

## Microsoft Portal Improves Underground Safety in Western Australian Mines

### Overview

**Country or Region:** Australia

**Industry:** Mining

### Customer Profile

Barminco is a leading Australian mining contractor, supplying heavy mining equipment and expertise for underground mining operations. The company employs approximately 1,800 staff at 30 sites, mostly in remote locations in Western Australia.

### Business Situation

Critical business processes were reliant on paper-based communications. Operating and training manuals were printed and distributed to mine sites, and site staff had to fax capital expenditure requests.

### Solution

From 2005 to 2007, Barminco implemented, updated and customized Microsoft SharePoint Server 2007 to provide a central repository of mine operating documentation. Business processes were automated with workflows.

### Benefits

- Faster dissemination of information.
- Delegated responsibility for updates.
- Quicker, more transparent approvals.
- Better quality reporting.
- Reduced risk of business interruption.

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Mick McLennan, IT Systems Administrator, Barminco

Barminco provides plant and specialist personnel to approximately 30 mines in remote sites across Australia. To comply with government, supplier, and site-owner regulations, Barminco needs to ensure mine staff are supplied with current versions of all training and operating manuals. Regulations and machinery instructions change frequently, but because Barminco had no centralized document library, staff constantly reprinted and redistributed bound copies. In addition, some paper- or fax-based processes were slow and lacked transparency. In 2005, Barminco began implementing Microsoft SharePoint Portal Server 2003 to establish a central and accessible online document library. Over two years, Barminco adapted, updated, and customised the application, eventually upgrading to Microsoft SharePoint Server in 2007. Up-to-date manuals became accessible to all sites, capital expenditure requests were automated, and the risks of interrupted mining operations were substantially reduced.

“The consequences of having to stop operations – for whatever reason – are huge. The business has an absolute duty to ensure that its staff are safe.”

Mick McLennan, IT Systems Administrator,  
Barminco

## Situation

Established in 1989, Barminco is a leading underground mining contractor, providing expertise and plant for hard rock underground excavation sites. The company has 1,800 staff, most of whom work on-site at 30 mine locations in Western Australia, Queensland, and Tasmania.

Staff work in a hazardous environment with complex and potentially dangerous heavy mining equipment. Barminco's Environmental Health and Safety department (EHS) has to ensure that all staff are properly trained and that equipment is operated in accordance with government regulations and mine-owner and supplier instructions.

“The point is that there is no room for error,” says Mick McLennan, IT Systems Administrator, Barminco. “Things can't happen imperfectly.”

EHS relied heavily on paper-based communications to disseminate this important information. Training documentation, operating manuals, plant manufacturers' instructions, and information on hazardous substances was printed, bound, and distributed to mining sites. However, these documents were subject to frequent updates, and some required changes daily. Consequently, EHS reproduced large volumes of printed material that were frequently out of date before they could be distributed.

“What we were trying to get away from was having stacks of hardcopy manuals lying about the place,” says McLennan. “Besides being inefficient, it wasn't the best way of keeping mine sites up to date with what they needed to know.”

Because each of the mine sites had its own Active Directory domain, a unified network would have been difficult to implement.

To centralize document control, McLennan constructed an intranet site that hosted updated copies of critical manuals. Although the relevant documents became more accessible to site managers, they were difficult to find, there was no alert for updates, and the burden of communicating this information had effectively shifted from EHS to the IT department.

Communication from mine sites to head office was also hampered by dependency on paper-based processes. In particular, all requests for new capital expenditure had to be sent by hand written fax from mines to executives in Perth. After different stages of approval, the request had to be logged by accountants before the purchasing department could execute an order.

“Faxes would get lost along the way,” explains McLennan. “The faxes themselves would be of fairly low quality, and many of the forms that sites had on hand were outdated. New equipment approvals are a daily requirement for the majority of mine sites because of the environment they work in. But ours was a slow and unreliable process, and site managers found it very difficult to track how far their capital expenditure orders had progressed.”

The capital expenditure approvals process was particularly important as Barminco has a relatively high turnover of sites. When a new site opens, the site manager often generates 20 to 30 capital expenditure requests at once.

The cumbersome process for distributing operating information, and the protracted process for replacing damaged equipment, carried major business risks for Barminco.

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Mark O'Malley, Managing Director, DSC-IT.

huge,” says McLennan. “The business has an absolute duty to ensure that its staff are safe. An accident or the serious risk of an accident can stop mining. Equally, if we don't get replacement machinery quickly, we are also at risk of having to stop operations. Ultimately, paper-based processes carried significant risks to the business.”

In 2005, Barmenco implemented Microsoft SharePoint Portal Server 2003 to improve its communication. However, the company simultaneously lost some of its major information technology staff, and over the following 18 months, the application's potential remained unexploited.

### **Solution**

In mid-2006, , Microsoft Gold Certified Partner and Business Productivity Solution specialist DSC-IT introduced Mick McLennan to SharePoint Server 2007. McLennan was impressed by the increased functionality of the latest version of SharePoint Portal Server 2003 and spotted the opportunity to re-invigorate management interest in a company-wide document library.

“I saw a demonstration of the 2007 version in Beta release,” says McLennan. “It was easier to use and the navigation system was better. Most importantly, it had a built-in workflow functionality, which meant that we could also use SharePoint to automate the capital expenditure approval process, and perhaps other routine administrative processes.”

“SharePoint was particularly suitable for Barmenco because of the geographical location of each of the mine sites,” says Mark O'Malley, Managing Director, DSC-IT. “As SharePoint is accessed in the same way as an internet portal, Barmenco could implement the solution without the need for a single domain across all of their sites in order to

disseminate documents. Anyone, anywhere, could keep up to date.”

The solution objective was to establish a single reference point for whatever mine site employees might need to find. In January 2007, DSC-IT implemented SharePoint Server 2007 and a supporting Microsoft SQL Server 2005 at the Perth head office.

The new SharePoint portal consisted of a home page containing company news and announcements. The centralized document repository included single versions of all EHS documents and manuals together with information on quality control. Version control was a key element to the document repository. DSC-IT also implemented the Enterprise Search capability within SharePoint, and indexed the most important documents.

The next step was to use document routing functionality in SharePoint Server to help Barmenco automate its document processing.

“We took the manual forms that were being faxed, created electronic versions of the forms using Microsoft Infopath and published them within SharePoint utilizing Infopath forms services., ,” says O'Malley. “The most important was the capital expenditure request form. We designed a multistage approval and notification workflow that would follow each Capital Expenditure request.”

The workflow accommodates the essential business processes involved in approving capital expenditure. Depending on the cost of the new item, the document is automatically routed to the CEO or the CFO for sign-off.

As a final step, each mining site was given its own web-based SharePoint portal where all site-specific content was collated. Barmenco dispatched an IT team member to each mine to train local staff to maintain their own

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libraries and search for general company documentation.

### Benefits

Microsoft SharePoint Server 2007 dramatically improved communication between Barmenco’s head office in Perth and its staff who worked at remote mine sites. Staff were notified of changes to critical operational information and instructions, and the updated manuals became easily and instantly accessible. In addition, the business gained increased visibility on the capital expenditure approvals process, which benefited both operational and administrative staff.

### Better administration

According to O’Malley, the solution is designed to be self-managing. One of the features of SharePoint is that IT personnel are not required to keep the repository up to date, or to adapt the SharePoint portal to changing business needs.

“SharePoint has removed an administrative burden that should never have been with IT,” says McLennan. “When manuals were hosted on the intranet site, I was responsible for ensuring that they were updated. Now, the dissemination of information is delegated back to the departments concerned. EHS is responsible for ensuring that sites are kept absolutely up to date – they are back in control of what is most important to them.”

As a result, Barmenco’s IT team has reduced the amount of time spent maintaining and disseminating safety information. Before SharePoint Server 2007, McLennan spent approximately 30 percent of his time maintaining the intranet site. Now, he has time to devote to making sure the company’s accounting package functions correctly.

### Efficient updates and access

“SharePoint Server helps EHS stay in control,” adds McLennan. “We have set up alerts, so each mining site knows when a new or amended document is being uploaded. The document is printed on site when it is needed. This is much more efficient, because we aren’t accumulating paper needlessly here at head office.”

Although Barmenco began consolidating all its sites onto a single domain in early 2008, SharePoint enabled Barmenco to provide immediate company-wide access to documents.

“Being able to access documents over the internet was a key benefit to Barmenco,” says O’Malley. “With SharePoint, we did not have to modify the on-site servers and domains to give mine staff access to the documents. Given the timeframes we could not have the dependency of designing the solution around the unified network project. It was critically important that one service was not dependent on the other.”

The SharePoint service also increased the availability of documents to staff who, for whatever reason, will not have immediate access to the network, even after a central domain has been established.

“There has been a 100 percent increase in usage of online documents,” adds McLennan. “Business users are happier and they can find what they need much more easily. DSC-IT also set up a reporting site that shows portal traffic. I can track what is being used and let company departments know who is retrieving specific documents and manuals.”

### Smoother workflow process

For Barmingo, the biggest benefit was the introduction of automated capital expenditure approvals using Microsoft Office InfoPath 2007 and SharePoint Server 2007.

“We now know where the capital expenditure form is,” says McLennan. “We can track who is holding it up, and we know that faxes are not getting lost. Site managers know exactly what stage their request is at in the approvals process. Once it has been approved, they can find out from purchasing when the item is going to arrive.”

“This is very handy, not least because staff aren’t chasing each other on the phone. But it is also hugely important for the business. The consequences of hold-ups in getting new equipment are horrendous. If we don’t drill, then we don’t get revenue. So automated capital expenditure approval significantly mitigates risks to our business.”

Being able to track the progress of all requests also improves the ability of site managers to plan the start of operations for new mines, when multiple approvals have to be processed at the same time.

#### **Better reporting**

SharePoint Server 2007 also provides Barmingo administration staff with the data to produce better reports.

“We have set up SharePoint Server 2007 to show total capital expenditure,” says McLennan. “Our accountants can export that data into Microsoft Office Excel, where they produce aggregate capital expenditure, and capital expenditure plans.

“Previously, it was very difficult for accountants to see how much the company expected to spend on capital expenditure each month or each week. This has improved the accuracy of financial planning.”

Although capital expenditure requests were the main driver behind developing workflows, various Barmingo departments spotted an opportunity to repeat the success of the automated capital expenditure approvals process. DSC-IT has devised additional InfoPath business forms and processes, and by March 2008, 12 company forms were processed using InfoPath.

“The HR department now uses InfoPath for annual leave request forms,” says McLennan. “This is highly beneficial to the company, because staff move around all the time. The business wanted greater visibility on staff availability, and since the data is in one place on the SharePoint Server portal, they have it.”

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