

## ***fab4minds* Cuts Development Time by 30% with IBM Rational Rapid Developer**

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### Overview

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#### ■ **The Challenge**

*At risk of losing market share to competitors that were rapidly releasing new improvements, fab4minds needed a cost-effective way to accelerate its development process.*

#### ■ **The Solution**

*fab4minds adopted IBM Rational Rapid Developer to simplify legacy system and business-to-business integration, jumpstart development projects, and increase developer productivity – while keeping costs down.*

#### ■ **The Benefit**

*Gained a time-to-market advantage over competitors by reducing development time by 30 percent on its first project, with an expected 50 percent improvement on future projects. At the same time, fab4minds increased customer satisfaction and gained flexibility in project staffing.*

#### **Company Profile**

Based in Vitis, Austria, *fab4minds* Informationstechnik GmbH is an IT consulting and development firm specializing in quality assurance and traceability systems for the food industry. These systems enable *fab4minds* customers to manage and control the entire food production process, from the field to store shelves. Certification boards, which inspect organic farmers and organic food companies, also use *fab4minds*' products in their certification process. With a system that integrates all market participants, including producer communities, markets, boards of control, and trade and agrarian institutions, *fab4minds* delivers a coordinated, comprehensive solution with hardware, software, training and service.

With such a wide range of partners and end users to serve, *fab4minds* decided early on that a Web-based, open system was the best way to collect, document, and present all the data gathered during the food production process – from harvesting, to handling, storage, transport and so on, until the final product reaches

the consumer. At the same time, the company decided to use a J2EE framework to ensure its solution would meet the company's high quality and scalability standards.

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Using J2EE standards, *fab4minds* built the initial release of its system, BioStockManager®, in about three years. The system worked well and was meeting customer needs, but *fab4minds* faced a challenge. Competitors in the industry using Microsoft .NET appeared to be able to add new features and functionality more quickly than *fab4minds* – and were threatening to gain market share as a result. Harald Falkner,

Systems Engineering Manager for *fab4minds*, recalls, “After three years of developing with the J2EE standard, we found the system we had produced was very good, but we were too slow in developing new features. We had competition from other companies that were developing with .NET and we saw they needed less time to develop and release their software. We needed to be quicker in our development process.”

### **IBM Rational Rapid Developer Accelerates Development**

Although the *fab4minds* team briefly considered switching to .NET, they ultimately decided that J2EE was the superior technology for their application, especially when the expertise and experience they had acquired in J2EE was taken into account. Looking for a cost-effective way to accelerate J2EE development, *fab4minds* found what they needed – and much more – in IBM Rational Rapid Developer. Merging model-driven development and automated application construction, Rational Rapid Developer is an architected rapid application development environment that helps *fab4minds* develop, integrate, deploy and maintain high-quality, n-tier business applications in less time.

Falkner reports that Rational Rapid Developer quickly gave *fab4minds* a competitive advantage. “With Rational Rapid Developer we can develop much faster than before. Even on our first project with Rational Rapid Developer, we were 30 percent faster than traditional J2EE programming. We estimated the project would have required 1000 hours without Rational Rapid Developer, but we completed it in

700 hours. I am confident that we now are faster in development than our competitors.”

Falkner also points out that during the first project, the *fab4minds* development team was learning to become proficient with Rational Rapid Developer. On future projects, he expects even bigger time savings. “On the next project, I think we will be able to complete it in 50 percent of the time,” he adds.

### **A Rapid Start**

Falkner explains that Rational Rapid Developer was readily accepted at *fab4minds* by developers who were enthusiastic about using it. “We have a young development team and they are all interested in new technologies,” he notes. This enthusiasm, combined with a two-day training workshop, and a half-day onsite training session was all the team needed to begin using Rational Rapid Developer productively from the start.

Requirements for the first Rational Rapid Developer project, which included generalizing a customer-specific implementation into a packaged solution, were defined using IBM Rational RequisitePro. The *fab4minds* team also used IBM Rational Rose to model use cases and other aspects of the system, prior to the adoption of IBM Rational Rapid Developer. To jumpstart development, the team synchronized their existing Rational Rose model with Rational Rapid Developer. The team further accelerated initial project development by using Rational Rapid Developer to model and automatically create the more than 70 database tables required by the project.

Falkner recalls, “We made an analysis model in Rational Rose which we synchronized to Rational Rapid Developer. After that, Rational Rapid Developer created the database.” Later, the team populated those tables with sample data generated by Rational Rapid Developer, which helped them with functional and performance testing of the system. Rene Edelmann, lead developer on the project, reports, “Constructing sample data in the database was a big advantage for us. We generated about 10,000 records with Rational Rapid Developer – it is a very helpful feature.”

### **Prototyping, Iterative Approach Ensure Customer Satisfaction**

In the past, *fab4minds* would prototype applications for its customers, but would need to rebuild the application once the prototype was approved. This approach was effective, but inefficient as it required significant additional work to rebuild the release version. With Rational Rapid Developer, the team can easily construct prototypes, adjust them as necessary, and deliver a final application all in the same environment. Each prototype is the result of an iteration in the *fab4minds* development process, which is based on the IBM Rational Unified Process. “Using an interface prototype is very important to us because a lot of our customers cannot imagine how the system should work and how it should look if they don’t see an interface prototype. Without Rational Rapid Developer we had to do the same work two times. Now we create all of the prototypes directly in Rational Rapid Developer and we use the final prototype as the completed application.” In the end, *fab4minds*

developers used Rational Rapid Developer to create over 220 pages in the presentation tier of their first application.

In addition to employing an iterative development approach, the *fab4minds* team also follows many of the other best practices of software development that lie at the heart of the Rational Unified Process. They manage requirements with Rational RequisitePro; visually model their component-based architectures with Rational Rose, and control changes to their software using IBM Rational ClearQuest and IBM Rational ClearCase for software configuration management.

### **XML Support is Key**

Falkner and Edelman agree that XML support in Rational Rapid Developer has been a key to their success. "One of the highlights of Rational Rapid Developer for us is the messaging system and the ability to generate XML. We used it very often because we needed to generate PDF documents, such as reports and contracts from our system. We used Rational Rapid Developer to gather the data into XML, and then used XSLT (Extensible Stylesheet Language Transformations) to produce the PDF document. With Rational Rapid Developer it was very, very easy to generate these documents," Falkner explains.

As *fab4minds* enhances its business-to-business integration capabilities, Falkner expects the XML messaging support in Rational Rapid Developer to play a big role. "We will be using Web services to integrate the system with other customers and other companies. In this area, the XML processing

functionality will be also be a real advantage for us," he adds.

### **Changing Deployment Environments with Ease**

Rational Rapid Developer generates executable applications across all layers of an n-tier system, with support for a wide range of application servers, databases, and messaging layers. By simply changing technology settings, developers can reconstruct and redeploy the applications they develop for a new technology platform. This capability proved to be exceptionally valuable for *fab4minds* as the project progressed. Falkner reports, "At the beginning of development, we were not sure which database system we had to use, so we started to develop with Microsoft Access. After about a month, our customer told us that they needed the application to use Microsoft SQL Server. We simply changed the deployment model and reconstructed the application and it was working on SQL Server. We know that without Rational Rapid Developer that would have required a lot of boring migration work, because in the past we had to migrate a J2EE application based on SQL Server to Access and it was a very hard job."

Rational Rapid Developer also enabled *fab4minds* to switch application servers with similar ease. "We started development using Tomcat as our application server, but later we needed to switch to JBoss, and this was also very easy," Falkner continues. In the future, as *fab4minds* expands its customer base and offers its clients the ability to select their own application platform, Falkner expects even greater benefits from Rational Rapid Developer's ability to reconstruct applications for a wide range of target environments.

### **Project Staffing Simplified**

Because Rational Rapid Developer masks much of the complexity of n-tier development, it enables developers with little experience to become productive very quickly. In the case of *fab4minds*, all of the developers were experienced J2EE developers, but each was specialized in a particular area. With Rational Rapid Developer, the developers are no longer limited to working only their area of expertise, which has given the company great flexibility in allocating resources for projects. "With traditional J2EE development, you need a development team of specialists for the presentation tier, for EJBs and so on. Our whole team is experienced with J2EE but most team members have the know-how only in specific disciplines of J2EE development, for example front end (JSP), middle tier (Struts), or backend (EJBs). With Rational Rapid Developer, one person can cover all the different roles of J2EE development," says Falkner.

This capability, combined with Rational Rapid Developer's short learning curve, will help *fab4minds* expand its development team by an anticipated 100 percent over the next year. "We are in an area of Austria where it is very difficult to find specialists in J2EE development. So it is very difficult to find employees that have the skills that we require. With Rational Rapid Developer, it will be easier to find developers because they don't have to be experts in the specific area we need. Also, it will be more interesting for the developers because they will be able to work on the entire application and not just one part," Falkner notes.



## Moving Forward

The *fab4minds* team has already started using Rational Rapid Developer on other projects, and they are finding new benefits along the way. For example, the team has leveraged Rational Rapid Developer's ability to reverse engineer databases into data models to help jumpstart a second project. "We have a data warehouse in our application and from this data warehouse we reverse engineered tables so we could access them via a Web portal. This is another very good feature of Rational Rapid Developer," Falkner reports.

Falkner adds that Rational Rapid Developer will play an important role in *fab4minds*' future development efforts going forward. "We're planning to use Rational Rapid Developer to develop our presentation-based or Web-based initiatives and new modules. We will continue to use IBM WebSphere Application Developer to develop EJBs."

According to Falkner, IBM Rational Rapid Developer, along with other IBM Rational tools and the IBM Rational Unified Process, enable *fab4minds* to develop software with a single guiding principle: to develop high-quality solutions faster. "We had a limited budget, a tight schedule and very few resources to work on the project, so we looked for a rapid development environment and decided to use IBM Rational Rapid Developer. It was a good decision -- we finished our project on time and on budget even though we took time to evaluate and learn how to work with the new environment. Because our J2EE experience is supplemented very well by IBM Rational tools, we are able to develop high-quality applications which are easy to support and based up on solid technology," Falkner concludes.

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