

## Technical Article-4 Digitization in Mining industry

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### How miners can deliver sustained outcomes from their transformation journeys

India aspires to be a US\$ 5 trillion economy by 2024 & US\$ 10 trillion by 2030. It is imperative that mining sector will have a significant play in this growth journey. However, the mining sector contribution to India's GDP has been on the decline. It contributed 3.4% of India's GDP in 1992-93. In recent times, the sector contributes around 3% to India's GDP.

Mining companies are facing multiple challenges related to declining ore quality, volatile commodity prices, political / social activism in mining zones, increased cost of mining among many others. Cost of mining has increased due to higher mine acquisition cost through auctions, delayed statutory clearances, longer implementation timelines, higher taxes, and duties etc.

We're already seeing many miners investing in Industry 4.0 capabilities and automation solutions to respond to these trends. Artificial intelligence and the Internet of Things are informing new solutions, such as predictive maintenance, integrated planning simulations and optimization, digital twins, and robotics for agile operations, which let miners scale production up or down as commodity prices fluctuate.

A critical part of this journey will be improving coordination and collaboration across the organization and developing, enhancing, or refining a data strategy to generate the insights you need to improve your operations.

### Here are a few areas where mining companies can start:

#### A. Take a closer look at current data assets.

Miners are generating more data through their equipment and software platforms than ever before. Before making large investments in new technologies that will create even more information, it's helpful to pause and look for opportunities to use what you already possess to make better—and more timely—decisions. Some examples include:

- ✓ **Data analytics:** There are limits to the amount of analysis individual employees can perform as the volume of data you're generating multiplies. Automated tools can produce meaningful insights that can help create more value from mining operations.
- ✓ **Cloud storage:** Centralized storage makes data more accessible to both operational and business leaders than housing it in different on-premises locations.
- ✓ **Data convergence:** Historically, the numerous software platforms that help run various parts of a mining operation rarely connected with each other. But that's changing. New enterprise resource planning (ERP) systems and operational platforms integrate multiple sources of information from across an organization, tying disparate data sources together to tell a compelling story.

#### B. Embrace quick wins :

Some mining companies may perceive all digital transformation initiatives as cumbersome and expensive undertakings. But there are often low-cost solutions that drive improvements to key performance indicators such as profitability, health and safety metrics, cost per tonne of production and ESG targets.

For example, we've seen companies use existing technology to create a simple reporting dashboard showing a miner's performance for the previous day. By getting key information, such as tonnes lost the day before, to operators, it's possible to generate meaningful productivity improvements.

These incremental steps that deliver quick wins can add up to bigger improvements over time for

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smaller mining companies and larger enterprises alike. And miners can often scale them to fit their size and needs as they grow.

### How to move beyond digital:

Digitization is a top priority for many mining executives. While these digital investments are critical for many miners to achieve their organic growth, operational efficiency and ESG targets, winning in today's world requires more than digitization. Increasingly, miners must build unique capabilities that help them deliver value in a unique way. And this requires embracing a holistic journey that considers all elements of transformation.

#### Must Include:

**Strategy:** Start by reconsidering your strategy and what drives value for the business. Without this step, you may end up making changes before you've decided on what you're looking to achieve.

**Reorganizing for growth:** Automate low-value tasks where possible.

**Building digital trust:** Adopting new technology solutions is opening new opportunities for miners to explore and use data.

**Cross-functional alignment:** While technology can deliver significant benefits, it can't fix a broken process. To truly make a difference, it's important to develop a clear, cross-functional agenda for achieving your goals based on conscious choices for streamlining processes across the organization.

**Creating the mining workforce of the future:** We believe a critical element of success lies in combining human ingenuity with technological innovation.



### Embracing new opportunities to shape the future:

By following this path, miners can focus their efforts on changes that will help them thrive in the long term. This can also help miners shift resources and costs away from areas that are no longer a priority, which they can then reallocate to their investment priorities.



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