

Votorantim Cements Decision to Standardize on MRO Software's Strategic MRO Solution

Votorantim Cimentos, one of the ten largest cement manufacturers in the world, is a leader in marketing, operations and logistics. Votorantim Cimentos is a part of the Votorantim Group, a large conglomerate that is also active in eight principal economic areas: Agribusiness, Pulp and Paper, Cement, Energy, Finance, the International scene, Metals and Chemicals.

The group entered the cement business in 1936 with the inauguration of its first furnace in the city of Votorantim, in the state of São Paulo, Brazil. Currently Votorantim Cimentos operates 22 manufacturing units, and supplies 42% of the domestic market under the brand names Aratu, Itaú, Poty, Tocantins and Votoran.

With 18 cement plants and four mortar factories producing 25 million tons of cement and 1.5 million tons of mortar per year in Brazil, Votorantim Cimentos supplies almost half of the Brazilian cement market. In 1999, Votorantim identified that to enhance their current competitive edge they needed to streamline their maintenance operations with a Strategic MRO solution. The company evaluated several solutions, and based on criteria such as flexibility and ease-of-use they selected MAXIMO® from MRO Software.

“Initially we only planned to use MAXIMO for the Rio Branco do Sul division. However, after seeing the benefits that could be achieved, we decided to make MAXIMO the standard enterprise asset maintenance system for all of our Brazilian units,” commented Gilberto Alexandre, Maintenance Technical Manager of Votorantim Cimentos.



Before MAXIMO, Votorantim used four different maintenance management systems and procedures. The Rio Branco unit staff managed the entire MAXIMO implementation, and effectively decreased the number of systems from four to one – MAXIMO.

“Reducing the number of maintenance solutions from four to one saves time and money as we no longer have to support disparate systems,” explained Gilberto Alexandre. “Not only have we saved IT hardware, software and labor costs, but MAXIMO also allowed us to standardize our maintenance procedures company-wide.”

Goal:	Result:
Record at least 88% or 321 days of uptime per year	Surpassed goal by 6% as Votorantim's plants operated 343 days last year
Eliminate redundant software systems	Saved IT costs by reducing number of maintenance software systems from four to one
Minimize equipment downtime	Increased visibility into inventory helped reduce machine downtime as parts were quickly found and replaced

Votorantim Cimentos Customer Profile

Votorantim uses MAXIMO in the mechanical, electrical, instrumentation (electronics) and mining maintenance areas to control, program and plan all maintenance activities. MAXIMO controls all security inspections, maintains the maintenance budget and helps Votorantim track all parts that have a warranty. In addition, Votorantim integrated MAXIMO to its internally developed supplier system which includes stock levels, requisitions and material costs, and Sisquali the company's quality and maintenance standards system.

"We operate on a 24 x 7 schedule, and having the right part at the right time is essential to preventing costly shutdowns. MAXIMO gives us visibility into the inventory level of highly detailed parts, and helps us effectively minimize downtime that could be caused by not having the correct part in stock," added Gilberto Alexandre.

The cement production process is very detailed, and Votorantim uses over 14,000 preventive maintenance (PM) routines in MAXIMO to help reduce machine downtime, increase production and extend the life of its capital-intensive assets. Votorantim begins the cement production process with ore extraction, and then takes the extracted ore to trituration which reduces the stones' size. Later the stones are transported in aprons or lifts to the mixing and the dosage processes. The mills transform the broken stones into powder, which is fired in high temperature ovens and then cooled. Next plaster stone, calcareous rock and pozzolanic ash are added to the powder. The final substance is then ground, transforming it into cement, and stored in big silos.

One small breakdown in this detailed production process can cause Votorantim to lose a significant amount of production time, ultimately impacting the bottom line. For example, if one of the ovens fails, the crew has to wait 32 hours for the oven to cool down before they can solve the problem. After they fix the oven they have to wait at least another 28-32 hours before it is reheated. With breakdowns such as this Votorantim loses almost 64 hours of productivity. MAXIMO's PM routines help Votorantim make sure that the machines are serviced and checked on a regular basis, reducing the potential for costly breakdowns.

"Over 900 Votorantim personnel use MAXIMO for all maintenance activities," continued Alexandre. "MAXIMO helped our company optimize performance, reduce downtime and labor costs. Our worldwide goal is to work at least 321 days a year. With MAXIMO we exceeded the goal by 6% as we reduced machine downtime and worked 343 days last year."



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