

SAP Customer Success Story Mining – Diversified Resources



“Carried on the shoulders of the SAP NetWeaver platform, now we have fantastic investment reporting coming out of BHP Billiton enterprise-wide.”

Matthew Harding, Global Technology Architect, BHP Billiton Limited

AT A GLANCE

Company

- Name: BHP Billiton Limited
- Location: Melbourne, Australia
- Industry: Mining
- Products and services: Mining commodities, oil and gas, and diamonds
- Revenue: US\$30+ billion
- Employees: 38,000
- Web site: www.bhpbilliton.com
- Project partner: Agile Solutions

Challenges and Opportunities

- Company's fast growth leads to substantial issues in consolidating investment reporting.
- Nonintegrated reporting systems provide stakeholders with inconsistent and inaccurate information.
- Senior management requires a single unified view of all high-value business unit investments.

Objectives

- Develop customized investment tracking system, built on the SAP NetWeaver® platform and enterprise service-oriented architecture
- Enable stakeholders to track major enterprise-wide projects that exceed US\$50 million

SAP® Solutions and Services

SAP NetWeaver Exchange Infrastructure (SAP NetWeaver XI), SAP NetWeaver Application Server, and SAP NetWeaver Portal components

Implementation Highlights

- Real-time and asynchronous interfaces to Web services and to document management system (Documentum) through SAP NetWeaver XI
- Smooth, 6-month implementation
- Secure, Web-enabled access, single-input controlled data, “one version of the truth,” and a search engine for high-value capital projects
- Powerful business application for middle and senior management

Why SAP

- BHP Billiton selected SAP® software as its enterprise-wide enterprise resource planning solution.
- SAP NetWeaver provides a flexible development environment built on open standards with easy connectivity to other applications.

Benefits

- Improved information quality and integrity with a “single version of the truth” for everyone
- Ensured reliability and timeliness of data with a single-source database
- Reduced number of management reports by 50% – from 20 to 10
- Ensured greater consistency and control for reports
- Improved visibility of internal key performance indicators
- Enabled more streamlined and transparent management of investment portfolio
- Delivered user-friendly interface to all users through the portal

Existing Environment

- Separate and nonintegrated project reporting systems
- Manual integration at enterprise level

Third-Party Integration

- Database: Oracle
- Hardware: IBM and Intel
- Operating system: IBM and Microsoft Windows

BHP BILLITON

Mining Investments with State-of-the-Art Portfolio Management Powered by SAP NetWeaver®

Many of the names in the roll call of the world's most famous mines and petroleum fields – like the massive Escondida copper mine in Chile, the rich gas fields of the North West Shelf off Australia's coast, and the phenomenal Ekati diamond mine in Canada – belong to the largest mining and diversified resources company in the world: BHP Billiton Limited.

In 2001 BHP Billiton was formed in the merger of two historic companies, each with mining roots digging back to the 19th century: Broken Hill Proprietary Company (BHP) and Billiton. BHP is one of Australia's oldest and largest companies and a global leader in natural resources. Billiton is a British company and global leader in the metals and mining sectors with extensive operations in South Africa. Coming together as a dual-listed company headquartered in Melbourne, Australia, BHP Billiton is today a world-class diversified resources company with annual revenues in excess of US\$30 billion.

It is the world's second-largest copper producer and exporter of energy coal, third-largest producer of nickel metal, fourth-largest producer of uranium, and sixth-largest producer of primary aluminum. In addition, it has substantial interests in oil and gas, diamonds, silver, and titanium minerals. Supporting the wide variety of petroleum, mining, and processing operations it takes to meet BHP Billiton's customer demands are more than 38,000 employees working in over 100 operations in 25 countries around the globe. With the merger, many new opportunities came knocking on BHP Billiton's door, and so did the challenges.

BHP Billiton Invests in a “Single Version of the Truth”

Rapid growth followed the merger that formed the new and much expanded company, but with this growth came substantial project reporting issues. “We had a lot of unstructured, uncontrolled ways by which people were reporting data and information within BHP Billiton,” says Gernot Wiegrefe, the company’s project manager of ITS (the company’s customized investment tracking system), “particularly to our capital investment projects. Data was inconsistent and inaccurate, and one version of the truth was lacking. In addition, we did not have a central document repository to store the official decision documents.” As a result, important stakeholders were left guessing about the consistency, timeliness, and accuracy of the information they were being provided.

A conspicuously missing tool for most senior managers was a single view of all major, high-value (US\$50+ million) investments within the BHP Billiton business units. “There was no single standard for investments reporting,” says Matt Harding, global technology architect for BHP Billiton. Because reporting systems were not standardized, no single view of investment projects was possible. Instead, information was stored in data silos, required repetitive data entry, existed in multiple versions, and suffered from unclear accountability. Over 20 investment project reports contained more than 500 data fields, many of them duplicates or just slightly different from one another. From a security standpoint, this was some of the company’s most sensitive data. In 2005, led by Wiegrefe, the search for an integrated investment reporting solution became a corporate priority at BHP Billiton.

An Innovative Investment Tracking System Is Born

Together with business experts from its business units, BHP Billiton global IT architects set out to define the solution they needed. “We wanted to try and bring together all the different customer sector groups [CSGs] in terms of reporting for their investments,” explains Harding. “We wanted the same types of information from each CSG, so we could compare apples to apples. And one of the most essential requirements was that we needed to develop the solution extremely quickly.”

Following a series of meetings and workshops, the team defined a structured and standardized ITS reporting solution. ITS offered security and access control, global accessibility, single-input controlled data, one version of the truth, clear data accountability, and search capabilities for high-value capital projects. “The next step after that was to actually come up with a solution that

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would support obtaining all the information we needed,” says Harding. “We wanted a Web-enabled application that was easy to use, that didn’t bog down the process with overly complicated workflows. We looked at a whole range of off-the-shelf products.” Between September 2005 and January 2006 the company implemented the SAP® xApp™ Resource and Portfolio Management composite application as a prototype, but recognized that its business requirements could be fulfilled only to a certain extent. “The closest we found was only a 50% fit, and thus we came up with the conclusion that we really needed to look at a custom development.”

SAP Solutions Help Track Key Investments

BHP Billiton was already an SAP software user. “With the decision to go for custom development, it was a natural choice for us to stick with SAP. Our strategic direction in the company is to use SAP software,” says Harding.

Next, BHP Billiton identified the solution requirements for ITS. “I would say the most important requirement that we were trying to capture in the ITS project was that requirements were going to change,” comments Harding. Taking the dynamic nature of change into account, a highly flexible solution was necessary. Rather than build a solution that fit a requirement at a given time, as with the first tracking solution they tried, the global architects decided to develop an application that could

change over time. “I can equate this to an analogy of an SAP application,” explains Harding. “Rather than developing a table with a set number of fields, we developed a table that would support any number of fields.”

Such a high degree of flexibility could only be built on and supported by a powerful application and integration platform.

SAP NetWeaver® Drives Move Toward Enterprise SOA

Senior managers at BHP Billiton sought an investment-tracking application tailored specifically to their needs, with the flexibility to support additional functionality in the future. They wanted to enable a comprehensive but single point of reference for investments exceeding US\$50 million, complete with consistent comparison, performance, and measurement criteria. Because BHP Billiton can run either a centralized or decentralized decision-making model, depending on the size of the investment, ITS needed to support a similar model. Therefore, ITS needed a common application and integration platform so users can continue to work in the same flexible way they are used to – while ensuring they work as efficiently and effectively as possible.

The SAP NetWeaver® platform supported BHP Billiton’s need for a flexible development environment built on open standards. It also satisfied the company’s document storage requirements by allowing seamless interoperability and connectivity to Documentum, the company’s document management system. Furthermore, as the foundation for enterprise service-oriented architecture (enterprise SOA), SAP NetWeaver supported the principles of reusability and scalability, allowing ITS to be adapted easily to BHP Billiton’s changing business requirements. The Web services enabled by the implementation would form an important part of this agility for the company.

ITS Undergoes a Fast and Smooth Implementation

“The challenge we faced was creating a design that was open to requirements changing, while leveraging the existing technologies we’ve invested in,” says Harding. To address those challenges, BHP Billiton global architects looked at the overall SAP NetWeaver platform – rather than at isolated technology – for ways to address the key business goals of ITS. To support the architects in developing the application, SAP NetWeaver provided and

combined different integration technologies. In addition, the platform leveraged the company’s existing system investments and enabled the developers to build new business processes in a highly flexible environment.

“With SAP NetWeaver as a foundation platform, BHP Billiton has the flexibility to further exploit different business models and process innovation that an enterprise service-oriented architecture offers,” says Carlos Cruz, partner director of Agile Solutions, the project partner selected by BHP Billiton to help install ITS.

The blueprinting of ITS began in late 2005. To address the moving target of requirements, BHP Billiton’s global architects and consultants from Agile Solutions developed a configurable, object-oriented architecture. Using the ABAP™ programming language, they worked within the SAP NetWeaver Application

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Server (SAP NetWeaver AS) component. Then, programming with Java in the Web Dynpro development environment in SAP NetWeaver AS, they exposed the application to the SAP NetWeaver Portal component.

For interfacing, the SAP NetWeaver Exchange Infrastructure (SAP NetWeaver XI) component was leveraged to enable orchestration of Web services to support real-time and asynchronous interfaces to the Web Dynpro layer and the ABAP layer. For example, ITS leveraged Adobe Document Services, and reports could be sent directly to the user through Web Dynpro or via SAP NetWeaver XI to be stored within Documentum for audit and distribution purposes.

The thorough planning and efficient execution was rewarded with a smooth ITS implementation that lasted just six months. The state-of-the-art ITS solution at BHP Billiton went live on July 1, 2006, ushering in new possibilities for this innovative company.

A Gold Mine of Business Benefits

“I am really pleased with how much we achieved,” says Harding. “With this architecture, we leveraged all the SAP NetWeaver components to build a perfect-fit solution. From a technology perspective, it is a very nice solution.” It is also a very nice business solution, as BHP Billiton continues to reap numerous business benefits from ITS.

“I think the magic phrase here,” says Wiegrefe, “is that we now have ‘one version of the truth’ for all the relevant data and documents we’re looking for to track our projects.” This single version of the truth has improved the quality and integrity of information for everybody using ITS – about 200 of BHP Billiton’s most senior managers, plus approximately 300 project team members worldwide. “The main benefit enabled by SAP solutions is consistent reporting for investments across the enterprise,” says Harding.

“We’re supporting a changing set of requirements quite rapidly and easily now,” Harding continues. “And something else I like about this application is how easy it is to maintain. It may sound complicated – and in terms of the number of technologies we are using, it is – but if you know anything about the applications involved, the maintenance is really straightforward.” For example, BHP Billiton software coders have to fix a bug only once, because the fix is then reused throughout the system.

And there are many other benefits as well. A single, controlled, centralized database of information is providing more reliable, consistent, and timely data. And user productivity has improved with fewer wasted hours chasing the same data multiple times. In addition to the reduction in the number of investment project

reports from 20 to 10, the reports themselves are more streamlined, consistent, and controlled. Furthermore, IT costs have been reduced, since BHP Billiton no longer has to deal with multiple and different legacy systems and has reduced nonproject staff needed to maintain the system.

With ITS, BHP Billiton has streamlined and improved the transparent management of its investment portfolio, giving the world’s largest diversified resources company a clear vision of the future. And the company has even larger plans for ITS. Reports Wiegrefe, “ITS is one part of a complete strategy. In 2007 we are planning to go ahead with phase two, which will broaden ITS into projects, the ways we manage our people and their skills and competencies, and linking to cash flows.”

BHP Billiton is not sure of the structure yet, but it knows that with ITS as the first building block, there will be a lot of other areas coming together – projects, people, countries, and opportunities. “We have many databases to link into,” says Wiegrefe.

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“ITS will provide an umbrella function for a number of different applications, bundled under one central view in order to display and analyze information that is critical for our project portfolio. For example, we are extensively utilizing map services to help display the features of a country or a certain location in the country.” And who knows – ITS may even help BHP Billiton discover its next famous mine.