CEGEDIM
Leading European technology provider adopts Adobe \textsuperscript{\textregistered} Flex\textsuperscript{\textregistered} within an SOA to improve deploying, managing, and using its solutions

CEGEDIM, the European leader in data, services, and software for the healthcare industry, traditionally developed its entire product range for a mainframe environment, and more recently a client-server environment. Now, new product development will be based on a service-oriented architecture (SOA) with J2EE-based business services and an Adobe Flex graphical user interface. By basing its new software on J2EE and Adobe Flex, the company is offering its customers unmatched portability and user experience.

Using J2EE and Adobe Flex overcomes numerous constraints. CEGEDIM’s aim was to improve the user experience and level of interactivity, while having a flexible and extensible architecture on the business services side. Deployment was also a key point. “We wanted to improve application deployment and maximize client reach,” says Didier Fleury, CEGEDIM’s IT director. “That’s why a heavy client was not an option—especially given the mix of the installed base of target customers.”

CEGEDIM also wanted to migrate its mainframe and client/server software directly to a forward-looking architecture without going through a web phase. “The HTML thin client is good for handling our deployment constraint but does not meet our requirements in terms of user experience (despite AJAX), maintainability, and security,” explains Fleury. “Rich Internet applications (RIA) coupled with SOA bring together the best of the thin- and heavy-client worlds.”

Adobe Flex, the natural client for SOAs
After evaluating the rich client technologies on the market, CEGEDIM opted for Adobe Flex, which was the only solution that met the company’s technical requirements. For CEGEDIM, the Microsoft solution was not yet mature. Eclipse RCP was heavier on memory, requiring more than 23MB of space on each client workstation as compared to a few hundred bits for Flex. Lastly, deploying an XUL application required the Mozilla browser.

An added advantage of using Flex is the ability to use Adobe LiveCycle \textsuperscript{\textregistered} Data Services (formerly Flex Data Services) to automatically synchronize data between the client and the backend business services—a core function within an SOA. Adobe LiveCycle Data Services offers various communication protocols such as HTTP, SOAP, RTMP, and AMF, as well as all the capabilities of pre-developed communications.

“The AMF binary protocol performs especially well and is well integrated into our J2EE transactional services,” says Michael Baden, Flex Framework Manager at CEGEDIM, who participated in the company’s development of its CRM offering. “We increasingly use push-mode data synchronization along with asynchronous calls to our business services. Not having to develop this communication layer has saved a considerable amount of time.” Also, client-side processing helps avoid expensive client-server roundtrips, both in terms of response times as well as network traffic and server load.

Aside from these technical aspects, the user-friendliness of the prebuilt Flex components and graphical controls, including data tables, tabs, and forms, were designed to meet software management needs. For example, users can manipulate data in a table without any programming required by CEGEDIM teams.
Instant deployment

The evolution of its CRM software has enabled CEGEDIM to satisfy most of its expectations regarding a large and specific project. The company has set up a development center for Java developers focused on the Flex user experience. This did not result in any sweeping changes, because there are many similarities between the ActionScript programming language and Java. CEGEDIM was therefore able to capitalize on its internal resources while gradually centralizing development around one base. The result? “One week was enough for training our developers. After a few days of experimenting, they were fully up and running,” says Fleury.

CEGEDIM built its own Flex framework to increase project productivity. The solution extends existing services—such as LiveCycle Data Services—with other functionalities that address user preferences, a model view controller rendering manager, and assistance in dynamically localizing the application. Meanwhile, the business services are written in Java in a J2EE framework and accessed by the client application using the Adobe LiveCycle Data remoting services. The screen layouts are expressed in the Flex XML language (MXML) and generated directly through the Flex Builder 2 WYSIWYG integrated development environment. Rules and business processing are based on ActionScript. CEGEDIM opted to develop graphical controls that relieve the server from compiling screens. These are interpreted in XML upon request from the client.

“Screen updating at client workstations is almost instantaneous because there’s no compiling,” says Baden. This is because Flex is based on a language interpreted by the user’s Adobe Flash client. It also has a built-in system that performs incremental application updates.

Faster build and easier maintenance

The benefits for CEGEDIM in moving to the Flex rich client are tangible. “We are building client interfaces more quickly,” says Fleury. “We are also making gains in maintenance due to language harmonization. At equal output, Flex clearly enables increased productivity compared to a Java Struts/JSP approach.”

CEGEDIM customers appreciate the makeover of their CRM tool. Its interface is so engaging that they quickly forget they are working off a remote server in asynchronous mode. “High-performance communication between the Flex client and our business services using LiveCycle Data Services has a good deal to do with this,” says Fleury. In addition, the almost transparent deployment and updating of the application are two major benefits for customers’ IT departments, which can continue using their choice of operating systems and browsers on client workstations.

All set for enterprise-wide implementation

Encouraged by this initial success and very positive user response, CEGEDIM will now migrate all of its tools to Flex 2. Two new Flex projects are already underway: medical practice management in England (Vision 4) and back-office management of global physician surveys (CAM-IT V2). “Adobe Flex is the only concrete solution that meets our aim to provide the highest level of service to users,” says Fleury. “Flash Player is already mature and performs at our expectation level in terms of an MMI. Flex allowed us to skip a generation of technology and go directly to a rich client”.

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Didier Fleury,
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www.adobe.com/products/flex/