

Industry:
Financial Services

Organization:
BT Financial Group

Description:
BT Financial Group is one of Australia's most respected financial institutions. For more than 25 years, BT Financial Group's three main businesses, BT Funds Management, BT Margin Lending and BT Portfolio Services have compiled an impressive performance record while providing a wide range of financial products and excellent service to both individual and institutional investors.

Business Problem:
BT Funds Management needed to manage the development and deployment of an innovative financial services e-commerce application. In order to be the first fund manager in Australia to offer full on-line transaction services, the project team had to develop both Web content and Java code quickly without sacrificing quality. The project's constraints demanded a software configuration management solution that provides strong support for project management processes, pinpoint control, solid auditing capabilities, and flexibility to allow developers to work in their preferred environment.

Solution:
Rational ClearCase

Key Benefits:
Supported BT Financial Group's existing project management process, and enforced roles and responsibilities on the development team

Accelerated development with seamless parallel development and fast code merges

Adopted quickly and enthusiastically by developers, because Rational ClearCase enabled them to work in their chosen environments, using their preferred methods

Minimized problems commonly encountered in projects that include both content and code, and that span multiple development groups

Increased confidence in the stability and reliability of the entire e-commerce application

Programming Environment:
Platform: Windows NT
Development Tools: Visual J++
Number of Developers: 6
Number of Business Analysts: 2

Rational software

Using Rational ClearCase for e-development Pays Dividends to BT Financial Group

The difficulties inherent in developing e-business software are, by now, well documented. As time goes by, e-commerce applications grow more complex, while release cycles grow shorter. Meanwhile, the public nature of the Internet has made software failures impossible to sweep under the rug, and hardly a week passes without a report of another e-business crash that sends customers to the competition and investor confidence plummeting.

In the financial services industry, the bar is set even higher. And there is zero tolerance for on-line applications that do not deliver as promised, 24 hours a day, seven days a week. No one knows this better than Peter Horne, Senior Vice President of BT Financial Group's Funds Management Technology. Horne and his team were responsible for developing and deploying BT On-line, an e-commerce application that offers investors full on-line transaction services, balances, and the ability to consolidate multiple investment products into a single portfolio. BT Financial Group is the first fund manager in Australia to offer these services on-line. Horne was ultimately responsible for giving the final go ahead to the software after deciding it was ready for release. Clearly wanting to leave nothing to chance, he turned to Rational ClearCase®, Rational® Software's market-leading software configuration management solution*, to help him manage the entire project from start to finish. "When you are the project manager that has to sign-off on an e-commerce banking application, you just don't want to have anything out of your control," he explains. Rational ClearCase gave Horne the control that he needed to deliver a high-quality, innovative e-commerce application on time.

Horne's group is part of BT Funds Management, which is one of three main businesses in the BT Financial Group. Collectively, BT Funds Management, BT

Margin Lending and BT Portfolio Services offer individual and institutional clients a comprehensive range of services in investment management, margin lending, and portfolio administration. Now part of The Principal Financial Group, BT has been part of the Australian financial market place for 25 years and is one of Australia's leading financial institutions.

Rational ClearCase: The Clear Choice for BT On-line

BT Funds Management wanted to provide its investors with 24-hour, on-line access to their accounts and developed BT On-line to do the job. BT On-line is a retail e-commerce application offered to BT's 400,000 investors and 10,000 financial planners. Horne and a team of six developers and two business analysts implemented BT On-line in pure Java using Microsoft J++ on Windows NT. The development team used a Joint Application Development approach to develop the specification by gathering input from various stakeholders including marketing groups, salespeople, legal teams and outside consultants. After the specification was complete, the team used Rapid Application Development techniques to develop both Web content and the application itself.

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*Development Life-Cycle Management: 1999 Worldwide Markets and Trends, (IDC, August 1999.)



“Rational ClearCase supports the project management process first and foremost... It gives you the ability to work in your own space, to share code or control access to it, and to merge code easily. It supports the way developers want to work.”

BT On-line was a complex project, not only because it had to satisfy the requirements of several groups, but also because it integrated several back-end legacy systems, including three record-keeping systems as well as security and auditing systems. The development team used Rational ClearCase every step of the way, and benefited from effective configuration management on multiple levels throughout the project. “Rational ClearCase provided an invaluable level of support for the project. It was a highly effective configuration management and workflow tool. ClearCase minimized the potential difficulties that can occur in projects that span multiple groups,” Horne explains. As project manager, Horne found that ClearCase’s ability to organize a project using components and activities was indispensable, “We could define roles and responsibilities within the lifecycle that ClearCase not only supported, but enforced.” While ClearCase helps compartmentalize various aspects of the project, it also facilitates distributed development, enabling teams of developers to work more efficiently and complete projects faster. Horne’s team took full advantage of ClearCase’s parallel development support, “We did a lot of baselining and used feature-specific branches which were then merged back into the main line with other features that were developed in their own cycles.” And because the BT On-line project included both code and content, Rational ClearCase’s unified code and content management was a substantial benefit.

From Horne’s perspective, Rational ClearCase was an undeniable success, “ClearCase supports the project management process first and foremost.” But a development tool cannot be truly effective unless it appeals to developers, as well as management. Horne’s team had no problem adopting Rational ClearCase, because it fit in with their existing methodologies. “It gives you the ability to work in your own space, to share code or control

access to it, and to merge code easily. It supports the way developers want to work,” Horne continues. “We plugged it into our process very easily without having to bend it too hard. It just worked.” Stephen Borg, VP of BT Funds Management Technology, is equally pleased with the final result, “We release directly to the production environment from the ClearCase repository, and our confidence in what we have in production has never been higher.”

Building on Earlier Successes

BT On-line was not the first project that BT successfully developed with the help of Rational ClearCase. Before BT On-line was developed by BT Funds Management, BT Portfolio Services used ClearCase to build its highly acclaimed Wrap Service — an advanced portfolio administration service designed for distributors of financial services products such as financial planners, accountants and stock brokers. Wrap is essentially an Internet based administration tool that “wraps around” a portfolio of investments. Since launching its Wrap Service in October 1997, BT Portfolio Services has played a groundbreaking role in developing the Wrap market in Australia. Wrap embraces all the benefits of e-commerce. Through a secure Internet link with BT Portfolio Services, the advisor can provide his or her clients with consolidated reporting, access to daily pricing information, greater convenience and reduced paperwork. One of the keys to the success of BT Portfolio Services’ Wrap has been its ability to quickly adapt to the increasingly sophisticated needs of the market.

Behind the scenes of Wrap there was a lot of hard work and leading-edge e-business technology. Wrap has a Web-based front-end running on IIS4 built with XML and ASP, a load-balanced mid-tier architecture developed on NT with Java and DCOM, and a Sybase backend, with a VB client for internal administration. The entire application was designed and maintained with modern object-oriented methods including the Unified Modeling Language, pioneered by Rational. The project relied heavily on parallel development to streamline a variety of software activities, including analysis, development, testing and builds.

Before undertaking such a large project, BT Portfolio Services put a significant amount of effort into establishing criteria for the software configuration management tool they needed. Development managers defined a set of benefits they expected to receive including:

- **Data Stability** – prevent the loss of data and code
- **Improved Audit Trails** – meet the stringent needs of the bank's internal auditors
- **Enhanced Parallel Development** – speed development and scalability
- **Increased Security** – close backdoors and other potential problems
- **Better Configuration Management** – boost developer productivity
- **Higher Service Levels** – allow the teams to meet the increased needs of developers
- **Overall Cost Benefit** – justify the investment to top management

After analyzing various version control tools, the team selected Rational ClearCase as the optimal solution based on these requirements. As the project progressed it became clear that ClearCase was exactly what they needed. With ClearCase, stability significantly improved across the board and the team no longer spent any time fixing corrupted files or directories. ClearCase provided detailed audit trails allowing the development team to recreate any current or previous software version with guaranteed accuracy. "ClearCase makes it easy to go back in time and to recreate a release," notes Niall Crawford, Software Engineer for BT Portfolio Services Technology. During the project, parallel development was seamless and the contention sometimes found within development streams was avoided altogether. "ClearCase's parallel development capabilities saved us days compared to our previous approach," Crawford recalls. Like Horne, Crawford counted on ClearCase's ability to enforce security — and set up levels

of authorization to control changes to code and the configuration process. "ClearCase has provided our division with a complete audit trail, ensuring important tasks like roll back operate effectively and internal security requirements are met," confirms Crawford. As for boosting developer productivity and meeting the needs of developers, ClearCase surpassed expectations again. Build/release times were reduced by a factor of eight after the introduction of ClearCase and its virtual file system. Merges, which previously required five hours to complete, were finished in one hour. Crawford continues, "When people saw the power of its branching and merging, and realized how it would make their lives easier, ClearCase became the undisputed choice among our developers. With ClearCase, we didn't overlook any files, we didn't miss any changes, and most merges were performed automatically." And, finally, the overall cost benefit could not have been more obvious to Crawford, "ClearCase gave us massive performance gains."

Not Just Rational ClearCase — An Array of Rational Tools Plus Rational Support and Training

BT relies on a variety of other Rational products and services, in addition to Rational ClearCase. For example, BT Portfolio Services technology team uses Rational Rose® for visual modeling, Rational Requisite® Pro for requirements management, Rational Suite TestStudio™ for automated functional testing. The team plans to begin using Rational ClearQuest™ for defect tracking and change request management very shortly. And David Simpson, Executive Vice President and CIO of BT Financial Group finds that Rational is responsive when they have questions or problems, "We are very happy with the support we've received from Rational Software. They have been very accommodating to our needs and we feel we've gotten a lot of value from the relationship." To help hit the ground running, each technology group sent two team members for Rational training and then used those developers as mentors for the rest of the group. Once trained, they were able to quickly set up guidelines and standards and served as second level trainers for the other developers.

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Management and Developer Support Promotes Widespread Acceptance

Software tools that make both management and developers happy do not go unnoticed. News of Rational ClearCase's effectiveness on the Wrap and BT On-line projects has led to widespread acceptance of ClearCase throughout the BT Financial Group. "Because the BT On-line project was such a success, other groups have migrated to ClearCase — including all development of 3-tier applications, 2-tier applications and conventional BT database applications," says Borg. Each of BT's five technology units is either using ClearCase already or is rolling it out shortly. Christine Lay, VP of Business Technology Services and the ClearCase project manager explains why it has been easy to adopt ClearCase. "Each technology group within BT may have a slightly different project management process in place, but each is able to use ClearCase. For us, this shows that ClearCase is both flexible and process-independent." Horne agrees, and adds that his developers helped promote the tools to their colleagues, "ClearCase allowed our developers to choose their own editors and tools, and was quickly accepted. It was not a case of management shoving a tool down the developer's throat, it was a case of developers pulling management along."

In e-commerce, and especially in the financial services industry, it pays to invest in tools that help your team work more effectively, without forcing you to change the processes that you have developed over the years. For BT, Rational ClearCase delivered just that. Horne puts it this way, "ClearCase is both powerful and flexible — and that is a combination a lot of the other change management tools on the market do not have. They work their own way, ClearCase works your way."

About Rational

Rational provides a software development platform that improves the speed, quality, and predictability of software projects. This integrated, full life-cycle solution combines software engineering best practices, market-leading tools, and professional services. Ninety-six of the Fortune 100 rely on Rational tools and services to build better software, faster. This open platform is extended by partners who provide more than 500 complementary products and services.

IBM Rational software

Dual Headquarters

18880 Homestead Road
Cupertino, CA 95014

20 Maguire Road
Lexington, MA 02421

Toll-free: (800) 728-1212
Web: www.ibm.com/rational

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