual approach necessary to update content within this system, Bentley's web services team adopted a publishing-oriented methodology. A workflow queue was used and content was updated periodically. This arrangement posed several challenges to Bentley's web team, as well as content creators. New content generation was often held up in the queue and outdated content was not corrected as frequently as it could have.

From a management perspective, Cold Fusion was a costly endeavor. While at one time Cold Fusion was a ubiquitous product, it has become increasingly niche. Consequently, there is a small pool of available Cold Fusion developers, making it difficult and costly to locate and retain talent.

Bentley's web team was familiar with Open Source platforms and evolving trends towards community-based, modular CMS solutions. Unlike these alternative formats, the Cold Fusion site was very difficult to expand with new functionality. "There were many features we were interested in adding to our site," said Nicholas Maloney, Web Architect. "Unfortunately, most of these solutions involved writing extensive amounts of code from scratch. This limited our growth to only the most pressing issues – which were usually reactive bug fixes and other time-sensitive issues."

The web team endured the challenges of their legacy environment until their CMS product was placed on an end-of-life schedule by the vendor. Maloney recounts, "Once we knew that our CMS product was going to be discontinued, we knew it was time. Utilizing commercial software without support wasn't going to work for us. We realized this was our opportunity to reassess and execute on a long-term plan that would solve many of our long-standing issues with the Bentley site."

## Challenges

- Manual approach to publishing workflow
- Difficult and expensive to retain developers
- Static, inflexible functionality
- Slow performance and lower content visibility
- CMS product no longer supported

## Proving Drupal's Worth

Migrating Bentley's site over to a new platform was much easier said than done. With over 75,000 pages across the University's sites, and dozens of content areas, any switch would require a Herculean effort, including careful planning and disciplined efforts. Fortunately, there was a vision to leverage innovative, Open Source solutions to get the job done.

Bentley's web team was familiar with Open Source platforms, and evolving trends favoring community based, modular CMS solutions. Most members of the web team had PHP experience, and were ready to embrace an Open Source platform that utilized a LAMP architecture.

The team reviewed a range of solutions, including WordPress and Joomla, but eventually selected Drupal as the platform of choice. "Our selection of Drupal was based on several factors," said Maloney. "The core Drupal technology was solid and mature. There are thousands of modules, far beyond the number any other system could offer. If we wanted a feature, there was a module that could do it. The Drupal.org community was thriving, providing not only modules, but also feedback and community support in their forums. The availability of commercial support, through Acquia, provided a level of reliability required by our leadership team. Finally, we looked at what other schools were using, and Drupal was already being validated by many other successful University sites."

Fortunately for Maloney and his team, Bentley's leadership team had no qualms about making this substantial shift towards an Open Source platform; they simply needed to know that the team was capable of implementing and maintaining it. To build their proof case, the web team built a pilot project around the university's PR newsroom. Containing thousands of articles, dating back to the early 2000s, the pilot site was no small experiment. The web team carefully approached the pilot project with a detailed plan, including a migration schedule for content, organized theming customization, and a revised approach to search. The team wasn't interested in overhauling the site with a radically different format, or inundating users with a plethora of newly available features. Instead, it was going to prove Drupal could deliver existing results in a way that would be easier and less expensive to manage, while demonstrating support for future innovation.

The reasonably scoped project focused on organizing and presenting content in a traditional newsroom fashion, with some important differences. First, content authors and managers would finally gain the tools to upload and maintain their own content. Second, the new site would provide the ability to redefine content types using CCK. Third, the team would demonstrate a measurable improvement in performance. Finally, site content would become more visible and available through improved searching.

To bring content in and make it usable for tagging, profiling and searching, the web team used the Drupal API to write migration scripts, pulling content over from Oracle. The team credits Drupal's robust and clear documentation with making the script writing a manageable task.

The site was easier to manage, and content was much more available. The PR department and the executive management at Bentley were sufficiently impressed with the results, and a green light was given to plan a full-scale migration.

## Rebuilding Bentley.edu

The team recognized that with so much content on the line, careful planning would be required in addition to the pilot strategy. The school intended to invest primarily on supporting the new site using internal resources; this created a cost savings that enable the web team to invest in consultative planning. Bentley engaged Acquia to guide the migration and the overall architecture of the new site.

The ability to manage content and sub-domains was one of the Bentley web team's primary initial concern. The new system would include between 30 and 50 initial content areas that would become unique sub-domains, with upwards of 100 content managers responsible for submitting and managing content, of which as many as 60 would be regular contributors. The new architecture would need to provide some departmental and sub-domain controls for each respective content area, while preserving the ability for the web team to manage and control the site globally.

With Acquia's input, Bentley planned to migrate content according to department. This would require separating the site into sub-domains. For example, the team would create a campus-life.edu sub-domain, migrate all associated content, and launch the sub-domain. This approach helped segment the project into digestible parts. It also provided Bentley with a repeatable process, from which they could learn, refine, and apply to subsequent sub-domain migrations.

Bentley also engaged Palantir, a Drupal design firm that provided important guidance on managing theming and customization across the Bentley sites. This approach enabled the team to keep web sites sufficiently unique, while retaining and adhering to the overarching Bentley brand identity. Centralized controls would allow modules, features and functionality to be administered globally. "Thanks to Drupal, we've gone from managing over 70,000 pages, to centrally managing several dozen content areas. Content is unique to its respective parent area, but can be shared across sub-domains easily and dynamically, according to how its profiled and tagged," says Maloney.

The pace of the migration has been deliberately moderate. The team responsible for the massive migration is modestly sized, with three developers and two designers working together. They credit Drupal with their success in working together so well. HTML and CSS can be converted easily into themes, thanks to Drupal's robust theming tools and the team's disciplined approach to migration.

## The New Bentley.edu

Since the pilot project began in late 2007, the web team has migrated several thousand pages over to Drupal, importing Oracle metadata to a CCK compliant format. Content can be shared across multiple sub-domains. In the process, the Drupal implementation has grown its footprint considerably, without experiencing any downtime. Page loads are noticeably faster, while the Drupal platform needs none of the regular massaging that the Cold Fusion stack required for staying online.

In the process, the Bentley.edu domain will be able to decommission four enterprise Cold Fusion licenses, and the university will be able to repurpose a number of expensive hosting servers, and database administrators no longer have to constantly monitor and tweak the site's Oracle data. Bentley estimates that the Drupal resources cost approximately one quarter of the corresponding Cold Fusion and Oracle investments.

### Benefits

- Reduced resource demands
- Migration was direct and reliable
- Search and page load performance improvements
- Strategy for managing information locally and globally
- Content is created with greater ease and frequency
- Information is more accessible

### Conserving Costs

According to Bentley, their Drupal resources cost approximately one quarter of the corresponding Cold Fusion and Oracle investments.

## From Bentley

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- Nicholas Maloney, Web Architect at Bentley University

Maloney cites that for every single sub-domain that has been migrated, site traffic and time spent on the site have increased. Traffic improvements are partially due to improved accessibility through better searching, content semantics and profiling, but also to a surplus of new, relevant content. Because content contributors can easily add and update content, they tend to do so more frequently – increasing the site’s value to visitors.

From a larger perspective, Maloney explains how Drupal has changed the information paradigm for Bentley. “Originally, we were the stewards of web pages. These pages had to be managed in a very fragmented way. We now own core architecture and a series of modules. Instead of supporting fixed pages, we are stewards of flexible and ubiquitous content. This content can be interactively created for one section or sub-domain, but automatically shared or linked anywhere that is relevant. This is a much easier way to support the site, but more importantly, it’s a more honest reflection of what the content represents – information that should be made available on demand, for whoever needs it.” This sharing of information also extends beyond the Bentley site, as the team has been adding functionality that will help push relevant content beyond the Bentley.edu domain and pull in useful external content for posting and linking.

## Looking Forward

Bentley plans to finish the phased migration by the end of 2010, and will begin to expand functionality even further. It is carefully reviewing how to implement commenting and rating information, so that it can learn from site visitors, without exposing comment boards to risk. The web team is also in the process of creating a strategy for building in a stronger connection to social media tools, including Twitter and Facebook and they are considering Apache SOLR as a replacement for the Google search appliance currently in place. Both the web team and the Bentley administration are comfortable with the monumental progress that has been made to date, and are extremely pleased with the ease of introducing new features and via Drupal’s flexible, stable modules.

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## About Drupal

Acquia helps organizations of all sizes build social publishing websites quickly, easily and with a lower total cost of ownership by leveraging Drupal, the open source social publishing platform that blends content and community. Our products, services and support enable companies to leverage the power, technical innovation and economic value of Drupal while simplifying the experience, removing the complexity and minimizing the risk. Please visit: <http://acquia.com>. Download Acquia Drupal, the completely free Drupal distribution, at <http://acquia.com/downloads>.