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Artificial Intelligence is expected to save US$26 million for Vale in 2018

Company had a proven benefit of US$5 million with only one Advanced Analytics project

Artificial Intelligence is changing the way industries predict equipment failures, solve problems, and optimize processes. Vale expects an estimated benefit of US$ 26 million for 2018 by using this science. Ten projects establish new maintenance methodologies for mine equipment, help avoiding problems in railroad tracks, and promote improvements in the management of ore processing and pelletizing plants.

In a nutshell, Artificial Intelligence can be understood as the ability of machines to simulate the human decision-making process and to perform complex tasks as we do. It is present in several systems, such as those used for shopping recommendations on e-commerce sites or in self-driving cars.

In those ten projects, Vale collects millions of data generated by sensors installed in the operational areas equipment and analyzes them with the help of Artificial Intelligence systems. Thus, insights about equipment behavior are generated, which help to predict problems and influence decision making.

By using this specific process, known as Advanced Analytics, Vale seeks to establish a new maintenance methodology that optimizes the life cycle of equipment, increases its lifespan, and avoids unnecessary interventions.

The results of one of the projects with greatest impact have already been proven recently. At Salobo copper mine in the State of Pará, in Brazil, there was a 30% increase in the lifespan of haul truck tires in one year, which saved US$5 million in the period. The work was done in partnership with the business area, which also implemented important improvements in the operation and maintenance of equipment.

The same technique is being used in other mines of Vale, in the States of Pará and Minas Gerais, and with other components of trucks, such as engines, and even in fuel consumption.

In the railways operated by Vale (the Carajás Railroad and the Vitória-Minas Railroad), the project aims at predicting fractures on the rails – the most common occurrence, and a critical one for the operation. The data generated by the railways allowed to identify a solution that reduces the occurrence of fractures by up to 85%, which represents a potential gain of US$7 million per year.

"We believe that Vale is on its way to become a 'smart company', that is, a company that uses information technology to increase operation productivity", explains Hélio Mosquim, the IT Innovation Executive Manager.

Vale's digital strategy

In 2016, Vale began to implement a digital transformation program aimed at saving more than US$100 million in two years, that is, until the end of this year. The company is using Internet of Things, Advanced Analytics, Machine Learning, Artificial Intelligence, and mobile applications, among other technological innovations, to promote integration between business areas around the world, reduce costs, simplify processes, increase productivity and operational efficiency, and achieve the highest levels of health and safety.

More information ─────────────────── ★

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