Automated Mining Equipment - Market Share Analysis, Industry Trends & Statistics, Growth Forecasts (2025 - 2030)

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Report description:

The Automated Mining Equipment Market is expected to register a CAGR of 35.38% during the forecast period.

Key Highlights
- Mining is a composite industry that extracts raw materials of different shapes, sizes, and chemical compositions from the earth's crust. Transforming it into a standardized and high-quality final product is challenging and has pushed the industry to opt for solutions that improve its efficiency and productivity. Typically mines are located in remote areas, and adopting automation helps in resource utilization better.
- Autonomous technologies bring certain benefits which cannot be overlooked. These impact the whole value chain of the mining industry and the industries depending upon mining for their raw material requirements. The companies that implement automation technologies are anticipated to quickly realize a significant increase in productivity and a decrease in expenditures with the correct implementation.
- Moreover, Mining companies worldwide are swiftly utilizing technological developments to better use their equipment and human resources to improve safety. For instance, in September 2020, Bis, a logistics company, and Israel Aerospace Industries (IAI) announced its collaboration for 'Auto-mate,' a new joint venture, to provide autonomous systems for mining operations. According to IAI, the JV is likely to give the mining industry players access to the benefits of automation in their operations, which improves safety and productivity.
- The industry is anticipated to benefit from a considerable increase in safety practices. Identifying processes and operating procedures helps address danger points and develop the SOP to mitigate those risks. Moreover, using automated equipment, which can be maneuvered into unsafe areas and challenging locations, the mining companies can send fewer miners underground while extracting a higher output, with lower risk to their employees. For example, after implementing autonomous technologies in several African mines, Randgold Resources reduced the quarter-on-quarter injury rate by 29%.

- Further, the demand for automation equipment in the industry is primarily driven by the rising need to enhance productivity and improve workers' safety. The outbreak of COVID-19 has caused the demand for automation and is expected to increase over the long run, primarily to cope with the shortage of labor and rising costs. Within the mining industry, the situation is likely to vary from commodity to commodity. The mining of commodities, such as gold, iron ore, and uranium, has remained buoyant. In contrast, thermal and metallurgical commodities have come under more pressure as the commodity is fully exposed to consumer demand.

Automated Mining Equipment Market Trends

Excavators is Expected to Hold Significant Market Share in the Hardware Segment

- A wide range of excavators can be seen in the mining fields, ranging from a skid's size to a massive building-sized earth mover. These excavators are used in the foundation of any mining operation. The excavators play a vital role in digging and pulling back the materials using hydraulics. Many companies offer excavators classified into two categories: wheeled excavators and large excavators, with differences in their manufacturing processes.
- Moreover, wheeled excavators are popularly used for multi-tasking and are designed to deliver the speed and power required for such tasks. Continuous innovations in load management have enabled the creation of excavators with maximum digging capacities. To cater to the concerns about safety and improved productivity, automated excavators provide improved visibility. The operator stands in line with the sight and uses a remote to run the vehicle operations. Thus, automating the excavator on a job site can increase productivity and accuracy and decrease operator fatigue and fuel consumption.
- In March 2020, Leica Geosystems, a Hexagon company, released its new semi-automated excavator functionality for the iXE3 3D excavator machine control solution, including tilt and tilt rotator bucket automation. The solution automatically controls bucket, boom, tilt, and tilt rotator bucket functions to dig faster and more accurately to the target design surface and cross slope. The new semi-automatic functionality makes the operator execute complex tasks, increase productivity, reduce manual controls, speed, and accuracy of the work, even for less experienced operators.
- The manufacturers of heavy earthmoving and construction machinery are collaborating with tech companies to develop automated excavators. For instance, Engcon, the tilt rotators technology-based equipment manufacturer, teamed with Kobelco Construction Machinery Europe BV (KCME) and Leica Geosystems, developed the tilt rotator compatible excavator guidance system on a Kobelco SK210LC-10 excavator. The system is based on the latest 3D machine control (3DMC) technology by Leica Geosystems, along with the newest tilt rotator technology from Engcon.
- Further, in January 2021, Hyundai Construction Equipment launched the upgraded series of excavators under the series name SMART PLUS and new global color to strengthen the brand positioning, especially in India and the export market.

North America is Expected to Account For Significant Market Share

- North America is one of the major mining equipment markets, owing to the United States and Canada's presence, which combinedly hold a significant share in the mining industry. According to the data produced by the US Geological Survey, more than 22% of the global active mineral exploration sites are located solely in Canada. Together, the United States and Canada host more than 34% of the international active mineral exploration sites. The production shares of the two countries, for a few essential mineral commodities, put them in leading positions compared to other countries.
- Further, the US government has various regulations that guide the mining industry to work without damaging the environment and providing safety to the workers involved. This is driving the market in the region due to the capabilities of automated vehicles working in hazardous environments without time boundaries. The US government has environmental regulations such as National

Environmental Policy Act (NEPA), Resource Conservation and Recovery Act (RCRA), Clean Air Act (CAA), Clean Water Act (CWA), Toxic Substances Control Act (TSCA), etc. Owing to such regulations, the country is driving the demand for autonomous mining vehicles.
- The region provides substantial business for mining equipment producers. For instance, Komatsu, one of the significant vendors of mining equipment worldwide, generated JPY 447.8 billion from the region with sales of its construction, mining, and utility equipment. Komatsu's American subsidiary, Komatsu America Corp., recently announced that its front-runner Autonomous Haulage System (AHS) has qualified to operate on private long-term evolution (LTE) mobile broadband technology. It is the first AHS enabled to run on private LTE in commercial operations.
- Moreover, the regional players are contributing to the growth of the market. For instance, Cisco's IoT industrial networking technology and Sandvik's automation systems and software helped the Swedish mining company, Boliden, automate and optimize mining operations. Sandvik Mining and Rock Technology is a business area within the Sandvik Group. It is a global supplier of equipment and tools, services, and technical solutions for the mining and construction industries. The application areas include rock drilling, rock cutting, crushing and screening, loading and hauling, tunneling, quarrying, and breaking and demolition.
- Further, ABB has launched ABB Ability Operations Management System in Canada that maximizes coordination between weekly production plans and dynamic situations in mining to improve efficiency, increase productivity, and maximize profitability. It has developed in collaboration with Boliden AB and ArcelorMittal Mining Canada. Moreover, ABB Ability Operations Management System for mining (OMS) connects and coordinates mine operators, workforce, equipment, and mining activities in real-time, from face preparation to the crusher.

Automated Mining Equipment Industry Overview

Automated Mining Equipment remains a consolidated market with a few significant players owning a considerable market share. However, with the market's overall size, expanding the market attracts new players, who have actively entered the market only recently. Some of the recent developments in the market are.

- September 2021 - ABB has launched ABB Ability eMine, a portfolio of solutions that will help accelerate the move towards a zero-carbon mine. ABB also unveiled the piloting of the ABB Ability eMine FastCharge, the fastest and most powerful charging system, designed to interface with all makes of electric mining haul trucks. eMine comprises a portfolio of electrification technologies that make the all-electric mine possible from mine to port and are integrated with digital applications and services to monitor and optimize energy usage.
- November 2020 - ABB launched the ABB Ability Safety Plus for hoists, a suite of mine hoist safety. The products include Safety Plus Hoist Monitor, Safety Plus Hoist Protector, and Safety Plus Brake System, including Safety Brake Hydraulics. The products are designed following the international safety of machinery standard IEC62061, and the products have been independently certified by Sweden's research institute, RISE. ABB Ability Safety Plus for hoists includes the new ABB SIL 3 Safety Plus Brake System, the mining industry's first entirely independently certified Safety Integrity Level 3 mine hoist system.

Additional Benefits:

- The market estimate (ME) sheet in Excel format
- 3 months of analyst support

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