METALS & MINING Review

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Understanding Mining Project Management

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Role of Technology in Optimizing Mining Project Management

Technology is at the forefront of all mining activities that Dyno Nobel is involved in, and automation and remote monitoring are the cornerstones of many of our recent developments. For example, we have what we call our "Connected Bench," where we can utilize different building blocks like our TITAN DIFFERENTIAL ENERGY™ (ΔE), bulk truck data, the mine's smart drill data, our Nobel Fire® digital platform, DigiShot® Plus 4G electronic detonators, and the Commander initiation system in conjunction to provide the right amount of explosives in the right place at the right time.

> ***"Productivity and sustainability in mining can be significantly improved by utilizing technology and a highly qualified mining workforce to mitigate risk and to drill, blast and mine safely."***

Share Your Experiences of Significant Mining Engineering Projects

One of our recent projects that comes to mind was at a surface metal mine. The operation identified an opportunity to drive value by increasing their fines percentage, particularly the -1/2" size fraction, to improve overall mill throughput. Several rock types posed a challenge due to their hardness and grindability characteristics. Knowing that the mine plan showed these rock types would increase significantly throughout the next several years, the operation turned to our team for assistance.

We completed a Drill to Mill™ initiative that examined the entire mining process to identify areas for improvement and optimize drilling and blasting. Once we gathered and analyzed baseline data, we were able to create new blast designs that targeted an improvement in the -1/2" size fraction. Using the new designs and our TITAN 5000G Emulsion and ΔE^2 technology, the -1/2" size fraction was increased by up to 10% and mill throughput was increased by 15%. This resulted in a $58.1 million value-add to the operation in just one year, with significant value projected in the years to come.

Challenges in Your Business to Providing Optimal Solutions to Mining

As mining companies work to wring every bit of value out of ore recovery as economically as possible, the challenges to develop technologies fast enough is a major challenge that Dyno Nobel is well suited to meet. To meet the ongoing challenges in the mining industry, we work hard to attract, employ, and retain the best of the best people in mining.

Because of the continuous need to adapt and add value to our mining customers, we started DynoConsult in 1999 to provide our customers with the most outstanding mining professionals and

critical thinkers in drill and blasting and develop the highest level of innovations and technologies. Since 2020 alone, our DynoConsult group has helped our mining customers reap an additional $100 million in productivity, ore recovery, and profits with the use of our explosives, electronic detonators, technology, and tools.

Emerging Approaches in Mining Project Management You Find exciting for the Future

There are so many amazing breakthroughs in mining project management that it's hard to know where to start. Utilizing digital twins, mines can accurately simulate the mining work environment, which will lead to better mine plans, higher productivity, safer activities, and higher productivity and profits.

Drones, picture analysis for better screening, optimizing mills, AI estimations, and new developments with autonomous vehicles are all evolving today. Sustainability and ESG efforts will continue to produce higher returns for mining companies and lead to better community relations, better permitting speed, and better shareholder engagement and returns on investments.

Dyno Nobel has made several developments such as Nobel Fire, which helps mines optimize blast design. From blast reporting to blast modelling, Nobel Fire offers a single software solution to your blasting software needs. With a focus of interoperability with your existing eco-system, Nobel Fire is the industry setting platform for integrating into your mining or quarry operation to supplement and drive your blasting management cycle.

Advice for Professionals and Organizations Looking to Excel in the Field of Mining Engineering Project Management

Productivity and sustainability in mining can be significantly improved by utilizing technology and a highly qualified mining workforce to mitigate risk and to drill, blast, and mine in a safe way. Continuous internal training and utilizing your explosive supplier and their staff to help your mining team design patterns are also impactful. Finally, you should always use the best technology suited for the conditions at your mine and utilize proven technology for maximized directed explosive energy to produce highest economic yields safely while minimizing total cost of operations, emissions, and ground water issues.

Biography

I'm Dyno Nobel's Vice President of Metals Mining and Corporate Accounts for North America. I'm responsible for managing several Corporate Accounts personally and managing our team of Corporate Account Managers for Dyno Nobel Americas. My role is to coordinate the Dyno Nobel and DynoConsult services and our channel partners to provide value to our largest mining customers. I am also a proud husband, father, and grandfather.

The original Metals & Mining Review interview can be found **here**.

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