



## Melbourne 2006 Commonwealth Games Uses Integrated Solution from Partners to Build Web Site

### Overview

**Country or Region:** Australia

**Industry:** Government

### Customer Profile

The Melbourne 2006 Commonwealth Games Corporation (M2006) managed the 2006 Commonwealth Games, held in Melbourne, Australia, in March 2006.

### Business Situation

M2006 needed a Web site to deliver schedules, venue and transport information, team and athlete profiles, photos, video, and up-to-the-minute news and results from 16 sports during the Games.

### Solution

Microsoft worked with local partners Devtest, Readify and Telstra to build and operate the Web site between April 2005 and March 2006 at its Solutions Development Centre using a wide range of Microsoft® software.

### Benefits

- 100 percent uptime during the Games
- Results published within one second
- Easy to manage for M2006 volunteers
- Satisfied up to 10,000 page requests per second

“We were always confident the approach we took would result in a fantastic Web site for the Games.... Microsoft’s rigorous approach and high level of professionalism made all the difference.”

*Brian Nourse, Group Manager, Technology, Melbourne 2006 Commonwealth Games*

The Melbourne 2006 Commonwealth Games met all expectations: pageantry, athletic skill, moments of sporting magic, and a stunning haul of gold medals for the host country. The Melbourne 2006 Commonwealth Games Corporation (M2006) needed a Web site to deliver schedules, venue and transport information, team and athlete profiles, photos, and up-to-the-minute news and results from 16 sports during the 12 days of the Games. Microsoft, the Official Technology Partner for the Games, built and operated the Web site between April 2005 and March 2006. Working with local partners Devtest, Readify, and Telstra, Microsoft® Services consultants at the Microsoft Solutions Development Centre built the site on a wide range of Microsoft software. During the Games, the Web site processed up to 10,000 page requests per second and reached a global audience of nearly 12 million. The expertise provided by local technology firms was vital to its success.



## Situation

During the Melbourne 2006 Commonwealth Games, more than 4,000 athletes from all 71 Commonwealth countries competed in 16 sports and 24 disciplines. They were supported by a workforce of approximately 50,000, including 15,000 volunteers, staff from M2006 and the Office of Commonwealth Games Coordination, technical officials, contractors, and venue staff.

The Games brought millions of spectators to Australia, mostly from Canada, India, Malaysia, New Zealand, Singapore, South Africa, and the United Kingdom. This generated plenty of work for local businesses and created up to 35,000 jobs.

Similarly, the Games Web site—which delivered schedules, venue and transport information, team and athlete profiles, and, most importantly, up-to-the-minute news and results—benefited from the expertise of local technology businesses and gave them new opportunities.

Testing and quality control specialist Devtest and technical readiness and emerging technologies specialist Readify were both indispensable partners in the development of the Web site. Hosting provided by Australia's largest telecommunications company Telstra was also critical to Web site's success.

For M2006, the Web site needed to be secure, scalable and reliable.

"During peak times, the Web site had to satisfy 10,000 page requests per second; a major Australian bank's Web site would peak at around 75," said Brian Nourse, Group Manager, Technology at M2006. "It served up a rich mix of content, including the latest stories, images, and sporting results. It aggregated information from a wide variety of sources. We needed to ensure everything

that went live was accurate and had gone through the necessary approvals. And to serve a global audience of nearly 12 million, it had to be available 100 percent of the time."

## Solution

Working with M2006 staff, Devtest, Readify and Telstra, Microsoft built the Games Web site at its Solutions Development Centre (SDC). The SDC is part of the company's Microsoft® Services arm and is tailored to deliver large, complex projects using the unique and proven software development and project management methodologies from Microsoft.

### **An Integrated Software Solution**

Microsoft Content Management Server 2002 allowed M2006 staff and volunteers to aggregate text, images, video, schedules, and results using a simple interface.

Sophisticated workflow features ensured all content was approved before going live. This allowed the Web site to be updated and maintained by volunteers with minimal training and ensured the Web site complied with accessibility specifications for the visually impaired.

Each result was digitally signed and sent from M2006's Games Info System to a server running Microsoft BizTalk® Server 2004 Enterprise Edition. BizTalk Server analyzed each result, translated it into a format readable by the content management system, and published it to the Web site. The development team used the graphical tools in BizTalk Server to define process flows for each type of data.

Microsoft Windows Server™ 2003 Enterprise and Standard Editions provided a stable and secure operating system environment. The integrated components of Windows Server 2003 saved the developers considerable

effort in tying pieces together. The authentication technology in the Active Directory® directory service ensured only the appropriate people gained access to vital systems and content. Internet Information Services version 6.0 Web server and Microsoft ASP.NET 2.0 allowed the developers to build powerful, database-driven Web pages that delivered customized, up-to-the-minute information to each Web site visitor.

Microsoft SQL Server™ 2000 Enterprise Edition provided a reliable back-end database cluster to store all the information required by the Web site, content management server, and BizTalk Server. The powerful text searching capabilities of Microsoft SQL Server 2005 greatly improved the Web site's overall performance and speed of searches.

Microsoft Operations Manager 2005 monitored the performance of each server and software component to ensure the Web site would run smoothly under any circumstances. Its pre-defined management packs allowed Microsoft to set thresholds for factors affecting server performance such as disk space and processor utilization that might indicate a particular server was struggling.

#### **Testing, Testing ... for Highest Quality**

From April 2005 to March 2006, Microsoft provided a series of monthly releases of the Web site. Microsoft would develop new features for three weeks and spend the next week reviewing the results with M2006. Based on the results of the review, M2006 and Microsoft would then set the requirements for the next release.

During the monthly release cycle, Microsoft built and tested a new version of the software every day. Microsoft called in Melbourne-based Devtest to build a series of automated tests. The two firms have worked together for

more than seven years. For the M2006 site, they ran up to 1,000 tests each night, collecting quality metrics throughout the process.

“Security was obviously a strong focus for M2006 and performance was also critical,” said Sarah Richey, Managing Director of Devtest. “The site also needed to be accessible from multiple browsers and readable by as many people as possible. Finally, the design needed to be flexible enough to make changes even while the Games were on.”

“We built our test cases around these business requirements. As soon as new code was ready, the tests were in place to assess its quality and make sure it didn't affect the existing code.”

Devtest worked with the SDC through the monthly release cycle, at first testing the basic infrastructure processes such as ensuring the database, integration, and content management servers worked together. As the functionality of the site developed, Devtest prepared new tests to try out the new features.

This testing ensured the quality of the new code and allowed Microsoft to analyse trends. For example, Microsoft could demonstrate to M2006 that the number of issues was decreasing as the go-live date approached.

“Having an external company come in to verify our work pushed us to achieve the highest possible quality,” said James Simpson, Services Program Manager at Microsoft Australia. “Devtest regularly challenged us on our code and we encouraged them to do so. They gave us a smart and powerful process to wrap around our code.”

### **Local Knowledge of Leading Technology**

As well as some proven older technologies, Microsoft used a variety of leading-edge applications such as SQL Server 2005 to provide the Web site's search functionality and the Microsoft Visual Studio® 2005 development system as the main software development tool. Having worked together for more than five years, Microsoft engaged Melbourne-based Readify to give expert assistance in the use of the latest Microsoft enterprise technologies.

"We provided expertise on using Visual Studio 2005 and SQL Server 2005," said Graeme Armstrong, Chief Executive Officer of Readify. "We shared our approach to developing highly scalable applications using these tools and making all the parts of the Microsoft [line of server software] work together."

Microsoft and Readify combined their experience and specialist skills to ensure the Web site was developed in accordance with best practice.

"It's part of the SDC's charter to encourage partners, particularly those who make commitments to emerging technologies," said Armstrong. "Could they do it themselves? Of course, but they're a partner-centric organization."

"Our consultants really enjoyed working on the Games Web site. A project like this helps raise our profile and we saw it as an opportunity to work where the rubber hits the road and use emerging technologies in a practical application." Armstrong also said Readify learned from working with strong project management methodologies from Microsoft, which ensured each stage of the project was delivered on time.

"Readify and Devtest provided specialist skills that meant we could do the job reliably

and predictably," said Simpson. "Working with partners also brings us valuable non-technical skills and alternative ways of thinking about things."

### **Benefits**

For M2006, one business benefit outweighed all the others: the Web site performed flawlessly for the duration of the Games.

"It's like electricity – you only notice when it's not working," said Nourse. "Microsoft's project management and software development methodologies ensured Web site performance was smooth and uninterrupted."

The experience Microsoft has in delivering large-scale Web site projects, including the Webjet online travel Web site and the 2003 Rugby World Cup site, ensured the Melbourne 2006 Web site was delivered with all the required features, on time, and within budget. The integrated innovation of the Microsoft technology stack provided a stable, secure and feature-rich environment.

M2006 and the Games also experienced the following benefits:

- During the Games, the Web site processed many thousands of page requests per second and reached peak loads of more than 6 million page views in a single day. In total, it served more than 64 million page views to nearly 12 million visitors.
- The content management system processed more than 17,000 content postings; around 3,800 were created manually, 8,100 were generated automatically from event results and schedules, and 5,300 were athlete biographies.
- The integration server processed 114,000 schedule and result messages which were posted to the Web site within one second

## For More Information

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For more information about Devtest products and services, call (613) 9826 1499 or visit the Web site at: [www.devtest.com](http://www.devtest.com)

For more information about Readify products and services, call (61) 1300 666 274 or visit the Web site at: [www.readify.net](http://www.readify.net)

For more information about Telstra products and services, visit the Web site at: [www.telstra.com](http://www.telstra.com)

For more information about M2006 and the Melbourne 2006 Commonwealth Games, visit the Web site at: [www.melbourne2006.com.au](http://www.melbourne2006.com.au)

of reaching M2006's Games Information System.

Even after the last spectators had left the closing ceremony, the partnership between M2006 and Microsoft continued to contribute to the host state and local industry. The intellectual property and technologies Microsoft built for the Games Web site were delivered to the Victorian Government as a re-usable environment for building ecommerce sites.

"Microsoft and M2006 worked really well together," said Nourse. "We were always confident the approach we took would result in a fantastic Web site for the Games, one that both organizations would be very proud of. Microsoft's rigorous approach and high level of professionalism made all the difference."

## Microsoft Services

Microsoft Services helps customers and partners discover and implement high-value Microsoft solutions that generate rapid, meaningful, and measurable results. As the consulting, technical support, and customer service arm of the world's leading software company, Microsoft Services enables the successful adoption, deployment, and use of Microsoft solutions and technologies for all customers, from the individual to the enterprise.

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## Software and Services

- Products
  - Microsoft BizTalk Server 2004 Enterprise Edition
  - Microsoft Content Management Server 2002
  - Microsoft Operations Manager 2005
  - Microsoft SQL Server 2000 Enterprise Edition
  - Microsoft SQL Server 2005
  - Microsoft Visual Studio 2005
  - Microsoft Windows Server 2003 Enterprise Edition
  - Microsoft Windows Server 2003 Standard Edition
- Services
  - Microsoft Services
- Technologies
  - Active Directory
  - Internet Information Services 6.0
  - Microsoft ASP.NET 2.0

## Hardware

All servers were hosted in a secure, purpose-built Telstra datacenter. The solution was hosted on eGenera BladeFrame chassis and servers and included:

- 16 Web servers
- 2 support servers
- 2 content management servers and
- 2 integration servers, each with two 2.4GHz Intel Xeon processors
- 4 database servers, each with four 2.4GHz Intel Xeon processors

## Partners

- Devtest
- Readify
- Telstra

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