



 Powering the low carbon generation

Overview

Country or Region: United Kingdom

Industry: Utilities

Customer Profile

British Energy Trading & Sales (BET&S) is a part of the leading utility British Energy Group. It deals in commercial energy sales and trading transactions.

Business Situation

BET&S was looking for an IT environment that would effectively support its integrated wholesale and retail trading divisions with improved business intelligence solutions.

Solution

A service-oriented architecture encompassing a new Enterprise Service Bus based on Microsoft® BizTalk® Server 2006 and Microsoft SQL Server® 2005.

Benefits

- Adjusts to environment.
- Reduces development costs.
- Provides business control.
- Supports business needs.

British Energy Trading & Sales Supports Integration with Business Intelligence Tools

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Jeremy Lock, Head of IT, British Energy Trading & Sales

British Energy Trading & Sales (BET&S)—a subsidiary of leading utility British Energy Group—deals in commercial energy sales and trading transactions. The firm’s 220-strong trading team operates round the clock analysing huge volumes of data to deliver value from the highly complex and ever changing energy market. BET&S needed a new flexible and reliable IT environment to better support its integrated wholesale and retail trading divisions. The firm chose a service-oriented architecture encompassing a new Enterprise Service Bus based on Windows® Communication Foundation unified programming model, Microsoft® BizTalk® Server 2006 integration software, and Microsoft SQL Server® 2005 database software.

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Situation

British Energy Group is the United Kingdom's largest producer of electricity. Its 6,500 employees help to produce around a sixth of the country's electricity. Its subsidiary British Energy Trading & Sales (BET&S) is organised into three divisions—Power Markets (wholesale trading), Retail Sales (trading as BE Direct), and Business Infrastructure and Finance—with the business managed as one entity.

Wholesale traders negotiate deals with counterparties such as banks, often in complex and high-value deals. A forward trading team buys and sells forward contracts, primarily interacting with power exchanges and the Internet broker markets in London. The business also has day-ahead traders and a shift-trading team who trade for half-hour periods 24 hours a day, seven days a week.

British Energy owns and operates eight nuclear power stations, which are managed by its British Energy Generation subsidiary. British Energy also directly manages the operation and running of a coal-fired power station at Eggborough through Eggborough Power. The company's retail business sells direct supply contracts for a significant proportion of this power generation. Its employees market and sell directly to large industrial and commercial customers and then manage these relationships.

Jeremy Lock, Head of IT for BET&S, is responsible for managing IT development and support for the Trading and Sales business. He explains that with a high concentration of IT for each user, the department runs a tight operation. “Processing retail trading information is extremely demanding—like most commercial businesses, we need to be sure information is accurate and up to date, particularly when dealing with customer accounts and billing processes,” he says. “In

the area of wholesale trading, we manage a significant amount of real-time data and conduct customised development to help ensure our trading activity is effective and opportunities for value delivery are enhanced.”

Over the years, the business has relied on third parties to develop and support its integration solutions. This has often reduced the agility of the business to deliver new integration and deal with change promptly and effectively. Nick Browne, IT Integration Manager for BET&S, explains that because the organisation didn't own its integration environment, it was difficult to change it quickly to meet business needs. “We needed to make market information available to staff through these systems. But the format of the data we receive changes frequently. For example, if one of the organisations supplying us with data decided to change the format of that data, we had to go through an expensive cycle of work, bring in a third party, and implement a new interface to support it.”

It was vital to ensure that the systems fully supported traders so they didn't miss any opportunities through delays in data feeds. “We recognised the value of investing in the definition of an enterprise architecture supported by an enterprise meta-model. We set out to make sure we captured all our business and IT estate information in one place,” says Lock. “We've used a process-driven service-oriented approach to successfully bridge the gap between business and IT architecture.”

According to Lock, a standard approach to integration based on well-established design and implementation patterns would help the team make changes quickly and help them react faster to changes in the technical environment. He says: “We wanted to bring the knowledge in-house and develop a more

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agile environment to respond quickly to business needs.”

Solution

As part of a broader multi-million pound change programme, BET&S chose to invest in new integration and reporting environments alongside the replacement of key critical business applications, including its trading and risk management systems. Now half-way through the implementation, the development team is putting the server infrastructure in place to make the application replacement process more efficient. This is done by creating reusable integration components and wizard-based code delivery processes.

Lock and his team, alongside their business design colleagues, are developing a service-oriented architecture (SOA)—a combination of carefully selected off-the-shelf applications and discrete customised software components that are linked together to meet business requirements. Lock says: “There are different ways of approaching service orientation. The way we’ve chosen is closely aligned with industry standards—we have also created an Enterprise Service Bus (ESB), which provides the features that support an SOA. The ESB makes use of the latest Windows Communication Foundation toolsets.”

The organisation is working with Microsoft Services and two Microsoft partners, Casewise and independent software vendor K2.net, to implement the new infrastructure. The Casewise solution provides an enterprise architecture modelling tool, which captures the full extent of the BET&S business and IT architecture in a form that supports solution design and—where appropriate—software development process. “It helps ensure that our business and solution architects and developers are following a defined process and format, which is central to our strategy

around building and retaining detailed knowledge of our solutions and getting control,” says Lock.

The K2.net solution runs alongside BizTalk® Server 2006 and Microsoft integration tools, to orchestrate human workflow in and around some of the pilot processes.

BizTalk Server 2006 is crucial for two reasons:

- First, as part of the ESB it manages the data that enters the business, such as information about the energy market. “We have a lot of sources of information, many of which are formatted in different ways,” says Browne. “One source might send it as a PDF file, another as a Microsoft Office Word document. BizTalk Server 2006 restructures that information in a standard way. It acts as an interpreter between us and the outside world.”
- Second, the ESB using BizTalk Server 2006 acts as an internal messaging layer between systems, and offers a service provider to the ESB. “In some instances, the ESB aggregates services,” says Lock. “To get information, we might need to call one Web service for a customer’s name and address, and another for information about the corresponding bill. Instead, the ESB using BizTalk Server 2006 retrieves data from all locations, giving me a consolidated view and a single response.”

BizTalk Server 2006 helps to orchestrate higher level processes. “A piece of data comes in, and depending on a value within that you perform one operation or another,” says Lock. “BizTalk Server 2006 helps us to automate those processes so we can bring in rules to make sure data goes to the right place at the right time.”

“Microsoft business intelligence is very important to our strategy, and we’re implementing it to provide rich analytics. It’s critical that we have a good understanding of the information that underpins decision making and we intend to build a robust reporting framework.”

Paul Holyoake, Head of Data Architecture Team, British Energy Trading & Sales

Additional technologies being used are:

- Microsoft .NET 2.0 and .NET 3.0 to support the company’s Windows Server® 2003 and Windows® XP operating systems.
- The Microsoft Visual Studio® 2005 Team Suite development system. This offers a development environment for designers of all disciplines. Paul Holyoake, Head of Data Architecture Team, BET&S IT, says: “It gives us transparency of the development process, and helps us better manage our development capability.”
- Microsoft SQL Server® 2005 database software is integrated primarily for its enterprise reporting features, both reporting services and use of specialised tools such as ProClarity. Volumes of data in the energy sector can be quite large, with a lot of information arriving for half hour intervals. The aim is to provide a significant improvement in the analysis of retail customers in the different sectors by slicing into and analysing their supply profiles. The business users have already been able to take advantage of the first business reports generated by the system.

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A new Trading Risk Management (TRM) application has been selected, which aligns with the architectural strategy, built on SQL Server 2005 and Web services technology. BET&S plans to work with the new ESB to address common integration challenges.

Benefits

Deployment of the new infrastructure is still underway at BET&S, but the development team is already experiencing benefits that will prove invaluable in the future. Lock says: “We’re ready to start using the technology. From what we’ve seen, we expect to meet our objectives to deliver a more responsive business. In particular, we expect to reduce the cost of second and third generation changes to our solutions through the use of design patterns, improved capture of solution design detail, and use of the selected tools to help us to deliver change quickly and effectively with high levels of reuse.”

Adjusts to Rapidly Changing Trading Environments

Trading environments change regularly and rapidly. “Today you might be trading in one set of products, and tomorrow another,” says Browne. “Traders rely on us to support these changes through the IT environment.” Browne explains that in the past, IT was seen as a barrier, with the IT team sometimes forced to tell business users that the systems couldn’t support their needs. “By adopting the Microsoft toolset, we have control that we never had before. The aim is to ensure that the IT landscape is no longer a constraint to stop these changes from being supported in a timely manner.”

BET&S can now dramatically speed up the development to create new specifications in line with market changes. Browne says: “The time it takes to produce a piece of code in Microsoft Visual C#® .NET 2003 these days is reducing all the time as the toolset improves. Our aim is to augment this by providing additional tooling around our ESB so that a developer can deliver integration more efficiently.”

“Microsoft tools and techniques also help us to integrate with non-Microsoft technologies, so we can use the software that best aligns with our business strategy.”

Jeremy Lock, Head of IT, British Energy Trading & Sales

Improved Architecture Aims to Reduce Development Costs by 20 Per Cent

Quantitative analysts at BET&S use specialised mathematical modelling tools to create business-specific algorithms. The firm’s adoption of Microsoft technologies helps the team to package these algorithms for reuse and to speed up the development of similar capabilities in the future. Lock says: “We can encapsulate the code from mathematical modelling, build it into broader code sets, and make it available for reuse quickly.”

Lock estimates that in due course the business will see a significant reduction in development costs. “Everything we create should be reusable and available for the next project or business request,” he says. “As a result, we expect the investment in Microsoft technologies and a focus on design patterns to reduce our downstream implementation costs by around 20 per cent.”

Better Managed Applications Provide Business Control

The IT team at BET&S is working on how it can apply this sophisticated toolset to make advanced analysis tools more accessible to business users through standard desktop applications, such as Microsoft Office Excel® spreadsheet software. Lock says: “It’s important to get this balance right. We want to be agile, but still control the environment. Microsoft helps us to do that.”

He explains that this policy is particularly critical for the generation of business reports. Lock adds: “IT needs to give traders the tools they need to do their jobs, but without creating a situation where uncontrolled end user computing could expose the business to a huge amount of risk.”

Strong Relationship and Infrastructure Supports Business Needs

Before choosing to build the infrastructure on Microsoft software, the team assessed a number of integration technologies, including TIBCO, Cape Clear, and IBM WebSphere.

However, the team saw that by selecting Microsoft, they could take advantage of their existing skills in Microsoft products. “We also recognised that Microsoft technologies are continually evolving and converging in terms of their construction, particularly Microsoft Office applications,” says Lock. “This was the most attractive proposition to us, because development with these systems is getting faster and easier.”

It’s also important to BET&S developers that the technologies the team selects can still integrate with other technologies when required. “Microsoft tools and techniques also help us to integrate with non-Microsoft technologies, so we can use the software that best aligns with our business strategy,” says Lock.

The organisation has a strong relationship with Microsoft, both through the development of its infrastructure and through the company’s low-cost volume licensing agreement Microsoft Select Licence. “We collaborate regularly with Microsoft Services and have a good relationship,” says Lock. “We are grateful for the input the Microsoft team has given us.”

For More Information

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For hearing impaired customers with a Minicom, contact: 0870 50 30 400*

*Lines are open 8am–6pm, Monday to Friday. Please note, numbers prefixed 0870 will be charged at national call rates. For details of national call rate charges, please contact your telecommunications provider.

For more information about British Energy Trading & Sales products and services, call +44 01355 846 000 or visit the Web site: www.british-energy.com

Microsoft Server Product Portfolio

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

Software and Services

- Microsoft Server Product Portfolio
 - Microsoft BizTalk Server 2006
 - Microsoft SQL Server 2005
 - Microsoft SQL Server Reporting Services

■ Technologies

- Microsoft .NET Framework version 3.0
- Microsoft Visual Studio C# .NET 2003
- Microsoft Visual Studio .NET 2005
- Windows SharePoint Services
- Windows Communication Foundation

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