

Industry:
Telecommunications

Organization:
Telstra Ltd.

URL:
www.telstra.com

Description:
Telstra is the Australian national telecommunications carrier and a primary provider of public telephone, mobile phone, and Internet services in Australia. Approximately 54,000 employees and contractors work for Telstra.

Business Problems:
Telstra needed to unify and standardize their defect tracking and change management software for a diverse group of outsourced software developers often separated by large distances.

Rational Solution:
Rational ClearQuest

- Key Benefits:**
- Flexibility and scalability for a wide range of development projects
 - Customizability of web interface bypassed the need to develop a custom network with adhoc software
 - Comprehensive metrics gathering capabilities increased efficiency
 - Eliminated many problems associated with multi-platform, geographically distributed defect tracking by using a built-in Web interface
 - Ease of learning and using for minimal impact on productivity during implementation

Telstra Unifies Software Defect Tracking Across Australia with Rational ClearQuest

Telstra, the Australian national telecommunications carrier, is a company in the midst of unprecedented change. Once entirely government-owned and sole provider of public telephone, mobile phone, and Internet services in Australia, Telstra is now 49.9% privatized and has recently undergone a large amount of organizational change. As a result, Telstra is now faced with the challenge of adapting to a competitive marketplace while maintaining, expanding and improving telecommunications services essential to the nation.

One of the changes that Telstra has undergone is the widescale outsourcing of software development for its rapidly expanding mobile telephone, Internet and e-business services. Software developers, working independently of each other, are producing a wide range of software that must be debugged and tested for high performance and reliability before commercial deployment. This need for high quality, coupled with market-driven demands for rapid deployment, has made an efficient defect and change tracking system a critical component of Telstra's software development lifecycle (SDLC).

"It's imperative for us to resolve defects as soon as they happen and to track them to completion upon detection," said Wendy Kennedy, Quality Manager for Core Customer Relationship Infrastructure/Product Maintenance Applications at Telstra. "With over 100 developers, testers, management, business unit personnel and support staff in our group alone, the communications and co-ordination challenges are obvious. Because our software must be of high quality and developed on tight timelines, it's important that defects are fixed in a timely manner."

But with developers often using different off-the-shelf, or, in some cases, home-grown defect tracking tools, maintaining high-quality across the SDLC was becoming a cumbersome and difficult task for Telstra management. With defect and change request definitions varying across development

projects, there was also no unified mechanism for gathering metrics or assessing the costs of defect management. And with independent developers and Telstra testers sometimes separated by thousands of miles, communication and coordination of defect reporting and bug fixes was a complicated process prone to errors.

The Solution: Rational ClearQuest

To resolve these and other important defect tracking issues, a number of projects within Telstra have selected Rational ClearQuest® as their project standard for defect tracking and change request management. ClearQuest, the world's fastest growing defect and change tracking system, is developed by Rational Software, the leader in e-development software tools.

"We started looking at Rational ClearQuest in 1998," said Nick Singh, an independent testing consultant for Telstra who's been active in implementing ClearQuest usage with outside developers. "We did a significant evaluation of ClearQuest against other defect tracking tools, evaluating it in a number of key areas. ClearQuest satisfied all our mandatory requirements much better than other tools we looked at, and that's why we adopted it. It's now become the standard defect and change tracking tool in a number of large projects within Telstra."

Among the mandatory Telstra requirements that Rational ClearQuest effectively met were full customizability, comprehensive metrics gathering capabilities, native support of industry standard databases, a Windows NT interface, and a browser-based, customizable Web interface. With Telstra already using other Rational tools such as Rational RequisitePro®, Rational Rose®, and the Rational Unified Process™, ClearQuest offered the benefits of a look and feel familiar and popular with developers and testers both inside and outside the company.





With Rational ClearQuest, the Web is now a viable and accurate communications channel for Telstra software development stakeholders.

Customizability and Web Interface Builds Cohesion, Improves Defect Tracking

With a diverse group of developers working on a wide array of software projects, Rational ClearQuest's full-range customizability has been a significant asset allowing individual development groups to shape ClearQuest to their projects. Singh noted that this customizability has proven invaluable for achieving wide-scale ClearQuest use by outside developers. "We've found ClearQuest's customizability very useful," he said. "Developers have customized their workflow by modifying the various fields that are mandatory within that workflow. They've added fields like 'interested parties' into their e-mail notification process and they can create drop-down fields customized for each application being worked on. Configuring ClearQuest to fit the specific needs of each project streamlines the development process while simplifying the work of our developers," Singh said.

Also important to unifying the defect tracking process has been Rational ClearQuest's powerful Web interface. Enabled through a standard browser such as Microsoft's Internet Explorer or Netscape Communicator, the customizable Web interface allows stakeholders to easily view and update the latest defect tracking and change requests from any location via a standard PC running common browser software. As Singh noted: "Our developers and testers are often separated by thousands of miles so the Web is an ideal way for them to communicate accurately and effectively. The ClearQuest Web interface creates a great benefit for us because we don't have to deploy any software locally and we don't have to define which specific

users have ClearQuest access because they automatically have it through the Internet. Now developers anywhere in Australia can log on to the Web site and keep track of whatever is going on with a project. No other tool can offer us this tracking capability across the web as well as ClearQuest does."

Unifying Metrics Gathering

The collection and analysis of metrics (measurable data) is an essential part of the defect tracking and testing process. With different developers using different metrics definitions and parameters, it was increasingly difficult for Telstra management to spot trends and affect changes at critical steps of the SDLC.

Rational ClearQuest remedied that situation by providing Telstra's dispersed team with a unified set of metrics parameters for metrics consistency and metrics gathering uniformity. With standard definitions in place for all developers, defect visibility and defect occurrence patterns were readily visible across the SDLC. "Determining patterns of defect numbers across the testing phases is one of our important metrics gathering parameters, as is turnaround times for fixing defects," said Singh. "ClearQuest makes it easy for us to see where defects are being found, corrected and tracked at specific points throughout the SDLC. ClearQuest has often helped us identify deeper problems with the software application or the software development process. For example, when more defects are found in UAT (user acceptance testing) than in system testing, we know that the software probably isn't ready for field deployment. So it's critical that we have defect and change tracking metrics for all our testing, right down to the end. ClearQuest automatically analyzes the work being done by the developers and presents them with the meaningful metrics they need to do the job."

A Scalable Solution

Rational ClearQuest's Web interface forms the basis for a user network that allows testers and developers to concurrently enter, monitor and query data. Telstra currently has 1,200 registered users in its ClearQuest network. To meet anticipated future needs, the system configuration has been successfully performance-tested to handle a load of 2,500 registered users with 250 concurrent users.

"ClearQuest satisfied all our mandatory requirements much better than other tools we looked at, and that's why we adopted it. It's now become the standard defect and change tracking tool in a number of large projects within Telstra."

About Rational Software Corporation:

Rational Software Corporation (NASDAQ: RATL), the e-development company, helps organizations develop and deploy software for e-business, e-infrastructure, and e-devices through a combination of tools, services, and software engineering best practices. Rational's e-development solution helps organizations overcome the e-software paradox by accelerating time to market while improving quality. Rational's integrated solution simplifies the process of acquiring, deploying, and supporting a comprehensive e-software development platform, reducing total cost of ownership. Founded in 1981, Rational, one of the world's largest Internet software companies, had revenues of \$572 million for its fiscal year that ended in March 2000, and employs more than 2,600 people around the world.

Rational[®]
the e-development company™

Dual Headquarters:
Rational Software
18880 Homestead Road
Cupertino, CA 95014
Tel: (408) 863-9900

Rational Software
20 Maguire Road
Lexington, MA 02421
Tel: (781) 676-2400

Toll-free: (800) 728-1212
E-mail: info@rational.com
Web: www.rational.com

International Locations:
www.rational.com/worldwide

This ability of the system to handle concurrent usage is of importance to Telstra as software release alignment across interfacing projects produces peaks of testing activity. This means that at certain periods there could be an increased number of users on the ClearQuest system all submitting and modifying records simultaneously. "Knowing that the ClearQuest system can comfortably handle 250 concurrent users performing simultaneous defect tracking tasks gives Project Management confidence in the system during these intense periods," said Singh.

Easy to Learn

Rational ClearQuest's widespread acceptance by Telstra has been aided by ClearQuest's easy-to-use interface and fast learning curve. Singh commented that most technicians and engineers could be trained on ClearQuest in about an hour, with half the time spent on process and the other half on tool use. "ClearQuest is a very simple tool to pick up on and to use," said Singh. "This fast learning curve is one of the good things about ClearQuest."

Given the explosive rate-of-change at Telstra, Rational ClearQuest's inherent ease-of-use should continue to prove valuable as more and more outside developers are brought into the company's software development network.

"The ClearQuest Web interface creates a great benefit for us because we don't have to deploy any software locally and we don't have to define which specific users have ClearQuest access because they automatically have it through the Internet."

Rational, the Rational logo, Rational the e-development company, Rational ClearQuest, Rational Rose, Rational ClearCase, Rational RequisitePro, and Rational Unified Process are trademarks or registered trademarks of Rational Software Corporation in the United States and other countries. Microsoft Windows is a registered trademark of Microsoft Corporation. All other names are used for identification purposes only and are trademarks or registered trademarks of their respective companies. ALL RIGHTS RESERVED. Made in the U.S.A.

© Copyright 2000 by Rational Software Corporation.

Subject to change without notice.