



Charles River Web, Inc.  
240B Elm Street, Suite B1  
Somerville, MA 02144  
617-996-9174  
[www.charlesriverweb.com](http://www.charlesriverweb.com)

*Dynamic Content for Sites That Matter*

---

## Overview

Charles River Web is a full service web consultancy committed to providing superior and cost effective solutions to organizations of all sizes. We specialize in open source application development and Drupal CMS customization and integration. We are a fully vetted vendor with some of the region's most prestigious institutions, including Harvard, MIT, and Partners Health / Massachusetts General Hospital. In October of 2008, Charles River Web became a Silver Partner with the world's leading contributor of Drupal technology, Acquia Incorporated of Woburn, MA ([www.acquia.com](http://www.acquia.com)). Our relationship with Acquia assures that clients receive exemplary Drupal development and support services.

Operating since 2005. Officers authorized to act on behalf of the Company:

Ezra Klughaupt, CEO  
[ezra@charlesriverweb.com](mailto:ezra@charlesriverweb.com)  
617-996-9174

Seth J. Itzkan, President  
[seth@charlesriverweb.com](mailto:seth@charlesriverweb.com)  
617-996-9174

## Big Project Confidence

We are accustomed to building mission critical sites for meticulous clients. A quick summary is below:

- **United for a Fair Economy (UFE)** - Portal for Economic Policy Reform. UFE is a leading voice for economic policy reform. They are an informational and organizing hub for training and networking programs around the country. Charles River Web helped UFE expand its reach and versatility by building a site that is visually engaging, content rich, and easily maintainable. See <http://www.faireconomy.org/>.
- **MIT Center for International Studies - Jerusalem 2050 Project.** We developed the website for the MIT Jerusalem 2050 Project, which is a joint venture of the MIT Department of Urban Studies and Planning and the MIT Center for International Studies. The site supports the presentation of visions for the future of Jerusalem including support of ancillary rich media and social-networking functionality. This is a high-visibility project intended to help facilitate breakthrough discussions germane to peace in the Middle East and other areas of conflict around the world. See <http://www.envisioningpeace.org>
- **Harvard University Initiative for Innovative Computing (IIC)** - Scientific portals. For the Harvard IIC in partnership with Partners Health / Massachusetts General Hospital, we are developing portals for scientists working on stem cell experiments and Parkinson Disease research. These are part of a new online publishing framework being spearheaded by the Harvard IIC called the Science Collaboration Framework (SCF). The sites require extensive Drupal module customization and provide a new facility in support of peer reviewed research, collaboration, and grant targeting. See <http://www.pdonlineresearch.org/>.
- **Clarimed** is an information service which brings “transparency and openness” to the medical device industry, helping patients, providers, and other stakeholders make informed decisions. At its core is an aggregated database of 130,000+ medical devices with product specs, recall notices, and adverse event reports. Charles River Web build their prototype on a Drupal platform, moving from PowerPoint slides, to working functioning application, suitable for test use and investor review. Today Clarimed is open to the public at <http://www.clarimed.com>.
- **Sustainable Minds** - On-Demand Life Cycle Assessment Software. Sustainable Minds is a Cambridge, MA startup that is helping to green the products design industry by offering the world's first web-based on-demand life cycle assessment application. We developed the backend software to help make this happen. The project requires extensive data integration and custom visualization for decision making. See <http://www.sustainableminds.com>.
- **BostonNOW** - Online Paper & Blog Space. Our most visible project (which died during the collapse of the Icelandic krona), was BostonNOW.com. This was the website for the free daily that competed head-to-head with The Metro. At its height, they were publishing over 100,000 papers per day with over 3000 registered bloggers. We handled all aspects of the site (which was in Drupal), including blogging, work-flow, ad server management, and hosting. Just before their unfortunate demise, we had built a server cluster to handle their intended scaling to eight cities across the US. See screen shots

on our portfolio page.

- **The Health Effects Institute** - Publications Library. The Health Effects Institute is the country's leading scientific research agency specifically tasked with investigating the environmental and toxicological effects of automobile emissions. They are a trusted third party source that is equally funded by both the U.S. government and the auto industry, and their research papers and opinions are routinely cited and significantly influence regulatory action. Before employing Charles River Web, their publication library was hard coded. Today they have a facile system that allows for rapid search, sorting, and file attachment. See <http://pubs.healtheffects.org/>.
- **The Hockey Academy** - E-commerce integration. The Hockey Academy is the premier leagues, tournaments, and clinics management company for one of New England's most popular winter sport - hockey. We developed an integrated e-commerce application that manages events, schedules, league and team assignments, and statistics, as well as payments and reporting for thousands of members. It is the cornerstone of their operation. All financial transactions are securely processed through the Authorized.net payment gateway. See <http://thehockeyacademy.com/>.

Additionally, Charles River Web has done many sites for smaller businesses and organizations, including the Mount Prospect Public School District in Illinois. See <http://d57.org/>. Links or screenshots for sites not currently under development or NDA are available on our portfolio page, <http://www.charlesriverweb.com/portfolio>.

## Staff

- Ezra Klughaupt, CEO. Ezra is a developer with extensive experience developing and managing a wide range of database-driven sites in ASP and PHP. Ezra has a Computer Science degree from Tufts University.
- Seth Itzkan, President. Seth has over 25 years of experience in high-tech industries. He has worked for Andersen Consulting; Bolt, Beranek and Newman; and Digital Equipment Corporation. Seth has a Bachelor of Science in Engineering from Tufts University.
- Natalie Keller, Developer. Natalie provides programming depth to our team. She has a Masters of Science in Computer Science from Suffolk University and a BS from Cornell University.
- Scott McCabe, Developer. Scott is a developer with interests in both programming and server management. He has been developing in Drupal with Charles River Web and on his own for over three years.
- Michelle Ichinco, Junior Developer. Michelle is a Computer Science senior at Tufts University. The Tufts Computer Science program is rigorous and she is quite skilled in formal programming methods and languages, such as PHP. She is already well versed in Drupal management, site configuration and module extensions.

## Accessibility Consultant

- Richard Caloggero, Accessibility Consultant. Richard is blind from childhood and has become one of the region's leading accessibility consultants. Richard is a graduate of Worcester Polytechnic Institute (WPI) and has worked for the accessibility departments of both MIT and WGBH.

## Technical Approach

- Drupal / Acquia Drupal - In the last 2 years we have become increasingly impressed with Drupal's ability to meet the needs of our clients in a manner that would not have been possible through a proprietary or custom-developed content management system (CMS). Like many software houses from a few years back, we had our own CMS, but the rapid evolution of Drupal and the breadth and robustness of its contributed module base has convinced us to focus our expertise in its direction. We are impressed with its underlying logic, and unless there are specific client needs that warrant an alternative approach, we are likely to use it for most applications.
- Development, Staging, & Production Servers - All of our projects have at least two servers associated with them, a development server and a production server. The development server is what we develop on and the production server is what is live and publicly viewable on the Internet. For larger, mission critical projects, there will be a third server, known as "staging". The staging server is the middle ground between production and live. After changes are made and vetted on the development server they are then migrated to staging where they will await a final round of testing before being migrated to production. New ideas and incomplete features are never tested on

the staging server. This allows us to have full impunity on the development server and assures that a robust and stable version of application is always ready to migrated from staging.

- Version Control - Charles River Web utilizes industry standard version control methods for multiuser programming environments. Our version control system of choice is Subversion (<http://subversion.tigris.org/>). With a Subversion repository in place, the full history of development is always preserved.
- Project Management and Issue Tracking - After the initial discovery period a full project plan with technical specifications, milestones, and schedule will be generated. Project status updates will be made bi-weekly, or as requested. Issues will be tracked using industry standard tools such as Trac ([trac.edgewall.org](http://trac.edgewall.org)), or a similarly suited application.
- Content & Layout Separation - The site will be designed using the Web2.0 convention for full separation between the content and the appearance. The visual display of content will be controlled with stylesheets that will not impact content integrity.
- SEO - The application will be built with search engine optimization (SEO) as a design criteria. Drupal helps support SEO through a feature called "path auto" that builds the URL based on the title of the page or story. For example, a story titled "New Funding for Kieser Gym", will have as the URL, <http://www.mysite.com/content/new-funding-for-kieser-gym>". Additionally, we will submit a sitemap page to Google.
- Accessibility - The site will be designed according to Section 508 standards to be fully readable and navigable to persons with physical impairments, such as seeing, hearing, or mobility. Many of the accessibility requirements are addressed in Drupal's own handling of headings, page titles, and navigation links.

## Hosting & Site Maintenance

The world of application hosting is rapidly changing. Outsourcing to robust, "cloud-based" hosting solutions with reputable companies, such as Amazon, is ultimately easier, more secure, and cheaper than in-house solutions. We are recommending that all our clients move to the Amazon EC2 service. This service can scale to meet the needs being placed on the server. For more information on the Amazon EC2 service, please see <http://aws.amazon.com/ec2/>. We can provide managed hosting in which we will maintain the EC2 service and Drupal security updates. We are also happy to work with the client's preferred hosting provider or internal department.

## Discovery: Refining Requirements & Technical Design

The essential first phase of project development is discovery. During the discovery phase, user requirements, technical specifications, and cost expectations are refined. The deliverable is a full summary of the design approach. For a Drupal installation, this will include the following:

- **Modules (Core, Contributed, Custom)** - Core modules are those that install with the Drupal or Acquia Drupal release. Contributed modules are those that are vetted and posted on drupal.org. Custom modules are those that we write ourselves. In practice, there will usually be a contributed module that satisfies the requirement or that gets close enough that only a slight modification is needed.
- **Content Types** - These define the informational / database "containers" or structures required by the application. Content Types may include, portfolios, resumes, videos, institutions, events, users (many types), pages, and notes / comments. Any item that has a description, or title, or date, or that is expected to be edited, is a content type. Content types will have fields and permissions. Fields may be required or optional, and depending on the permissions, may be hidden or visible to certain user groups.
- **Views** - These define how the site information is displayed. In database terms, they are "queries", the results of which are displayed to the user in a certain fashion determined by the client and graphic designer. The information may be presented as lists, or tables, or separate pages and may contain photos, thumbnails, links, etc. Every list of candidates, or events, or resumes, or comments is a specific "view" that has to be created. Like Content Types, Views can also have permissions to determine who sees them, or in what circumstances.
- **Taxonomy / Terms / Categories** - These determine the general labeling, organizing and hierarchy of content. On a newspaper site, for example, this includes the principal "sections": news, sports, weather, etc. All stories would fall into a specified section. In Drupal, taxonomy goes across content types, so that a taxonomy term "sports" could apply to stories, events, photos, or even users. The display of information associated with a taxonomy is a "view".
- **User Roles** - The user roles define the types of accounts that can exist on the system. Each user role has it's own permission set. These, in turn, determine every aspect of what that user sees and is able to do. Typically, user roles would include: admin / senior administrator, content editor, content contributor, authenticated user, and non-authenticated user. It is not uncommon to have sites with user roles associated with specific content types, such as video contributor, video editor, event contributor, event editor, etc. In those cases, that user role would only have permission to contribute or edit that specific content. There is no set way to do this. Every project has it's own requirements.
- **Regions & Blocks** - These determines the layout of the pages and what sorts of information will be displayed in each section. Typically, a site will have five principal regions: header, footer, left column, main column, right column, with additional regions and subdivisions as needed. Blocks are typically small pieces of content that can be placed in, above, or below, any region of the site. In practice, these may be used to add a piece of content to the site that was not already accounted for as a content type. Like most everything else in Drupal the blocks have permissions associated with them, and

will automatically make themselves visible or hidden as determined by the user.

- Styles, Classes, and CSS - Styles and classes determine how the content looks: the text size, the background colors, the heading margin size, the table cell width, etc. The technical requirements document lists the expected style types, but it doesn't define their properties.
- Drupal Level, Hosting & IT Needs - This defines what Drupal release we will implement, the expected hosting solution, and any additional IT needs that may be required.
- Hosting environments. We will define the hosting plan, including the plan for development, staging, and production. Typically, for significant projects like this, we will have three servers allocated to the project. One will be for development. On this server the site first takes shape and implementation approaches are tested. The second will be for staging. This is a stable platform from which the live, or production, server will be migrated. The third is production. This is the live site.
- Unknowns / Questions - We will include a section on unknowns. This will specifically elucidate the aspects of the implementation for which we or the client still have questions.

## Client Endorsements & References

*"Our goal for the bycatch reduction site was to greatly expand public awareness about the issue while maintaining and building upon our extensive library of scientific research. The new website by Charles River Web with graphic design by Metropolis Creative, helps us do just that. It improves the searching and display of our research database while also providing new features and capabilities of interest to the general public."*

Tim Werner  
Senior Scientist  
New England Aquarium, and Director, Consortium for Wildlife Bycatch Reduction  
617-226-2137  
twerner@neaq.org

*"We could not be happier with our experience working with the team at CRW. Their expertise in Drupal has been critical to implementing the improved design and upgraded functionality we envisioned for our new website. Moreover, they have been engaging and responsive to our needs throughout the project. It is a pleasure to recommend them."*

Shannon Moriarty  
Communications Director  
United for a Fair Economy  
617.423.2148 ext. 108  
smoriarty@faireconomy.org

*"Charles River Web was invaluable at helping us design and develop the prototype for Clarimed. This prototype integrated our complex data model with an intuitive interface and helped us get to the next level of service offering and funding. I would definitely recommend them for any entrepreneur looking for a CMS-based website front or a prototype of their online business."*

Nora Iluri, PhD  
Founder & CEO of Clarimed  
617-852-5770

*"Charles River Web helped us develop a website for Parkinson Disease research that is now influential in the field. The site employs extensive Drupal customization to enhance collaboration among researchers around the world. I found Charles River Web to be an exemplary technology partner."*

Tim Clark  
Director of Informatics  
MassGeneral Institute for Neurodegenerative Disease  
617-726-1278  
twclark@nmr.mgh.harvard.edu

*"Charles River Web met our needs promptly and professionally. Their expertise in Drupal is helping us implement an aggressive program for online publishing."*

Sudeshna Das  
Program Manager, Initiative in Innovative Computing

Harvard University  
857-472-0039  
sudeshna\_das@harvard.edu

*"When I needed a rapid software development team for my company, I turned to Charles River Web. They hit the ground running, providing engineers with the talent I needed to develop and succeed despite an aggressive schedule."*

Keith Lehman  
CTO, Sustainable Minds Inc.  
617-834-2863  
keith@sustainableminds.com

*"Working with Charles River Web has been a pleasure. They have enthusiastically engaged the project and demonstrated a dedication to achieving the goals we have set for the group, the website, and the project as a whole, contributing both technically and conceptually to the website."*

Amy Spelz  
Project Coordinator, Jerusalem 2050  
Massachusetts Institute of Technology (MIT)  
617-253-2017  
aspelz@mit.edu

Diane E Davis  
Project Directory, Jerusalem 2050  
Head, International Development Group  
Massachusetts Institute of Technology (MIT)  
dedavis@MIT.EDU

*"Charles River Web built a site to our specifications which significantly helps automate the purchasing process for home heating oil delivery. This is a boon to us and our customers. We are happy to recommend Charles River Web for Drupal based eCommerce solutions."*

David Trojano  
Trojan Oil  
(508) 583-3046

*"Charles River Web provided mission critical web services for our newspaper. I'm happy to recommend them for other newspapers or high-visibility media web clients."*

Michael E. Schroeder  
President and Publisher  
Central Connecticut Communications LLC (Former Publisher, BostonNOW)  
860-225-4601  
mschroeder@centralctcommunications.com

*Charles River Web was able to develop code that provides transaction information from UberCart to Authorize.net so that the QuickBooks IIF file automatically adds full transaction detail to QuickBooks's Sales Receipt, saving us four minutes per transaction and numerous opportunities for error. This detail included item SKU's, discounts, shipping choices and fees. It was easy to work with the Charles River team, we will return to them the next time Drupal does*

*not provide a solution to our activity.*

Pan Vera  
IT Coordinator and Web Master  
Center for Nonviolent Communication  
panvera@cnvc.org  
802-659-0144