IBM

Workscape Develops Next-Generation HR Platform Using IBM Rational Software Configuration Management Solutions

Overview

■ *The Challenge*

About three months into development of the next generation of Workscape's core technology platform, it became clear the company's existing software configuration management (SCM) solution would be inadequate given the project's size and scope. Workscape needed to implement a new, advanced SCM solution without disrupting the project schedule.

■ *The Solution*

The company adopted IBM Rational ClearCase for software asset management and IBM Rational ClearQuest for defect and change tracking. Workscape further simplified their SCM functions and workflow by using Unified Change Management (UCM) activity-based change management capabilities.

■ *The Benefit*

Despite the mid-project switch in SCM tools, Workscape completed the business-critical project on time.

By supporting straightforward customizations and rapidly responding to customer needs with new functionality, Workscape was able to gain a competitive advantage and continue its steady growth.

An innovator in HR self-service, Workscape provides a full range of online benefits and workforce management applications, including employee self-service, manager self-service, compensation management, performance management, outsourced benefits administration, as well as an employee portal. Today, Workscape's applications and services are configurable to support each client's unique business processes, which are easily integrated into multi-vendor environments to ensure protection of existing technology investments, and are available in multiple deployment options to enable rapid implementation and return on investment.

Early last year, Workscape embarked on a project to develop OneForce™. Based on open standards such as XML, OneForce is the next generation of the company's core technology platform.

Jason Smith, Manager of Release Engineering for Workscape, explains, "OneForce is a whole new generation of our technology and represents the future of the company as the platform for our customer deployments over the next several years. We wanted to bring our tools into a pure Java 2 Enterprise Edition (J2EE) model that supports simpler customizations with fewer code changes and a better upgrade experience for our customers." Bal Mahale, Application Engineering Manager for Workscape and the project manager for the OneForce effort, notes, "With the OneForce platform, our products are much more open and adaptive, making it much easier to integrate with other systems and packages. We expanded the scope significantly from our earlier products, and made it much more configurable."

"The Rational tools gave us so much visibility and insight into what was going on that we were able to take corrective action."

-- Bal Mahale
Application Engineering Manager
for Workscape

A Critical Decision

About three months into the project, the Workscape team faced a critical dilemma. As the team was wrapping up the requirements and design phase, it became clear that Workscape's existing software configuration management (SCM) solution would be inadequate for a project with the size and scope of OneForce. The team needed to focus on one of Workscape's core competencies – software development – but found it difficult given the deficiencies in its current tools. Smith notes, "It was a huge project involving thousands of man-days of work over the course of nearly an entire year. Tracking progress and understanding the state of the project was critical. The branching and merging engine of our current SCM solution was weak and it lacked some other basic features, such as the ability to version directories. But the bigger problems were deficiencies in configurability and reporting for defect management. Adapting the product to our needs – customizing the underlying workflow, the forms, the buttons, all of it -- was either very difficult or simply not possible in the tools we were using." Mahale adds, "The other big issue was definitely reports and metrics. If you are not collecting the right data, it's impossible to report on it and our tools didn't include any sort of reporting engine."

At that point, the team had to decide whether to struggle on with their existing SCM tools or change tools mid-project. Mahale recalls, "We had to ask ourselves, 'Do we want to incur the extra cost of introducing new tools, which nobody is familiar with, and go through training at this point in time?'" Smith adds, "We quantified the cost from a development perspective of implementing a new SCM solution midstream at about 128 development days lost. We evaluated a lot of tools from various companies; it was a hard decision for the executive staff to make. But IBM Rational came in and made great presentations and really swayed the executive management team." Workscape was looking for an SCM solution with:

- *Advanced metrics reporting to better track project progress*

- *Traceability of code changes, with the ability to link defects to code modifications*

- *Simpler customization of defect tracking forms*

- *Stronger branching and merging capabilities*

- *Improved scalability and speed*

- *The ability to provide project managers insight into the project to facilitate resource allocation.*

To meet these requirements and more, the team decided to adopt IBM Rational ClearCase® for software asset management and IBM Rational ClearQuest® for defect and change tracking. Workscape further simplified their SCM functions and workflow by using the Unified Change Management (UCM) activity-based change management capabilities in Rational ClearCase and Rational ClearQuest. "Switching tools midstream was a difficult decision, but after the fact, I can say it was clearly the right decision," notes Mahale.

Despite the mid-project switch in SCM tools, the development team was still able to complete OneForce on time. "With very little Rational experience on the team, we managed to customize Rational ClearCase and Rational ClearQuest to our workflow, train everybody, implement them, move the work we had started in our existing SCM tool, lose 120 days or more, and yet still deliver the project on schedule. Not only did the Rational solution help us bring the project in on time, but it did so despite the fact that it incurred its own cost at the beginning of the process. I've used Rational tools for a long time, and I was confident the decision to use them would work out. I think it turned out even better than I expected," says Smith.

Implementation Services Accelerate Tool Adoption

Bringing in new development tools on a project that is already underway requires rapid implementation and adoption by the development team. Workscape used training and professional services from IBM Rational to help its development teams come up to speed as quickly as possible. Smith reports, "The IBM Rational team was tremendous in helping us build out our workflow and make recommendations. I can't say enough about the effort they put in. They helped us quickly customize a training course and came in to deliver two days of training to the team. We got what we needed, when we needed it." Smith adds that the tools were eagerly accepted by the development team, which helped accelerate their implementation. "The benefits were so self-evident that I practically had to restrain our QA department when they knew they were going to get their hands on a copy of Rational ClearQuest," he says.

Improved Insight Keeps Project on Track

According to Smith and Mahale, one of the biggest benefits provided by Rational ClearCase, Rational ClearQuest and UCM was greater visibility into Workscape's development process. As project manager, Mahale had access to detailed metrics and extensive reporting capabilities and, as a result, had deep insight into the project.

When the schedule began to slip, Mahale was able to take corrective action by reallocating resources to bring the project back on track. Mahale explains, "With Rational ClearQuest, we tracked a lot of defect metrics. We could see the rates at which we were opening and closing the defects, and their severity and priority. We had distribution reports by the responsible manager or functional area. We could see trend charts and instantaneous charts, as well as aging charts that showed how long the defects had been open."

Mahale continues, "We didn't have any of these reports before. In the past, by the time we knew something was wrong and reacted; it was too late. The Rational tools gave us so much visibility and insight into what was going on that we were able to take corrective action. For example, as soon as we saw that one of the defect backlogs in a certain area of the application was increasing, we were able to concentrate on that, apply more resources to it and get out of that situation. Similarly, we were able to better forecast and do a better job of resource planning. With a certain completion date in mind, we could look at the defects we had and determine whether we could really make that date. We had scheduled the release for December 28; and we did, in fact, release on December 28. The project was massive, and I can't imagine how we would have done it without the visibility we had."

According to Smith, one of the most impressive aspects of the improved reporting capabilities was they required no additional work – in fact they required less. He explains, "We had one QA manager putting together crude metrics by logging into our old SCM system everyday, adding up the open and closed defects on a calculator, and entering them into a spreadsheet. With Rational ClearQuest all of that work – what amounted to almost a full time job gathering metrics – was absorbed by the power of the tool."

Development Tasks Streamlined

IBM Rational ClearCase has simplified the daily tasks of Workscape's developers as well. Rational ClearCase is integrated into Eclipse, enabling the Workscape team to check files in and out directly from their open source integrated development environment (IDE). Workscape developers also use the version tree in Rational ClearCase to visualize different development branches. Mahale reports that the process of merging development streams is also greatly simplified with Rational ClearCase. "Merging is a lot easier than what we were used to – the difference is like night and day."

There were other advantages as well. He adds, "All of our developers must backup their work, so that in case some thing happens to their machine, they don't lose the work. With our old SCM tools, they had to check in

their work, but as soon as the work was checked in, it was automatically delivered into the mainstream and was built into everything suddenly. The developer did not have any control, and could not check in unless he or she was ready to deliver. With Rational ClearCase, the developers can all have private development streams. They can check in whenever they want, and then deliver when they want to deliver. That is a big benefit from a developer perspective."

Simplified Release Management

Smith notes that IBM Rational ClearCase and the activity-based change management provided by the UCM model have made his job as Release Engineering Manager easier as well. "From a release management perspective, managing multiple changes as a single activity greatly simplifies the creation of private branches and individual delivery. As a release manager, I don't have to write tools to wrap around Rational ClearCase and Rational ClearQuest for them to be easy to use by the development community."

Mahale adds, "With our previous tool, sometimes our QA team would not know if a fix was in a particular release. Now, with the integration and the automation between Rational ClearCase and Rational ClearQuest, they can go in and see what release a particular fix was included in. They don't have to rely on notes from engineering."

In another example, Smith explains how Rational ClearCase helped Workscape deliver a release for one application server while it continued work in supporting another, before bringing both versions back together. "On a dime, we split the code base and were able to stabilize and ship one version. Then we stabilized the other release and brought it back into the code base over the next month or so. That ability to be flexible and agile was a huge win for us. We didn't have to maintain two completely different source repositories and we didn't have to worry about manually piecing it all back together again."

An Expanding Relationship

Considering the success Workscape has had with Rational ClearCase and Rational ClearQuest, the development team is looking forward to expanding its use of other Rational tools throughout the development lifecycle, including IBM Rational RequisitePro® for requirements management, IBM Rational Rose® for visual modeling, and IBM Rational TestManager® for test management. Mahale notes, "On this project we decided to take a bite size chunk and just use the Rational SCM tools. Since we had already completed the requirements phase when we brought in Rational, we decided to wait for our next release to implement Rational RequisitePro, and we just started that a few months ago. We have been using Rational Rose for some time already, but we are now

looking towards integrating it more with our process and using more of its code generation capabilities."

Smith adds, "We didn't really have a requirements management tool in-house, we basically were using spreadsheet. I think the benefits of using Rational RequisitePro are evident to our management team. Similarly, we don't have a test management tool in-house, so we basically do all of that by hand. We are also looking at implementing Rational TestManager later this year. We certainly see it as an expanding relationship with IBM Rational."

Smith notes that even with Workscape's achievements on its first project with IBM Rational SCM tools, he expects even greater benefits in the future. He concludes, "This project was a resounding success. And whereas in the past each project was essentially all new work, now we have commonized so much of the base that upgrades will be much easier. We will really see the benefits two, three, and four years into our contracts as a result."

IBM®

G225-4343-00