

SAP INFO

THE SAP MAGAZINE

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Sincerely,

Your SAP INFO Team

Queensland Alumina refines processes with SAP

Information Made Simple

To optimize its processes, Queensland Alumina Limited (QAL) made the decision to replace its old business systems with sophisticated SAP software. As a result, the Australian alumina producer has been able to not only streamline its business processes, but also coordinate employees, resources, and information more effectively at its production facilities.

Aluminum was first extracted by Friedrich Wöhler in 1827 and is a sought-after metal. Its main uses lie in transportation – for example, building motor vehicles, trains, and aircraft, as well as in the construction and engineering industries – and in packaging, such as aluminum foil and cans. The benefits are clear – aluminum is not only a very resistant metal, it is also very light. This is a major advantage, especially in the automotive and aviation industries. The main consumers of this silvery-white metal are the United States, Japan, China, Germany, Italy, and France.

The principal source of aluminum is bauxite, named after the place where it was discovered in Southern France, Les

Baux-de-Provence. Bauxite is composed of a mixture of aluminum hydroxide minerals; it is mainly mined in Australia, Guinea, Jamaica, and Brazil – with Australia boasting over 50 million tons a year, a good third of global production. The bauxite is refined into white, powdery alumina, which is then smelted into aluminum ingots. It's no surprise that the world's largest alumina refinery is located in Australia – in Gladstone, Queensland. QAL produces an impressive 3.8 million tons of alumina powder a year, and is owned by a consortium of international companies – Alcan, Comalco, and Rusal.

End-to-end coordination of information

Extracting alumina is a complicated business, clearly reflected in the complexity of QAL's production facilities at Gladstone, where end-to-end and effective coordination of employees, information, and resources is of the essence. "The underlying aim is to optimize our processes, particularly in terms of safety, the environment, production, maintenance, and finance management," explains Tony Craner, systems superintendent, Information & Process Control at QAL. This could not be done with the 40 or so custom legacy systems, so managers decided to implement a sophisticated enterprise resource planning system (ERP) and new plant information system (PIMS).

After rigorously assessing the various available products, QAL managers opted for the ERP system supplied by

SAP. "We decided to go for SAP R/3, with its Financials, Controlling, Materials Management, Plant Maintenance, Projects, Production Planning for Process Industries, Environmental Health & Safety, and Human Resources components," Craner says. They also decided to implement SAP Business Information Warehouse, Knowledge Management, and SAP Enterprise Portal – all components of the SAP NetWeaver platform.

Reasons for this decision include the breadth and depth of functions of the solution's individual components and the fact that Comalco, one of the shareholder companies, also uses SAP. Another important factor was SAP's expenditure on research and development. "A company like Queensland Alumina can therefore be safe in the knowledge that it will continue to benefit from new developments," he says.

Information Made Simple project

The IMS project – originally called "integrated management systems" but then rechristened "information made simple" – formally kicked off in August 2002 and ran for about nine months, using a "big bang" approach. An analysis carried out with implementation partner Accenture revealed that this would be the most cost-effective method of implementation for QAL.

"The actual implementation phase lasted around six months," recalls Craner. The rest of the time was devoted to core detail design and subsequent developments. The changeover itself

had little impact on the business fundamentals, with no impact on plant operations or support processes. "Overall the project was implemented to the original planned timetable and was within budget, often not an easy task for a large IT related project," the systems manager says.

The 80-member project team, made up of equal numbers of QAL employees and Accenture consultants, worked together really well, helping the implementation to run smoothly. The team was supported by select SAP consultants and a regional service provider to deal with issues relating to the site infrastructure. Technical staff, IT experts,

and consultants all merged into one team, pooling their skills and experience. "The project was awarded the SAP ERP R/3 Implementation Award 2003, providing ample proof of how well the team worked together," Craner remarks.

The challenge of managing change Managing change proved more difficult than the actual technical implementation. "Migrating old mainframe systems to the new solution was a significant change for employees, particularly in terms of how they do their work," he explains. It all boiled down to either getting people to embrace the new pro-

cesses embedded in the software or tailoring the solution to the old ways of doing things. "We decided to head into new territory, and change the processes rather than the software," says Craner, adding: "User training was without doubt a major challenge in rolling out SAP."

Considerable effort was therefore expended on training just under 1,000 employees and SAP users at QAL over a six-week period. Using the InfoPack SAP from SAP Learning Solutions, QAL built a large repository that includes more than 75 detailed training courses, covering the SAP modules, SAP Portal, and plant information



system environments. QAL employed 27 instructors and set up 88 training PCs to deliver the courses.

“The sessions were organized so that users could learn how to operate the system and see how the new processes differed from the way they had worked in the past,” Craner explains. Managers decided to start training just before SAP ERP went live. “Our reasoning was that we didn’t want users to forget everything they’d learned by the time they started working on the system,” Craner says. Taking everything into account, he acknowledges that this conversion period was a difficult time for employees. The original training focused on using trans-

actions – on what people needed to know for the changeover. Future training will focus on the business process.

SAP Enterprise Portal is more user-friendly

Buyin was not exactly overwhelming in the beginning. “It’s quite strange really,” Craner says. “Users used to complain that the mainframe was complicated. Since we’ve installed SAP, they now say SAP is too complicated and some say they want the old mainframe back.” This has little to do with the actual solution, and far more to do with what people are used to. “In the end, they had to accept the system – well, there

was no choice,” he says. Luckily, their difficulties would soon be overcome thanks to SAP Enterprise Portal, part of the SAP NetWeaver platform; a good 50 percent of employees now access applications via the SAP portal. “The portal is very user-friendly – a real plus,” he says.

The company has been using the ERP solution since March 2003. Craner believes one of the great benefits is that QAL can now access its costing data in real time. “Regardless of their level of management, employees can access their costs and their impact – all in real time,” he explains. Cost-center managers used to receive a cost report at



■ QUEENSLAND ALUMINA

Queensland Alumina Limited (QAL), based on Australia’s Central Queensland coast, is the world’s largest single alumina refinery producing some 3.8 million tons of smelter grade alumina per year. The company is owned by a consortium of three international aluminum producers, Alcan, Comalco, and Rusal. The refinery covers 80 hectares of a 400-hectare site on the southeast outskirts of the city. Adjacent to the plant is a wharf and storage facility on South Trees Island, which is connected to the mainland by a causeway and bridge. The reddish pebbles of bauxite are mined at Weipa in North Queensland and shipped 2,000 kilometers to be refined using a chemical treatment known as the Bayer process. There are more than 200 shipping movements at the wharf annually, involving some 11 million tons of imports and exports in bulk carriers. The plant has fully equipped workshops, warehouse and service facilities to handle general maintenance requirements. Employment is provided for a workforce of 1,000 direct employees and 200-300 contractors on a daily basis, involving a wide variety of operative, technical, trade, and administrative skills. About half the workforce is on shift work to maintain round-the-clock operations.

the end of the month, but now they have an excellent up-to-date reporting system.

Another plus is the fact that human resources information is now more widely available, for managers to look at data on their employees, and for employees to access their own data. What’s more, this is all possible online. With the old mainframe system, employees had to go through the laborious process of submitting requests for this information. A useful side effect of the migration is that the number of systems required for paper-based processes like this has been drastically reduced.

Benefit of data integration

Another benefit is data integration. “We used to carry out maintenance planning in our mainframe system – which was fairly good. But linking up with other systems either took time or just wasn’t possible,” Craner explains, adding: “It’s a big plus having every-

thing in one system now, because everyone’s working with the same data.” This means that QAL can now make decisions based on fact rather than assumptions.

According to Craner, QAL next wanted to enhance the quality of data and optimize reporting by implementing SAP Business Information Warehouse (SAP BW). The reports not only clarify our results, they highlight the opportunities, and the hope is that people will enter more correct data. “If the people enter the right breakdown codes on maintenance notifications, we can get the true failure analysis out. In the end, we can coordinate our maintenance better with production, and ultimately get better production and lower costs of maintenance.”

In the final phase of upgrading, Queensland Alumina wants to reduce the huge number of Oracle databases. “At the moment, we’re still working with around 60 databases, which is about half the original number,” Craner says.

“In the end, we’ll only need 40 percent of the original number.”

Craner’s plans for SAP solutions are not over. Knowledge Management was released early in 2005 and in the third quarter of this year, he plans to upgrade to version 6.0 of SAP Enterprise Portal. “The new release will help us simplify more transactions and integrate additional data from other systems into the Portal,” he says.

Craner is exploring the options of SAP Learning Solutions, or more precisely, the Learning Management System module. “We want to ensure that all our employees, whether operators or maintainers, can properly operate their equipment,” he explains. QAL is also looking at the potential of the SEM module for presenting Business Results in a more simplified and consistent manner. This will allow employees at all levels to gauge their performance and its contribution to the business.