

An Enterprise Resource Planning Solution (ERP) for Mining Companies

Driving Operational Excellence and Sustainable Growth



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A comprehensive enterprise resource planning (ERP) solution can help make your mining company more profitable. It can help you eliminate information silos, unify business processes and data, and improve corporate sustainability in areas such as safety and environmental compliance.

Spanning the entire mining value chain with a single source of data for the entire company, you gain strategic insight. Powerful functionality tailored to your business needs enables you to drive operational excellence and sustainable growth.



What It Takes to Succeed in Mining

Mining companies face challenges including decreasing reserves, increasing equipment complexity across facilities, rising equipment, parts and contractor costs, and declining commodity prices. To succeed in the industry today, they need to:

- Adapt to changing commodity markets and customer demands
- Gain visibility into mining assets and maximize uptime to maximize return on investment
- Manage and optimize an increasingly complex supply chain
- Improve corporate sustainability in areas like safety, environment compliance, and corporate social responsibility
- Ensure profitable growth
- Thrive in a global environment of mergers and acquisitions

Leading mining companies know that operational excellence is key to addressing these and other challenges. But too often manual processes, disparate equipment and systems, and information delays make it difficult to control costs, streamline business activities, create efficiencies, and make the right business decisions promptly in order to achieve competitive advantage.

Today, ever more mining companies are leading the way by replacing patchwork software solutions with a single, comprehensive enterprise resource planning (ERP) solution.

Why are these mining companies doing this? With an ERP solution, mining companies can provide outstanding service to customers, maximize their return on investments in assets, optimize enterprise processes, mitigate operational risks, facilitate environmental compliance, and streamline the merger and acquisitions process. An ERP solution helps mining companies meet changing market requirements, achieve operational excellence, and drive sustainable growth. Industry-specific functionality provides powerful business tools to integrate information with business processes; enable better monitoring, transparency, and control; and track and drive performance, sustainability, and profitability.



Because processes are handled on a single platform, decision makers get a **single, unified view** of key performance indicators.

BEING COMPETITIVE TODAY

With an ERP solution, mining companies can strengthen collaboration within the organization and increase efficiency and adaptability. They can streamline operations throughout the enterprise, including customer contract management, project management, mining and processing, plant maintenance, transportation, sales and marketing, and procurement. Organizations can embed risk and compliance management into core business processes while gaining better insights into costs and profitability organization-wide.

The ERP solution lays a solid foundation for mining companies to continuously review, benchmark, and optimize their business processes based on and in line with their corporate business strategy. Making the right business decisions for management becomes easier. A comprehensive ERP solution also makes it easier for a mining organization's business partners to engage productively with the company.

PREPARING FOR THE FUTURE

Implementing new software solutions is a strategic undertaking. It requires a commitment from top management as well as contributions from the best people in your organization. Today's business environment and the current maturity of IT provide great opportunities to transform processes end to end across the organization – by investing in people and information solutions to better navigate current challenges and prepare for future economic volatility.

An ERP implementation is an opportunity to review and optimize existing business processes. The implementation results in increased company expertise and productivity as people who work on the project gain new business experiences and insight and are able to share them with management and colleagues.

Mining companies have the opportunity to become a digital mining enterprise. A core element in achieving this ambitious business goal is to establish a comprehensive ERP software platform that supports an integrated application landscape and seamless information flow.

Sustainable Growth, Complexity, and Profits

More than simple growth, efficiencies gained from interconnected data and business processes foster profitable, sustainable growth. The agile mining companies that leverage an ERP solution have an advantage over those traditional mining companies that continue to rely on outdated and disparate solutions. Just a few of the benefits that mining companies can derive from leveraging an ERP solution include:

- Controlled capital and operational expenditure through efficient production, processing, maintenance, and project management
- Improved profitability through the effective handling of sales contracts and supply chain management
- Safe, economical operations across the mining value chain
- The ability to attract, train, and retain top talent

PROMOTING CLOSER COLLABORATION

Collaboration in any company is an art, particularly so in a growing mining company that has multiple mine locations, a separate location for headquarters, and dispersed staff. This may impair the overall efficiency of the company, whether due to the multiple locations or the difficulty in maintaining communication within and across departments. It is not hard to imagine that communication between finance and sales, between production and maintenance, or between sales and transportation may fall out of sync or be delayed.

A comprehensive ERP solution provides the functionality to maintain automatically close connections between different departments and sites, and through all business processes, to promote efficient management and effective collaboration.

DRIVING OPERATIONAL EXCELLENCE IN MINING AND PROCESSING

Being in a capital-intensive industry, mining companies need their mine operations to run optimally in order to maximize

their return on investment. Yet, so many aspects are involved in running an efficient mining company that achieving operational excellence is very difficult without powerful software and infrastructure tools. Key priorities include: improving cost-effective mine production, getting real-time visibility of important assets, planning efficient asset maintenance, and training and retaining skilled workers. A comprehensive ERP solution provides the functionality to help a mining company address these aspects systematically and thereby drive operational excellence.

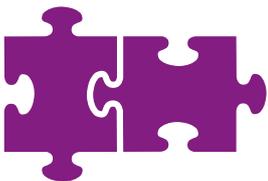
IMPROVING SUSTAINABILITY

Safety and environmental compliance are at the top of the agenda for mining companies. Noncompliance with safety and environmental regulations exposes mining companies to safety risks and negative exposure to their corporate image, not to mention financial penalties. For this reason, mining companies worldwide are working to improve their operational risk management capabilities.

Reducing the carbon footprint and energy costs is a key priority. As energy costs climb and maintaining profitability gets tougher, mining companies strive to reduce energy consumption. A comprehensive ERP solution helps them improve safety and reduce energy consumption in their mining operations and downstream processing.

MANAGING AN INCREASINGLY COMPLEX SUPPLY CHAIN

To stay competitive and achieve sustainable profitability, mining companies must extend their activities and utilize a global approach in their supply chain, including mine production, transportation, and sales. Homegrown or point solutions often cannot support the increased complexity of the new supply chain. In-house-developed, proprietary software is often difficult to maintain, scale, and adjust to constantly changing demands. Moreover, as the workforce that developed these software systems gradually retires, important knowledge and expertise to maintain them is too often lost.



Sustainable growth is a key priority for mining companies. Having a solution that provides a solid foundation for sustainability is essential.

Complicated and costly upgrades of installed third-party solutions also become a problem for mining companies, who often face the issue that the software and technology are outdated or no longer supported by the vendor.

A comprehensive ERP solution supports the new requirements posed by a more complex supply chain. It can scale as your business grows through modular extensions of your required functionality. And it can be maintained over time with long-term support.

ENSURING PROFITABILITY

Stakeholders expect mining companies to manage fluctuations in the business. However, the price of major commodities is becoming more volatile in the global market, introducing greater uncertainty in the profits, especially for those mining companies dealing in huge quantities of those commodities.

A comprehensive ERP solution can capture and help mitigate the financial risks due to volatile commodity prices by tightly integrating sales, purchasing, and risk management.

GROWING THROUGH CONSOLIDATION

Mergers and acquisitions are an important aspect of growth in the mining industry. Many mining companies have recently acquired or are seeking to acquire another company to expand into new territories or broaden business divisions and their value chain. However, consolidation has inherent challenges. Acquisitions create larger organizations requiring greater management capabilities, and they increase complexity by bringing together new

people, products, and processes. Mergers often saddle the organization with legacy software systems and custom applications running on a variety of operating systems and platforms.

All of this can result in disconnected data and a lack of useful information about operations, finance, and customers. Inflexible software systems can slow your response to changing business conditions. Satisfying your compliance requirements can turn into a nightmare. IT costs run high – in terms of both capital and human resources – when you have to integrate and maintain numerous software systems. In short, mergers and acquisitions, while often essential, can lead to disruption rather than profitable growth.

A comprehensive ERP solution can help streamline the merger and acquisitions process.

SUPPORTING NEW BUSINESS EXPANSION

To seek new business growth, mining companies require great flexibility and extensibility to adapt to new business divisions quickly. For instance, a mining company may need to expand into new commodities, extend from “mining only” to “mining and milling,” or extend from “mining” to “mining and chemicals.” This requires that the solution provide cross-industry support to handle such business transformations.

A comprehensive ERP solution supports multiple industry-specific requirements on a single platform.



Powerful analytics tools from SAP help mining companies **identify trends and patterns** in areas such as operations and profitability, which can help improve business decisions.

A Solution Tailored to Mining

Comprehensive enterprise software has often been perceived by mining companies as out of reach, designed for larger, global organizations, and not meeting their industry-specific business requirements. However, software applications and technology have evolved to make it cost-effective for companies of any size to implement an ERP solution to accelerate business value. SAP has developed such an industry-specific ERP solution that provides comprehensive and flexible functionality for mining companies.

ENABLING INTEGRATION

The SAP® ERP application provides tools that enable integration with specialized software that runs programmable logic controllers and distributed controls systems and with functionality for supervisory control and data acquisition, data historians, fleet management, and mine scheduling. It communicates with different software modules within the ERP software. Any third-party or custom application can be integrated thanks to a flexible integration infrastructure. This protects the IT investment for mining companies. Moreover, the integration makes it technically possible to visualize operational equipment and assets and improve production efficiency and operational risk management.

GETTING COMPREHENSIVE FUNCTIONALITY WITH INDUSTRY FOCUS

With its mining focus, SAP ERP supports a broad range of industry-specific processes, including production planning and execution, processing, transportation, plant maintenance, contract to cash, commodity management, and financial management. For instance, the SAP Supply Chain Management application and the SAP Transportation Management application help mining companies orchestrate complex supply chains across sites. Because processes are handled on a single platform, informa-

tion and process “silos” that can impair operational performance are greatly reduced – giving decision makers a single, unified view of key performance indicators.

ENABLING PROCESS IMPROVEMENTS

An ERP solution drives operational efficiency and profitability. Having SAP ERP in place helps promote collaboration among different departments, such as finance, logistics, mining, processing, maintenance, and inventory management. Moreover, with the solution, mining companies can centralize control over operations, reduce redundancies in back-office and logistics processes, and establish shared-services centers to support processes, such as human resources and finance.

A single enterprise software platform can enable supplier consolidation and collaboration. For instance, it can provide easy access to figures reflecting stockpile or finished product inventory levels and mining and processing capacities across locations. Mining companies can analyze and share such information with and extend processes to external partners more easily, ultimately strengthening cooperation with their business partners.

ENSURING SUSTAINABLE AND PROFITABLE GROWTH

Sustainable growth is a key priority for mining companies. Having a solution that provides a solid foundation for sustainability is essential. SAP offers additional solutions that can be integrated with SAP ERP to cover operational risk management and energy and environmental resource management. The software’s support for sustainability reporting can help mining companies improve corporate sustainability in areas like safety and environmental compliance.



The SAP for Mining solution portfolio is a set of applications that is modular in nature, allowing it to be **deployed flexibly**, like building blocks.

Additionally, the SAP Commodity Risk Management application can be integrated into SAP ERP to fully support the business rules of commodity derivatives, futures, and trading. This add-on software helps mining companies mitigate the financial risks related to price volatility by tightly integrating sales, purchasing, and risk management.

UNDERSTANDING THE MINING BUSINESS BETTER

Powerful analytics tools from SAP help mining companies identify trends and patterns in areas such as operations and profitability, which can help improve business decisions. By using these tools, management can analyze critical key performance indicators easier and faster. Moreover, by using the in-memory computing technology that the SAP HANA® database harnesses, management can analyze transactional data in near-real time to get instant insight into the business. Additionally, this revolutionary technology not only speeds up core business processes for mining companies, it can also help them simplify their IT landscape. The result is reduced total cost of ownership.

ENTERPRISE MOBILITY FOR ANYONE, ANYTIME, ANYWHERE

Mobile solutions make people's work much more convenient, and they can make many processes more efficient. For instance, maintenance workers can receive and confirm the maintenance work on their mobile devices. Managers can approve travel and purchase requests on their mobile devices. Production supervisors can monitor mining production performance and trigger corrective actions from mobile devices.

SAP ERP – along with SAP Mobile Platform and the right mobile apps – helps any employee become mobile at anytime, anywhere, which ultimately improves efficiency and enables profitable growth for mining companies.

MODULAR DEPLOYMENT

The SAP for Mining solution portfolio is a set of applications that is modular in nature, allowing it to be deployed flexibly, like building blocks. Mining companies can implement the SAP software in phases to reflect their priorities, budget, expert resource availability, and rollout schedule. This flexibility is extremely beneficial, allowing them to stagger the ERP implementation and adoption process, which helps to reduce any potential project risk.

FAST IMPLEMENTATION

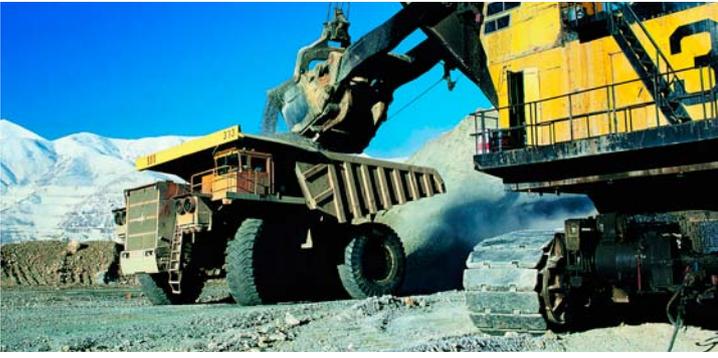
With mature, streamlined implementation processes, mining companies can have SAP ERP in place in a few months with minimal disruption to daily operations. As a preconfigured application, the SAP Best Practices for Mining package incorporates years of experience in the mining industry from customers and partners alike. Whether you use it as is or customize and personalize it to suit your individual company specifications, this software gives you a supercharge on your way to operational excellence.

MULTICOUNTRY SUPPORT

To meet the business requirements of operating and expanding in a global environment, mining companies need to resolve numerous localization topics. These include language, tax, finance, HR regulations, and payroll, not to mention the numerous legal requirements that apply. The IT costs to adapt homegrown or point solutions to meet these localization requirements can be simply too high, especially for multinational mining companies. To offset these costs, SAP ERP offers multicountry versions with long-term support, a much more attractive option for mining companies who are global or plan to become global.



With SAP solutions, mining companies can realize a fast return on investment and **reduce IT spending** by standardizing software on a single platform.



A tin mining company reduced the time required to create reports by 90% and the time required to close the monthly books by 40%.

MANAGEMENT AND OPERATIONS

An integrated ERP solution can help bring the management and operations of your mining company into sync. Your financial team will know what is happening on the production side, and the production team will have insight into the financial situation. Providing this visibility can improve communications and create opportunities for improvement.

THE BENEFIT OF SAP SOLUTIONS

The SAP ERP application and the SAP for Mining solution portfolio increase organizational efficiency, provide visibility across all business functions, and improve strategic planning, operational control, and decision making.

With SAP solutions, mining organizations can reduce operating expenses by improving efficiency in mining and processing operations, boosting asset uptime and utilization, enhancing overall logistics processes, and expanding efficiency improvements to areas like purchasing, finance, and controlling. For example, **one mining company increased its overall equipment effectiveness by 75% by implementing SAP ERP.**

Additionally, mining companies can realize their sustainability strategy on safety and environmental compliance and help ensure financial success. With a clear view of profits and spending, they are in a better position to initiate internal improvement projects and drive effective negotiations with customers and suppliers. **One copper mine realized a US\$20 million reduction in stores inventory by implementing SAP ERP and reduced time from purchase order to requisition by 75%.**

Finally, with the SAP solutions, mining companies can realize a fast return on investment and reduce IT spending by integrating and standardizing enterprise software on a single platform. SAP solutions support organizations with acquisitions and mergers

in a global environment and help them to overcome various localization issues in areas such as legal, finance, and HR when going global. SAP solutions help mining companies expand by providing the security of long-term software vendor support. As an example, **a tin mining company reduced the time required to create reports by 90% and the time required to close the monthly books by 40%.**

LEARN MORE

The SAP ERP application and the SAP for Mining solution portfolio support sustainable growth with flexible, industry-specific functionality for mining companies. By providing up-to-date information, they help decision makers take advantage of new business opportunities.

The solutions support:

- Commodity management – Handle daily fluctuations of commodity prices and achieve full visibility into associated financial risks
- Bulk transportation – Plan and execute bulk shipments end to end and gain full visibility into shipment performance, resulting in lower transportation costs
- Optimized asset operations and maintenance – Reduce mining equipment downtime by employing proactive maintenance strategies
- Operational risk management – Proactively manage risks across mining operations
- Sales – Drive profitable growth across all sales channels
- Sourcing and procurement – Enable sourcing and procurement end to end by connecting spend analysis and on-demand strategic sourcing
- Enterprise management and support – Enable comprehensive financial reporting, analytics, and operations support

To learn more, contact your SAP representative or visit us at www54.sap.com/solution/industry/mining.html.

US\$20 million

Reduction in stores inventory with SAP ERP at one copper mine.



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