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WHITE PAPER

Turning Up the Heat with ColdFusion

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IDC OPINION

For over a decade and a half, ColdFusion has delivered an end-to-end Web solution for productively building highly functional Web sites and Web applications of significant complexity and richness. While the choices for developing Web application have proliferated, ColdFusion has remained popular among its loyal users and has continued to attract new developers interested in its unique blend of capabilities. ColdFusion offers the following key benefits for Web development:

- An uncharacteristically easy-to-learn and easy-to-master programming language known as ColdFusion Markup Language, or CFML (CFML is a tag-based server scripting language with support for a component model that is considerably more productive to develop in than many of its competitors.)
- Ready support for common programming integration tasks, such as with relational database back ends and Web services through SOAP/WSDL (Simple Object Access Protocol/Web Services Description Language) and REST (Representational State Transfer)
- Strong document manipulation and integration features, especially with respect to the popular Adobe Portable Document Format (PDF) files (ColdFusion is also distinguished by offering unique integration with other Adobe technologies such as Connect and Flash, including remote object execution between Flash clients and CFML servers [known as Flash Remoting].)
- The backing and industrial strength and extensibility of the underlying Java technology on which ColdFusion runs (Since release 6 in 2002, ColdFusion was developed to run on top of Java, positioning it as a technology that can scale both in performance and in programming flexibility through Java extensibility.)
- Integration with Microsoft technologies, including interoperability with .NET code and the ability to manipulate Microsoft Office documents, SharePoint metadata, and Exchange email, that puts ColdFusion in a differentiated spot as a crossover technology appealing to both Java and Microsoft platform ecosystems
- An Eclipse-based IDE, called ColdFusion Builder, that delivers on the key promise of providing an end-to-end Web development experience, which supports productive and speedy workflows without compromising the functional reach of the technology
- ColdFusion 10, which represents the culmination of a long effort to make ColdFusion even richer, more productive, and more secure (IDC believes the operational and security improvements alone justify the adoption of this release.)

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In this white paper we examine the value proposition of the Adobe ColdFusion application development platform and assess its position in the market. We take a look at the unique set of capabilities that ColdFusion has delivered over the years as it has cultivated certain use cases for which it is exceptionally well-suited. We also explore the outlined road map for the technology and identify some of the strategic challenges and opportunities that it faces. We end the paper with customer case study examples that illustrate these usage scenarios.

SITUATION OVERVIEW

ColdFusion plays in a widely covered area of the market, namely that of server scripting technologies such as PHP, JSP, and ASP.NET. However, it differentiates itself from other products in this broadly popular competitive landscape by offering a variety of unique capabilities and a blend of characteristics that have kept it popular among its loyal following of developers and allowed it to continue to garner new deployments.

IDC has found the following to be the most often cited broad qualities that have made ColdFusion an enduring choice for its adopters:

- **Productivity and ease of use.** Almost all ColdFusion adopters cite its approachability as one of the key features that drew them in initially. Allowing developers to accomplish complex tasks with seemingly simple scripting is compelling, but ColdFusion also allows advanced developers to dive in and code in Java. Version 10 further brings the power and versatility of an embedded Apache server.

- **Bridging technology domains.** The ability to integrate Java systems with Microsoft systems or data from databases with content such as documents and presentations, or to interface with email and text messaging or chat systems, or to integrate with client-side technologies such as Flash- and now HTML5-capable browsers has proved to be one of the most attractive and unique aspects of ColdFusion that has kept users loyal as new technology domains are added. In version 10, ColdFusion tackles modern Web development with rich HTML5 and REST support, allowing developers to build modern applications efficiently.

- **Document management and manipulation.** ColdFusion includes powerful PDF manipulation and generation features, giving it unique abilities in its class as an app server. These capabilities were first introduced in version 7 where capabilities for Flash-based Web forms and PDF reports were introduced even prior to the acquisition of Macromedia by Adobe. In version 8, after the close of Adobe's acquisition of Macromedia, ColdFusion gained additional integration features with Adobe technologies, such as extracting and modifying interactive Adobe Acrobat forms and converting them into XML for richer manipulation inside ColdFusion.

- **Integration with Microsoft technologies.** First introduced in version 8.0, .NET integration was a key enabler because it allowed code to leverage .NET assemblies including on remote servers through a proxy even if it was installed

on a non-Windows server, making ColdFusion a true crossover technology connecting both the Java and the Microsoft platform technology ecosystems. ColdFusion additionally is able to integrate with Microsoft Exchange and the Active Directory database and extract and manipulate documents from Microsoft Office and SharePoint.

A Brief History of ColdFusion

ColdFusion has seen persistent R&D investment as it has evolved through 12 significant releases in 18 years. This relatively aggressive pace of evolution, with an average release cycle of 18 months, ensured that ColdFusion kept up with the requirements of its customer base. Table 1 highlights some of the new features introduced with major versions over the years and paints a picture of a product that flexibly evolves with market conditions and customer needs, always providing its customers added value. In the sections that follow we discuss the three most recent major releases of ColdFusion — CF 10, CF 9, and CF 8 — to identify the broad thematic evolution of the product over the past five years of its history.

TABLE 1

ColdFusion Major Release History

Release	Date	New Feature Highlights
CF 1	July 1995	Tag-based language for data-oriented Web sites written in C++ by JJ Allaire
CF 2	November 1996	Custom tags and new language features such as looping, variables, and typeless expression evaluation; 150+ new functions
CF 3	July 1997	Custom tags and a search and indexing system for text; ColdFusion Studio IDE
CF 3.1	January 1998	ColdFusion Studio with HTML syntax checking and live page view; Sun Solaris port
CF 4	November 1998	Multithreading and enhanced security and multiserver support
CF 4.5	November 1999	Ability to access external system resources including Java objects; enhanced editor features; scriptable deployment; advanced project management; true debugger
CF 5	June 2001	First release after Macromedia acquisition; enhanced query support; new reporting and charting features; user-defined functions; improved management tools
CF MX 6	May 2002	Rewrite in Java to run on Java EE (JRun); object orientation with ColdFusion Components (CFCs); Flash integration features such as Flash Remoting
CF MX 6.1	July 2003	Improved stability and quality plus significant performance improvements; direct compilation to Java bytecode; ability to run with other JEE application servers; CFC model improvements (e.g., calling overridden parent object methods)

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TABLE 1

ColdFusion Major Release History

Release	Date	New Feature Highlights
CF MX 7	February 2005	Flash and XForms-based Web forms, PDF Report Builder, FlashPaper, RTF, and Excel; gateway features in enterprise edition for integration with non-HTTP request services (e.g., SMS and IM services)
CF 8	July 2007	Extensive release with many new features and capabilities; JSON serialization; PDF and Acrobat Connect integration; Microsoft Exchange and .NET integration; language improvements and new tags; AJAX widgets; server monitoring and reporting with many performance and manageability enhancements
CF 9	October 2009	Java object relational mapping (ORM) through Hibernate; integration with Microsoft Word, Excel, SharePoint, Exchange, and PowerPoint; integration with Adobe Flex/AIR; CFScript CFCs, implicit getters/setters, control flow enhancements (cffinally tag)
CF Builder 1	March 2010	Eclipse-based IDE with CFML, HTML, JavaScript, and CSS syntax highlighting, code folding and refactoring, outline viewing, line-level debugging and ORM auto-configuration; server management support
CF Builder 2	May 2011	Improved code navigation and searching, granular code formatting, automatic method stub creation, code assists for argument context and hover support
CF 10	May 2012	JRun replaced with Tomcat Web server; HTML5 Web sockets, video, and dynamic, interactive charting; improved Web services support (WSDL 2.0, SOAP 1.2) and support for RESTful Web services; Hotfix installer, improved scheduler, Tomcat integration and search integration with Apache Solr; support for Windows 8 and Windows Server 2012

Source: IDC, 2013

ColdFusion 10 Enhancements

The latest release of ColdFusion features a broad set of enhancements that significantly augment the already rich capabilities of the product. The new capabilities build on the key themes of speedy development, enterprise readiness, and keeping ColdFusion ready for future technologies.

- **HTML5 platform.** ColdFusion 10 provides support for new HTML5 capabilities such as server mapping support for browser geolocation features, built-in HTML5 video player, and WebSocket support for permanent, full-duplex connections to clients for efficient and secure communication. Permanent WebSocket connections contribute significant efficiency and performance to Web applications compared with alternative methods of communicating. Additionally, HTML5 video player support is added with the benefit from interoperability with fallback to Adobe Flash Player in non-HTML5 browsers. The revamped Flash Player with well-defined APIs helps ensure a consistent user experience across browsers.

- **Security enhancements.** With ColdFusion 10, Adobe has put special focus on bolstering security. One of the key new features is the set of built-in functions that can be used to prevent XSS (cross-site scripting) and CSRF (cross-site request forgery) attacks. Improved session management and functionality to invalidate and rotate a session are now included. Additionally, HTTPOnly session cookies can be made to apply only to a particular domain. Finally, the product can be installed with a secure profile to ensure that various settings are locked down by default.

- **Advanced charting.** ColdFusion 10 features new extensive charting capabilities implemented in HTML5, with Flash fallback in case of a non-HTML5 compliant browser. The new capabilities provide built-in advanced zooming and previewing that bring ColdFusion's easy charting capabilities to a new level of sophistication to support deep analytic capabilities in applications.

- **Apache Tomcat integration.** ColdFusion 10 integrates the popular Apache Tomcat Web application server into its delivered code. Tomcat replaces the older JRun application server, which is no longer being evolved by Adobe. The integration of Tomcat not only brings the benefits of a category-leading technology with its modern fittings but also encapsulates and delivers those benefits for the ColdFusion developer without the need to learn Java and its complexity. Additionally, features that ColdFusion 9 developers have come to rely on, such as search engine safe URL rewriting and session replication in a cluster, were added to Tomcat. ColdFusion 10 continues to support the use of other JEE application servers, though the benefits of the integration would not apply.

- **Revamped Web services support.** ColdFusion 10 not only revamps the Web services engine to support WSDL 2.0 and SOAP 1.2 but also allows ColdFusion Components (CFCs) to interact through the popular REST Web service protocol with built-in support for all HTTP methods and JSON serialization and deserialization. The REST support provides a popular approach for building back ends for mobile applications.

- **Full-text and relational mapping.** Integration of Hibernate-based ColdFusion object relational mapping (ORM) support with the Apache Solr full-text search engine. In addition to enabling the full-text indexing and searching of unstructured content in multiple languages, this new integration allows Solr to be used for full-text querying of returned relational data in the same spirit as ColdFusion's established abilities in blending differing technology paradigms. In characteristic fashion, this sophisticated capability is made easy to harness by ColdFusion developers through simple settings and CFML tags.

- **Language enhancements.** Language-level enhancements to CFML such as closures add a new construct to ColdFusion, bringing it in line with other commonly used languages in the Web ecosystem. Closures were supported from the early days in browser-based JavaScript and were also supported by Flash's ActionScript since version 3. Additionally, closures have become more common on the server as both Ruby on Rails and PHP (since version 5.3) support the feature.

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- **Operational enhancements.** The new release implements a simple Hotfix installer, new notifications to the administration console, and an improved task manager and scheduler that supports application-specific tasks, event handling, grouping, and chaining with cluster support. Finally, ColdFusion 10 implements significant security-strengthening measures such as authentication of applications using the enhanced log-in mechanism, user-input sanitizing to mitigate cross-site scripting and cross-site request forgery, and more secure default settings.

ColdFusion 9 Enhancements

ColdFusion 9 introduced a variety of key capabilities that span multiple areas and domains, but the four most important areas of improvements are:

- **Object relational mapping.** ColdFusion 9 introduced a new way to deal with relational data through an object relational mapping framework based on the Red Hat Hibernate open source project. This framework, known as ColdFusion ORM, provides a mapping of the object model of the application to the relational model of the underlying data the application uses. ColdFusion ORM encapsulates the complexity of Hibernate while providing its power of data querying and caching and of persistence event handling with significant productivity advantages to the ColdFusion developer. Java development skills are not required to take advantage of this powerful productivity enhancer.

- **Microsoft Office integration.** ColdFusion 9 introduced the ability to generate PDFs from Microsoft Word and Microsoft PowerPoint file format documents through the cfdocument tag and the ability to convert Microsoft PowerPoint into HTML and Adobe Connect with the cfpresentation tag. Microsoft Excel spreadsheets can be queried, updated, converted into HTML, or read into internal memory variables with the cfspreadsheet tag for complex manipulation. A variety of integration capabilities with the increasingly more popular Microsoft SharePoint were also introduced in this release, including single sign-on integration and the loading of SharePoint actions into ColdFusion. Finally, ColdFusion 9 queries IMAP-compatible servers such as Microsoft Exchange.

- **Adobe Flash and AIR support.** New capabilities to support the Adobe AIR offline database model were added, and the Flash Remoting technology was reengineered to improve speed and efficiency. Additionally, the PDF generation and manipulation functionality introduced in ColdFusion 8 was further enhanced, including support for extracting images and text from PDF files, improved thumbnail generation, and the ability to add headers and footers to PDF documents using the cfpdf tag.

- **Apache Solr search engine.** ColdFusion 9 introduced Apache's Solr indexing and search engine, which is based on the Java Lucene Search Library. Solr is a high-performance open source engine made available along with the Verify search engine first introduced in ColdFusion 8 but dropped from ColdFusion 10. Microsoft Excel spreadsheets can be created, read, and updated using the cfspreadsheet tag.

ColdFusion 8 Enhancements

ColdFusion 8 was one of the most feature-rich releases in the history of the product as it introduced a variety of new capabilities. We highlight the thematic anchors of the release by discussing four of the most important features:

- **Adobe PDF and Connect integration.** PDF document generation and manipulation were first introduced in this version, allowing PDF documents to be split and recomposed with the cfpdf family of tags. A rich set of tags was added to perform all manner of manipulations to Adobe PDF documents, providing ColdFusion with one of most enduring and compelling value propositions. Also included is the ability to create slide presentations dynamically from HTML code or Adobe Connect (SWF) files by using the cfpresentation family of tags and write the presentation files to disk or directly to a browser. The presentation can access live data from a database and populate charts and graphs.

- **Microsoft .NET and Exchange integration.** With integration, developers can access .NET assembly classes as ColdFusion objects by specifying type=".Net" in the cfobject tag or the createObject function. Bridging technology allows Java proxies to represent the .NET classes on the ColdFusion system and requires that a .NET-side agent run on the system where the assemblies are located. The DotNetToCFType function is also available to convert complex DotNet type variables into ColdFusion arrays, structures, or queries, as appropriate. Additionally, ColdFusion 8 is able to interact with Microsoft Exchange servers and post, retrieve, and manipulate email messages and calendar events, opening the door for rich workflow usage scenarios.

- **AJAX UI and JavaScript enhancements.** Language improvements and new tags to support JavaScript and AJAX programming were added, including support for AJAX widgets. A new cfajaxproxy tag creates a JavaScript proxy for a ColdFusion component, which is used in AJAX client code. The proxy and ColdFusion server-side support simplify the creation of AJAX applications that use CFCs by managing the interactions between the client and server, including automatically serializing CFC return values into JSON format. Support for explicit JSON serialization was also added with the SerializeJSON, DeSerializeJSON, and IsJSON functions.

- **Management tools enhancements.** A new Server Monitor application built with Adobe Flash was introduced to manage the server and collect and display information on requests, queries, memory usage, and errors. Also introduced were a Multiserver Monitor for tracking the status of several ColdFusion servers and security enhancements for disabling the creation of Java objects and for specifying user-based access permissions. The roles assigned to a user determine which pages in the ColdFusion Administrator and which functions in the Administrator API a user can access.

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Developer Tools for ColdFusion

ColdFusion is known for integrating multiple technology paradigms into a single package, which offers Web developers simplified configuration, ease of development and operation, and concepts that abstract complexity while retaining the full flexibility of the underlying Java technology. It therefore stands to reason that this technology is best delivered through an integrated development environment (IDE). Adobe introduced the first release of its Eclipse-based ColdFusion Builder IDE in March 2010 in between server release cycles. Just over a year later, ColdFusion Builder 2.0 was released. The ColdFusion Builder IDE is a critical piece of the ColdFusion strategy to simplify complex Web development while enabling an extensive feature set to be effortlessly exploited by developers. Only through an IDE can end-to-end capabilities and guidance with templates be properly offered to developers. An IDE allows Adobe to take ownership of the overall experience of its server product and control the destiny of its product by offering the best developer experience possible.

Key capabilities of ColdFusion Builder start with syntax highlighting of the key languages that ColdFusion developers use, such as JavaScript, HTML, CSS, and of course, CFML. The IDE also supports code assists for tags and argument context information, functions, variables, and components. Features such as snippet creation and management, custom and persistent code folding, refactoring, line-level debugging, and outline viewing capabilities are also supported. After two major releases, the ColdFusion IDE has evolved into a mature environment for developers featuring advanced capabilities such as ORM auto-configuration, granular code formatting preferences, customized CFML find/replace capabilities, and extension enhancements and callbacks for extending the IDE itself. ColdFusion Builder is an integral part of the ColdFusion offering and a critical enabling component for realizing its full promise of productive and rapid development.

FUTURE OUTLOOK

Release Road Map

ColdFusion has historically been an aggressively evolved product, though in many cases it has not offered competitive technology as early as it needs to. On the other hand, the product has offered substantial value as a Web technology that integrates heterogeneous application areas and paradigms from diverse vendors and ecosystems. ColdFusion's role as an integration hub of multiple paradigms of technologies and multiple developer ecosystems will continue as all the features that have been built into it are further integrated with new technology currently in planning. The next two releases for both the server and the IDE are discussed in the following sections.

Server Road Map

Adobe has discussed the broad outline of the next two releases of ColdFusion server — Splendor and Dazzle. In between releases, the team has continued to work on other aspects. For example, support for the popular Amazon cloud in the form of a Splendor AMI was released in early 2013, providing users with a quick and simplified approach to deploying ColdFusion applications in the Amazon cloud. The key thematic areas of

improvements for Splendor include bringing ColdFusion into the era of mobile application development and support for social applications. Special emphasis is planned for additional security features, building on the significant security work done for release 10 and taking its priorities from the OWASP Top Ten Project. Improved manageability and deployment as well as revamped and new PDF integration functionality are also planned.

For the Dazzle release, expansion of the mobile platform support capabilities and support for multiscreen content are planned. Dazzle is also expected to carry the water for Adobe's aggressive push into the digital marketing space by introducing deeper Web, mobile, and social analytics functionality. A customizable enterprise video portal is also planned, and capabilities that will enable ColdFusion to run in cloud environments in major cloud platforms are expected in the Dazzle release. Finally, the improvements are expected to be accompanied by a strong focus on security, extending the work done with Splendor and prioritizing mobile security according to the OWASP Mobile Security Project.

IDE Road Map

Adobe has also identified key work areas for two future releases of ColdFusion Builder. The Thunder release is expected to play a key role in the end-to-end development workflow for mobile application development as well as provide a professional JavaScript authoring experience. Focus on new developers will be delivered with new workflows around a "getting started" scenario. The following release, code-named Blizzard, is expected to coincide with the Dazzle server release and to feature one-click multiscreen support, deployment support in line with Dev/Ops integration trends, and improved test and debug workflows.

CHALLENGES/OPPORTUNITIES

While ColdFusion has been evolved on a relatively aggressive schedule, its most recent releases have taken longer to deliver. This release cycle has expanded largely as a function of maintaining the high level of integration with the various evolving domains of technology that ColdFusion integrates with. The result is that ColdFusion is on a treadmill to keep up with all that is transforming the tech industry. We highlight three challenges that also present evolution opportunities for ColdFusion.

Keeping Up with the 3rd Platform

IDC has identified four key areas that encapsulate the nature of the changing tech industry over the next few years. The four anchors of the 3rd platform are mobile, social, cloud, and big data. Each requires significant deep technical investment for any platform to support. While in many ways any low-level development platform can be used in support of 3rd platform applications, the very promise of simplicity and abstraction that ColdFusion offers means that these technologies have to be supported in specific ways through constructs in the ColdFusion engine. The challenge is that the 3rd platform is broad and deep and supporting these capabilities adequately may strain Adobe's resources. Nevertheless, Adobe has outlined a road map of investment that specifies support for the essential ingredients of the 3rd platform, which ColdFusion application builders are expected to embrace.

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Release Cadence and Incrementality

Among the key aspects of the three most recent releases of the ColdFusion server are that they are feature packed and have involved lengthy beta cycles; however, the average release cycle time has extended well beyond two years. In following this R&D route, ColdFusion is in good company with offerings from many traditional software vendors. However, the market is evolving in a different direction, which is putting extreme pressure on software vendors to rework their software delivery processes. Release cycles in the industry are shortening in the age of cloud services and disposable mobile devices. Over time, large software products such as ColdFusion have to be delivered in a more incremental way. In the long run, as software transforms into cloud services, releases may shift to quarterly cadence. In the intermediate term, the ColdFusion team would be well-served to adopt an annual cadence of software delivery. Adobe is beginning to gain experience with more incremental software release cycles of its Creative Cloud offerings. We expect some of this reengineering to carry through to ColdFusion.

Crowded Web Development Field

ColdFusion plays in a large and growing ecosystem of Web languages and frameworks. This ecosystem is rich with competent technologies such as Ruby on Rails and PHP. Additionally, large ecosystems such as Java and Microsoft platform technologies overlap with the Web ecosystem, providing developers a rich and expansive set of options. These ecosystems continue to spawn new technologies that capture the interest of developers. Recently, Node.js has been in fashion, attracting server-side Web developers who want to take advantage of an asynchronous programming model, highlighting the short-lived attention span of Web developers. In this context, it is legitimate to ask whether ColdFusion can grow its base of developers and garner more adoption. IDC believes that ColdFusion has a loyal and mature base of developers who are unlikely to leave it as long as the stream of innovation continues. IDC also believes that the unique blend of developer productivity, multiparadigm technology integration, and Java fallback that ColdFusion delivers will have lasting and potentially growing adoption as long as Adobe's ColdFusion investment endures. It is clear from Adobe's articulated road map that this investment will continue for the foreseeable future.

CONCLUSION

A scan of ColdFusion's evolution exposes a technology on a mission to integrate varied new capabilities from external platforms that take hold in the market. If it has to be boiled down to its essence, ColdFusion's key innovation is to act as the Switzerland of varied technologies and platforms, often bridging diametrically opposed ecosystems such as Java and the Microsoft platform. The amazing applications that result often bring these varied capabilities into rich integrated systems, which are impossible to fashion with so few resources, so few lines of code, or so little time without ColdFusion.

dominKnow Learning Systems

dominKnow is the purveyor of an advanced learning management system known as Claro. dominKnow customers come in all shapes and sizes because today the need to author courseware and training material for students and employees is a broad and horizontal requirement. Claro is a newly architected cloud solution that is hosted by dominKnow for users who access it through HTML5-capable Web browsers and mobile devices. Learning management systems are essentially content management systems with extremely versatile interactivity that support multiple delivery options for their authored learning content. Additionally, learning has evolved into a collaborative activity considerably beyond systems of the past, which were designed to generate content to be consumed individually. Segments of the learning content authoring industry are undergoing rapid evolution as online education has begun to gather more excitement and usage. Claro's advanced architecture means that it sits at the forefront of this changing marketplace with features and capabilities that will allow it to evolve quickly to meet new requirements. A key piece of this agility is the technology dominKnow used to build Claro.

Why ColdFusion?

dominKnow developed two successful generations of its learning content management system in ColdFusion, so it understands the product's key value proposition. The outstanding aspects of ColdFusion that kept dominKnow coming back are its productivity and agility of development. "It is not often that you have technology which is really easy to use, yet at the same time feature rich and is enterprise hardened," noted dominKnow CEO Luke Hickey. For the latest incarnation of its system, a collaborative learning system known as Claro, dominKnow essentially reimagined its learning system and took advantage of ColdFusion's most salient feature, namely the productivity of its development model, to bring the solution to market more quickly and reliably. "We were able to take a fresh approach to the design of the product based on fast-changing market transitions such as mobile and cloud, and ColdFusion 9 was a key part of the incredible productivity and agility we needed to harness the technology climate," said Hickey.

ColdFusion's ability to integrate and interoperate with other domains such as Microsoft Office files and SharePoint is important to dominKnow. "Our client base has significant interoperability needs and expects to use the learning content in a variety of flexible ways," said Hickey. Also, the fact that ColdFusion runs on top of Java and essentially encapsulates and abstracts for Web developers is not lost on Hickey, who attributes his ability to find developers able to move the product forward to this exact quality of Cold Fusion. "We are able to do a lot of coding to move the product along without Java development skills," said Hickey. "Yet, the fact that Java is there if we need it is also a compelling aspect of ColdFusion that makes us very comfortable with our choice."

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IDMI Systems

As an independent software vendor, IDMI Systems is unique in that it caters to a market that demands the type of automated advanced functionality and system maturity that can come only from a broadly installed and field-tested software package but that also needs customizations provided through a high level of service and client intimacy. IDMI is exactly this blend of software publisher and service provider with its flagship PTS policy tracking system. According to Tim Cunningham, IDMI Systems vice president of technology, "PTS is a real-time Internet-ready policy admin system that can provide full policy life-cycle processing capabilities in a unique all-in-one automation system for small to midsize insurance companies."

IDMS Systems clients are not the largest insurers and thus do not have extensive technical talent and resources at their disposal. For this reason, a system that is easy to deploy and manage, yet highly automated and comprehensive and deeply supported by its vendor is exactly on target for them. IDMI Systems has installed more than 50 PTS systems in the United States, and its customers appreciate not only the core functionality of PTS but also the product's ability to integrate with other systems and technologies used at customer sites such as accounting and email systems. PTS is a multifaceted and comprehensive insurance solution targeted specifically at property and casualty insurers in the midmarket.

Why ColdFusion?

When IDMI Systems set about the task of tackling this space, it was looking for technology that is developer friendly yet rich in features. In particular, the technology had to feature comprehensive capability and yet deploy easily at customer sites without a lot of IT sophistication. "We wanted to offer the property and casualty insurance industry a way to run their entire business online; a system where agents across the country could use browsers to quote, rate, issue, bill, and pay our clients' insurance products," said Cunningham about the PTS system that was developed to meet this functionality. The system also had to handle both data and documents adeptly.

Documents are at the center of almost all workflows for insurers, and the ability to generate and manipulate printer-ready documents was not typically built into Web technologies. But ColdFusion was not ordinary Web technology, and it provided exactly this blend of characteristics and capabilities. PTS makes extensive use of the PDF integration features offered by ColdFusion 8. "Without built-in PDF capabilities in ColdFusion, PTS would have taken many extra months to write, and we could not have continued to provide new functionality to our clients with such agility," said Cunningham. IDMI Systems continues to take advantage of new PDF features in new releases of ColdFusion as they come.

One key capability of ColdFusion that was greatly appreciated by a start-up software vendor is the ability to develop large commercial business applications at a rapid pace. "ColdFusion is a technology which allows applications to be developed two to three times faster than other systems we looked at, yet it provided enough scale, performance, and reliability to meet our needs," said Cunningham. One of the most comforting capabilities offered by ColdFusion is that it sits on top of Java, providing it

commercial hardening and robustness and allowing the full power of Java to be used to extend the capabilities. "We knew that we could always roll up our sleeves and work directly with Java if the situation called for it," said Cunningham.

AboutWeb LLC

An example of the many consulting houses that have built a thriving business around Adobe's ColdFusion is AboutWeb, an IT solutions provider in the Washington, D.C., area. The company's two founders selected ColdFusion in the early days of the Web to build a document-focused application for an optical sciences journal publication and workflow application. "In the early days of the Web, there weren't many technologies that could handle what we wanted to do, and the BPM tools wave hadn't started kicking in to provide more specialized workflow application construction," said Kelly Brown, AboutWeb cofounder and CTO. From those early roots, AboutWeb continued to build out its portfolio of applications, targeting associations and agencies in the federal government. Today, AboutWeb manages a portfolio of applications from over 40 clients and has grown to almost 100 employees. "It has been an incredible ride, and we have worked with Adobe as a close partner, integrating their products into our solutions as we have diversified into other technologies," added Brown. In fact, the integrative nature of ColdFusion has been a key asset as AboutWeb has diversified into other technologies, often using ColdFusion as the glue to tie multiple systems together as it forged new document-oriented systems for its clients.

Why ColdFusion?

Like most ColdFusion adopters, AboutWeb was first attracted to ColdFusion because of its ease of use, which translates into a productive process of development where a lot is accomplished on a project quickly. "The fact that we could find a vendor-supported product that provided comprehensive Web development features was a key value in the early days of the Web," said Brown, "but as our applications got more complex, the evolution of ColdFusion into a technology integration hub which aggregated data sources and provides interfaces to various other technology domains was a big reason why we stayed with the technology." Because ColdFusion is built on top of Java, AboutWeb was able to recruit more experienced developers to work on more complex applications. This expanded both the range and the durability of the product. Like any Web technology with a long history, ColdFusion has been subjected to many security attacks. "The patches for ColdFusion kept coming to deal with whatever was thrown on it, leaving unpatched installations at risk," said David Epler, software architect for AboutWeb, who built an open source tool now used by thousands of developers for simplifying updates to ColdFusion 8 and 9 known as the "Unofficial Updater 2." Adobe stepped up with its own automated update facility in ColdFusion 10 while also adding many new security features and rich documentation to help administrators lock down their installations. "ColdFusion 10 truly raises the bar in security, providing a more secure install of the product with 'Secure Profile' and providing protections against many of the attacks that are rampant on the Web," said Epler. "Upgrading to version 10 is the single biggest step towards a more secure installation that administrators can take," he added. The partnership between AboutWeb and Adobe has continued to deepen as Adobe recently bolstered its partner and customer programs. In fact, Adobe's close work with partners has been a key factor in the longevity of ColdFusion, in addition to its ability to morph in the face of new challenges.

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