FUJITSU

Digital acceleration unleashes value for global mining giant

The customer's vision is to be a Miner of Choice: valued and respected by those around them and celebrated by their owners. In 2021, they announced a plan outlining their aspirations across five key pillars: Safety and Sustainability, People, Operating Performance, Technology and Innovation, and Profitable Growth, which they aim to achieve by the end of 2025.

Challenge

The customer faced challenges with legacy systems, inconsistencies in business rules, metrics and terminology, an over-reliance on spreadsheets and centralised reporting tools with no self-service capabilities.

Solution

Fujitsu Data & AI was engaged as a strategic partner to drive the digital transformation journey.

Outcomes

- Over 300% increase in adoption of Power BI
- $440 million real value unlocked
- Fujitsu Data Services achieved unparalleled efficiency by driving data-driven decisions that elevate safety, production, and ESG performance.

"Fujitsu understands our business and its challenges and has consistently delivered high quality solutions and positive outcomes for us. They have also supported the delivery of our data platforms and AI strategy. Fujitsu is a trusted partner of our company."

Digital Platforms Manager

300%
increase in Power BI adoption

440M
dollars of real value unlocked

The journey

Fujitsu and the customer have worked together on numerous projects over many years to establish enterprise-class data and AI platforms, AI/ML architectures, and self-service models in critical areas. This has enabled the unlocking of value from their data and transformed the way they work. This transformation continues across the organisation by providing powerful insights via dashboards, optimising mining operations through interactive analytics and AI/ML models, and standardising group-wide reporting with common terminology and metrics. In addition to delivering world-class Data Operations services, the partnership has created value across several key business areas.

Safety is the highest priority

The safety of all employees is the highest priority for the customer. As part of their continuous improvement methodology they include a governance cycle to review safety controls, processes, and data, ensuring they minimise risk. To enhance the performance of this practise the customer and Fujitsu collaborated on several new innovative digital solutions, including:

- **In-cab Driver Safety System**
  Captures and alerts operators as soon as fatigue or distraction is identified.
- **Self-service Safety and Risk Data Model and Reporting Solution**
  Provides timely and secure access to integrated safety data, including pre-calculated KPIs. Future incidents can be avoided using data-driven insights, and senior management can ensure the right mechanisms are in place to reduce safety risks for team members.

Sustainability takes focus

The customer's target is net zero carbon emissions by 2050. To support monitoring progress towards the goal their sustainability performance is reported annually using GRI (Global Reporting Initiative) guidelines.

Historically, the process to collate all the necessary data for the ~190 GRI Standards used in the Sustainability Report across its operational sites was achieved via spreadsheets and manual data for over 3000 data points and 150 data owners. This process was arduous, error-prone and lacked timeliness to support the business to make faster and better-informed decisions.

Fujitsu collaborated with the customer's team to define the Sustainability Data Centre (SDC) model, enabling the automation of thousands of data points and an improved Microsoft Power Apps-based data capture solution. The data is consolidated into a newly centralised Sustainability Data Centre (SDC) on an Azure data platform. The SDC facilitates the timely collection, review, analysis, and reporting of sustainability data.

The new SDC will assist in identifying opportunities to enhance sustainability performance across the business and facilitate more expedient reporting.

Industry:
Gold mining and production

Location:
Australia

About the customer

One of the world's leading gold producers, and among the largest mining companies globally, operates mines in Australasia and North America.

10M
dollars approximately saved by reducing crusher downtime since 2019

Fujitsu has supported other sustainability-focused projects, including an IoT Environmental Monitoring solution that enables proactive and real-time measurement of sensor data related to air quality, noise, dust, odour, water levels, weather and vibrations. Fujitsu also supported a key Water Management solution and an AI/ML model to forecast rainfall, enabling optimised water consumption and ultimately boosting production on site.

Enhancing site production management via Plan-Do-Check-Act

Mine performance metrics were previously captured via Excel, which was onerous and prone to human error. A centralised enterprise common data model was built consisting of 121.6 million records, which enabled self-service reporting.

The value delivered included improved visibility and performance management for all critical planning cycles, identification of production gaps and opportunities to fill them and the efficient redirection of assets as required to increase utilisation and respond to breakdowns.

The importance of open-pit reporting has been clearly demonstrated at one mine, where there were over 18,000 report executions in its first year alone.

Digital twins to predict and prevent operations failure

Fujitsu helped to support and productionise the operation of several strategic digital (data science algorithms and AI) solutions to optimise processes by simulating optimal operating parameters, thereby increasing throughput rate and recovery.

These solutions included Crushed Ore Bin "Soft Sensors," or virtual sensors, which ran in parallel with actual sensors, and a data science AI/ML model to predict the level of Crushed Ore Bins when the real sensors were unreliable.

Operational cost control

Operating multiple mines worldwide and producing a variety of metals, the company sees any method to improve cost control and reduce expenses as crucial for meeting business targets. As Fujitsu continued to shape the customer's digital transformation, a purpose-built self-service model was introduced to support these efforts.

With pre-calculated KPIs and metrics from SAP at a daily, weekly, and monthly level of granularity, the model includes work orders, capital costs, cost centre and inventory. Having a separate single source of truth in SAP has made it easier for teams to take the required actions to optimise their budget. A maintenance cost variance dashboard was developed and implemented for use by maintenance specialists, superintendents, and managers to improve their cost management.

A Maintenance Cost & Improvement Analyst has noted the benefits of the self-service model, stating, "The team has transitioned a heavy, data-based, clunky Excel file into a streamlined, easy-to-use analytical tool that helps both Commercial and Maintenance teams review and control their costs."

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