

# Building an Enterprise-Class Web Site with



**Drupal™**

**mediacurrent<sup>SM</sup>**

INTERACTIVE SOLUTIONS

and



**acquia™**

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# Summary

**Congratulations.** By reading these lines, you've taken a decisive step toward improving not only your Web site, but also your interaction with customers. We at Mediacurrent and Acquia have enjoyed the benefits of Drupal for years and believe that you'll be as impressed as we've been by all it can do.

But a hammer is only as good as the hand that swings it, and it takes a practiced hand to deliver Drupal's full impact. This guide shows you how to use Drupal to:

- ▶ Reach a wider audience
- ▶ Create and manage content easily
- ▶ Get higher placement on search engines
- ▶ Deliver information that's easier to browse and search
- ▶ Collect more and better-quality customer feedback
- ▶ Sync your Web site better with your company's tone, style, and message
- ▶ Lower the total cost of ownership of your website
- ▶ Manage multiple sites with ease and efficiency

Our jobs at Mediacurrent and Acquia are to give you the tools, expertise, and guidance to implement a Web site that's as powerful as it is well-controlled. This guide tells you how we do it.

## Preparing for tomorrow's audience

After fifteen years of exposure to the Web, people expect sites to be dynamic and interactive. Yet, many companies still create Web sites using 1990s tools intended to create static, Web 1.0 sites. The result is a pile of pages, sometimes tied to a legacy database system with hacked-together code, needing frequent, manual updates. That's no way to run a company!

The superior alternative is a content-management system ("CMS"), which stores content in a structured database that's optimized for frequent updates. There are literally dozens of CMSes available; about half of them free and open-source. Of the top three<sup>1</sup>, Drupal is most often the choice of enterprises that need the stability, flexibility, speed and functionality that high-traffic and mission-critical sites demand.

By using Drupal, Mediacurrent takes advantage of a growing Web platform with thousands of active developers and one of the best support structures available. Its open structure makes it easily extensible, with thousands of free "modules" available right now, and more available every



*These companies and thousands more run high-visibility public sites on Drupal.*

<sup>1</sup> WordPress, Joomla, and Drupal

day. (If a ready-made module doesn't suit your needs, we can often adapt it or write a new one to your specifications.) Regardless of whether you choose to maintain your site by yourself or engage our partner Acquia (acquia.com) for expert-level Drupal support, search and hosting, you can be confident that it will have a solid foundation for years to come.

## About Drupal

The first version of Drupal was created in 2000 by Belgian student Dries Buytaert as a “Web board” for his friends to stay in touch. Within a couple of years, its release as an open source project had attracted developers and Webmasters who used the software on a daily basis.

Drupal's popularity gained a tremendous boost when it was used to run several sites for Howard Dean's Presidential campaign in 2004.

Since then, it's undergone two major revisions, become the software running tens of thousands of Web sites, and emerged as the second-largest open-source project in the world (after the Linux kernel).

Speaking of Linux, Drupal shares many of that project's goals, working methods, and pattern of success in the marketplace. Like most of Linux (and approximately two-thirds of all open-source projects), Drupal is licensed under the GNU General Public License<sup>1</sup>, a highly permissive contract that guarantees your ability to use and modify the software as you like, free of charge. Like Linux, Drupal is integral to the business life of thousands of enterprises. Just as important, the communities that maintain both Linux and Drupal are highly proactive about maintaining software quality to the level that these enterprises demand.

Drupal's popularity is partly due to growing acceptance of CMSes in general over static Web-development techniques. Its two largest competitors, WordPress (wordpress.org) and Joomla (joomla.org) have also experienced remarkable growth over the past several years, and each is generally acknowledged to host a larger number of sites than Drupal. However, Drupal far outstrips them in the *size, complexity, traffic, and security* demands of sites hosted. Simply put, Drupal has had the most real-world testing by enterprise-level clients.

Enabled	Name	Version	Description
<input type="checkbox"/>	Aggregator	6.10	Aggregates syndicated content (RSS, RDF, and Atom feeds).
<input type="checkbox"/>	Blog	6.10	Enables keeping easily and regularly updated user web pages or blogs.
<input type="checkbox"/>	Blog API	6.10	Allows users to post content using applications that support XML-RPC blog APIs.
<input type="checkbox"/>	Book	6.10	Allows users to structure site pages in a hierarchy or outline.
<input checked="" type="checkbox"/>	Color	6.10	Allows the user to change the color scheme of certain themes.
<input checked="" type="checkbox"/>	Comment	6.10	Allows users to comment on and discuss published content. Required by: Comment Notify (disabled), Forum (disabled), Tracker (disabled)
<input type="checkbox"/>	Contact	6.10	Enables the use of both personal and site-wide contact forms.
<input type="checkbox"/>	Content translation	6.10	Allows content to be translated into different languages. Depends on: Locale (disabled)
<input checked="" type="checkbox"/>	Database logging	6.10	Logs and records system events to the database.
<input type="checkbox"/>	Forum	6.10	Enables threaded discussions about general topics. Depends on: Taxonomy (enabled), Comment (enabled)
<input checked="" type="checkbox"/>	Help	6.10	Manages the display of online help.
<input type="checkbox"/>	Locale	6.10	Adds language handling functionality and enables the translation of the user interface. Required by: Content translation (disabled)
<input checked="" type="checkbox"/>	Menu	6.10	Allows administrators to customize the site navigation menu.
<input type="checkbox"/>	OpenID	6.10	Allows users to log into your site using OpenID.
<input type="checkbox"/>	Path	6.10	Allows users to rename URLs. Required by: Pathauto (disabled)

*The basic Drupal installation comes with numerous functions that encourage visitor participation, such as blogs, forums, and RSS aggregation.*

<sup>1</sup> <http://www.gnu.org/licenses/licenses.html>

## What you'll learn from this guide

This guide gives you a solid understanding of both Drupal as a Web platform and how Mediacurrent and Acquia make it easy and profitable to adopt. You'll learn how to:

- ▶ Re-use your existing assets on your new site
- ▶ Create needed materials that you don't already have
- ▶ Control procedures and costs for your site's life cycle
- ▶ Plan for site launch and ongoing maintenance
- ▶ Set and monitor measurements of your site's success

Along the way you'll see best practices for Web site development generally, and about features of Drupal that make those practices effortless and transparent. You'll also learn about common difficulties that face first-time Drupal developers. While Drupal is mature and stable at its core, its administration can be baffling to the uninitiated. But don't fret: Our years with Drupal have taught us the "secret handshakes" needed to avoid those problems.

We've also included a list of resources for learning more at the end of this guide, in Appendix G. And, of course, we're always available to answer your questions by phone and through [mediacurrent.com/contact](http://mediacurrent.com/contact) or <http://acquia.com/about-us/contact>.



*Acquia (acquia.com) helps organizations to build social publishing sites faster and more cost effectively by commercializing and supporting Drupal*

## Who we are

Mediacurrent offers a wide range of Drupal services, including custom module development, theming, post-launch support, training, SEO, and strategic consulting. Acquia helps accelerate Drupal usage by contributing to the advancement of the core technology and offering products, services and technical support to simplify the deployment and management of Drupal websites.

Our work exemplifies a proven track record with clients that include established businesses, startups, nonprofit organizations, agencies, universities, foundations, and fan-based sites.

As active members of the Drupal community, we regularly participate in (and sponsor) events and forums that keep us in touch with the project's key players. In addition, we've set up formal relationships with the following companies and organizations to amend our in-house experience:

### Partner/Affiliate:

- ▶ **Acquia** (Drupal Support & Network Services)
- ▶ **Adobe** (graphics software)
- ▶ **Mosso** (Web hosting)
- ▶ **Volacci** (Drupal Search Engine Optimization)

### Member:

- ▶ Drupal Association (Organizational Member)
- ▶ Atlanta Drupal User Group
- ▶ Technology Association of Georgia
- ▶ Atlanta Interactive Marketing Association
- ▶ American Marketing Association

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# Planning Your Drupal Site

*In all things success depends on previous preparation. Without such previous preparation there is sure to be failure.*

— Confucius, “The Doctrine of the Mean”

Building an enterprise-level Web site is like preparing for the courtroom: All of your efforts are tested upon launch, and you have no second chance to make a first impression. While site builders have the advantage of a “beta” period — and opportunities for refinements over a long run — eventually every public-facing Web site has to face a trial by audience. Verdicts are swift, and appeals unlikely.

So the need to prepare is clear, but not all forms of “preparation” are equal: Some devour time with little ultimate result, while others are necessary, but non-obvious. How can you tell which is which?

In our experience, effective preparation involves examination of two areas: business goals and technical assets. We’ll look at both to help you frame your project up front, which will save tremendous time later in the process. Two checklists at the end of this guide help you answer these questions in detail: “Before You Start: Business Questionnaire” (Appendix A), and “Before You Start: Specific Requirements” (Appendix B).

## Defining your business’ goals

The two most common questions we get from prospective clients are:

- ▶ **How much is this going to cost?**
- ▶ **How long will it take?**

Surprisingly, the answer to both questions depends more on the project’s clarity than on its complexity: In short, ambitious goals that are well-framed are easier and cheaper to achieve than simple goals, poorly framed.

The first step to clarity is to ask: **Who is your target audience?** You’re seeking not only general demographic information, but also a sense of how its members interact with Web sites. To drill deeper: How much do they already use the Internet, and in what ways? How much of your interaction will be “offline”, and how will you tie the two venues together? Are they familiar with online social networking, and would they benefit from it in your site? Are there sites similar to yours that they already use?

This is a good time to exercise your optimism and imagination to their fullest. Try to picture the perfect exchange between your site and your audience; imagine them walking away, smiling and satisfied. Then ask yourself: What can I give them to make them feel that way?

Your decisions at this point will help drive the technical design of your site: A little planning now will prevent the need to develop a custom module two weeks before launch.



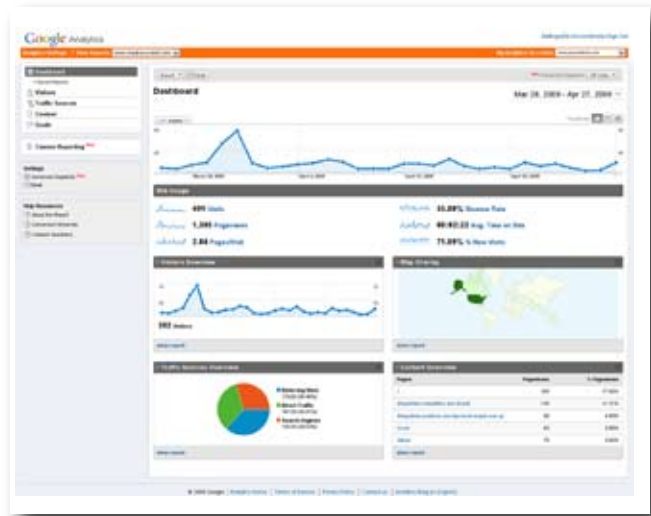
*Decisions made easy: The form, “Before you start: Business questionnaire” at in this guide’s appendix walks you through the tough choices that will define your Web site’s goals.*



The second question to answer is: **What assets do you already have?** If you already have a Web site, which parts would you like to migrate to the new site? Which have become obstructive or obsolete? What “offline” assets should be brought online? Regardless of your answer, chances are that a fundamental reorganization of assets will make your site clearer, less cluttered, and more friendly. But you can’t start that process until you know exactly what’s on hand.

Two of this guide’s Appendices help gather your forces: The *Before You Start: Specific Requirements* checklist (Appendix B) puts everything on the table, while the *Site Map* (Appendix C) gives you an opportunity to reinvent your world with what you already have. As always, you can engage Medicurrent for a set block of time to help you identify your strongest assets, group them in logical ways, and determine the optimum site structure to deliver them.

The last question to answer is: **How will you know if you’ve succeeded?** Modern Web tools offer comprehensive ways to measure the volume of visitors and track their actions, but far too many administrators treat their metrics program as an afterthought. As a result, they don’t have a sense of what’s working, and their attempts to improve response are scattershot. That’s why we ask so many questions about your current Web metrics in the *Business Questionnaire* (Appendix A), and equip your site with Google Analytics and other measurement tools. With written goals and a way to measure your progress, you’ll know quantitatively what your Web investment is worth.



Among other tools, Medicurrent uses Google Analytics to help you understand who’s seeing your site, where they’re coming from, how long they stay, and what they do.

Acquia Network subscription services are designed to help you manage your Drupal website. The Acquia Network dashboard offers you an overview of the status of your site including its general condition, Mollom spam-protection statistics, heartbeat log, code modification warnings, error messages pertaining to individual sites, and detailed technical profile.

So you’ve plotted a course, which is no small feat: Fulfillment is impossible without a goal to fulfill. Now it’s time to be sure you have everything needed to execute your plan.

The good news is that, technically speaking, Drupal’s requirements are both easy and cheap to fulfill, even on the enterprise level: Free software and inexpensive hardware can (and do) run some of the most impressive Drupal sites out there. Drupal’s requirements fall in three categories:

- ▶ **Tools for development and deployment;**
- ▶ **Personnel;** and
- ▶ **A site host.**

## Piece #1: Development and deployment tools

Chances are good that you already have everything you need for **development and deployment**. (We recommend that you develop primarily on a “staging” server, not on your live production host.) Drupal is written entirely in unobfuscated, well-commented PHP code, with some CSS driving its graphic design. You can therefore develop for Drupal using any plain-text editor, and manage the files using industry-standard project managers. Drupal developers commonly use Adobe Dreamweaver, Eclipse, Aptana Studio, or any of a number of other Integrated Development Environments (IDEs) and source code editing packages.

On the hardware side, practically any modern computer is strong enough to handle all that Drupal can throw at it. Your choice of operating system isn’t crucial, but Drupal runs best in a Linux environment.

Whatever OS you choose, you’ll need an AMP stack — that is, the combination of the Web server Apache, database program MySQL, and programming language PHP. All three are, like Drupal itself, open-source and extremely well-supported. Apache is the most popular Web server in the world by a wide margin, running two-thirds of the world’s million-busiest sites<sup>1</sup>; MySQL is the most-popular open-source database in the world; and PHP is installed on over a million Web servers, running over twenty million sites<sup>2</sup>. AMP stacks are known by the operating systems on which they run: LAMP for Linux, MAMP for Mac, and WAMP for Windows.

The only other software you’ll need is Drupal itself and any additional modules that are needed to execute your design. Many Drupal sites feature functions that aren’t available in the standard (“core”) Drupal download; instead, they come from extensions called “modules”. Both Drupal and these modules are available as free and open-source software at drupal.org; in addition, Mediacurrent can produce custom modules when existing ones won’t fill the bill.

### Tools

#### Development

**Text editor**  
**Graphic editor**  
**Source manager**

#### Deployment

**Hardware**  
**LAMP stack**  
**Drupal**  
**Modules**

### Personnel

**Project Manager**  
**User Interface Designer**  
**Database Administrator**  
**System administrator**  
**Content administrator**  
**Drupal partner**

### Host

**Linux (preferred)**  
**LAMP stack**  
**Database access**  
**Filesystem access**  
**Sufficient bandwidth**  
**CVS etc. as needed**

*All you need to support a Drupal Web site*

## Piece #2: Your personnel

The second “technical” requirement is **personnel**. In short, you’ll need staffers, contractors, or partners to fill six functions:

<sup>1</sup> [http://news.netcraft.com/archives/web\\_server\\_survey.html](http://news.netcraft.com/archives/web_server_survey.html)

<sup>2</sup> <http://www.php.net/usage.php>

- ▶ **Project Manager:** Drives the site’s launch. This role is typically performed by someone within the company who profoundly understands the site’s *purpose*, and who can interface equally well with the project’s business and implementation teams.
- ▶ **User Interface Designer:** Often filled by an outside agency or partner. This person is primarily responsible for putting together the site maps, wireframes, and graphic design for the site’s launch, but should be available on an ongoing basis to improve the site as it grows. (See Appendix C for a sample site map and Appendix D for a sample wireframe.)
- ▶ **Database Administrator:** Since Drupal’s database is mostly managed through Drupal itself, the Database Administrator is only needed intermittently for such tasks as data migration and backup. But while these tasks are infrequent, they’re important!
- ▶ **System Administrator:**  
Oversees management of Drupal’s environment, including the LAMP stack, security, configuration, and file backup.
- ▶ **Content Administrator:** This is the one position that will almost certainly be filled by someone inside your company, as it is responsible for defining your message. Besides the daily task of copyediting, the content administrator must address issues that define a site’s tone and feel, for example “How long should a typical blog post be?”. Other tasks include: traffic management for house-created content (such as product information); selection and editing of news feeds from outside sources; and moderation of user-created content.
- ▶ **Drupal Partner:** Needed both for development and ongoing maintenance. Some tasks will be easily done by people within the company: However, you’ll appreciate having an experienced partner on hand to answer Drupal-related questions as they come up. This is the primary role that Mediacurrent fills, to whatever level is required.
- ▶ **Drupal Site Support and Management:** By subscribing to the Acquia Network, you gain access to a suite of remote site management services that simplify and automate the operation of your Drupal websites. The Acquia Network completes the Drupal experience by providing the support and network services to operate trouble-free Drupal 6.x websites.



The good news is that these functions don’t require much time: Unless you’re running an unusually active or high-traffic site, you won’t need full-time people in these roles.

You might need to fill other personnel slots, depending on your site’s architecture and goals. For example, a site that has a heavy e-commerce component might need someone to monitor interaction between Drupal and the shipping, merchant-card, and tracking systems responsible



for fulfillment. Mediacurrent can help you determine what such roles you'll need to create, and how to best fill them.

### Piece #3: Your site host

The third and final technical requirement is **a place to host your site**. If you don't already have a Web site, we can suggest solutions that start at only a few dollars per month, including Acquia hosting. If you already have an existing host, it should be fine for your Drupal site as long as the following features are available:

- ▶ An “AMP stack”, as is described earlier. Its components should be fairly current, as older versions may be incompatible or have security vulnerabilities.
- ▶ Access to let you create, delete (“drop”), export, import, and edit MySQL databases. In particular be certain that you can import and export fairly large databases: Some hosts limit DB transactions to as little as 2MB, which won't be enough to easily back up and restore your Drupal site.

Some hosts have a “Drupal one-click installation” program that automatically creates the database, but (for security reasons) doesn't give you further access to it. That's fine for simple installations, but could be problematic for more-complex uses.

- ▶ Access within your Web root to upload and download files freely, and to change file and directory permissions. Without these abilities, you won't be able to add modules (for functionality) and themes (for design).
- ▶ Any other systems you'll need to manage your site. For example, some administrators prefer to keep sites in sync using the versioning programs CVS and Subversion. Make sure your administrator has whatever access is needed before deciding on a host.
- ▶ Adequate bandwidth. Most hosts provide varying levels of bandwidth based on your needs (and payment). If necessary, multiple hosts can be networked together, and Drupal works well with Content Delivery Networks (CDNs) such as those available from Amazon, Akamai, and EdgeCast.
- ▶ The Linux operating system. Again, this isn't strictly a requirement, but we've found that Drupal works best on a Linux host.



*Linux, Apache, MySQL, and PHP are the time-tested, enterprise-quality technologies that comprise Drupal's foundation.*

In addition to the products and services provided, hosting is available directly from Acquia. Acquia hosting has been tailored to the specific demands of high-traffic Drupal implementations. Acquia hosting is a great match for organizations that are looking to consolidate hosting and support to maximize the reliability and performance of their Drupal applications.

To better define these technical requirements, see Appendix B, *Before You Start: Specific Requirements*.

## The Drupal Advantage

*“Power corrupts. Absolute power is kind of neat.*

*— John Lehman, Former U.S. Secretary of the Navy (attributed)*

By now you know quite a bit about Drupal: that it’s free and open-source software; that its functionality is extended through “modules”; that it’s built on Apache, MySQL, and PHP; that it’s the choice of many high-traffic enterprise Web sites; and so on. But the important question is: How well does it work? After working with Drupal for as long as we have, we’ve gotten a superb sense of what it’s good at — and its challenges.

### 12 reasons Drupal is Mediacurrent’s choice

We prefer Drupal, but we’re not partisans: We believe in using the best tool for the job, and in fact often use other technologies (such as Adobe Flash) when appropriate.

But often, we find that Drupal *is* the best tool for the job. Here’s why.

- 1. Development speed.** Drupal’s flexible core, wide range of available modules, and ease of installation mean that most time is spent tweaking packaged systems, not designing them from scratch.
- 2. Cost.** As free and open-source software, neither Drupal nor the modules found on Drupal.org demand purchase or licensing fees. Some of those modules — such as the e-commerce system Übercart and the customer-relations product CiviCRM — replace systems that have historically cost thousands of dollars from proprietary software vendors.
- 3. Scalability.** Drupal powers several of the world’s top 10,000 Web sites<sup>1</sup>. It scales both horizontally (distributing load over several servers) and vertically (delivering several sites from a single server in a “multisite” installation).
- 4. Community.** Over 700 people contributed to Drupal’s core software; a semiannual Drupal convention in Washington, DC drew 1,400 people from around the globe. The Drupal.org Web site serves as a unified online meeting place, connecting expertise with those who need it.

#### Drupal by the numbers

- ~ 2,000,000 downloads
- ~ 250,000 downloads per month
- ~ 500,000 Drupal 6 downloads
- ~ 350,000 community members
- ~ 400,000 live Drupal websites
- ~ 4,400 modules
- ~ 740+ Drupal 6 contributors

<sup>1</sup> A notable example of Drupal’s scalability is its use to serve Wikipedia’s donation system, which sustained over 20,000 hits per second, a figure in the range of the Web’s top 20 sites. See [tomgeller.com/content/can-drupal-handle-high-traffic-sites](http://tomgeller.com/content/can-drupal-handle-high-traffic-sites) for details.

5. **Modularity.** Drupal's architecture uses functional namespaces to prevent conflicts among modules and with the software's core. Custom modules that you develop are unlikely to cause problems for your existing installation, and vice-versa.
6. **Extensibility.** Drupal's active development community supports around 2,000 free Drupal modules for the current version<sup>1</sup>; custom modules are possible through its thorough application programming interface (API)<sup>2</sup>.
7. **Security.** Drupal's record for fixing security flaws is among the best in the industry. As of this writing, the vulnerability monitoring agency Secunia gives Drupal a 100% "patched" rating, compared to 78% for WordPress<sup>3</sup>.
8. **Currency.** Drupal is a living technology; modules that take advantage of significant online trends typically appear as soon as their popularity is evident. (For example, there are over 350 free modules available for "third-party integration".)
9. **Standardization.** Drupal is designed to take advantage of existing hardware, software, and skills. It's written in straightforward PHP and its transactional language is industry-standard SQL.
10. **Reusability.** A well-defined "hook" system means that software created for one Drupal site will work on all similar Drupal sites. Content is stored in standard SQL tables, and is easy to export either directly from the database or through an intermediate application (such as the Views module).
11. **Search Engine Optimization.** Drupal is perhaps the most search engine-friendly platform available. Every element of a Drupal Web site can be tweaked or modified to be perfectly optimized for both site visitors and the search engines, supporting a positive ROI.
12. **Acquia Support & Services.** Acquia brings commercial-grade support to mission critical implementations.

*A list of free Drupal 6 modules by category on the Drupal.org Web site. This bounty is a great source of possibility — and, to the uninitiated, confusion.*

Projects
• Utility (471)
• Content display (396)
• Content (393)
• Third-party integration (354)
• Administration (290)
• Developer (192)
• Community (162)
• Content Construction Kit (CCK) (159)
• Media (155)
• User access/authentication (155)
• Javascript Utilities (142)
• User management (136)
• Filters/editors (134)
• Theme related (130)
• Taxonomy (121)
• Views (111)
• Mail (88)
• e-Commerce (88)
• Search (77)
• Commerce / advertising (76)
• Import/export (76)
• Syndication (73)
• Site navigation (71)
• File management (70)
• Security (66)
• Evaluation/rating (52)
• Multilingual (44)
• Organic Groups (43)
• Statistics (41)
• Event (35)
• Location (50)
• Performance and Scalability (26)
• Games and Amusements (25)
• RDF (25)
• Paging (12)

## Drupal's challenges

Drupal isn't perfect. While it delivers impressive results in the right hands, getting there can be baffling. It's like a high-performance car: Anyone can get it to run, but its intricate engine

<sup>1</sup> For Drupal 6, as of 1 May 2009

<sup>2</sup> api.drupal.org

<sup>3</sup> secunia.com, for Drupal 6, as of 1 May 2009

requires experienced mechanics to release its full power. (And as with high-performance car mechanics, sometimes the one with the lowest price per hour ends up being the most expensive choice!)

Drupal's most-notable issues are:

- ▶ **Too much choice.** Browsing Drupal's library of contributed modules is like trying to decide what to watch on TV: You'll often have a choice of a half-dozen options that will work just fine, but you won't know which is the *best* until you've invested some time, at which point it's inconvenient to turn back. The solution, of course, is to get advice from those who have faced such choices before. However...
- ▶ **Qualified Drupal experts are in high demand.** If you have a problem and haven't already engaged a Drupal support pro, it can be hard to get simple questions answered. Free support is available through IRC and forums on Drupal.org, but many questions go unanswered in those venues.
- ▶ **It takes a while to understand "The Drupal Way".** Both development and administration for Drupal require knowledge of how its pieces fit together: For example, its main administration screen has links to over 40 control areas. You could spend hours looking through them all for the one setting you want to change if you don't know where it is.
- ▶ **Drupal maintenance requires vigilance.** Drupal's flexibility is a double-edged sword: On one hand it lets your Web site fill many functions, but on the other hand every function it fills needs oversight. Add a voting function to your site, for example, and you'll need to watch out for users gaming the system. And with such an active development community, modules are frequently revised to add new tricks and security fixes.

We at Medicurrent believe that Drupal is both challenging and worthwhile because of its power. Unfamiliarity is the cause of most of its weaknesses; but when you've gathered administrators with sufficient knowledge and expertise around you, the results of a well-tuned Drupal site are unmatched.

Acquia Drupal provides a quick on ramp to Drupal. Acquia Drupal provides a distribution of Drupal with a collection of the most commonly used Drupal modules. It also has a super easy to use Stack Installer which installs all the components of the stack (LAMP, MySQL) for you.

Mediacurrent and Acquia together address each of these challenges and offer a complete solution for architecting, designing, developing, deploying and managing enterprise Drupal sites. In addition, the Drupal experts from both teams will insure that your enterprise sites are flexible, scalable, secure, and reliable.

## The results

Medicurrent has counted among its clients NASCAR, Emory University, BroadSoft, InterMedia Outdoors, The Rockdale Foundation, and many more. Here are a few examples.





**BroadSoft:** Mediacurrent worked with BroadSoft to develop a corporate extranet solution that integrated Drupal with the company's existing systems (Plone).

**Michael C. Carlos Museum:** As the museum's collection and popularity grew, it turned to Mediacurrent to give its site a new look, improve visitor navigation, and make administration easier. Mediacurrent implemented the design provided by an outside agency and configured over 30 modules to provide cataloging, calendaring, and maintenance functions.

**NASCAR:** Mediacurrent consulted with Turner Sports New Media on graphic design and Drupal architecture. The site is highly news-driven, and aims to keep racing fans in touch with their favorite drivers, tracks, and races. Additional community features encourage participation, while tightly designed membership controls prevent abuse.





# Launching for Long-Term Success

*“The planning process is essential if you want to know what to do when things don’t go according to plan.”*

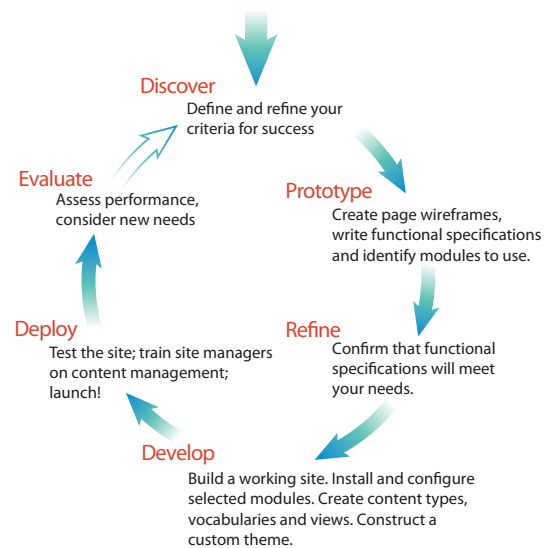
— Peter Baskerville, *“Business Planning for Entrepreneurs”*

## The life cycle of a Drupal site

So now you know the “what” and the “why”. Now let’s talk about the “how”.

Some Web developers consider their jobs over when the site launches. We believe that’s a mistake, because a Web site is like a house: It needs ongoing care and maintenance. Just as weather can destroy an untended property — and take with it a novice owner’s investment — so too can online forces render a “dead” Web site unusable. Five such forces are:

- ▶ “Link rot”, when outside information sources change their location or format;
- ▶ Security issues with underlying technologies, such as Apache or PHP;
- ▶ Newly discovered Drupal security issues;
- ▶ Spam and other vandalism; and
- ▶ “Functional obsolescence”, where a site fails to keep up with visitors’ changing expectations.



So we always consider a site’s future when taking on a project, and see the launch as merely a punctuated moment in its life cycle. To the right you see what that complete cycle looks like.

## How is a Drupal site built?

This life cycle defines a complete strategy; but as every good chess player knows, strategy without tactics quickly fails. In Drupal, the tactics to take a site from concept to living entity take the form of three tracks:

- ▶ **Data organization**, including the design of content types and user roles;
- ▶ **Module selection and configuration** to augment Drupal’s core; and
- ▶ **Site presentation**, as realized through theme development and UI testing.

The best way to demonstrate how the life cycle strategy and these Drupal tactics work together is by looking at solutions for typical client challenges.

First, consider a common request, for a photo gallery. Often a client will have a huge collection of existing graphics, gathered over a period of years. They may be of different sizes and resolutions, unlabeled, and ungrouped. How could Drupal turn that collection into a coherent whole?

The first track — data organization — means determining how those photos will be grouped. In Drupal, one way of grouping such items is by *content type*: For example, product photos might be put into a “Catalog item” content type, and augmented with fields such as price, quantity, and available colors. Meanwhile, staff headshots might go into a “Personnel” content type, with fields that provide their subjects’ department and contact information.

Another way to group those photos could be by “tagging” them with descriptive data, in structures that Drupal calls *taxonomies*. So a photograph of someone at a party could be tagged with the subject’s name, the party’s location and date, the photographer’s name, or any other data that serve your goal. Often, the hard part is in determining what those groups of tags, called “vocabularies”, should be. One usually needs to revisit how your taxonomies are set up after a site has been launched... demonstrating, once again, the value of the methodology’s cyclical nature.

The need to turn data into visual information brings us to our second track: module selection and configuration. The lightweight solution shown here uses the *Image* module, which includes an add-on that automatically creates galleries. This solution is simple, but not appropriate for all situations. Another possibility would be to use *Content Construction Kit (CCK)* and *FileField* to add fields to our content type, *ImageAPI* and *ImageCache* to import and resize graphics on the fly, and possibly a dedicated photo-display module such as *Lightbox* to make the galleries more interactive. As always, part of the challenge is choosing from several possibilities to find the one that’s right for your needs — a process that benefits tremendously from experience.



*Intelligent configuration of Drupal’s administration screens turns individual pieces of content, such as these photos, into a coherent whole.*

The graphic you see here shows the early stages of this process. The job isn’t complete — some photos still need to be “tagged” with a descriptive title, for example — but the process is well underway.

Finally, we come to our third track: site presentation. This is where earlier work to create site maps and wireframes comes to fruition. Programmatically, the wireframe is converted to a Drupal *theme*. A theme is a collection of PHP, HTML, and CSS code. Themes are sets of user interface designs. The site map becomes our template for the menuing system, so the site flows in a way that will be obvious and easy to visitors.

But one never knows how people will react! That’s where the life cycle methodology comes into play: The “Evaluate” step, coupled with site-monitoring software and optional user testing, allows us to be certain that the site’s message is coming across loud and clear.

We’ve simplified matters considerably to reduce Drupal’s techniques to three tracks. In reality, each of them has many parts, each with its own miniature cycle of definition, testing, deployment, and evaluation. Drupal’s flexibility means that each problem has more than one solution, and the obvious one isn’t always the best. With the cyclical methods we’ve described here, improvement is always a possibility — even long after launch.

**What to expect from Mediacurrent and Acquia**

Until now, we’ve talked generally about processes and techniques to create a vibrant Drupal site, regardless of whether you decide to engage Mediacurrent. Even if you don’t, we hope that this guide gives you tools to oversee your site’s development throughout its life cycle — and some criteria to judge whether any contractors you hire are up to the task.

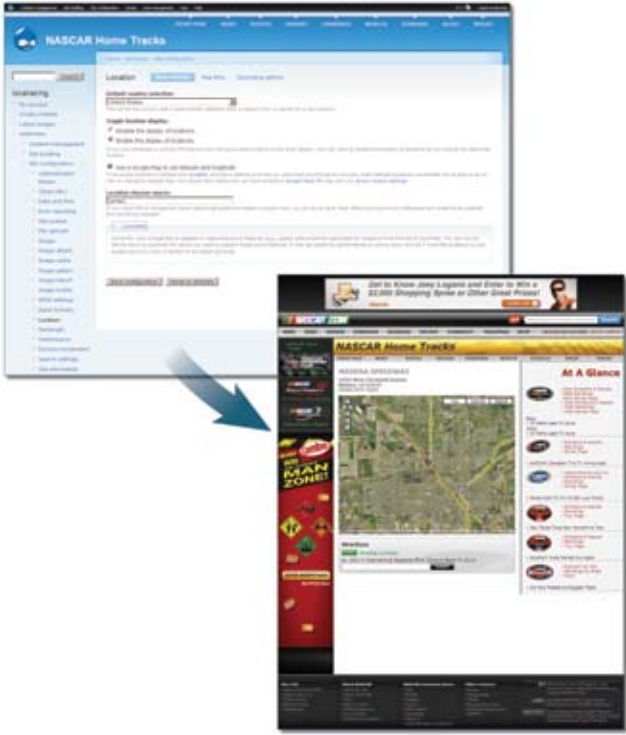
But let’s assume that you *do* decide that Mediacurrent is the right partner for your project. What happens now?

First, we ask that you fill out Appendix A, *Before You Start: Business Questionnaire*. What you write there becomes our blueprint, and a way of measuring success along the way. Don’t worry if you can’t answer some of the questions right away, or believe that some of your answers might change later: The important thing is to capture your vision before getting mired in details.

If you have enough information to do so, we also ask that you fill out Appendix B, *Before You Start: Specific Requirements*. Further, we’re always happy to work with clients who already have their **site map**, **wireframe (design)**, and **category/role structure** defined: Whatever you design, we’ll make Drupal do it. Having said that, Drupal is like other Web software packages in that some structures are easier than others to implement. We might make suggestions that will ultimately bring down your site’s cost of production and maintenance.

Next, we’ll meet with you to confirm the project’s parameters and to begin a survey of your existing assets. This exploration will help us get a better sense of how long each stage of the project will take and how to best approach it.

Then we’ll get together again to hammer out the details: who’ll perform various tasks, how to most effectively communicate, a proposed schedule, and contract details. As always, we can



*Drupal mapping, as seen in an administrative view and as presented to visitors with data input and custom theming applied. (The modules used here are GMap and Location.)*

revisit earlier steps to find ways to speed up production or better meet your goals. We set prices based on the level of expertise needed, the amount of time required, and any special circumstances, such as whether travel or rush work is needed. (Because so many factors are involved, we generally don't give fixed bids.)

Then we're off to the races! Mediacurrent uses agile development methods, which are designed to give you:

- ▶ **Frequent updates**, so you'll always know exactly how the project's going;
- ▶ **Goal-oriented metrics**, so "success" is a measurable quantity;
- ▶ **Ongoing contact**, so you never lose control of the project;
- ▶ **Quick response to change**, with change management procedures built into every stage of the process.



*Mediacurrent offers training through videos and other media to help your staff maintain and expand the site long after its initial launch.*

We build the latest monitoring tools into your site and show you how to use them, so you always know where you stand. In particular, we employ Google Analytics, which includes several widgets that quickly show you how site changes affect traffic. Altogether you get a package that, true to the creed of agile development, encourages experimentation and positions you for continual improvement. (Our Drupal SEO partner Volacci provides a list of other tools for improving your site's marketing in Appendix F, *Drupal Search Engine Optimization (SEO) Best Practices*.)

Finally, we ensure that you receive full documentation on how to maintain and develop the site further, including entry-level documentation where needed for non-technical staff. We also offer training in whatever formats best suit your situation, including both screencasts and on-site classes.

Ultimately, the goal is to give you enough knowledge and skills to not only manage your Drupal site yourself, but to grow it as your business flourishes. Of course, we're always there for those parts you can't do or don't want to do!

## So — are you ready?

We hope this guide helped you understand the processes that result in successful Web sites — and how to approach Drupal to build yours. First, frame your goals; then, collect your assets; then, give Mediacurrent a call. We'll give you an honest appraisal of your project's distance from deployment and start plotting the most direct route to get you there. Let's get started!

---

*This document was produced with help from Tom Geller of Geller Guides ([gellerguides.com](http://gellerguides.com)), which specializes in making technology clear. Contact [tom@gellerguides.com](mailto:tom@gellerguides.com), +1-415-317-1805.*

# Appendix A

## Before You Start: Business Questionnaire

Your answers to the questions below will help Mediacurrent better understand your goals.

### Basic company information

Company name: \_\_\_\_\_

Address: \_\_\_\_\_

Main phone: \_\_\_\_\_ Fax: \_\_\_\_\_

Preferred contact methods & conditions: \_\_\_\_\_

1st contact: \_\_\_\_\_ Title: \_\_\_\_\_

Phone: \_\_\_\_\_ Email: \_\_\_\_\_

2nd contact: \_\_\_\_\_ Title: \_\_\_\_\_

Phone: \_\_\_\_\_ Email: \_\_\_\_\_

### Motivation

What is prompting you to redesign your Web site or generate a new one?

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

### Further company information

Industries served: \_\_\_\_\_

Major marketing/sales methods: \_\_\_\_\_

No. of employees: \_\_\_\_\_ No. dedicated to sales? \_\_\_\_\_

Years in business: \_\_\_\_\_ Annual revenue: \_\_\_\_\_

Other relevant information: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_



**Your current Web site(s)**

URL(s): \_\_\_\_\_

Host: \_\_\_\_\_

Designer(s): \_\_\_\_\_

Underlying technologies: \_\_\_\_\_

Marketing techniques (SEO, PPC, email...): \_\_\_\_\_

Do you track visitors? How? \_\_\_\_\_

Monthly visitors: \_\_\_\_\_ Monthly page views: \_\_\_\_\_

Monthly throughput: \_\_\_\_\_ Monthly hosting cost: \_\_\_\_\_

Number of pages \_\_\_\_\_ Storage size: \_\_\_\_\_

When do they visit? \_\_\_\_\_

For how long do they visit? \_\_\_\_\_

Which pages are most popular? \_\_\_\_\_

What feedback have you received about the site? \_\_\_\_\_

\_\_\_\_\_

What are your objectives for the current site? \_\_\_\_\_

\_\_\_\_\_

What features would you like to keep? \_\_\_\_\_

\_\_\_\_\_

What features don't you like? \_\_\_\_\_

\_\_\_\_\_

**Business purpose of your proposed Web site(s)**

Why do you want to embark on this project? (Check all that apply.)

Establish Web presence     Improve branding     Increase int'l presence

Solicit direct sales     Generate leads     Recruit employees

Support email marketing     Support offline marketing     Receive payments

Provide periodic info (sales, news...)     Provide one-time info (address, manuals...)

Provide a portfolio/list of clients     Provide endorsements/recommendations

Be visible in online communities (RSS...)     Have hidden areas for staff/clients

Build/add a Community Site     Improve Customer Experience

Any other reasons? \_\_\_\_\_

Planned marketing techniques (SEO, PPC, email...): \_\_\_\_\_



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Your customers

Percent within 100 miles: \_\_\_\_\_ Percent outside the U.S. \_\_\_\_\_

Cultural profile(s) \_\_\_\_\_

Typical purchasing procedure \_\_\_\_\_

Your top two competitors

1st competitor: \_\_\_\_\_ URL: \_\_\_\_\_

Your online advantages: \_\_\_\_\_

Their online advantages: \_\_\_\_\_

Your offline advantages: \_\_\_\_\_

Their offline advantages: \_\_\_\_\_

2nd competitor: \_\_\_\_\_ URL: \_\_\_\_\_

Your online advantages: \_\_\_\_\_

Their online advantages: \_\_\_\_\_

Your offline advantages: \_\_\_\_\_

Their offline advantages: \_\_\_\_\_

In short, why do your current customers buy from you? \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Is there anything else we forgot to ask, but that you feel is important?

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

# Appendix B

## Before You Start: Specific Requirements

The Business Questionnaire (Appendix A) clarifies your strategy for the new Web site; this questionnaire helps define the tactics we'll use to execute it.

### Required technical features

- |   |   |
|---|---|
| <input type="checkbox"/> Surveys/polls                      | <input type="checkbox"/> Complex content search         |
| <input type="checkbox"/> Image galleries                    | <input type="checkbox"/> Public/member voting           |
| <input type="checkbox"/> Specialized data presentation      | <input type="checkbox"/> Category-based search          |
| <input type="checkbox"/> Customer relation management (CRM) | <input type="checkbox"/> Anonymous or member commenting |
| <input type="checkbox"/> Feedback forms                     | <input type="checkbox"/> Discussion forums              |
| <input type="checkbox"/> Date-based info (calendar)         | <input type="checkbox"/> Location-based info (mapping)  |
| <input type="checkbox"/> Groups                             | <input type="checkbox"/> Video                          |
|   | <input type="checkbox"/> E-commerce                     |

Other: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

### Hardware and software

Modules from [drupal.org/project/Modules](http://drupal.org/project/Modules) that you know you'll need (optional):

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

### Current personnel's existing experience

- |  |   |
|--|---|
| <input type="checkbox"/> Drupal administration           | <input type="checkbox"/> PHP                              |
| <input type="checkbox"/> MySQL databases                 | <input type="checkbox"/> Linux/Unix server administration |
| <input type="checkbox"/> Design (general)                | <input type="checkbox"/> Design (Drupal theming)          |
| <input type="checkbox"/> Open-source community relations |   |

Do you have a strategy for sharing code (and the burden of its maintenance) with the Drupal community, or any special concerns about doing so? \_\_\_\_\_  
 \_\_\_\_\_

## Proposed personnel

Project Manager(s): \_\_\_\_\_

User Interface Designer(s): \_\_\_\_\_

Database Administrator(s): \_\_\_\_\_

System Administrator(s): \_\_\_\_\_

Content Administrator(s): \_\_\_\_\_

Drupal Partner(s): \_\_\_\_\_

## Site host

How do you plan to host the site?

In-house servers                       Outside service provider     Not sure or other

Is it important for you to stay with your current site host? If so, why? \_\_\_\_\_

\_\_\_\_\_

Will you keep the same domain name? Any subdomains? \_\_\_\_\_

\_\_\_\_\_

AMP stack on server: \_\_\_\_\_

SQL database server installed: \_\_\_\_\_

Import size limit? \_\_\_\_\_

Can create DB                       Can import/export DB                       Can edit DB tables

Can change permissions                       Can use FTP                       phpMyAdmin

Command-line access                       CVS/SVN                       SSH/SFTP

Other services you require: \_\_\_\_\_

\_\_\_\_\_

## Proposed site appearance

What type of look/personality do you want to convey? (i.e. professional, trendy, knowledgeable, high-tech, etc.) \_\_\_\_\_

\_\_\_\_\_

Do you prefer a highly graphical look or something more simple and straightforward? \_\_\_\_\_

\_\_\_\_\_

What sites have a look similar to the one you want? \_\_\_\_\_

\_\_\_\_\_

Do you prefer a particular color scheme (light, dark, or current company color scheme)? \_\_\_\_\_

\_\_\_\_\_

## Execution

What level of budget is available for the site's launch and first three months of maintenance?

- under \$10,000                       \$10,000-\$25,000                       \$25,000-\$50,000  
 \$50,000-\$100,000                       \$100,000-\$250,000                       over \$250,000

What is your deadline for launch?

- 30 days or less                       1-3 months                       3-6 months  
 6-12 months                       more than a year

Where are you currently in the process ? \_\_\_\_\_  
\_\_\_\_\_

## To summarize, do you have:

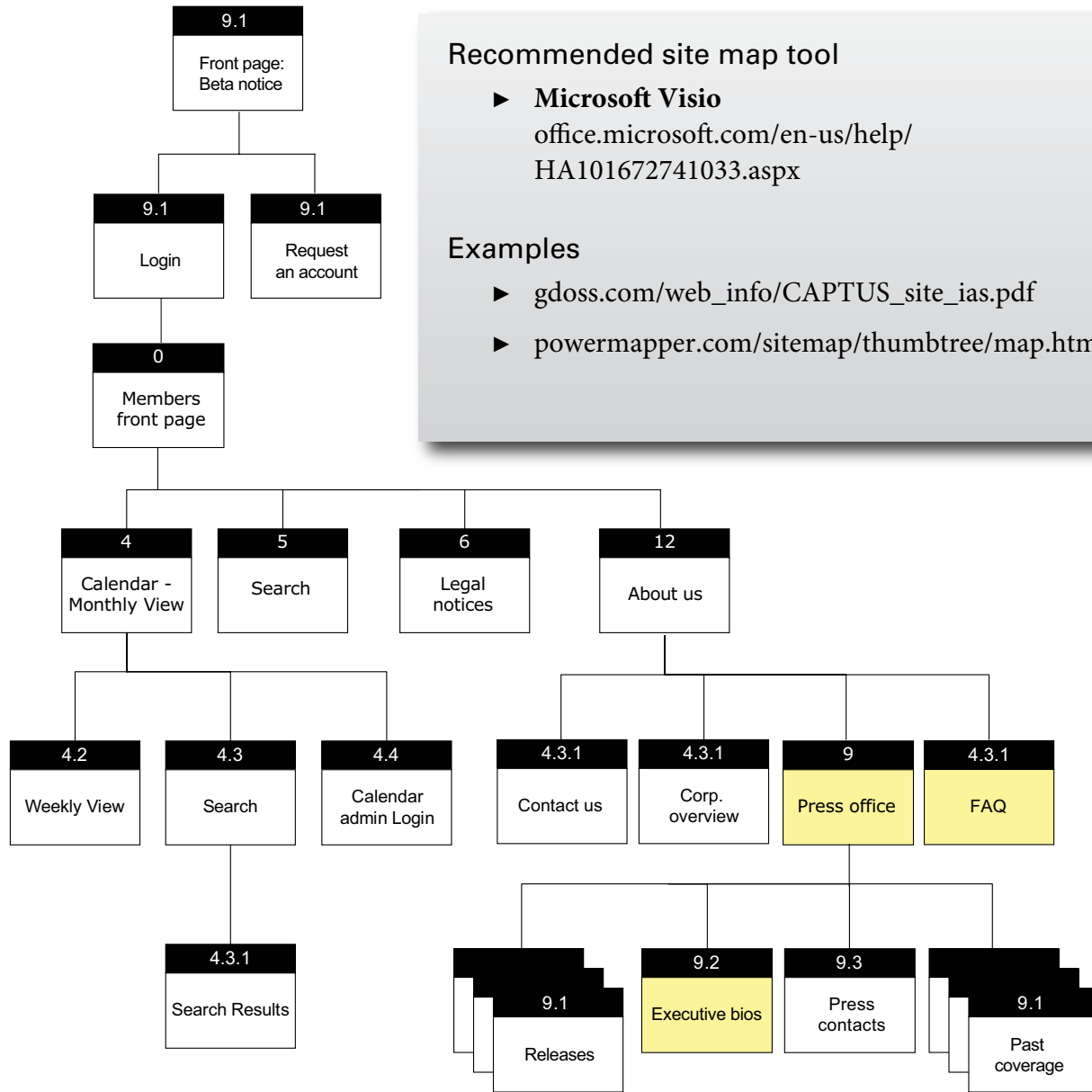
Do you have complete and available:

- Initial content (text, graphics, downloads)                       Stakeholder contact info  
 Business questionnaire (Appendix A)                       Specific requirements (Appendix B)  
 Site map (sample in Appendix C)                       Wireframes (sample in Appendix D)  
 Categories, Roles, Content types (sample in Appendix E)                       Design files



# Appendix C

## Sample Site Map




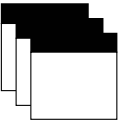

**Recommended site map tool**

- ▶ **Microsoft Visio**  
office.microsoft.com/en-us/help/HA101672741033.aspx

**Examples**

- ▶ gdocss.com/web\_info/CAPTUS\_site\_ias.pdf
- ▶ powermapper.com/sitemap/thumbtree/map.htm

**Legend**

-  Page ID, and page title
-  Multiple Similar Pages
-  Content for which additional assets will need to be developed

# Appendix D

## Sample Wireframe

<b>Site name and logo (with rotating graphic)</b>		Site Map   Contact Us   Feedback	<input type="text"/> <input type="button" value="Search"/>
			Advanced Search
Home   About This Site   Forum   Resource Links   Preferences   Publications			<input type="button" value="Chat now button"/>
<p><b>Login</b></p> <p>Email <input type="text"/></p> <p>Password <input type="text"/> <input type="button" value="Login"/></p> <hr/> <p>&gt; <a href="#">Our programs</a> &gt; <a href="#">Our products</a> &gt; <a href="#">Our people</a> &gt; <a href="#">Our offices</a></p> <hr/> <p>Latest blog posts</p> <p>&gt; <a href="#">Item 1</a> Posted NN days ago</p> <p>&gt; <a href="#">Item 2</a> Posted NN days ago</p> <p>&gt; <a href="#">Item 3</a> Posted NN days ago</p> <p>&gt; <a href="#">Item 4</a> Posted NN days ago</p>	<p><b>Page Title</b></p> <p>Site Introduction - Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat.</p> <p>Duis aute irure dolor in reprehenderit in voluptate velit esse cillum dolore eu fugiat nulla pariatur. Excepteur sint occaecat cupidatat non proident, sunt in culpa qui officia deserunt mollit anim id est laborum Et harum und lookum like Greek to me, dereud facilis est er expedit distinct. Nam liber te conscient to factor tum poen legum odioque civiuda.</p> <hr/> <p>- <a href="#">Privacy Policy</a> -</p> <p>Disclaimer Duis aute irure dolor in reprehenderit in reprehenderit Disclaimer Duis aute irure dolor in reprehenderit dolor in reprehenderit Disclaimer Duis aute irure dolor in reprehenderit Disclaimer Duis dolor in reprehenderit Disclaimer Duis aute irure dolor in reprehenderit</p>	<p>Optional block of info (user-set via preferences)</p> <p>Optional block of info (user-set via preferences)</p> <p>Optional block of info (user-set via preferences)</p> <p>Optional block of info (user-set via preferences)</p> <p>Optional block of info (user-set via preferences)</p>	

### Wireframe tools

- ▶ **Microsoft Visio:** office.microsoft.com/en-us/help/HA101672741033.aspx
- ▶ **PowerMapper:** powermapper.com/products/mapper/
- ▶ **List of other tools:** filetransit.com/files.php?name=Sitemap\_Design

### Examples

- ▶ [gdoss.com/web\\_info/ia\\_deliverables/afh-wireframes.pdf](http://gdoss.com/web_info/ia_deliverables/afh-wireframes.pdf)
- ▶ [totheweb.com/learning\\_center/website-wire-frame.html](http://totheweb.com/learning_center/website-wire-frame.html)
- ▶ [sitepoint.com/article/wire-frame-your-site/](http://sitepoint.com/article/wire-frame-your-site/)

# Appendix E

## Sample Content Types, Vocabularies, and Roles

### Content types

- ▶ **Page.** Default Drupal content type. Used for static pages, such as “About Us”.
- ▶ **Story.** Default Drupal content type. Used for time-sensitive or dynamic content, for example news stories.
- ▶ **Product.** Created by Übercart. Defines an item to be sold.

### Vocabularies

- ▶ **Section.** Terms: *Announcement, Legal, Feature, Humor, Internal, Partner*. Applied to content types: *Story*.
- ▶ **Topic.** Terms: *Software, Hardware, User Interface, Business*. Applied to content types: *Page, Story*.
- ▶ **Catalog.** Terms: *Book, Video, Audio, Apparel, Software, Hardware*. Applied to content types: *Product*. (Created by Übercart.)

### Roles

#### Drupal default roles:

- ▶ **Superuser:** Drupal user #1. Has all permissions.
- ▶ **Anonymous:** Visitor who has not signed in to the site. Permitted to: read content of types “Page” and “Story”; create new account (requires email confirmation); buy from store.
- ▶ **Authenticated:** Any user who has signed in. Augments roles below. Permitted to: do everything permitted to Anonymous (except create a new account); read and comment on forums; add topics to forums; comment on content of type “Story”; add details to user profile.

#### Additional roles:

- ▶ **Writer:** All rights of “Authenticated”, plus: Can create content of types Story, Page, Forum, Blog.
- ▶ **Editor:** All rights of “Writer”, plus: Can administer taxonomy; can contact users directly;
- ▶ **Store Administrator:** Can create and edit content of type Product; can administer Übercart; other limited administration rights as needed, and to be determined.
- ▶ **General Administrator:** All rights of “Authenticated”, plus: Can create or delete (but not edit) content of any type; can administer users; can view reports; can do all administration tasks in Drupal’s “Site Building” and “Site Settings” areas.

## Appendix F

# Drupal Search Engine Optimization (SEO) Best Practices

Contributed by Ben Finklea, CEO, Volacci (volacci.com), 512-989-2945

### General tips

- ▶ It's important to pick the right keywords. Don't pick keywords that are too "hot" or you'll never rank. Don't pick "cold" keywords or you may rank but won't generate traffic. Pick warm keywords that indicate people are interested in you. For example, "digital camera store" is probably a better choice than "camera".
- ▶ Install the **Drupal SEO Checklist Module** ([drupal.org/project/seo\\_checklist](http://drupal.org/project/seo_checklist)), which organizes what you'll need to optimize your site. It also keeps track of the modules that you've installed and when you installed them.
- ▶ As you go, configure all modules for maximum SEO benefit — and revisit their settings from time to time to be sure you're getting the most out of them.
- ▶ Links are the currency of the Web. Get as many sites to link to yours as possible!

### Level 1: Strongly recommended modules

- ▶ **Page Title** ([drupal.org/project/page\\_title](http://drupal.org/project/page_title)) gives you full control of your <title> tags throughout your site.
- ▶ **Pathauto** ([drupal.org/project/pathauto](http://drupal.org/project/pathauto)) automatically creates search engine friendly URLs based on the title of your content.
- ▶ **Global Redirect** ([drupal.org/project/globalredirect](http://drupal.org/project/globalredirect)) Fixes some common URL problems when clean URLs and Pathauto are turned on.
- ▶ **Path Redirect** ([drupal.org/project/path\\_redirect](http://drupal.org/project/path_redirect))
- ▶ **Google Analytics** ([drupal.org/project/google\\_analytics](http://drupal.org/project/google_analytics))
- ▶ **Meta Tags**, formerly known as Nodewords ([drupal.org/project/nodewords](http://drupal.org/project/nodewords))

### Level 2: "Should-have" modules

- ▶ **Scheduler** ([drupal.org/project/scheduler](http://drupal.org/project/scheduler))
- ▶ **HTML Purifier** ([drupal.org/project/htmlpurifier](http://drupal.org/project/htmlpurifier))
- ▶ **Search 404** ([drupal.org/project/search404](http://drupal.org/project/search404))
- ▶ **Related Links** ([drupal.org/project/relatedlinks](http://drupal.org/project/relatedlinks))
- ▶ **Alinks** ([drupal.org/project/alinks](http://drupal.org/project/alinks)) dynamically turns specific words on your site into links
- ▶ **XML Sitemap** ([drupal.org/project/xmlsitemap](http://drupal.org/project/xmlsitemap)) creates a Sitemaps.org compliant, search engine readable, dynamic sitemap.
- ▶ **Site Map** ([drupal.org/project/site\\_map](http://drupal.org/project/site_map)) creates a plain text sitemap.

- ▶ **Digg This** ([drupal.org/project/diggthis](http://drupal.org/project/diggthis)) facilitates links to the popular social bookmarking site Digg.
- ▶ **Service Links** ([drupal.org/project/service\\_links](http://drupal.org/project/service_links)) adds links to several popular social bookmarking sites.
- ▶ **TrackBack** ([drupal.org/project/trackback](http://drupal.org/project/trackback)) adds TrackBack support.
- ▶ **Mollom** ([drupal.org/project/mollom](http://drupal.org/project/mollom)) provides spam protection via the powerful Mollom service.

### Level 3: “Good-to-have” modules

- ▶ **Top Searches** ([drupal.org/project/top\\_searches](http://drupal.org/project/top_searches)) supplies a block with a list of the top site search phrases, to keep you informed of what people are searching for on your site.
- ▶ **Notify** ([drupal.org/project/notify](http://drupal.org/project/notify)) sends periodic emails with details of all changes to a site; useful for responding to comments as they happen.
- ▶ **RobotsTxt** ([drupal.org/project/robotstxt](http://drupal.org/project/robotstxt)) dynamically generates the robots.txt file, which is especially helpful if you have multiple sites running off a single Drupal installation and need different robots.txt files for each site.
- ▶ **URL List** ([drupal.org/project/urllist](http://drupal.org/project/urllist)) creates a plain text sitemap listing every URL on your Drupal site. It’s a good replacement for, or addition to, the XML Sitemap module (above).
- ▶ **Google News Sitemap Generator** ([drupal.org/project/googlenews](http://drupal.org/project/googlenews)) creates an XML sitemap that meets the specification for Google News.

### Seek professional help

- ▶ Many companies would love to have the time needed to optimize their Web site with Drupal, but can’t allocate the resources to do so. That is why it is imperative to hire a qualified SEO firm that provides you with the Drupal expertise and knowledge that gets you ranked and converting with your Web site. Volacci is the leading Drupal SEO company and very passionate about your online success. Visit [www.Volacci.com](http://www.Volacci.com) for more information.

# Appendix G

## Resources for Learning More

The following listings are by no means exhaustive: The Drupal community is just too big! But these sites and resources will help you better understand Drupal on your own. Of course, we at Medicurrent always stand ready to strengthen your Drupal knowledge through training, video courses, documentation, or one-on-one-consultations.

### Sites

**Drupal.org** is the unquestioned center of the Drupal world, but not always the easiest place to find answers. Top sections:

- ▶ **drupal.org/search** lets you drill down after making the initial search;
- ▶ **drupal.org/handbooks** provides basic instruction;
- ▶ **drupal.org/support** lists several ways of getting help;
- ▶ **drupal.org/project/[projectname]** is the home page for specific modules and themes;
- ▶ **drupal.org/planet** aggregates Drupal-related newsfeeds (including our blog). Nearly all sites linked from this page are full of interesting Drupal information.

Other sites of interest:

- ▶ **themegarden.org** lets you browse through numerous free Drupal themes.
- ▶ **drupalmodules.com** provides commentary and ratings on Drupal modules that are themselves available from [drupal.org/project/Modules](http://drupal.org/project/Modules).

### Training

- ▶ **drupaltrainer.com** is Laura Scroggins, who offers both classes and private tutoring.
- ▶ **computerminds.co.uk** provides training in the United Kingdom (Bristol).
- ▶ **lullabot.com** is a well-known Drupal development firm that offers training.

### Books

- ▶ **Using Drupal** was written by six of the best-known names in Drupal development, and teaches practical skills by applying them within real-world Web site recipes.
- ▶ **Front End Drupal: Designing, Theming, Scripting** covers several user-facing areas of Drupal development that are traditionally difficult to learn.
- ▶ **Drupal 6 Themes** is particularly useful for developing functional designs.
- ▶ **Pro Drupal Development** is mainly about module development, and is an excellent addition to the bookshelf of any experienced PHP programmer.



## Videos

The Drupal community has been extremely active in producing free “screencasts”, where an expert visually shows you the steps to do a specific task. Numerous screencasts are listed at:

- ▶ [drupal.org/handbook/customization/videocasts](http://drupal.org/handbook/customization/videocasts)

Some of the more-prolific producers of free screencasts are:

- ▶ [growingventuresolutions.com](http://growingventuresolutions.com)
- ▶ [gotdrupal.com](http://gotdrupal.com)
- ▶ [drupaltherapy.com](http://drupaltherapy.com)
- ▶ [learnbythedrop.com](http://learnbythedrop.com)

Some of the more-prolific producers of free screencasts are:

- ▶ [doitwithdrupal.com](http://doitwithdrupal.com) is an archive of taped sessions from Lullabot’s popular training program.
- ▶ [lynda.com](http://lynda.com) offers Drupal courses as either as DVDs or as part of its subscription model.
- ▶ [drupal.org/node/128763](http://drupal.org/node/128763) gives links to videos of past Drupal conferences.

## Why Acquia

Companies are turning to Drupal as a highly customizable platform for building Web applications, managing Web content, and creating social networks. Organizations quickly realize that open-source, community driven platforms provide an overwhelming set of choices, and can find a learning curve unlike what they have experienced with pre-packaged proprietary solutions. The challenge for these companies is to gain all of the benefits of open-source software, without losing the services and support of commercial software.

At Acquia, we bridge this gap by simplifying Drupal adoption with products, network services, and technical support for Drupal. Our mission is to help organizations of all sizes to be successful with Drupal. Acquia serves as your guide to a successful Drupal experience.

Acquia's expertise and support capabilities provide a level of security and reliability that allow institutions of any size to run mission critical applications using Drupal.

To accelerate adoption and deployment, we provide an essential collection of software that gives your team an advanced starting point with Drupal.

To support Drupal in an enterprise environment we backup the reliability, scalability, and security of Drupal with software tools, support and hosting services. To minimize your operational risk, in-house Drupal experts are available up to 24x7, with enterprise-grade quality, reliability, and responsiveness.

## About Acquia

Acquia's products, network 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. At Acquia, we provide guidance through product expertise, support, and a packaged product offering of Drupal to ensure your Drupal project meets or exceeds all of your objectives, no matter what the size of your organization, no matter how big or small.

## Acquia Network Services

The Acquia Network is your operations portal for managing Drupal sites and connecting to Acquia's Technical Assistance Center. The Acquia Network completes the Drupal experience by providing the support and network services to operate trouble-free Drupal 6.x websites. Acquia Network subscriptions can be obtained for any Drupal 6.x site and offer expert support for all Drupal 6.x modules and custom code. Subscribers to the Acquia Network gain access to technical support, remote network services, and moderated subscriber forums. Premium subscriptions offer advisory services, 24x7 coverage, and email and phone support.

## Acquia Hosting

Acquia Hosting is a highly available cloud-based hosting platform tuned for Drupal performance and scalability. Architected to meet the needs of large Drupal websites, Acquia Hosting delivers a complete infrastructure to support Drupal deployment workflow processes from hosted SVN access and staging through to production instances. Together with Acquia Network subscriptions, Acquia delivers comprehensive Drupal infrastructure support from a single vendor.

## Acquia Search

Based on the powerful Lucene and Solr technologies from the Apache project, Acquia Search creates a rich index of your site content. When users search on your site, Acquia Search presents them with dynamically created filters so they can drill into results based on date, author, taxonomy term, content type, or other built-in or custom attributes.

## Acquia Drupal

Acquia offers Acquia Drupal, a packaged set of Drupal technology, including Drupal core, and a set of basic modules. Acquia Drupal provides a quick on-ramp to begin building Drupal websites.