4 WONDERS OF THE WORLD OF HIGHER EDUCATION WEBSITES

HOW TOP UNIVERSITIES ARE MANAGING MANY .EDU WEBSITES. NO MULTISITE, NO REGRETS.
STONEHENGE, THE COLOSSEUM, & YOUR HIGHER EDUCATION WEBSITES?


Multisite is the traditional choice. You can deploy hundreds of websites from one codebase. But several factors make Multisite unsustainable for higher education. What are the proven alternatives?

We asked tech teams from top schools how they’re launching and managing many websites. Hear our higher education customers tell you in their own words.

— Matt Cheney, Products & Co-Founder of Pantheon
4 WONDERS OF THE WORLD OF HIGHER EDUCATION WEBSITES

You’ll learn:

1. WHY YOU DON’T HAVE TO THROW FLEXIBILITY UNDER THE BUS WITH A CUSTOM DISTRIBUTION.

Got a multitude of use cases and departments? So did Weill Cornell Medical College. See how they reduced digital sprawl by ensuring a consistent user experience and design—while also allowing customizations.

2. 3 REASONS MULTISITE ISN’T AS AWESOME AS IT LOOKS.

Multisite looks great on paper. Launch from one codebase—what could go wrong? See why California State University opted out of Multisite, and how they saved their team 40 hours a week with faster workflows.

3. HOW TO GET UNSOLICITED COMPLIMENTS FROM STAKEHOLDERS AT YOUR UNIVERSITY.

The tech team at Arizona State University earned praise by deploying a custom distribution for 2,000+ sites, freeing up 2-3 full-time employees.

4. THE BEST WAY TO MAKE CONTENT UPDATES—WHEN YOU HAVE 50+ CONTRIBUTORS AND 2 DEVELOPERS.

Even if you’re not ready to build a custom distribution, you can relieve your team of web management headaches. See how California College of the Arts got twice as fast at updating content.

This book is required reading for .edu tech teams who are thinking about building a custom distribution—and want to do it right the first time.
WEILL CORNELL MEDICAL COLLEGE

HOW WEILL CORNELL MEDICAL COLLEGE BUILT A DREAM DISTRIBUTION WITH PANTHEON

At Weill Cornell Medical College, Dan Dickinson manages a 12-person Web Communications team that designs and develops organizational websites for medical education, research, and patient care. Read how his team is rescuing 100+ websites from design anarchy—by setting out to build the best Drupal distribution in higher education.

DIAGNOSIS? AN ADVANCED CASE OF DIGITAL SPRAWL

100+ static websites running on various platforms. We had approximately 100 virtual hosts on our production web cluster. Decisions over the years had gotten us an enterprise CMS (too big!) and some lighter-weight CMSes (too small!). The departments who did want to rebuild their sites were having their options limited by a need to maintain support for sites that hadn't been touched in years.

Need consistent user experiences and designs, STAT. Having a consistent user experience is as important to us as whether or not the official university colors get worked into the design. The buttons should work the same. The calls to action should be in the same place. The most common actions should be easy to find. But because there weren't any real boundaries for creating new sites, there was a wide array of look-and-feel, branding, and other functional issues. We knew we needed a better content management strategy.
A differently-shaped site for every department. Even though we’re one institution, every department can have a unique focus. One site might focus exclusively on donors. Another focuses on prospective students. Still others focus on existing students, research fellows, or collaborators around the world. You can’t design a website for 21 different audiences—it would kill the designers. So each department needed its own, unique, differently-shaped site.

No consistent base design or framework to work from. Sometimes departments need to hire external web agencies. Other departments want to build sites themselves. We wanted them to be able to make progress, without us having to be there for every minute of the project.

SEEK CMS THERAPY IMMEDIATELY

After some market research in early 2012, we settled on Drupal and set a modest goal: to build the best Drupal distribution in higher education.

WHY BUILD A CUSTOM DISTRIBUTION FOR HIGHER EDUCATION?

A custom distribution is the optimal tool kit for us to build sites off of and on top of. Here’s why:

• It includes some of the boilerplate work we need to include at any given site for our institution—like web analytics, site search, content types, email forms, navigation elements, etc.
• It’s a toolkit we can switch on and off for various sites and departments.
• It’s bundled up so we avoid doing most of the repetitive work or trying to find the right modules as we go.
• It accelerates our production work significantly.

WHY PANTHEON? (MULTISITE VS. MULTI-INSTALL)

Once we chose Drupal for a CMS, we had to decide whether to go with Multisite or multi-install.

Multisite would minimize the number of installations, but it would also require us to build a lot of infrastructure and bureaucracy internally. We would spend as much time managing Multisite installs as we would spend making websites.

We needed to start to standardize site form and function, while driving down our implementation times (and eventual cost to departments), but without train-wrecking our project life-cycle. Multi-install would allow us to do all these things by keeping it to one site per codebase. That’s a big part of why we chose Pantheon.
PROGNOSIS: A FULL RECOVERY WITH CUSTOM DRUPAL DISTRIBUTION AND PANTHEON

So far, we've launched five sites on the distribution, with more constantly on the way. We've also had some outside vendors working on it. Even though we're still pretty early into the process, here are some of the first results we're seeing:

Even though the first project to switch to the Drupal distribution was mid-cycle in development, we saw significant savings in billable hours for the client.

First project comes in under budget (& on time). Even though the first project to switch to the Drupal distribution was mid-cycle in development, we saw savings in billable hours for the client. The typical rush of last-minute change requests didn't happen this time.

Freedom from design anarchy. When our team is asked to create a new site, now there's a consistent start state to work from and build customizations on top of. We can have tons of Drupal sites with different shapes that still function in the same manner. So we're starting to get both consistency and flexibility. If one department wants a vanilla site while another needs a bunch of contributed modules installed, we can handle that.

Customers love it. Most of the departments who have seen the distribution love it. They like knowing the base legwork is already done, so they don't have to sweat it. In site builds, we always spent a lot of time going from design concepts to workable betas people could click around on. The sooner we get there, the better. It's much easier to speak a common language with a client. They can focus on what will make the site special, rather than things like, “where does the call to action go?”

Customers say “yes” to our pricing model, too. With Pantheon, I don't need a Powerpoint presentation to explain how the pricing works. It's simple and very straightforward. This is your website. We expect this much traffic. It costs you x. We're not subdividing shared servers or trying to pair departments together into multi-site installs.

Lets the right ones in. The multi-install model helps with the provisioning and permissioning for outside agencies and others. When outside vendors finish a project, we're not doing anything different to have the site go live; our platform becomes their platform. When they leave at the end of the project, we're not left with foreign infrastructure that takes a lot of effort to debug and maintain. And anyone at Weill Cornell can sign up for a Pantheon account and spin up a site using our distribution.

Our team—and more importantly, our internal clients—are happy with our push to use Drupal and a custom distribution at the heart of our future web strategy. We're already seeing a good return on the time invested, and expect to see more over the coming years as we keep moving Weill Cornell onto Drupal.
THINKING OF BUILDING YOUR OWN CUSTOM DISTRIBUTION?

Here are some tips and best practices to anyone else who's considering multi-install to manage their educational websites:

**Budget, compliance, speed? What's at the top of your list?** Some schools are very budget-conscious. Others have very strict security and compliance requirements. So ask yourself: what matters to you? Do you have one mammoth site, or a lot of smaller sites? Do you have compliance concerns? Is your web development cost-recovery or centrally funded? All of these factors are important requirements that will drive your development. Set these priorities for yourself, before you start touching any lines of code.

**How can you give departments what they already want, and what they want in the future?** A vision for the future is great, but you also need an honest look at how the web at your institution operates in the present. Often, techy people get hung up about what we want an idealized future to look like. But getting to that future point isn't about working off of a giant technical list and a work effort list. It's also a political and cultural shift. Business units can react badly if you suddenly change the rules on them. We needed something that fit our current model as to how our web ecosystem operated, so that we did not add unnecessary stress as we build towards the future.

**Insist on kicking the tires.** It's nice to have Directors and C-level executives in meetings with vendors, seeing best-case WebEx demos. But if you're only seeing a tool when a vendor shows it to you, you can't really get a sense for it. The key for any technology evaluation is being able to kick the tires. Signing our team up for free accounts with Pantheon helped tremendously in our decision process.

**Take an honest look at your team's capacity.** It's hard to do it all—and it's better to focus your energy on the things that make your institution unique, rather than conquering problems that others have tackled before. For us, we saw a lot of value in not building a new stack of in-house infrastructure. By partnering with Pantheon, we got to spend our time working in Drupal, rather than spending precious time procuring servers.
CALIFORNIA STATE UNIVERSITY, MONTEREY BAY

LAUNCHING 18+ INTEGRATED WEB APPLICATIONS

Kevin Miller is the web developer for California State University, Monterey Bay. Here, he describes why his team adopted Pantheon One for a web application that is now used by a majority of campuses in the California State University system.

WHY WE CREATED AN INTEGRATED WEB APPLICATION

CSU Monterey Bay has a program called Service Learning, in which students do community work as part of their academic program. We were taking a lot of legal risk in writing these projects. No one was tracking where students were, or informing them of the risks. We were on the hook if they got injured.

So we built a platform to track thousands of volunteer opportunities, the student participants, the courses, and the faculty. Students can sign in, read about risk information, discover opportunities, place themselves, and provide emergency contact information. Campuses can also use the application to show the community data like, “Our students are doing 20,000 hours of community service in your zip code.”
A few years ago, other campuses in the system came to us because there wasn't anything like what we had in the marketplace. So we decided to take our existing application and rebuild it in Drupal 7 as an install profile. Initially, we were just going to release it. The code is open source. Other campuses could just load and install it. But because it has a lot of data integration—business process mapping and other sorts of authentication has to happen beforehand—a lot of campuses found they couldn't just download and install it. So we decided to start hosting instances of this install profile for our other sister campuses.

We now maintain a single git repository that's a fork from our open source project. This fork gets pushed to every single campus in the California State University system. Pantheon One powers that. S4 is run by CSUMB in conjunction with the Center for Community Engagement in the Chancellor's Office. I like to say it's a startup within the CSU system. The other campuses reimburse us for the staffing and hosting, and we provide a single platform.

*The Pantheon side of launching is only a few clicks. I moved everyone over in about 4 hours, and didn’t worry about workflow.*

**WHY MULTISITE WASN’T THE ANSWER**

At first I thought Multisite was awesome. I no longer had 15 different installs. I could just log in, add a folder, create a new site, configure the file, and be on my way.

**Time-intensive setups.** The biggest problem was setting up environments for each campus. We have to maintain each Multisite environment individually. Lots of klugey workflows. It took a full month—four 40-hour weeks of my time—to set up an environment that supported one-click deploys and installs of our platform. We also needed to do things like spin up an instance for a campus, let them play with it, and then take it offline two weeks later. We had lots of needs, but no infrastructure. It took up a lot of my team's time.

**Messy code.** Things got messy, fast. We might have two different projects in a Multisite install, each needing a different version and a different contributed module. You'd need to go in and fix the paths and the system table. It became difficult to debug. There were so many places things could be.

**All-or-nothing updates.** We're running an application for a variety of campuses with different needs and deployment schedules. Multisite made it impossible to update them at different times. When it comes to updating code, it's all or nothing.
WHY PANTHEON?

**Staggered updates for each campus.** Some campuses are very aggressive, and some are slower. With Pantheon, it’s been nice to push updates in a staggered configuration. We’re also running our own internal test sites on top of this platform. We use a training site for other campuses, and a playground site to do demos. We update those immediately to show what’s coming down the pike.

**Fast workflows save me 40 hours a week.** The Pantheon side of launching is only a few clicks. I moved everyone over in about 4 hours, and didn’t worry about workflow. I don’t spend any time on deployment management. Our team of five probably spends 30-60 minutes every 2-3 weeks doing that kind of stuff.

**Anyone can push updates.** Our support person isn’t a developer, but she can push updates out to clients herself. If we have minor version changes, or integration work that requires maintaining certificates, we’ll push that into a repository and then update everybody’s dev instance.

**Predictable pricing.** As a state entity, we would rather know what our bill is going to be month to month. It means we can plan for that in our budget. Resource-based pricing means things fluctuate too much. Having to run all of our client campuses under a Multisite environment was a big problem.

THE FUTURE IS COLLABORATIVE

We’re just starting on another project to launch a single web application for our campus web properties. So, all of our external websites, our schedule, and our catalog will be one Drupal install. We want to start hosting that on Pantheon. We’ll have a couple of different vendors who will be doing test, code, and theme development for us. With Multidev, one vendor can be doing custom module for bulk feeds integration in one branch, without overwriting or bumping into what the other vendor is doing around a theme update. We’re excited about using Multidev for that, with custom work on a given instance.
ARIZONA STATE UNIVERSITY

2,000+ SITES, ALL HOSTED AND SUPPORTED BY ASU

The central IT Web development and hosting team at Arizona State University recently transitioned 2,000+ sites from self-hosting to Pantheon One. Three members of the University Technology Office—Daniel Garcia-Mont (Web Application Developer Lead), Ron Page (Senior Director of Applications & Design), and Ryan Clemens (Director of Web Applications)—share their story below.

SITUATION: 2,000+ SITES, HOSTED & SUPPORTED BY ASU

Everyone at the University Technology Office (UTO) is a Drupal advocate. More than half of the 2,000 departmental, faculty, and personal sites hosted for free by the UTO are Drupal installations. It’s always been easy for ASU employees to request a new site. In the beginning, even students could get them. Quite a few of these sites now sit abandoned.

THE CHALLENGES OF HOSTING ON OUR OWN ENVIRONMENT

Not scalable. With dozens of virtual machines, each hosting 80 to 100 sites, the system was never meant to handle high-traffic situations. A few years ago, President Obama came to our commencement. As soon as he started speaking, the ASU news site crashed. So did every other site on that host. After that, we built a dedicated rig for the high-traffic library and the news site. The web hosting service still took 2-3 full-time employees to maintain.

Security issues. Sites weren’t being kept up to date, so there were lots of vulnerabilities. Drupal was too complex for a non-developer to maintain. People would switch over to WordPress and their sites would get hacked.

Support demand > supply. It was in our best interests to get out of the hosting business. Each department is responsible for maintaining their sites, fixing vulnerabilities, and paying for development. But in real life, people call central IT when they need help. We help when we can, but we are not staffed to give people the kind of service they ask for.

CHOOSING A FOCUS: DRUPAL

So many customers, so many needs. We got caught up in analysis paralysis at first, as we tried to find a hosting solution for all the different technologies of web sites.
Continued from previous page...

In a moment of clarity, we decided to start with Drupal. After all, UTO had already standardized on Drupal as a development/CMS platform. We reasoned that finding a great solution for our Drupal customers would be the best starting point for meeting others’ needs, too. This helped us focus our requirements and limit the scope.

EVALUATING THE OPTIONS FOR A DRUPAL HOSTING SOLUTION

In evaluating our options, a few factors were most important to us. They turned out to be the reasons why we chose Pantheon:

**A turnkey solution.** A lot of our requirements come from Drupal newbies. We needed to make it easy for them to get started. Pantheon provided a customized Drupal start state, called open ASU, that makes it easy for non-developers to build Drupal sites.

**Easy to maintain.** The original goal of providing web hosting for the university was to get people to stop hosting their own servers under their desks or in utility closets. With centralization we succeeded in keeping the o/s up to date, but we found that many of our customers did not keep Drupal up to date. Pantheon makes it easy for customers to keep their Drupal sites patched and secure.

**Single sign on, out of the box.** Pantheon was the only solution that could provide basic-level sites that came with integrated SSL and SSO out of the box, without relying on third-party modules.

**A cost-effective way for us to ramp up.** We still needed to transition all 1,100 sites away from self-hosting, so we needed a cost-effective way to ramp up. Pantheon gave us a path. We could start slow, without paying large amounts up front. That was a big help.

*Keeping sites up to date is easy, too. Before, you’d need to be a Drupal developer. Now, we maintain the distribution. You just make one click through the Pantheon dashboard and you’re up to date.*

THE SOLUTION: ASU-BRANDED SITES OUT OF THE BOX

Open ASU gives you a responsive, ASU-branded site out of the box. We’ve been calling it the WordPress killer. Now an entry-level person can flip through a couple options and spin up a turnkey website. They don’t need extra funds or technical knowledge.

Keeping sites up to date is easy, too. Before, you’d need to be a Drupal developer. Now, we maintain the distribution. You just make one click through the Pantheon dashboard and you’re up to date.
PUTTING PANTHEON ONE TO THE TEST: A REAL-LIFE FIRE DRILL

Last Friday, our housing site came under so much traffic that our environment couldn’t handle it. We decided to switch that site over to Pantheon. It took about 15 minutes. Since this was an older site, there was some additional work to get the branding working and looking the way it needed to.

Pantheon’s dev-test-live workflow really helped us out. We also liked the one-click ability to move up and down between plan levels so we could meet the temporary traffic spikes that happen once a semester. Plus, the New Relic add-on is now giving us info about the site’s performance that we didn’t have before.

ANY CHALLENGES WITH IMPLEMENTATION?

Moving to Pantheon is a bit of a double-edged sword, because it forces developers to work in a more enterprise environment. New things can be scary to novice developers. But in the long run, it will be good to start enforcing these workflows throughout the University.

Some novices were used to going in and manually making live changes to a production server via an FTP client like Dreamweaver. They were set in their workflows and didn’t want to learn a new one. But once they started using Pantheon’s tools, most of them came around.

With Pantheon, you have a dev-test-live environment, and all the tools that come with it. The real Drupal developers on campus saw that as awesome. With one click, they could set up all these environments.

The more sites we can get on Pantheon, the less work we have to do on our current hosting service. It’s worth the effort.
SURPRISE—RESPONSIVE SERVICE

Pantheon is a young company. Initially, we feared they might not be quite ready for production. While a few small things have come up, Pantheon's commitment to the customer and to making things right has really stood out. They're pretty hands-on when working to meet our needs. We weren't given a cookie-cutter solution.

PANTHEON ONE DOES THE WORK OF 2-3 FULL-TIME EMPLOYEES

We're still working to deliver the final distribution on time. But there's a light at the end of the tunnel. When we're finished, we expect to free up the equivalent of 2-3 full-time employees. The UTO management is pretty excited to outsource a service that was never core. Now we can use more full-time employees for things that are.

The more sites we can get on Pantheon, the less work we have to do on our current hosting service. It's worth the effort.

Rather than helping people keep their sites running, we'll be able to concentrate on helping them make effective websites.

WELL-RECEIVED BY OUR OWN DRUPAL COMMUNITY

Our developers are universally excited. People actually came up and told us what a great decision we'd made. No one ever says that!
CALIFORNIA COLLEGE OF THE ARTS

GIVING 50+ CONTRIBUTORS THE TOOLS TO MAKE THEIR OWN UPDATES

Allen Fear is the Web Director at the California College of the Arts. His team also oversees the websites for the Center for Art and Public Life, which focuses on important issues in community development and service learning in arts education; and for the Wattis Institute for Contemporary Arts, which serves as a forum for the presentation and discussion of international contemporary art and curatorial practice. Allen explains how Pantheon's Multidev capabilities help his team to manage the college's website.

ONE WEBSITE, DOZENS OF CONTRIBUTORS

California College of the Arts is a nonprofit institution that educates students to shape culture and society through the practice and critical study of art, architecture, design, and writing, and we offer an MBA in design as well. We have about 2,000 enrolled students, 21 undergraduate and 12 graduate majors, and campuses in Oakland and San Francisco.

Our website is one of our most important tools for telling our story and showcasing the work of our students, faculty and alumni. We use it to reach out to future students around the world who want to enroll and learn more about the college's programs and culture.
Four people manage the college’s core web websites: a designer, a developer, a web editor, and myself. In addition, more than 50 people across the college contribute website content and make other page updates.

**WHY DRUPAL?**

Before adopting Drupal a few years ago, we had a primarily static website with a custom-built CMS for isolated sections of dynamic content. Drupal allowed us to open the site up to more content contributors and add features at a faster clip than before. The open-source community that Drupal brings together acts as an extension of our team and has helped us grow and maintain the site, especially in those cases where a contributed module offers a solution for a particular feature request.

While every organization is unique, many are working to achieve similar goals. Drupal’s community is a kind of hive mind where problems can be solved collaboratively and solutions shared openly, which in turn accelerates development, fosters innovation, and benefits the community as a whole.

**FAIL FASTER, EXPERIMENT MORE**

As an art college, we get a lot of requests to feature content in ways we’d never considered before. Before Pantheon, trying out new approaches, iterating, and testing to make sure a particular commit was ready for our production site could be difficult tasks.
Pantheon's platform is designed from the ground up to foster experimentation and iteration by providing a smooth glide path for pushing code changes through a development project's stages and for moving content and files around quickly and easily between environments. Its three environments (dev, test and live) and workflow tools like Git and Multidev allow us to not only ship code faster, but also to experiment and iterate with greater freedom and frequency.

Multidev in particular supports our ability to innovate. In a matter of minutes, it gives us easy access to a new branch environment that we can use to try new things, all in the safety of discrete environments that we can merge into the master branch and push to the production site if the experiment pans out and is ready to be implemented. Some of our favorite things about Pantheon include:

- **Branching.** Best practices are baked into Pantheon's development workflow, and that makes adopting them virtually automatic for anyone making code changes, including contractors or other third parties who might be working with us. That in turn fosters collaboration and mitigates risk. We don't need to worry about someone pushing changes to the master branch to test changes out because we can do all of that in our personal development environments and wait to share and merge until after we've had a chance to kick the tires there.

- **Multiple Cloud Development Environments.** Each team member gets an individual development environment to work in, so experimentation and testing happens on a site with exactly the same configuration and platform setup as the live environment. This eliminates problems related to workflow and environment discrepancies and allows us to maintain focus on the issue at hand. It also makes it easy for us to fork and merge directly from the hosted development environments, so we can readily switch between working independently and collaborative according to our needs. The development environments are so quick and easy to spin up that we have even started using them for simple content and design tweak demos.

- **SFTP and Git integration.** Since Pantheon lets you use either Git or SFTP to access the codebase, we can commit changes even if there are issues with our local site copies. You don't need a local environment to make and test changes, which can remove the terminal as a barrier of entry and makes it possible for us to work with others even if they are not comfortable with Git or the command line. The SFTP and Git integration allows you to temporarily deviate from version control best practices and sidestep the command line, but then ties everything back nicely into a Git commit that can be merged and managed via the command line going forward.

Each team member gets an individual development environment to work in, so experimentation and testing happens on a site with exactly the same configuration and platform setup as the live environment.
FOCUS ON WHAT MATTERS MOST

High availability, reverse proxy cache, and database replication were all attributes that we had explored adding to our sites, but the costs associated with building and supporting a stack with that degree of complexity kept it outside our reach. Pantheon’s offering took the complexity out of the equation and made the business case for us. But perhaps the greatest benefit Pantheon has given us is the ability to shift focus more fully to the things that our end users care most about rather than things like dev-ops workflow and systems maintenance.

The fact that Pantheon is always pushing the envelope on these fronts means that we stay at the cutting edge of best practices just by working with the platform, and energy we might otherwise be spending on building, maintaining and mastering the technologies necessary to support development are spent on what matters most, engaging our end users.
YOUR UNIVERSITY WEB PRESENCE—FUTURE WONDER OF THE WORLD?

Here are five steps to one platform, many sites, unlimited reach:

1. GET YOUR FREE ACCOUNT.
   Visit www.getpantheon.com to get started. Invite your developers to spin up sites on Pantheon for free using Drupal power tools.

2. LEARN WHY MULTISITE & HIGHER EDUCATION DON’T MIX.
   Most Multisite implementations host many sites on a single server. Single point of failure = deployment nightmares. One site’s traffic spike brings every other site down. Learn more at: getpantheon.com/pantheon-one/drupal-multisite

3. ADD UP THE POTENTIAL SAVINGS FROM ONE PLATFORM TO MANAGE ALL YOUR SITES.
   Yes, you’ll save on line-items like physical servers. But the greater savings happen when your team no longer needs to spend time managing and deploying hundreds of sites. Learn more about Pantheon One and download the datasheet at: getpantheon.com/blog/higher-education

4. CALCULATE THE COSTS OF TRADITIONAL HOSTING.
   See why we call Drupal self-hosting “The Road to Server Hell.” Then, calculate the costs of traditional hosting when you download this white paper, Hosting is Dead.

5. GET ONE-ON-ONE ADVICE FROM DRUPAL EXPERTS.
   Want advice on using Panopoly to build your custom distribution? Have a hosting challenge or technical question? I’d love to chat with you about the possibility of adding your story to our gallery of Higher Education Wonders of the World. Email me at matt@getpantheon.com.
TRUSTED BY MANY OF THE WORLD’S TOP UNIVERSITIES.