CASE STUDY: SKILLS MIGRATION FOR REMOTE DRILL OPERATORS

Stakeholder group: Mining company

About the mining operation(s) discussed:
- Located in Chile, South America.
- This large copper mine successfully transitioned to autonomous drilling operations in 2020 with no job loss.

Role and Skill Requirements

Through a process of upskilling, drill operators had to transition from the traditional role of controlling the machine onsite to controlling the machines remotely. This change demanded new skills such as:
- The use of new software for creating instructions for the drill.
- Basic Microsoft Office skills so they could gather all the relevant information for the process.
- The ability to make strategic decisions based on digital information and KPIs.

Key Stakeholders

Operators had to become familiar with and accustomed to working with the new technology that enabled autonomous operations. For this to happen, it was important to include the Original Equipment Manufacturer (OEM) in all steps, especially once training began.

Training

There were not enough internal resources available to teach the new skillsets, so using an external facilitator from the OEM who brought experience and knowledge from developing the technology helped the operation save time and resources. When internal resources were used, training was provided by engineers or technicians with certification from the OEM**.**

For the first three months of the transition, training was conducted traditionally with a trainer working hands-on with operators. After the third month, the COVID crisis resulted in a reduction of onsite employees, so the remainder of training was completed online.

On-site training proved to be the most successful way to learn. As many operators had little-to-no educational background in digital technologies, this knowledge gap presented challenges for online learning. However, once operators became more comfortable working in a virtual environment, they became more motivated. After a slow start, operators started to learn faster as they gained more experience online.

One challenge was that many operators did not have a strong understanding of mining KPIs— such as availability and utilization—in order to make strategic decisions and enable continuous improvement. While some courses covering similar topics were offered, they did not provide a strong enough understanding to enable improved decision-making.

Change Management

Keeping constant communication with the drill operators was the main enabler in managing a fast and secure transition to autonomous operations. During this time of transition, communication included:
- Providing a detailed description of new processes
- Highlighting the benefits of the transition, such as the ways in which the new technologies will add convenience and the opportunity to develop new skills in a changing world
- Listening to any concerns brought forward about the introduction of new technology

Key Takeaways

Focus on and listen to the users of technology. The operator has a lot to say about the use of new technology and it is very important to cover the knowledge gaps for implementing new processes correctly.

About the GMG Autonomous Mining Skills Migration Case Study Project

To achieve the desired operating efficiency and productivity benefits of an autonomous operation, companies require resources with a different skillset than those which are required from the typical mining equipment operator. This project aims to develop case studies from organizations that have successfully implemented autonomous systems to help companies create a workforce that will enable autonomous mining.

Do you have a case study you would like to share? Contact us.

About GMG

The Global Mining Guidelines Group (GMG) is a network of representatives from mining companies, original equipment manufacturers (OEMs), original technology manufacturers (OTMs), research organizations, academia, regulatory agencies, consultancies, and industry associations who collaborate to tackle the challenges facing our industry. GMG aims to accelerate the improvement of mining performance, safety, and sustainability by creating guidelines and white papers that address common industry challenges, facilitating collaboration and expanding the industry's knowledge base. GMG also hosts and supports events that bring mining stakeholders together along with external industries to address the industry's challenges, successes, and innovations. Learn more about GMG at https://gmggroup.org/