



RIVET LOGIC AND HARVARD BUSINESS PUBLISHING DELIVER RICH USER EXPERIENCE WITH OPEN SOURCE SOLUTIONS FROM RED HAT, JBOSS, AND ALFRESCO

FAST FACTS

Company	Harvard Business Publishing (HBP) and Rivet Logic
Red Hat Innovation Award 2009	Optimized Systems
Industry	Publishing
Geography	Cambridge, Massachusetts
Business Challenge	The HBP's ability to get new products to market and the quality of the customer experience at its e-commerce site were hindered by a proprietary operating system, a difficult-to-use legacy content management system (CMS), and inflexible customer-facing Web applications, which were negatively impacting the HBP's revenues and limiting growth
Software	Red Hat Enterprise Linux, JBoss Enterprise Application Platform and Frameworks including JBoss Seam, JBoss Hibernate, jBPM, Oracle Database, and Alfresco's open source Content Management System.
Hardware	Intel™ Xeon™ processor-based Dell™ 2950 multicore servers
Migration Path	From a proprietary operating system running a proprietary legacy CMS application to Red Hat Enterprise Linux and JBoss Enterprise Application Platform running the Alfresco Content Management System
Benefits	Increased employee productivity, lowered IT operational costs, and increased Web site traffic and e-commerce transactions.



BACKGROUND

Harvard Business Publishing (HBP) is a not-for-profit, wholly-owned subsidiary of Harvard University which publishes a range of content - both print and online - bridging the knowledge gap between academic and the corporate world. It serves three primary markets: academic, enterprise, and individual managers. With more than 250 employees, the HBP's mission is to explore and improve management practices around the world. HBP's major Web properties include the online version of Harvard Business Review (hbr.org), Harvard Business Digital (harvardbusiness.org), and Higher Education (www.hbsp.harvard.edu). Rivet Logic and HBP were selected for the Optimized Systems Innovation Award for the use open source solutions from Red Hat, JBoss,

and Alfresco that have enabled increased stability and the ability to develop products faster, bundle existing products more efficiently, and generate new revenue opportunities by increasing site traffic and offering richer, fresher, and more varied content.

Rivet Logic provides professional open source services and solutions that help organizations engage with customers, improve collaboration, and streamline operations. The company offers a full suite of JBoss professional services - including deployment, customization, and integration - enabling clients to fully leverage the power of the world's leading open source enterprise middleware stack. With complementary expertise in the Alfresco content management platform, Rivet Logic offers integrated, content-rich,

and Web-oriented architecture (WOA)-enabled solutions that power a new generation of interactive Web properties, enterprise intranet applications, and collaborative Web 2.0 communities.

“This project was as mission-critical as they come. It encompassed the back-end repository, the front-end application that internal users deployed to create new content and products, and a customer-facing Web application that delivered those products to customers through a variety of channels. Red Hat Enterprise Linux coupled with JBoss Enterprise Application Platform and Alfresco CMS, drove a total transformation of the way that HBP approached product development and delivery.”

-Mike Vertal, CEO, Rivet Logic

BUSINESS CHALLENGE

To stay innovative and develop new products faster, HBP’s business users require the ability to easily access and use content from a variety of systems across the range of HBP business units. But the existing aging content management system was limiting access to only a few trained power users, which routinely resulted in productivity bottlenecks across all units.

To further challenge the workflow and production of HBP products, critical content resided on various shared drives across the enterprise or was locked up in the proprietary system, making it increasingly difficult for HBP to repurpose existing content into the kind of new digital media products that the fast-moving business information marketplace was seeking.

“Strategically, HBP knew it needed to transform itself from a print organization - which what it was for the past 10 to 20 years - to a digital media organization,” said Mike Vertal, CEO of Rivet Logic Corporation, a professional open source services and solutions firm hired by the HBP to reengineer the core IT platform and mission-critical applications.

The growing array of aging and disparate legacy middle-ware and operating systems used to run HBP’s Web sites was also proving increasingly unstable. The system routinely caused integration hurdles, IT bottlenecks, and escalating operational costs due to personnel overhead and software licensing fees. The lack of easy-to-use Web publishing tools hindered the editorial staff’s ability to deliver fresh and innovative content and, consequently, limited HBP’s ability to drive site traffic and therefore the ad revenue and e-commerce transactions that contributed directly to the firm’s bottom line.

In addition to the financial overhead due to high software licensing and maintenance costs, a large percentage of IT operational costs and human resources were spent just keeping the old systems running, leaving little time and resources for developing innovative new products. The proprietary legacy systems were difficult to customize and integrate, and could not scale to keep pace with HBP’s expanding business.

SOLUTION

HBP recognized it needed to replace its proprietary content management system with a robust, yet easy-to-use enterprise-grade content management system that would facilitate access to its high-value content to its business users and integrate seamlessly with existing systems such as enterprise content repositories, search and merchandising



tools, e-commerce systems, ad networks, Web analytics, and community-building applications such as blogs.

HBP required a solution that provided increased flexibility around page design and messaging, easy access to digital products, a uniform user experience, easy-to-use e-commerce experience, and improved visitor experience for user registration and session management. HBP also sought a higher level of performance, scalability, and rock-solid stability.

One absolutely non-negotiable requirement: the new solution needed to be built with open source software and an open architecture with an enterprise Java foundation at the core. It also needed to support rapid, lightweight development at the upper layers of the application stack - most notably at the user interface layer and presentation tier. This requirement would focus on HBP's business goals and on leveraging HBP's very high-value content and core capabilities to enable future innovation.

This is where Rivet Logic came in. Rivet Logic provides professional open source services and solutions and offers a full suite of JBoss professional services including deployment, customization, and integration - enabling clients to fully leverage the power of the world's leading open source enterprise middleware stack.

Rivet Logic implemented an end-to-end open source solution that delivered on all of HBP's requirements. HBP's production ecosystem was built on Red Hat Enterprise Linux on Intel Xeon processor-based Dell 2950 servers with dual and quad core CPUs, running JBoss Enterprise Application Platform, Apache, Oracle Database, and the Alfresco Content Management System.

JBoss Enterprise Application Platform was used as a core component for the dynamic content delivery system and e-commerce experience. JBoss Enterprise Application Platform provided the basis for a WOA that enabled straightforward integration with numerous enterprise back-end systems and third-party Web services, including enterprise resource management (ERP), ad servers, XML repositories, taxonomy management, third-party search, Web analytics, and a user ID management system.

In addition, JBoss Seam served as the rich user interface (UI) framework for an intranet application for enterprise content management, and the public-facing Web applications for the online versions of Harvard Business Review at hbr.org, HBP's e-commerce site at harvardbusiness.org, and HBP's Higher Education site at www.hbsp.harvard.edu. In all cases, the JBoss Seam applications were integrated with Alfresco for back-end content management. The intranet application utilized Alfresco's document management (DM) repository, whereas the Web site applications utilized Alfresco's Web content management (WCM) repository.

JBoss Hibernate provided the persistence layer for all application logic and user-generated content, and jBPM governed workflow for editorial content and publishing processes. The JBoss Enterprise Application Platform provided the foundation necessary for HBP's mission-critical applications that required high performance and scalability. Rivet Logic used a WOA approach for the need for single-sign-on support, while also enabling integration with a variety of systems, including a blogging platform (blogs.harvardbusiness.org), e-commerce, an XML repository (for HBR article content), and community platforms. Integration with a third-party search engine offered powerful faceted search and navigation functionalities. This content delivery approach also met standards-compliant XHTML/CSS requirements, maintained SEO-friendly URLs, and allowed for straightforward integration of Web analytics. Integration between JBoss and Alfresco was streamlined by using free and open source software from Rivet Logic, including the Remote Alfresco API rivet for Alfresco DM integration and the Crafter rivet for Alfresco.

The JBoss Seam intranet application allows enterprise users to:

- Navigate, search, find and retrieve relevant content quickly through a combination of full-text search, metadata search, and content relationship browsing
- Create and enter new content and associate metadata and relationships

- Manage digital rights of product-related media
- Restrict access to certain types of content through role-based user authorization

"The new JBoss and Alfresco based intranet provides an easy way for end-users to search and find content, as the search results deliver detailed content, such as individual chapters, images, author bios and the public-facing HBP site provides visitors a rich experience for navigating and consuming HBP's digital content," said Vertal, "The JBoss and Alfresco based Web content delivery system provides the dynamic and feature-rich functionalities HBP needed in a simplified manner by seamlessly connecting the presentation, application and content repository layers."

BENEFITS

By using Red Hat, JBoss, and Alfresco open source solutions, HBP has gained platform agility that enables brand management, broader community functionality, and increased site traffic. The JBoss and Alfresco integrated solution has enabled HBP to gain the stability and ease of use it required to empower business end users and integrate with a host of critical applications and systems. With the new system in place, HBP can now develop products faster, bundle existing products more efficiently, and generate new revenue opportunities by increasing site traffic and offering richer, fresher, and more varied content.

From a developer perspective, HBP's IT department can now focus on value-added development of new application and site features given the open source architecture and the modern WOA infrastructure. Dramatically less time and resources are now spent on maintaining rigid, legacy systems that carried expensive maintenance and software licensing costs.

The new implementation has enabled HBP to better leverage the value of its branded content, including articles, books and book chapters, blogs, podcasts, and videos - easily, quickly and securely.

"Uniting all content across the enterprise led to the rapid development of new digital media products and richer content on HBP's revenue-generating Web properties,"

said Vertal, "With Red Hat, JBoss and Alfresco, HBP has enhanced the visitor experience with improved navigation, along with much faster Web site performance. By offering fresher and more dynamic content and increasing site traffic, HBP has started to expand its revenue opportunities."

"This project was as mission-critical as they come," said Vertal. "It encompassed the back-end repository, the front-end application that internal users deployed to create new content and products, and a customer-facing Web application that delivered those products to customers through a variety of channels. Red Hat Enterprise Linux coupled with JBoss Enterprise Application Platform drove a total transformation of the way that HBP approached product development and delivery."

Business agility has also increased by orders of magnitude, said Vertal. "Because we were on the new platform, in a matter of months we were able to replace the entire e-commerce front end with a much better user experience and more manageable applications."

The stability of the system has also proven itself. And, looking forward, HBP has plans to begin incorporating social media into the site using collaborative tools and community applications that will enable its employees to become better engaged with customers. "This will allow HBP to build and maintain better customer loyalty across its entire customer base," said Vertal.

"We utilized leading edge, open source platforms from Red Hat, Alfresco, and Rivet Logic to implement a large-scale, high-value, business-critical solution that spans internal enterprise collaboration applications, public-facing Web properties and communities, and business-critical e-commerce applications," said Vertal, "We believe this project demonstrates the powerful benefits that commercial open source software from Red Hat, JBoss and the open source ecosystem is ready to deliver to major enterprises for the converged world of content, community, collaboration, and commerce."



CUSTOMER ADVICE

"Any enterprise or government agency that is looking to increase employee productivity and/or improve relationships with customers should seek to leverage next-generation solutions that expand their use of content, community, collaboration, and community. And just as the consumer Web 2.0 was built on open source software, these next generation Enterprise 2.0 solutions are being built on enterprise-grade, commercial open source software from Red Hat, JBoss, Alfresco, and others. All organizations should seek to leverage commercial open source software as much as possible for any and all future enterprise software initiatives," said Vertal.

"Businesses should remember that software is a means to an end, not an end in itself. Companies should first focus on business requirements and desired results, and leverage the best-of-breed software technologies that will help them get there. And whether the business needs better internal-facing, content-enabled enterprise applications, improved external-facing Web properties, or e-commerce platforms, JBoss software has proven it can help deliver tremendous bottom-line results," said Vertal.

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