Transform Your Mining Organization into an Intelligent Enterprise

Achieve Value with Intelligent ERP
Enable process simplification and automation with intelligent ERP solutions. Leading mining companies transform their business to adopt rapidly to changing conditions.

Transformation in the mining industry is occurring at a rapid pace. Technology changes and evolving environmental standards require constant agility and adaptation. Mining companies must be able to respond to rapidly changing conditions yet still comply with all standards. How does a digital foundation with a true single source of truth help?

Mining companies have started to shift from a mainly engineer-to-order business model to a repeatable and scalable configure-to-order model, using individual customer engineering requirements to become nimble in serving a more demanding customer base. Furthermore, mining companies are seeking revenue opportunities by offering equipment as a service.

**Run the Mine Like a Factory**
The ability to respond quickly to changing conditions is an essential part of managing a mining business.

**Utilize Collaboration Platforms**
Real-time information exchange with vendors, customers, and workers is essential for the intelligent mining enterprise.

**Raise Customer Expectations**
In the commodity business, you have to differentiate yourself. Mining companies must improve customer interactions to gain a competitive edge.

**Increase Sustainability Standards**
Communities, investors, and governments are expecting more than just following the bare minimum requirements to keep the license to operate.

**Simulation, prediction, and analytical capabilities are important components to decide how to improve productivity. Measuring plans against actuals in real time allows quick adjustments.**

**Mining companies use direct collaboration to run efficiently from procurement to sales and project execution.**

**Adopting the supply chain to changing customer demands and providing direct channels with customers to make doing business easier are becoming essential.**

**Companies develop a holistic view for monitoring environmental conditions, becoming sustainable, and engaging proactively with stakeholders to keep the social license to operate.**

**Enhance and Extend Next-Generation Processes with Intelligent ERP**
Embedding intelligent technologies into SAP S/4HANA® is a key value contributor to enable intelligent mining enterprises. The principle of an intelligent enterprise is to automate, extend business processes, or even transform the entire business model. Intelligent technologies such as collaborative artificial intelligence, robotic process automation, and machine learning are the foundation of an insight-to-action-driven enterprise. Leading mining companies have already begun the journey toward becoming an intelligent enterprise.
With SAP S/4HANA, we can realize the benefit of real-time access to real-time data to make real-time decisions. We can be more innovative and efficient as we transform our business and prepare for the future.

Kim Perry, Vice President of Finance and Information Technology, Alacer Gold Corporation

Read the business transformation study.
These are uncertain times in the coal sector. SAP S/4HANA helps us differentiate from the competition and stay ahead.

Craig Howard, GM Finance, Mitsui Coal Holdings Pty Ltd.

30 minutes
To process and sort end-of-month mining data, down from 2 days

80%
Of time in finance now spent on business strategy and data analysis instead of transactional operations
The digital economy is disruptive. Mining companies need strategic priorities that drive transformation. SAP supports a reimagined set of end-to-end (E2E) business scenarios to support the strategic priorities of working in a digital environment.

**Strategic Priorities in a Digital Economy**

The digital economy is disruptive. Mining companies need strategic priorities that drive transformation. SAP supports a reimagined set of end-to-end (E2E) business scenarios to support the strategic priorities of working in a digital environment.

### Make the business more predictable, agile, and productive through automation

Advanced predictive analytics and machine learning integrated with real-time information help make vast operational data more actionable. Predict outcomes or exceptions to support the right decision-making and make mining more predictable, sustainable, and safer for the workforce.

**E2E scenario: Predictive maintenance and service** – Reduce costs and risks with real-time asset health information.

### Focus on customer needs

Differentiation in a commodity business is essential. Getting intelligent insights into customer interactions, needs, and requirements and providing a frictionless experience to interact with customers through multiple channels deliver value to your customers and your mining enterprise.

**E2E scenario: Real-time planning and execution** – Achieve real-time operational excellence.

### Collaborate with customers, suppliers, and workers

Transform interactions with all stakeholders into an interactive, collaborative, and responsive network to strengthen relationships, digitalize data exchanges, make the business more agile, increase profitability, and digitalize the worker.

**E2E scenario: Capital portfolio and project management** – Collaborate with all involved parties for efficient project management.

### Mine responsibly and sustainably

Moving from reactive to proactive and predictive sustainability measures is a key factor to secure the social license to operate. With real-time monitoring and assessment of direct working conditions, risks, and assets such as tailing, you gain full insight into operational issues to increase the safety of your workers and the environment.

**E2E scenario: Automated procurement** – Transform procurement into a smooth, frictionless process.
Make the Business More Predictable, Agile, and Productive Through Automation

**Predictive Maintenance and Service**

Working equipment is one of the most important value drivers in mining operations. A high utilization and availability rate has a direct impact on revenues and profits. It is essential to avoid unexpected downtime. To optimize availability, SAP S/4HANA helps predict asset failures so you can initiate maintenance activities before equipment breaks down and long outages occur.

**Traditional scenario**

- Time- and usage-based inspection and maintenance
- Unknown, real-time risk of failure and performance
- No optimization of cost, risk, and performance

**A new world with SAP**

- Use the SAP® Predictive Maintenance and Service solution for monitoring, scoring, and predicting asset health based on machine learning algorithms.
- Trigger maintenance orders just in time to avoid unnecessary inspections and improve asset availability.

**Top value drivers**

*Benefits are based on results from early adopters of SAP S/4HANA or are conservative outside-in estimates of the benefits of moving from a traditional ERP system to enhanced SAP S/4HANA with line-of-business and cloud capabilities. As each enterprise is at a different level of maturity, our recommendation is that you work with SAP to determine the value proposition for your enterprise.*

- **3%–10%** Reduction in asset service and maintenance costs
- **5%–15%** Reduction in unplanned downtime
Collaborate with Customers, Suppliers, and Workers

**Capital Portfolio and Project Management**

Projects in mining can be complex, with many parties involved. Collaborate directly on a shared plan to achieve visibility, agility, and responsiveness while accelerating completion.

**Traditional scenario**
Disconnected departments and limited access to the business network prohibit responsive planning:

- When plans are not consistently created and shared, information cannot flow quickly. Maintenance and operations are not aligned, wasting time and money.
- When companies rely on a few external partners and communicate manually with them, visibility is limited, collaboration is difficult, delays are inevitable, and the risk of error is high.

**A new world with SAP**
You can share one plan with all critical resources and partners to gain visibility, agility, and responsiveness:

- Collaboration between operations and sourcing, accelerating maintenance completion
- Insight into future demand for maintenance and procurement, optimizing inventory
- Alignment of sales, manufacturing, and delivery, improving customer satisfaction
- Linear supply chains that transform into digital supply networks
- Simultaneous collaboration with all relevant stakeholders
- Your company at the center

**Top value drivers**

<table>
<thead>
<tr>
<th>Driver</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>10%–15%</td>
<td>Increase in percentage of projects on time and within budget and scope</td>
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<tr>
<td>10%–20%</td>
<td>Reduction in audit cost</td>
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Focus on Customer Needs

Real-Time Planning and Execution

True customer centricity means understanding the ultimate end consumer and how their behaviors are changing – and then making every business decision based on this insight. Mining companies can maintain close customer relationships with a focus on long-term value based on a 360-degree understanding of their customers, starting with detailed insights into their requirements and needs. Mining companies can also interact smoothly with their customers on a constant basis through multiple channels, from Web to direct, including Internet of Things (IoT) connectivity.

Traditional scenario
- Planning outside of spreadsheets
- Data that needs to be entered and stored in multiple applications
- No ability to do frequent replanning due to long processing time
- Actual data not mapped with plans

A new world with SAP
- Run planning and what-if analysis in real time
- Capture operational data at the source
- Combine operational and financial data for decision-making on the spot
- Gain real-time operational insights
- Be more agile and responsive to changing conditions

Top value drivers*

10%–20%
Increase in customer satisfaction

2%–10%
Increase in revenue from new products and services

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Mine Responsibly and Sustainably

Automated Procurement

Mining companies are under increasing pressure to comply with public, investor, and government demands on environment, safety, and governance criteria. Navigating and complying with these often-contradictory requirements are becoming increasingly challenging. Mining companies can start by automating the collection of environmental data and making it more easily accessible. They can build a reporting framework to be used as the basis for inside and outside communications.

**Traditional scenario**
- Different applications to efficiently manage the procurement process for parts
- User experience enabled through traditional GUI and Web-based transactions
- Multiple manual steps resulting in erroneous purchase requisitions and orders

**A new world with SAP**
- Mobile app to take pictures of needed parts
- Machine learning to identify part numbers
- Automated creation of purchase requisitions

**Top value drivers**

<table>
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<th>Real-time Insight</th>
<th>Faster Planning cycles</th>
<th>Greater agility In managing change</th>
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Intelligent ERP Is the Foundation of an Intelligent Enterprise

An intelligent enterprise can be continuously enhanced and extended with business services and applications built on a digital foundation to create transformative business value.

Many mining organizations, especially those focused on innovation or early adoption, have already begun this journey.
The Intelligent Enterprise connects experiences and operations using Experience Management solutions from SAP, our Business Technology Platform, and a suite of applications. The SAP Intelligent Enterprise Framework methodology incorporates these essential components to help customers achieve their business outcomes.

**Experience** – Experience data (X-data) from Experience Management solutions from SAP (Qualtrics) holistically measures and baselines stakeholder experiences across all touch points; prioritizes and predicts stakeholder needs and trends with key experience drivers; and acts and optimizes by tracking progress and experience improvement.

**Intelligence** – The Business Technology Platform provides unified data management to connect, discover, orchestrate, and manage both internal and external data: intelligent technologies and analytics to improve analytical and transactional workloads; and application services to simplify extension and integration across the intelligent suite.

**Operations** – The intelligent suite produces operational data (O-data) to automate day-to-day business processes, share insights across functions, and better interact with customers, suppliers, employees, and partners through applications embedded with intelligence.

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SAP S/4HANA Provides **New Capabilities** to Enable the Strategic Priorities of Mining Companies

<table>
<thead>
<tr>
<th>SAP S/4HANA Innovations</th>
<th>Economic Value Added</th>
<th>Optimized usage of capital</th>
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<tbody>
<tr>
<td><strong>Make the Business More Predictable, Agile, and Productive Through Automation</strong></td>
<td><strong>Increased profitability</strong>&lt;br&gt;(revenue and costs)</td>
<td><strong>Demand-driven replenishment</strong></td>
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<tr>
<td>Asset operation and management</td>
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<td>Extended warehouse management</td>
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<td>Geographical enablement framework</td>
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<td>Transportation management</td>
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<td>Material resource planning cockpit that provides real-time insight into material availability, including detailed options to resolve issues</td>
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<td>Change management</td>
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<tr>
<td><strong>Collaborate with Customers, Suppliers, and Workers</strong></td>
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<td>Portfolio management</td>
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<td>Project management</td>
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<tr>
<td>Collaboration with manufacturers, operators, and service suppliers across the network</td>
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<td><strong>Focus on Customer Needs</strong></td>
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<td>Commodity management</td>
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<td>360-degree view of customer</td>
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<td>Order and contract management</td>
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<td>Analysis of delivery performance</td>
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<td><strong>Mine Responsibly and Sustainably</strong></td>
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<tr>
<td>Incident management</td>
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<td>Health and safety management</td>
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<tr>
<td>Environment management</td>
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<tr>
<td>Sourcing according to sustainability and social responsibility standards</td>
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<tr>
<td>Maintenance safety and permit to work</td>
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<td>Analysis and timely handling of potential environmental issues by monitoring a wide range of environmental data</td>
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SAP’s Value Proposition for Mining Companies

SAP S/4HANA provides mining companies with a proven framework to adopt industry best practices while attaining operational excellence across the entire value chain.

**Strategy enablement**
- Accelerate creation of new business models
- Enter new markets and industries
- Accelerate synergy for mergers and acquisitions
- Run live (SAP Digital Boardroom)
- Reorganize on the fly
- Achieve greater speed and agility
- Run simply (master complexity)
- Manage risk and enable compliance

**Empowered employees**
- Higher productivity with a new role-based way of working through the responsive, intuitive SAP Fiori® user experience (UX) on all devices
- Support for role-driven, user-centric processes and self-service business intelligence for user empowerment
- Actionable insights into unified, real-time data and processes with built-in system suggestions for decision support

**Business benefits**
- 2%–5% reduction in total logistics costs
- 5%–30% reduction in supply chain planning costs
- 3%–10% reduction in asset maintenance costs
- 3%–5% optimization of capital expenditure
- 5%–15% reduction in unplanned downtime
- 5%–30% reduction in environment, health, and safety penalties and fines
- 10%–20% reduction in inventory carrying costs
- 2%–10% reduction in HR costs
- 5%–30% reduction in finance costs

**IT benefits and total cost of ownership (TCO)**
- 10x smaller data footprint
- >10x faster data backup and restore
- 7x higher throughput
- 50%–70% faster operational reporting
- Faster adoption through the cloud and the SAP Fiori UX
- Simplified landscapes
- Native integration
- 20% reduction in TCO

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Customers Are Achieving Value with SAP Solutions

To meet changing customer requirements, mining contractor Macmahon Holdings Limited wanted to improve business agility by increasing visibility across its operations. The company established a unified business operations platform based on SAP S/4HANA Cloud and SAP SuccessFactors solutions to provide a single source of truth across all its markets. As a result, decisions are now based on real-time information, enabling the contractor to respond faster to help customers address new challenges.

Supported by cloud solutions from SAP, we’ve implemented several major new initiatives that have played a significant part in turning our business around, tripling our revenue and almost doubling earnings before interest and taxes.

David Van Den Berg, Chief Technical Officer, Macmahon Holdings Limited

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Hochschild Mining

SAP S/4HANA Cloud gives us a digital foundation with the agility, availability, and security we need. The expert guidance from SAP and our partner Seidor was critical to enabling project success and meeting time and budget goals.

Edward Alarcon Ninapaytan, CIO, Hochschild Mining PLC

With decades of experience in the Americas, Hochschild Mining PLC, a leading producer of precious metals, has a tradition of corporate responsibility. To further its mission for sustainable production while supporting goals for growth, the company wanted to improve its efficiency and responsiveness in a competitive environment of fluctuating metal prices. Hochschild also wanted to digitalize and integrate operations in the cloud to improve key business and financial processes and enhance the user experience for employees.

Click here to read the business transformation study.
Customers Are Achieving Value with SAP Solutions

Running as a live business, Alacer Gold Corporation is providing enterprise mobility for its workforce to enable better decision-making in an innovative environment using SAP S/4HANA. With SAP technology, Alacer is changing its corporate culture, creating a collaborative work environment, and preparing for future growth.

With SAP S/4HANA, we can realize the benefit of real-time access to real-time data to make real-time decisions. We can be more innovative and efficient as we transform our business and prepare for the future.

Kim Perry, Vice President of Finance and Information Technology, Alacer Gold Corporation
These are uncertain times in the coal sector. SAP S/4HANA helps us differentiate from the competition and stay ahead.

Craig Howard, GM Finance, Mitsui Coal Holdings Pty Ltd.
Daming Mining

Industry
Mining

SAP solution
SAP S/4HANA Cloud

Customer Web site
www.miningcircle.com

Click here to read the business transformation study.

Customers Are Achieving Value with SAP Solutions

A leader in mining and processing of ferrous metal and mineral resources, Xinjiang Daming Mining Group Co. Ltd. is capable of producing more than one million tons of iron ore annually. As the business grows, so does the need for refined management. To solve complex issues in management with advanced technology, Daming Mining needed a new generation of solutions to support end-to-end digital operations. The goal was to set an example for digital transformation of the mining industry across the region.

“...

The advanced management capabilities in SAP S/4HANA Cloud best address our needs for customized production. Its powerful ERP function also allows us to better integrate operations and finance to successfully digitalize our mining operations.

— Xu Ming, Chairman, Xinjiang Daming Mining Group Co. Ltd.