



## Overview

**Country or Region:** United States

**Industry:** Utilities

## Customer Profile

Based in Columbia, South Carolina, SCANA subsidiaries provide electricity and natural gas to the Carolinas and Georgia. With nearly 6,000 employees, the company had 2006 sales of U.S. \$4.563 billion.

## Business Situation

Already a satisfied user of Microsoft® BizTalk® Server 2002 business process management (BPM) software, SCANA needed more efficient electronic data interchange (EDI) transactions and BPM application development.

## Solution

SCANA upgraded to a beta version of Microsoft BizTalk Server 2006 R2, which offers improved support for EDI and for the Microsoft .NET Framework.

## Benefits

- Streamlines EDI business processes
- Supports an efficient multitier IT model
- Simplifies IT management
- Speeds up application development
- Reduces IT costs

## SCANA Streamlines Development, Cuts Costs with Business Process Management Solution

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Mike Sorrells, Infrastructure Analyst III, SCANA

SCANA is a holding company that includes electric and natural gas utilities in the Carolinas and Georgia. Years ago, SCANA deployed Microsoft® BizTalk® Server 2002 to support critical business process management (BPM) functions such as billing, payroll, and electronic data interchange (EDI) transactions with vendors. By 2006, the number of EDI transactions had grown too large to manually audit and reconcile. Additionally, SCANA wanted to more fully implement an efficient Service Oriented Architecture and to streamline development of BPM applications. To address these challenges, SCANA upgraded to Microsoft BizTalk Server 2006 R2, part of the Microsoft application platform. The new solution offers timely, meaningful information about EDI transactions and speeds their reconciliation. Its tight integration with the Microsoft .NET Framework helps to reduce development time and costs.

“BizTalk Server 2006 R2 is easier to support and makes it possible for us to produce more work, faster. The flatter, more streamlined infrastructure it gives us provides both labor and cost savings.”

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## Situation

SCANA is a U.S. \$10 billion, Fortune 500, energy-based holding company. Its subsidiaries and affiliates generate and sell electricity and purchase, sell, and transport natural gas to wholesale and retail customers in North Carolina, South Carolina, and Georgia. Other business interests include a fiber optic telecommunications network, data center facilities, tower site construction management operations, and service contracts for heating and air conditioning systems and home appliances. The company is headquartered in Columbia, South Carolina, employs nearly 6,000 workers, and had 2006 revenues of \$4.563 billion.

Several years ago, SCANA (specifically, the company's South Carolina Electric and Gas subsidiary) deployed Microsoft® BizTalk® Server 2002 to support a variety of mission-critical business processes. BizTalk Server supports business process management (BPM) by integrating disparate applications and systems within and across organizations. SCANA used BizTalk Server 2002 for BPM tasks such as billing, payroll transactions, and transferring files and application data both internally and with external vendors.

A particularly important task for which SCANA used BizTalk Server 2002 is electronic data interchange (EDI). EDI is a collection of standards for message syntax, protocol, and transport that define one of the most prevalent methods that businesses use to exchange data electronically. For example, SCANA uses EDI when it works with third-party vendors to process invoices. The invoices are transmitted in EDI batches containing hundreds of transactions. For each transaction, the vendors send an acknowledgement (also by using EDI) back to SCANA indicating whether the transaction has been posted (accepted) or rejected. Sometimes, the EDI transactions reported by the vendors do not exactly match the

transactions that SCANA previously transmitted, which requires SCANA to identify the source of the discrepancy as part of the company's auditing procedures (termed “reconciliation”).

Until recently, the reconciliation process that SCANA followed for EDI transactions was manual, tedious, and slow. By 2006, the number of transactions had grown so large that manual reconciliation became impractical. The company needed a solution that would fully support its existing business processes and provide more automated reconciliation of EDI-based transactions.

Also during this period, managing and supporting BPM systems and developing new BPM applications were consuming excessive time and labor resources. SCANA determined that by moving toward a Service Oriented Architecture (SOA) and the multitier architecture principles on which SOA is based, the company's IT department could improve efficiency, provide better service, and, in particular, develop BPM applications faster. To achieve this goal, SCANA needed a BPM solution that would better support a multitier IT model.

## Solution

In September 2006, SCANA began evaluating a beta version of Microsoft BizTalk Server 2006 R2, part of the Microsoft application platform. BizTalk Server 2006 R2 offers integrated support for the latest version of the Microsoft .NET Framework, key technologies such as Windows® Communication Foundation and Windows Workflow Foundation, and native EDI functionality. It integrates both proprietary and standards-based business processes and serves as a central component of an efficient BPM solution and an SOA strategy. With these features in mind, SCANA determined that this latest version of BizTalk

Server matched the company's IT goals, and it began planning an upgrade project.

"We actually had three environments running," says Mike Sorrells, Infrastructure Analyst III for SCANA. "In addition to BizTalk Server 2002, we had a limited deployment of BizTalk Server 2006, and the beta BizTalk Server 2006 R2. However, managing only one environment is much simpler than managing three, so the time had come for us to upgrade and standardize. The new version also better supports the Microsoft .NET Framework, which is the foundation of all of our internal development work, and we were confident that the new version would be easier to work with and would lead to faster application development."

#### **The Solution Components**

In October 2006, SCANA deployed BizTalk Server 2006 R2 in a testing environment along with the following Microsoft enterprise software to provide a complete BPM solution upgrade:

- Windows Server® 2003 Enterprise Edition operating system
- Microsoft SQL Server® 2005 database software
- Internet Information Services (IIS) version 6.0 to support a Web application infrastructure
- Microsoft System Center Operations Manager 2007 to monitor servers, applications, and clients throughout the IT environment
- Microsoft Visual Studio® 2005 Professional Edition development system to create and modify BPM applications

BizTalk Server 2006 R2 also comes with adapters to connect people, processes, and information across a variety of IT systems. To exchange files between BizTalk Server 2006 R2 and File Transfer Protocol (FTP) server computers, SCANA deployed the BizTalk FTP

adapter. And to exchange information with internal Oracle database applications, SCANA deployed an adapter based on Windows Communication Foundation technology.

#### **Deploying the Solution**

For its development and staging environments, SCANA installed BizTalk Server 2006 R2 on two front-end virtual servers and on one virtual database server. For its physical production environment, SCANA installed BizTalk Server 2006 R2 on three front-end HP ProLiant server computers that are connected to a SQL Server database.

Over the next few months, SCANA migrated many critical business processes and BPM applications to BizTalk Server 2006 R2. After each process was verified in the test environment, it was moved to the staging environment for quality assurance. By April 2007—because the beta version of BizTalk Server 2006 R2 performed so well—many processes had been moved from the staging environment to a limited production environment, even though the official Microsoft release of BizTalk Server 2006 R2 was still six months away.

During this period, a separate, parallel effort was underway to migrate EDI-based processes and applications to BizTalk Server 2006 R2, which required additional time due to EDI's complexity. This work was completed in June.

Final testing and refinements of the new solution were performed in July and August. On September 13, SCANA deployed BizTalk Server 2006 R2 to the full production environment, one year after the company's initial evaluation. "This was a big project," says Sorrells. "Taking this kind of time to set up an infrastructure is not unusual, and the benefits we're receiving certainly justify the effort."

“Whenever we look at changing our IT environment or purchasing new software, the question is always, ‘Does this help us do more with less?’ BizTalk Server 2006 R2 is a solution that helps us do more with less.”

Mike Sorrells, Infrastructure Analyst III,  
SCANA

## Benefits

Microsoft BizTalk Server 2006 R2 helps SCANA to streamline its EDI and overall business processes. It also supports the company’s strategy of moving toward an efficient multitier IT model that’s easier to support with fewer resources. In particular, the new version of BizTalk Server offers tighter integration with the latest .NET Framework technologies, which simplifies and speeds up BPM application development.

### Streamlines EDI Business Processes

BizTalk Server 2006 R2 builds on the BPM capabilities of prior releases with added functionality for EDI. This functionality helps SCANA to streamline its FTP and other data-transfer processes. “We have to transfer a lot of valuable data in and out of SCANA as we work with other companies,” says Sorrells. “BizTalk Server 2006 R2 helps us to better manage and track these data flow processes. Security, auditing, and retention of data are big issues for a utility like us, and BizTalk Server 2006 R2 plays an essential part in addressing them. Similarly, BizTalk Server 2006 R2 helps to ensure that our vendors’ business processes adhere to our high standards for data handling.”

In addition to better data tracking and management, the improved EDI functionality simplifies the jobs of employees who review the transactions. “With BizTalk Server 2006 R2, our users are getting higher quality, more timely notifications about EDI transactions,” Sorrells continues. “Before, employees would call us and ask if a particular batch was sent to a vendor. Now, they automatically receive messages saying in effect, ‘The following batches were sent. We received the following data from this vendor, and here is the reconciliation information.’”

### Supports an Efficient Multitier IT Model

The integrated .NET Framework technologies in BizTalk Server 2006 R2 make it an ideal foundation for an SOA IT model based on multitier principles. In a multitier architecture, applications are divided into separate layers containing components for user interfaces, business logic, and services (especially database services). These components can be shared across a distributed network, reused by other applications, and maintained by dedicated, expert IT resources—all of which makes the multitier model very efficient. BizTalk Server 2006 R2 supports the model by functioning as messaging middleware that connects multiple systems across many business boundaries.

“Moving toward a multitier environment means removing the direct hooks between application user interfaces and back-end processes,” explains Sorrells. “BizTalk Server 2006 R2 is the middleware that supports this strategy and will lead to much more efficient business processes.” For example, a couple of years ago when SCANA installed PeopleSoft human resources software, Sorrells’ team had to write 22 separate program interfaces for the many different departments that needed to access it. Now, different departments access the PeopleSoft software through a single interface, which makes it much easier to support. “If the PeopleSoft software is upgraded or its features change, we will rewrite one program interface between the PeopleSoft software and BizTalk Server. This is a huge benefit—much more efficient in terms of IT time and labor. We can also use this approach to more easily connect to our vendors’ applications and to adapt to each others’ application changes.”

### Simplifies IT Management

New features in BizTalk Server 2006 R2—such as EDI, business activity monitoring,

more adapters, and .NET Framework technologies—contribute to an easier-to-manage IT environment. Sorrells says, “Overall, BizTalk Server 2006 R2 is simpler to support than previous versions because it doesn’t have as many separate pieces. The pieces are now consolidated into one comprehensive infrastructure solution.”

For example, adapters simplify IT management by providing functionality that would otherwise have to be coded. Many of these adapters are based on Windows Communication Foundation, the unified programming model within the .NET Framework for building service-oriented applications. Windows Communication Foundation adapters, a Windows Communication Foundation line-of-business software development kit, and the BizTalk Adapter Pack are all now included with BizTalk Server 2006 R2, and many other adapters are available as convenient downloadable add-ins or from third-party vendors.

“We’re trying to get away from writing and supporting custom code, because it’s expensive,” says Sorrells. “The Windows Communication Foundation provides the hooks that allow applications to work with BizTalk Server 2006 R2 and its adapters without a lot of custom coding.”

Another IT management benefit of BizTalk Server 2006 R2 is the scalability that arises from the BizTalk groups feature. Although this feature is not new, SCANA is better able to take advantage of it since standardizing the company’s IT environment on the latest version. BizTalk groups are units of organization that usually represent an enterprise, department, hub, or other business segment that requires a contained BizTalk Server implementation. The BizTalk group has a one-to-one relationship with a BizTalk Server Management database that

stores configuration information for the BizTalk group and its server computers. This configuration information specifies part of the message processing logic for the servers and where this logic will physically run.

“BizTalk Server 2006 R2 functions as a host that runs multiple instances of itself,” explains Sorrells. “To support higher demand—or more instances—as our needs grow, we can just add more server computers to our BizTalk groups. A group can automatically shift computing loads from one server to another based on CPU availability because the applications don’t care which server they’re running on. It’s a very efficient, highly scalable system.”

#### **Speeds Up Application Development**

SCANA develops its applications on the .NET Framework, and the new version of BizTalk Server is more tightly integrated with the Framework, which makes the company’s development work easier and faster. “BizTalk Server 2006 R2 relies on and integrates with network control center plug-ins, SQL Server, and many other components that we already have expertise in,” says Sorrells. “As a result, we don’t waste time trying to figure out how its peripheral components work together. In this way, BizTalk Server 2006 R2 fits in perfectly with our in-house development needs.”

He adds, “Our IT department is under pressure to get more projects done, faster and with fewer resources. We don’t have the luxury of allowing projects to take weeks or months anymore; we must finish them in days or even hours. BizTalk Server 2006 R2 supports an IT model that makes this speed and agility possible. As we learn more about how BizTalk Server 2006 R2 works and about the features that the new version offers, we’re seeing more and more areas where we can use it to develop applications quicker.”

“In the past, our projects typically required a couple of person-months of labor, but when we recently created an adapter based on the Windows Communication Foundation, it took only two person-weeks.”

Mike Sorrells, Infrastructure Analyst III,  
SCANA

#### **Reduces IT Costs**

The more efficient IT model that BizTalk Server 2006 R2 supports and the fewer resources it requires for management and development translate into reduced costs, especially lower labor costs. “BizTalk Server 2006 R2 is easier to support and makes it possible for us to produce more work, faster,” Sorrells says. “The flatter, more streamlined infrastructure it gives us provides both labor and cost savings.”

Also, in the past, the IT department had one resource working on BizTalk Server development full time. Now, with its emphasis on SOA and multitier architecture principles, the new version more closely matches the company’s internal pool of expertise with Microsoft .NET connection software, so SCANA has four resources who can work on BizTalk Server 2006 R2 development part time. “Because we now have multiple part-time resources supporting BizTalk Server development, we can better manage and distribute our project workload. In the past, our projects typically required a couple of person-months of labor, but when we recently created an adapter based on Windows Communication Foundation, it took only two person-weeks. BizTalk Server 2006 R2 has taken a lot of the effort out of the development process, which lowers our costs.”

#### **Provides a Foundation for Future Enhancements**

SCANA is pleased with its new solution and with the benefits that BizTalk Server 2006 R2 is already providing. Now, the company is looking at ways to expand on the solution to further improve IT efficiency.

For example, SCANA plans to take advantage of business activity monitoring features in BizTalk Server 2006 R2 to monitor EDI transactions more closely and to create more detailed reconciliation reports. The company

will look at how workflow applications based on Windows Workflow Foundation can further streamline business processes. SCANA is investigating using Windows SharePoint® Services and Microsoft Office SharePoint Server 2007 to provide richer, easier Web-based interfaces for users. And, now that the IT department can handle more development projects faster, it’s considering centralizing and managing them by using Microsoft Visual Studio 2005 Team Foundation Server.

Sorrells concludes, “Whenever we look at changing our IT environment or purchasing new software, the question is always, ‘Does this help us do more with less?’ BizTalk Server 2006 R2 is a solution that helps us do more with less.”

## For More Information

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## Microsoft Server Product Portfolio

For more information about the Microsoft server product portfolio, go to: [www.microsoft.com/servers/default.aspx](http://www.microsoft.com/servers/default.aspx)

### Software and Services

- Microsoft Server Product Portfolio
  - Windows Server 2003 Enterprise Edition
  - Microsoft BizTalk Server 2006 R2
  - Microsoft SQL Server 2005
  - Microsoft System Center Operations Manager 2007
- Microsoft Visual Studio
  - Microsoft Visual Studio 2005 Professional Edition

### Technologies

- Internet Information Services 6.0
- Microsoft .NET Framework
- Windows Communication Foundation

### Hardware

- HP ProLiant server computers