

**Automated Testing of Online Booking
Service Using Microsoft Visual Studio
Helps Airline Increase Bookings and
Save 250 Working Days a Year**



A Case Study

Case Study: Automation Testing at BMI Airlines



Client Profile



BMI – British Midlands International

Web Site: www.flyBMI.com

Number of Employees: 3,810

Country: United Kingdom

Industry: Transportation and logistics: **Air transportation services**

BMI operates airline services in the United Kingdom, Europe, the Middle East, Central Asia, and Africa. It has its hub at London Heathrow with a fleet size of 27 aircraft. It is a member of Star Alliance, a group of 21 international airlines offering customers a worldwide network.

Testimonial

“We were advised it would take six months to build our Web site, but we completed it in just four months. Visual Studio 2010 helped us get the best out of our development team and produce the site in record time.”

Scott Johnson, Head of E-Commerce Development, BMI

Background

In 2008, U.K. based airline BMI, British Midland International, wanted to bring the development of its online booking engine in-house to respond faster to customer needs. With so many variations of flights and services offered, user interface testing is critical. The BMI development team re-wrote the site using the Microsoft Visual Studio 2010 Ultimate development system which offers powerful automated testing. The team predicts a saving of 250 days a year.

Business Requirements

The second-largest airline at London's Heathrow airport, BMI is part of a network of airlines that runs daily flights to 912 destinations in 159 countries. It is renowned for offering its customers competitive fares and a high-quality online experience. This can be attributed, in part, to its use of technology, which helps provide fast and efficient ticketing, booking, and check-in facilities.

As the first airline to offer an online booking service—in 1995—BMI has sought new ways to deliver rich online experiences to its customers. In 2008, BMI began a project to redesign its Web site, www.flyBMI.com. Until then, the user interface of the site—built using Visual Studio 2008 and Visual Studio Team Foundation Server 2008—was managed and developed by BMI, except for the booking engine, which was handled by a third-party company.

Scott Johnson, Head of E-Commerce Development, BMI, explains: “We wanted to bring the user interface of the booking engine in-house so that we could adapt or add functionality with a faster time to market, and improve the overall customer experience.”

With the release of new services to the site comes the need for testing. Amanda Jones, Test Manager at BMI, says: “Testing is important to ensure that all the combinations of flights and their attributes work smoothly.”

For example, a customer might include insurance or a hotel with the booking. We get huge numbers of visitors to the site, and if the system fails, they'll book with another airline. But while we could confidently program the site with Visual Studio 2008, we had to look for test management solutions elsewhere because the incumbent development environment did not support our testing needs.

Solution

BMI believes that the launch of Visual Studio 2010 Ultimate, including Visual Studio Team Foundation Server 2010, has provided the missing pieces of the puzzle. The new release technology automates test code generation so user interface elements in applications can be tested quickly and easily. Johnson explains: "We need to test the vast numbers of possible scenarios involved in booking a flight. Advanced testing features in Visual Studio 2010, including automation, Web performance testing, and load testing, ensure we can bring all the stages of development in-house."

The airline has rewritten the site using Visual Studio 2010, making several changes such as ensuring the display is consistent to users regardless of their chosen route. The team has also added "shopping basket" functionality, so users can select and pay for hotels and cars along with their flights instead of paying separately, as they had to before.

To test each scenario and reach 100 per cent availability of the site, BMI engaged Microsoft Inner Circle Partner Testhouse, an organisation that focuses on software testing and quality assurance. Testhouse works with Visual Studio to automate regression test scripts for BMI, which means that the airline can cut down on the time taken on manual testing to speed up releases to its Internet booking engine.

Johnson says: “With Visual Studio 2010 Ultimate, we have built on the skills that we had already invested in with Visual Studio 2008. Once you’re familiar with the interface it’s very easy to use so developers can pick up the new features quickly. The testing tools are far more powerful, so with the help of Testhouse, we can set up all our tests through the coded user interface feature, press a button, and let it happen.”

Achievements

The new BMI site was launched in June 2009 and is now managed entirely in-house, giving the technical team complete control over all elements of the site. Because BMI carries out testing quickly, it means the airline can respond faster to customers’ needs and add new services to meet demand. According to Johnson, the more intuitive site has already seen a rise in bookings since its launch.

- Frees time for new development. BMI estimates that prior to automated testing, 11 hours of regression testing was needed for every release. Automation in Visual Studio 2010 helps ensure that time can be spent on more productive tasks, such as developing the site.
- Saves hundreds of testing days. Johnson says: “We saved around six working days of testing per month for the pilot project. When rolled out to all our e-commerce projects, BMI will save, on average, 250 working days a year.”
- Keeps Web site up-to-date. “With Visual Studio 2010 Ultimate, we can quickly add new features to the Web site,” says Johnson. “This means our in-house development team can react to customers’ needs, make and test changes quickly, and tailor the overall experience for the highest possible revenue return.”

- Eases administration. Enhanced integration between Visual Studio 2010 and Visual Studio Team Foundation Server 2010 ensures the technical team work together more closely to manage new software projects and deliver them faster.
- Speeds time to market. “We were advised it would take six months to build our Web site, but we completed it in just four months. Visual Studio 2010 helped us get the best out of our development team and produce the site in record time,” says Johnson.

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testhouse

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