

Business Objects Drives Worldwide Development Efforts with IBM Rational ClearQuest

Overview

■ The Challenge

Business Objects was using a manual change management process and a defect tracking tool that made it difficult to automate, manage and enforce its development process. As the company's development team grew more distributed and the complexity of its projects increased, development was also hampered by the tool's frequent downtime and its inability to scale.

■ The Solution

The company adopted IBM® Rational® ClearQuest® to automatically enforce its change management process. The Business Objects worldwide development team enters, accesses and manages change requests (including defect submissions), reports and tasks via the Rational ClearQuest Web interface.

■ The Benefit

Rational ClearQuest has contributed to product quality improvements and has enabled the team to boost productivity, increase the efficiency of its development process, and effectively automate and enforce that process as it evolves over time. With Rational ClearQuest, Business Objects has a scalable solution to support its development organization as it grows and expands geographically.

With more than 29,000 customers in 80 countries worldwide, and headquarters in San Jose, California and Paris, France, Business Objects has a global presence that is reflected in its world-class, worldwide software development organization. As a clear market leader in the business intelligence industry, Business Objects helps the world's leading organizations track, understand, and manage their business in order to improve enterprise performance and operational efficiency.

When the Business Objects development team began to notice inefficiencies and productivity issues within their software development process, they recognized it as a threat to the company's own performance

and operational efficiency. The tool they used to track and manage software defects provided no way to enforce the team's development processes, so the company relied on manual checks to ensure that it was being followed. As the development teams grew and became more geographically distributed, these issues became more acute.

Time for a Change

In addition to frequent downtime, the defect tracking system had limited capability to support or enforce the company's processes, and therefore required manual oversight to ensure that steps were not being omitted, and that proper workflows were being followed.

James Anderson, Quality Assurance Manager for Business Objects, recalls, "We had a process that everyone knows about, but that was not written down. The process was essentially enforced by a group of five or six people who knew it very well. The issue we had with the product that we were using is that it didn't have support for state transitions, so there was no way to control or formalize our process within the tool. Also, at that time our development team included up to 250 people in a number of locations

throughout Vancouver and the UK. The design of the tool we were using was just not scalable.

We had daily down-time – at least once a day for 30 to 45 minutes. Because this is really a core system for our development process, the downtime was really hurting productivity and slowing development.”

A Solution with Added Advantages

When Business Objects began looking for a solution to replace its faltering tool and manual process, the team wanted to address the pressing needs of scalability and process automation first. After evaluating several options, Business Objects selected IBM Rational ClearQuest -- a highly flexible defect and change tracking system that captures and manages all types of change requests throughout the development lifecycle, helping organizations quickly deliver higher quality software.

According to Anderson, IBM Rational ClearQuest provided a number of clear benefits that were lacking in the system the team had been using and the other alternatives they evaluated. “Scalability was one of the big advantages over the product we currently had. The other big advantage was the state transition support offered by Rational ClearQuest, something we knew would be very valuable.”

Other factors helped further simplify the decision. First, the

quality assurance team had been successfully using IBM Rational tools for test automation and run-time analysis for some time, which had established a good reputation for IBM Rational tools within Business Objects. In addition, IBM Rational ClearQuest is tightly integrated with Business Objects’ own products – Crystal Enterprise™ and Crystal Reports® – which enables any Rational ClearQuest user to run reports where and when needed, right out of the box. Both of these advantages gave the company added confidence in selecting an IBM Rational solution for defect tracking.

A Running Start

Business Objects was able to rapidly deploy IBM Rational ClearQuest and start using it productively on projects in about one-third less time than the team originally estimated. The accelerated implementation was due, in part, to the flexibility of Rational ClearQuest and its state transition matrix, which enabled the team to automate and formalize its process. “For us, one of the real strengths of Rational ClearQuest is the state transition matrix. Support for state transitions was the fundamental capability that we were missing; it is what we needed to formalize our process. Our first release was quite quick, and the state transition matrix in Rational ClearQuest really made that possible. It saved us a lot of development time and it was a big cost savings for us as well.”

Assistance and training provided by IBM Rational Professional Services also contributed to the time savings. Anderson notes, “Rational consultants helped us formalize the processes that we had in place.” In addition, Anderson and other team leaders attended IBM Rational University courses on IBM Rational ClearQuest administration to accelerate the roll out of Rational ClearQuest.

Getting Hooked

The Business Objects team leveraged several key capabilities of IBM Rational ClearQuest to customize their schema and implement their process, including the ability to:

- design custom forms and organize information based on tabs
- design forms once, for both Windows® and Web clients
- implement out-of-the-box security and user group access control, and
- specify required fields and tie those fields to state transitions.

The team continues to customize Rational ClearQuest as their needs evolve using hooks – code that is executed at specified times or under specified circumstances to perform a related action. Hooks enable the Business Objects team to build focus into their defect tracking system by helping individuals see what they need to do and how to do it within the context of their development model. Business Objects relies on hooks to

maintain detailed audit trails and to automate many other steps in their process. Eric Ouellette, ClearQuest Administrator for Business Objects, notes, "Hooks are an integral part of the whole process."

As an example, Anderson and Ouellette point out that hooks have been key to implementing the development teams branching mechanism. "We have a large product line, and we frequently have issues that cross platforms and product versions. We use the concept of branching to address this, and when someone enters a defect, a hook creates the initial branch automatically. The hooks enable us to really make that mechanism work and be effective," says Anderson. "And, hooks help us create other branches, manage the multiple branches, and perform pre-processing. For example, if someone from QA enters a branch, it can go right to the full review state. But if somebody else enters a branch, it can be set to a temporary state. It allows us to create multiple entry states into the system" Ouellette adds.

Supporting Multi-Platform, Distributed Development

Although Business Objects primarily develops on Windows, many developers and testers also use AIX®, various distributions of Linux™, Solaris, and other platforms. Also, the Business Objects development team has grown to nearly 500 professionals distributed throughout the world, including offices in the United States, Canada, France, China, India and the United Kingdom. In this environment, having Web-based access to the

company's defect management system is essential. The Rational ClearQuest Web client enables the Business Objects development team to track and manage defects across multiple platforms, from virtually anywhere in the organization. Using their Web browsers, the team can submit defects, run queries and access detailed charts and reports. "Our integrated Crystal Enterprise reporting system allows us to view reports directly within the Rational ClearQuest Web interface and we have the ability to link directly back to defects or tasks in Rational ClearQuest, all in the same window," notes Anthoine.

In addition to providing convenient access to disparate groups that use a variety of operating systems in multiple locations, Rational ClearQuest also significantly reduced administrative overhead because it eliminated the need to install and update client software. Anderson explains, "One of the bigger advantages of the Rational ClearQuest Web client was a matter of administration. We didn't really have the infrastructure and resources needed to push an upgrade out to 500 clients worldwide if we wanted to update the software."

Managing Workflow and Tracking Tasks

With Rational ClearQuest, Business Objects tracks not only defects but also activities. The integration of Crystal Enterprise directly into the Rational ClearQuest Web interface has significantly improved developer productivity and workflows. Users can view reports and link back to edit

records in Rational ClearQuest all in the same window and parameterized reports allow users to view their own personal worklists.

This helps both developers and project managers to manage workflow and easily assign and monitor tasks across an entire project.

"We use it for tracking development tasks; QA and software testing tasks; and localization and documentation tasks. We get an overall view of the cost of the project as well as the timeline and the project's progress," Anthoine explains. "It provides a workflow for managing people, the work they do, and their deliverables," adds Ouellette.

Business Benefits

The Business Objects team cites a long list of benefits provided by Rational ClearQuest, including a more streamlined and efficient development process and increased productivity. Anderson notes that Rational ClearQuest, along with refinements to their testing process, has also helped Business Objects improve the overall quality of the products they release. "I believe the latest version of our Crystal line of reporting products is the most solid product that I have been a part of. The number of issues that we have had post-release is the lowest in our history and it has also been one of the highest volume selling products we have had in history."

The symbiotic relationship between the Business Objects reporting products and Rational ClearQuest benefits all Rational customers. "We

are really eating our own caviar” says Ouellette, “Business Objects is the first to use the latest versions of the Crystal line of reporting software with Rational ClearQuest in a production environment. It helps our software developers see their products in the same light as their customers do, and to share their customer’s experiences. And that helps make better software.”

The Business Objects team agrees that the automation of the process and the enforcement of the process with Rational ClearQuest have been a key to their success as they took on more complex projects with a distributed workforce. “That has been a core benefit to our organization,” notes Anderson.

Ouellette sees the freedom to evolve a process, combined with the ability to enforce it, as a major benefit. “Although Rational ClearQuest enforces the process, the process is not held hostage. When we want to, we can change the process in any way. There is really nothing that we want the process to do that we can’t make happen. That’s really important to us. It lets the process evolve,” he explains.

Moving from a manual process to a process that is automated and enforced through Rational ClearQuest has enabled the team to make sure that no steps are skipped and no departments or project leaders are inadvertently left out of important decisions – essentially ensuring the right activities are being done by the right people at the right time.

Rational ClearQuest has not only helped Business Objects effectively

automate and enforce its development process as it evolves over time, it has also contributed to improvements in productivity, efficiency and product quality. Looking forward, Rational ClearQuest has provided Business Objects with a scalable solution that will enable it to meet the needs of its growing worldwide development team.



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Route 100
Somers, NY 10589
U.S.A

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