Microsoft Visual Studio

Microsoft Visual Studio 2010
Customer Solution Case Study

Insurance Company Streamlines Internal Development, Cuts Testing Time by Half

Overview

Country or Region: United States
Industry: Financial services—Insurance

Customer Profile
With a staff of 750 people, Harrisburg, Pennsylvania–based Penn National Insurance offers personal and commercial insurance products through independent agents.

Business Situation
To develop new policy-quoting applications internally—a new approach for Penn National Insurance—the company needed to address several process inefficiencies.

Solution
Penn National Insurance upgraded its development environment to Microsoft Visual Studio 2010 and Microsoft Visual Studio Team Foundation Server 2010.

Benefits
- Time in face-to-face meetings down by 80 percent
- System test time cut in half
- Streamlined bug resolution and resource allocation

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Helena Vendrzyk Gordon, Director, Underwriting Initiative, Penn National Insurance

Penn National Insurance, a Harrisburg, Pennsylvania–based company established nearly a century ago, wanted to better differentiate itself to some 750 independent agents who sell its policies to individuals and businesses. To create new policy-quoting applications for the agents, development executives switched from a buy-and-customize approach to a build-internally approach and engaged the assistance of Microsoft Gold Certified Partner Computer Enterprises, Inc. (CEI). Based on the partner's recommendations, Penn National Insurance deployed the Microsoft Visual Studio 2010 Premium development system and Microsoft Visual Studio Team Foundation Server 2010 for greater efficiencies in acceptance testing and test-case management and execution. As a result, Penn National Insurance has boosted development productivity in acceptance testing and reduced the time spent in system testing by half.

Microsoft Visual Studio 2010

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Tim Caskey, Manager, Enterprise Architecture, Penn National Insurance

Situation

Penn National Insurance was founded in 1919 by a Pennsylvania farmers' association whose members were seeking a more affordable way to provide workers' compensation insurance. Over the ensuing decades, while retaining its original headquarters in Harrisburg, Pennsylvania, the company expanded its business focus beyond agriculture and into various industries and the service sector. Penn National Insurance also expanded the geographic scope of its operations, and today serves policy holders through a network of approximately 750 independent agents operating in nine eastern states.

Because those agents are independent, Penn National Insurance must earn their business by providing highly competitive products—and it does. Based on annual net premiums, Penn National Insurance ranks in the top 10 percent of more than 1,000 property-casualty insurance groups in the United States. It also holds an "Excellent" rating from A.M. Best Company, the industry's leading rating organization.

Competing Effectively

Providing competitive products, however, is only one factor in the continuing success of Penn National Insurance. Another factor is helping agents to get those products into the hands of their customers—the businesses, individuals, and families that go through the agents to purchase personal and commercial insurance policies from Penn National Insurance. To do this, Penn National Insurance has long provided agents with specialized policy-quoting applications—one for its commercial lines and one for its personal lines—designed to simplify the sales process and integrate smoothly with corporate applications for underwriting and policy issuance.

Traditionally, Penn National Insurance developed the policy-quoting applications by purchasing packaged solutions and customizing them to support its own brand. But in 2006, a new executive strategy encouraged a different approach, in which more of the application code would be developed internally so as to better support the corporate brand. This meant that when it came time to upgrade the existing applications with more powerful predictive analytics, Penn National Insurance developers would be developing key user-facing components of the applications—specifically, the user interface and data input and verification system—from scratch.

Identifying the Challenges

As Helena Vendrzyk Gordon, Director, Underwriting Initiative at Penn National Insurance, explains, developers began work on the project in 2007, targeting modules for the company's personal policy-quoting application. Using tools and technologies from the Microsoft Visual Studio development system and the Microsoft .NET Framework 3.5, the developers created application modules for personal automobile policies and homeowners' policies. But in 2009, when it was time to start work on the policy-quoting application for commercial policies, Gordon and her colleagues decided to take a step back, because they wanted some advice.

"Through the experience of building the personal policy-quoting application modules, we established some processes and practices that are vital for successful internal development, but we knew there was more work to do," Gordon says. "We

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Jim Weller, Applications Specialist, Architecture Team, Penn National Insurance

wanted advice on where improvements were most needed and which technologies could best help us implement those improvements, and we wanted assistance in deploying those technologies."

In connection with this effort, Gordon and her colleagues engaged Microsoft Gold Certified Partner Computer Enterprises (CEI), whose staff spent 10 days at Penn National Insurance conducting a Microsoft Application Lifecycle Management (ALM) Assessment. In that assessment, CEI identified room for improvement—primarily in acceptance testing and test-case management and execution.

In acceptance testing, for example, analysts and testers spent several hours per week prioritizing bugs and maintaining status reports on the resolution of those bugs. Even then, some bugs went unaddressed for days, while others were addressed by more than one person, which created unnecessary redundancies. In test-case management and execution, teams followed an inefficient approach of documenting anticipated and actual test-case results on paper and storing them in folders for later review by auditors.

Answering Key Questions

To identify the technologies that could help Penn National Insurance best address these challenges, CEI assisted development executives in deciding whether to upgrade from earlier versions of the Microsoft Visual Studio development system and Microsoft Visual Studio Team Foundation Server 2010—the core workflow and collaboration server for the Microsoft ALM platform—to Microsoft Visual Studio 2010 and Visual Studio Team Foundation Server 2010.

According to Jim Weller, Applications Specialist in the Architecture Team at Penn National Insurance, the team had already evaluated parts of Team Foundation Server 2010, with favorable results. "We found the testing component of Team Foundation Server 2010 to be more robust than its predecessors," Weller says. "We also liked the product's process template definitions, security management, and data warehouse."

Before making their decision, however, Weller and his colleagues needed CEI to help them answer two questions. The first was whether Visual Studio Team Foundation Server 2010 provided as comprehensive a set of functionalities as those in Concurrent Versions System (CVS) and Subversion, source code-management platforms that are widely used. "Even while understanding that Team Foundation Server 2010 was a powerful tool, we needed assurance that it had no gaps in functionality," Weller explains. "Through a comparative evaluation against CVS and Subversion, the CEI consultants provided us with that assurance."

The second question was whether Team Foundation Server 2010 would integrate cleanly with NUnit, a framework that Penn National Insurance had been using for unit testing. According to Tim Caskey, Manager, Enterprise Architecture at Penn National Insurance, the answer to that question came in the form of a pleasant surprise. "We learned that Team Foundation Server 2010 included a full-fledged unit-testing framework of its own," Caskey says. "So we would no

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Helena Vendrzyk Gordon, Director, Underwriting Initiative, Penn National

longer need to use NUnit, and the integration question became moot."

As a bonus, Caskey and his colleagues learned that a recent change in licensing options meant that by deploying Visual Studio 2010 as a part of the company's Premium subscription to the Microsoft Developer Network (MSDN), all development staff could access Team Foundation Server 2010. This would include even those staff members who were developing or supporting code created in earlier versions of the Visual Studio development system and Team Foundation Server.

Solution

In mid-2010, based on recommendations in the Microsoft ALM Assessment and with help from CEI consultants, Penn National Insurance deployed Microsoft Visual Studio 2010 Premium and executed a phased deployment of Team Foundation Server 2010. Penn National Insurance engaged CEI resources for staff training, onsite support, and advice on best practices. Since that time, approximately 45 Penn National Insurance developers and other staff members have used Visual Studio 2010 and Team Foundation Server 2010 on the policy-quoting applications project.

As Weller reports, Penn National Insurance developers have embraced Team Foundation Server 2010, especially in their work on the commercial policy-quoting applications. "On the personal side, we had already created some application modules before bringing in Team Foundation Server 2010, so developers there are using the platform on a fairly limited basis—for code-base management, analysis, and control," he says. "But on the commercial side, developers are using Team Foundation Server 2010 broadly—for process management, connecting requirements to code and code to bugs, test case management, and more."

Penn National Insurance is slated to complete its rollout of personal and commercial policy-quoting applications by mid-2012, with the modules for automobile and homeowner's policies on the personal side and modules for general liability and property, worker's compensation, automobile, umbrella, and package on the commercial side. The policy-quoting applications, accessible by the 750 independent agents and more than 230 underwriters, raters, senior analysts, and support personnel within Penn National Insurance, are or will be running in a service-oriented architecture (SOA) application infrastructure based on the Microsoft Server Portfolio, including the Windows Server 2003 SP2 and Windows Server 2008 SP2 operating systems, Microsoft SQL Server 2008 Enterprise data management system, and Microsoft BizTalk Server 2009 Enterprise.

Benefits

Developers, analysts, testers, and others at Penn National Insurance who are working on the policy-quoting applications are benefiting significantly from the implementation of Visual Studio 2010 and Visual Studio Team Foundation Server 2010. These benefits include a reduction of up to 80 percent in the time needed for face-to-face meetings in acceptance testing, more effective resource allocation, a 50 percent reduction in the time spent in system testing, and an anticipated reduction in the number of change controls.

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Tim Caskey, Manager, Enterprise Architecture, Penn National Insurance

Maintaining Focus

Instead of paper-based reports, Penn National Insurance development staff members now create and share all acceptance-testing documentation in electronic format, thanks to the extensive integration of Team Foundation Server 2010 with Microsoft Office Professional Plus 2010 and Microsoft Office SharePoint Server 2007 Enterprise. As a result, analysts and testers are spending a fraction of the time and effort they did before on developing and maintaining reports on bug discovery, prioritization, and resolution, while enjoying real-time access to the information through Team Foundation Server 2010.

"Moreover, because Team Foundation Server 2010 identifies when a given bug is released to the tester, everyone has up-to-the-minute information on which bugs have been resolved and who is resolving them," Gordon says. "Instead of requiring five people to spend five or six hours weekly on bug-status reporting and meetings, we achieve the same results with just two or three people meeting for about two hours weekly—representing 75 to 80 percent less time away from their hands-on work."

Cutting System-Testing Time by Half

In test-case management and execution, project managers can monitor activities far more easily than before, Gordon explains. "By accessing a timely and well-organized report that is captured by Team Foundation Server 2010 when developers insert control points, managers can know which test cases are held up because of bugs and who is addressing each of those bugs," she says. "They no longer need to access sometimes hard-to-locate, paper-based reports or to reach out to the testers for status information, saving time for themselves and enabling testers to remain focused on their work. Managers also can allocate resources a lot more effectively, knowing who is working on what part of a project. As a result of these efficiency improvements, we spend about half the time on system testing that we would have otherwise."

Embracing the Technology

According to Weller, one reason Penn National Insurance is benefiting so greatly from its deployment of Visual Studio 2010 and Team Foundation Server 2010 is ease of adoption among developers and other staff members. "In development, managers and developers alike are always finding things to do in Team Foundation Server 2010," Weller says. "For example, we are now customizing work-item forms and creating custom reports for mining the data warehouse, tasks we are finding far easier than we had expected."

Members of the business testing community at Penn National Insurance also have received Team Foundation Server 2010 well, according to Weller. "The business professionals who help us test the policy-quoting applications learned to work in the Team Foundation Server 2010 environment with Visual Studio Test Professional 2010 and have embraced it ever since," he says.

Caskey concurs. "Sometimes there is skepticism surrounding deployment of a new version of a tool or technology," he says. "But with Team Foundation Server 2010, that has not been the case."

Addressing a Widespread Challenge

Even with all the benefits that Penn National Insurance is realizing from the deployment of Team Foundation Server 2010, Gordon and her colleagues think

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of this deployment as only the start of what they hope to achieve.

As Gordon explains, Penn National Insurance will eventually use Team Foundation Server 2010 to address one of the biggest issues raised in the Microsoft ALM Assessment that CEI conducted: the need to establish traceability all the way from requirements to acceptance testing and internal customer code signoff. "Once we do this, we anticipate a big reduction in change controls," she says. "Minimizing change controls is a challenge for anyone developing large-scale software applications, but with the help of Team Foundation Server 2010, we'll be able to do something about it."

Microsoft Visual Studio 2010

Microsoft Visual Studio 2010 is an integrated environment that helps simplify the entire development process from design to deployment. Unleash your creativity with powerful prototyping, modeling, and design tools that let you bring your vision to life. Work within a personalized environment that helps accelerate the coding process and supports the use of your existing skills, and target a growing number of platforms, including Microsoft SharePoint Server 2010 and cloud-based services. Also, work more efficiently thanks to integrated testing and debugging tools that you can use to find and fix bugs quickly and easily to help ensure high-quality solutions.

For more information about Visual Studio 2010, go to
www.msdn.microsoft.com/vstudio

Software and Services

- Microsoft Server Product Portfolio
  - Windows Server 2003 SP2
  - Windows Server 2008 SP2
  - Microsoft BizTalk Server 2009 Enterprise
  - Microsoft SQL Server 2008 Enterprise
- Microsoft Office
  - Microsoft Office Professional Plus 2010
  - Microsoft Office SharePoint Server 2007 Enterprise
- Microsoft Visual Studio
  - Microsoft Visual Studio 2010 Premium
  - Microsoft Visual Studio Team Foundation Server 2010
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