

Industry:

Web content management

Organization:

Terabyte Interactive Limited

Description:

Terabyte is an internationally acclaimed e-commerce and Web technology consulting company, based in Auckland, New Zealand. Terabyte recently won EMMA and Invision awards for its internet innovation.

Business Problem:

To design, build and launch an interactive “virtual clubhouse” that will keep yachting enthusiasts interested and informed throughout a nine-month race – all in under eight weeks.

Rational Solution:

Rational Suite ContentStudio™ includes:

- Rational ClearCase® LT
- Rational ClearQuest®
- Content Management Server (CMS)
- Rational® NetDeploy
- Rational RequisitePro®
- Rational® TestManager
- Rational Unified Process®

Key Benefits:

Enables contributors to submit new content anytime, from anywhere — even a moving yacht — via Web browsers.

Enforces a standardized, traceable development process through Web-based change request and tracking capabilities.

Enables scheduled and on-demand updates to all or part of the site via an automated deployment tool.

Ensures scalability, allowing a very small team to easily manage high volume of change.

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Terabyte Interactive Enjoys Smooth Sailing with Rational Suite ContentStudio

What's your idea of a tough Web development challenge?

A spectacularly tight delivery timeframe? An internationally high-profile client? High traffic and equally high performance? Changing your development methodology on-the-fly to incorporate new tools and workflows?

Bundle those demands together, and you can begin to appreciate the situation recently faced by Terabyte Interactive, a leading Web design and technology consultancy based in Auckland, New Zealand. Starting from scratch, Terabyte had less than eight weeks to design and build a knockout Web presence for their customer Team News Corp, the entry sponsored by global media giant News Corporation in the 2001-2002 Volvo Ocean Race (formerly called the Whitbred Round The World Race).

Working against a hard-and-fast, pre-race deadline, Terabyte's goal was nothing less than challenging. They were to develop a fully functional “virtual clubhouse” for Team News Corp fans. Compelling content, lightning fast performance and rapid deployment capability would all be required to give site visitors round-the-clock, up-to-the minute access to the boat, her crew, and their progress in the race.

The veteran Terabyte team won this high-profile contract based on their exceptionally strong Web development experience, along with their proven ability to deliver quality content fast. In particular, Terabyte has a stellar track record creating and maintaining “live,” interactive Web sites, including the award-winning Virtual Spectator™ site for sporting events that brought interactive, 3D animation graphics to the Internet.

But now Terabyte needed to work almost impossibly fast, while simultaneously creating a robust framework of automated processes that could support the rapid updates, frequent

traffic surges and massive amounts of new content every day. And if that wasn't pressure enough, they faced the additional challenge of designing the site in partnership with a client team in Los Angeles and New York, all literally half a world away.

Fortunately, Terabyte has a wealth of expertise and in-house technology to solve these kinds of problems. But Derek Best, the development team leader and technical decision-maker on the project, felt it might not be enough. In particular, he was concerned about the need to create highly flexible, adaptable workflows that could easily change in response to the site's evolving structure. Along with his colleague, Business Development Manager Jane Melville, Best was equally concerned about the logistics of sharing content and design ideas with a very remote client. There would be no time for miscommunication.

To start fast, work smart and communicate effectively, Terabyte needed a content management solution that offered:

- Parallel development of code and content, with proven version control
- Management and tracking of all site requirements and changes via a common repository, enabling team members in different time zones to collaborate at their convenience
- Flexible, integrated workflow that could be easily modified
- Rich templating features to simplify the integration of new content
- Distributed authoring capabilities, allowing geographically dispersed team members to develop and submit new content anytime, from anywhere
- The ability to generate pages in HTML prior to deployment to optimize performance of the static portions of the site

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- Automated deployment, with support for both scheduled and on-demand deployments
- The market strength and vision of an established, reliable vendor

With these imperatives in mind, Terabyte quickly made the decision to adopt Rational Suite ContentStudio™, the Web code and content management solution from Rational Software. The decision to go with Rational was very simple: according to Best, Rational Suite ContentStudio was the only content management solution available that met the project's requirements for integration, flexibility and performance. And it was also the lowest cost option. As Best puts it, "the Rational solution just fit the bill quite well. And nobody else out there had an affordable solution."

Ready For Rough Seas with Rational Tools

Despite the project's high profile, tight time-frame and complex requirements, Terabyte went forward with a small development team consisting of just two full-time developers, two part-time developers, a project manager, two graphic designers and a client liaison. Content contributors include the client, the boat at sea (sending video clips, still photos and daily e-mails) and Terabyte's maintainers.

Now that the race has begun and site utilization is in full swing, you might expect Terabyte to beef up its staff to handle the additional volume. In fact, Rational Suite ContentStudio lets them do just the opposite.

"This site runs on its own," said Best. "We need a couple of developer hours a week to review the load on the site. Also, we like to do manual checks on things like usage statistics, to keep a human perspective on what's actually happening. And if anything too major happens we get an alert." Barring the need to make major changes to the site's architecture, Best foresees little need for development intervention at any time during the nine month long race.

Running a Tight Ship

Terabyte develops the site on a single server, while the live site environment runs on two Microsoft IIS servers. One of these hosts content management tasks and content databases; its main job is to perform multiple deployments daily, plus handle the overhead associ-

ated with the site's live data feeds. The second production server just serves the site, which is generated entirely in HTML. This high-bandwidth configuration helps make the user experience as seamless and snappy as possible. Terabyte hosts the site as well.

Though he anticipates exceptionally high traffic volume, Best confides that "we're prepared for a huge number of hits. And we're fully ready to increase our bandwidth as needed, by using Akamai caching services worldwide."

Here, too, Rational tools simplify a potentially risky process. "Rational's NetDeploy tool makes it all very easy," Best explains. "With NetDeploy you just set up a new server and there you go. If the site gets lots of hits, we'll just add a few more servers to our deployment tasks. The tools have given us tremendous peace of mind in that respect." Adds Best, "the fact of getting a site from one server generated and deployed to multiple locations is just given to us by NetDeploy."

Best describes how the Terabyte team uses Rational NetDeploy to automate all deployment activities:

- When new site content is ready, the page generation feature creates HTML pages which are then deployed using NetDeploy.
- With the race underway, synchronization and page generation tasks run every four hours, to update the site with the latest, approved version.
- Once these tasks are complete, an automated deployment task updates the entire site to the production server.
- Manually initiated tasks are pre-configured for different sections of the site. If there's breaking news, or a code or content problem arises, individual sections of the site can be rolled out – or rolled back -- "instantaneously, at the push of a button," Best states.

"These manual tasks help us cover ourselves quite a bit, and make us very versatile in terms of what we can get up or down for different sections of the site," explains Best. "Like, we can put up a holding page very quickly if we need to take down a section off the site."

In terms of features and flexibility for high-frequency Web deployment, Best finds

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Development Team Leader

NetDeploy to be “like a dream.” “Just the fact that we can roll out anything, from a file to the whole site, including records and all sorts of stuff – it just gives us the ultimate flexibility.” Best continues, “The difference between what’s on our content management server and what the world sees can all be managed through NetDeploy. It gives us total control.”

That control extends even to the timing of updates. “If we want to go live at a certain time, we can set it all up and do it automatically,” states Jane Melville. She describes the feeling at Terabyte when the site went up on the Web for the first time: “When the site went live, we just all kind of sat around – but we were here to watch and make sure it did go! Then as soon as it (the NetDeploy agent) started we were all off to coffee and breakfast!”

Steady As She Goes

While each leg of the race is in progress, Volvo provides a data feed that specifies the position of each boat in the race, along with statistics like the distance remaining to the next port and to the finish. Video, e-mails, photos, press releases and more will all be managed via automated workflows. This lets the team focus on handling the arrival of “breaking news” and other critically important new content quickly and smoothly.

At the start of the race, Best estimates that the site consisted of about 150 pages. He anticipates this number will climb by roughly 40 pages per week during each of the 40+ weeks of the race. Thanks to time wisely invested in workflows and templates, combined with the scalability inherent in Rational Suite ContentStudio, Best figures his team will need only two hours per week to manage the site’s exponential growth.

Incoming data is automatically plugged into the appropriate template; older content is automatically categorized and archived. Processing of live data feeds is handled by technology Terabyte already has in place; then, everything is simply fed directly into Rational Suite ContentStudio.

“It’ll all just go like clockwork,” Best marvels. “Yes, we see this site becoming, in terms of size, very large indeed. Though, needless to say, we were happy that it wasn’t going to be that big at the start!” “The client is waking up to amazing new stuff every day,” rejoins Melville. “It’s been unbelievable.”

The notion that such a dynamic, high traffic Web site will essentially run on autopilot for months at a time might seem like a sailor’s tall tale – but not with Rational Suite ContentStudio aboard. When asked what management challenges he expects in the months to come, Best coolly replies: “Actually, none.” He and his team planned ahead, ensuring that the site’s structure is flexible enough to handle all foreseeable changes without a hitch.

“There may be cosmetic changes that have to be managed, but we’re aiming not to do too much other than to manage content,” Best explains. Thanks to Terabyte’s expertise, alongside the power of Rational Suite ContentStudio, the Team News Corp site is rigged to weather even the toughest conditions.

Smooth Sailing with Rational Suite ContentStudio

With its Web-based change request and tracking capabilities, Rational Suite ContentStudio enables round-the-clock progress even across far-flung time zones, a critical requirement on such a fast-moving project. Nearly all interaction between Terabyte and client staff takes place asynchronously, via phone and e-mail.

“It’s a very big help,” says Melville of Rational ClearQuest®, a Web-based tool for tracking and managing project change requests and activities. “Everybody always knows what’s going on. This enables us to manage expectations even with a twelve hour time difference. We often didn’t have a chance to present things any other way. But the client knew exactly what they were getting at all times.” As a business manager, Melville sums up the value of Rational Suite ContentStudio this way: “I love it when there are no surprises!”

Best and Melville both assert that Rational Suite ContentStudio has made a huge difference in the quality, reliability and maintainability of the site, especially now that it’s up and the race is underway. “It’s one thing to throw a site up there, and another to hit your deadline with a robust environment – especially when you’re expecting high traffic volumes,” Best points out. “For example, Rational’s built-in workflow let us adjust things as everyone came up to speed on new processes. That was really important for us.”

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Jane Melville
Business Development
Manager

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Best speaks from experience on the critical importance of flexible workflows to Web development. "Terabyte has developed workflow on both small and large scales in the past. In our experience, if you're building your own workflow, unless you have a very good idea of what the entire site is going to look like for its entire lifetime, your workflow can actually limit you in terms of what you can do in the future. Rational Suite ContentStudio handles workflow as part of content management, rather than making it part of the actual site. We liked that separation in the product a lot."

With change request and tracking support to maximize speed and productivity, and flexible workflow to support quick changes in direction, Terabyte relied on the sophisticated version control and rollback capabilities in Rational ClearCase LT to manage risk.

According to Best, "We know we have the ability to roll the site out or back and have all our versions sitting there, which is especially good for dealing with hardware failure issues. It helps you go to sleep at night, especially when the customer has so much at stake, and the outside world can see what's happening. It's always good to know we're safe and we can get back up very quickly."

The bottom line, of course, is how the site looks and feels to visitors. Here, the ability of Rational Suite ContentStudio to output dynamic data to HTML is "huge," says Best. The site's ability to serve content rapidly and scale to meet even at times of peak usage meant that the ability to generate pages in HTML "was a real key for us, because we needed to have the most basic type of page to get maximum performance," Best explains.

Partnering for the Long Haul with Rational Services

Terabyte based its decision to use Rational Suite ContentStudio not only on the capabilities of the software, but also on the market leadership of the vendor. Terabyte wanted to invest in technology that would stand the test of time, and would position them well for future business opportunities.

"In terms of a strategic decision for Terabyte, going from the outset with a Rational product that we believed would go a long way has worked out very well for us," relates Melville. "We were able to get a lead position in the world with respect to using the product, and we're the first production site using Rational Suite ContentStudio in the world."

"There's a lot of interest in the product down here in New Zealand, and one of the reasons is that financially it's so achievable. New Zealand business is keen to see more of what happens, and that hasn't done us a disservice at all."

Another reason Terabyte went with Rational Suite ContentStudio was its prior experience with Rational products and customer support. Terabyte was already using Rational Rose®, the world's leading visual modeling tool; and Rational RequisitePro, for robust and easy-to-use requirements management.

"We had a relationship we were looking to strengthen," explains Best. Confidence in Rational was especially important given that Terabyte actually began development with a pre-release version of Rational Suite ContentStudio. Though extensive training was not needed, Rational New Zealand provided consulting services to help get Terabyte up and running with Rational Suite ContentStudio. And Rational Customer Support proved equally responsive, providing fast answers to whatever questions came up along the way.

The Volvo Ocean Race 2001-2002 began on September 23, 2001. With regular updates arriving from the boat and from race headquarters, and an interactive notice board to converse with the crew, Team News Corp supporters can participate in the excitement of the race and access the latest information on the team's progress 24 hours a day at www.TeamNewsCorp.com. And Rational Software is proud to be on board.

About Rational Software Corporation:

Rational Software 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. Founded in 1981, Rational is one of the world's largest software companies, with revenues of \$796.7 million in its twelve months ended September 30, 2001, and over 3,800 employees worldwide. Rational is a component of the Nasdaq-100 Index®. Additional information is available on the Internet at www.rational.com.

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