MINING SERIES: DIGITALISATION

Digitalising the mining sector can improve business performance while reducing risk

Mining companies are embracing digital transformation as a key lever to extract value across the supply chain and enable step change in operational risk reduction.

How digitalisation supports value release and risk mitigation

PROSPECTING AND EXPLORATION
- Mineral prospecting and exploration using AI and predictive analytics
- Identification of target zones using AI
- AI for improving exploration targets
- Simulation driven planning using digital twin
- Autonomous drilling

MINING AND BENEFICIATION
- Autonomous operations and self-driving trucks/trains
- Digitise remote operations and use of digital twins
- Smart sorting equipment
- Wearables and real-time monitoring of behaviours
- Predictive maintenance and loss prevention
- Asset performance monitoring and predictive analytics
- 3D printing of spare parts

SUPPLY CHAIN AND LOGISTICS
- Use of Big Data for smarter procurement
- Drones for inventory management, site surveying, traffic management, blast planning and collaboration
- Shipment tracking and route optimisation
- Pit to port integration

SALES AND MARKETING
- Document digitisation and Robotic Process Automation
- Trading analytics
- Demand forecasting using predictive analytics
- Price movement forecasting

The three priorities for effective digitalisation

1. Addressing three priorities will ensure digitalisation actually translates into cost effectiveness, sustainable risk reduction and performance improvement.
   - Integrate digital capabilities into the Management Operating System across levels to support decision-making and active performance and risk management.
   - Adopt an integrated view of key value drivers and risks along the supply chain to maximise impact to business and EHS performance.
   - Evolve leadership skills and address the cultural change (mind-set and behaviours) required for successful adoption.

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