

São Martinho increases the productivity of its operations through digital transformation

Sugarcane plantations has made São Martinho one of the largest sugar and ethanol companies in Brazil – seeking the digital transformation of operations at its mills. Through the constant search for process optimisation, it was necessary to reduce losses and thereby gain efficiency through a single platform capable of supporting real-time orchestration throughout the process.



São Martinho





Credits: São Martinho archive

São Martinho

With four mills in operation, São Martinho is one of the largest sugarcane producers in the Brazilian sugar and ethanol sector. Since the construction of its first sugar mill in the interior of São Paulo state in the early 20th century, the company stood out in the processing and sale of sugarcane products. Its portfolio includes the production of several types of sugar, as well as three types of ethanol - hydrated, fuel, and industrial - electricity from the residual bagasse and, finally, by-products - yeast, fusel oil, and ribonucleic acid sodium salt.



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Challenge

The lack of connectivity between the equipment makes it difficult to collect data that can be transformed into intelligent information, which is essential for the assertiveness of operation planning activities, fleet management, process automation, and centralised monitoring. The more accurate these actions are, the easier it will be to build an environment in which resources are used in an efficient and sustainable manner.

With more than 12,000 employees at present and an approximate milling capacity of 24 million tons/year, São Martinho aims to triple the processing of its sugarcane plantations in the coming years and conquer new markets. The adoption of technological innovations that allow the optimisation of all agricultural processes, generating greater profitability, and providing the desired growth, has become important in reaching this goal.

In this scenario, the company has sought partners and methods for digital transformation in its production in order to increase operational efficiency, reduce costs, and systematise the capture and storage of data generated in the field, as well as treating information with digital technologies and developing support tools for agricultural operations, thereby minimising the lack of synchronisation between equipment, activities and resources, improving profitability, and centralising the monitoring of its operations.

Hexagon

Hexagon is a global leader in digital solutions that creates autonomous connected ecosystems, where data is seamlessly interconnected through the convergence of the physical and digital worlds, incorporating intelligence into all processes.

Hexagon's Agriculture division has a portfolio that provides a complete view of agricultural operations, continuously optimising processes, maximising resources and increasing profits. Its products collect data from the field and transform it into intelligent information for decision-making – from planning, monitoring and automation to the systematisation and computerisation of workflows.



Credits: São Martinho archive

A Successful Partnership

Based on the history of trust established in recent years between Hexagon Agriculture and São Martinho, a new strategic alliance between the two companies emerged. For the digital transformation project, it will be necessary to capture data from the machinery and equipment used in the field, as well as people and sensors, and rely on the transmission and use of this information in real-time through other technologies such as Artificial Intelligence, Machine Learning, and Predictive Analysis, aimed at the optimisation of agricultural operations.

The first step in capturing field data would be incorporating HxGN AgrOn Machine Monitoring integrated to display Ti7 into the group's agricultural machinery and establishing a partnership with Hexagon – a great importance for the consolidation of this project. Hexagon's displays, which are integrated to Monitoring & Operation Management and Machine Control solutions, have already been established in the market for monitoring and automating agricultural operations, helping the operator perform tasks with better efficiency and quality.



São Martinho has consolidated its position as an innovative company by using IoT digital solutions as monitoring, telemetry, navigation, and tracking of the machines and trucks that Hexagon provides.”

Fábio Perna

Commercial Director – Hexagon Agriculture





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Solution

Hexagon has developed a customised solution that is fully adaptable to the operational methodologies used by São Martinho. This is fundamental to the success of the digital transformation of the field. The project consists of a unique solution for automating logistical and operational processes at the group's plants, using modern, high performance, and scalable platforms. The scope also includes transmission and sensor systems; and software with planning, optimisation, data integration, and interface elements.

This project includes the implementation of the AgrOn Control Room, which monitors, processes and summarises fleet and real-time operations data directly for the Agricultural Operations Command (COA). Furthermore, 1.700 AgrOn Machine Monitoring, integrated to Ti7 display, which manages the information of the equipment that is in the field.

As a major differential of Hexagon, the HxGN AgrOn Control Room operates in real-time, helps decision making, and directs control processes to operators. Composed of several functions, this project includes: truck dispatch optimisation, displacement monitoring, navigation support, publication of status and controls, raw material tracking, and integration with support systems. All these functions work in a synchronised manner, ensuring that the planning provides a forecast, with reports and alerts for action to be taken immediately.

In addition to providing speed and operational efficiency and cost savings for São Martinho, the partnership between the two companies consolidates the plant's goal of tripling sugarcane processing and winning new markets by 2020. Hexagon has committed itself to be a supplier of high quality solutions with longevity in order to guarantee increasingly innovative tools for increasing the performance of the company's agricultural operations.



Hexagon was able to translate our demands into operational aspects in its product, meeting all the requirements necessary for the success of the project. There is a high level of satisfaction with the product, as well as with all aspects of the institutional relationship.”

Walter Maccheroni Junior
Technology Assistant –São Martinho



Hexagon is a global leader in sensor, software and autonomous solutions. We are putting data to work to boost efficiency, productivity, and quality across industrial, manufacturing, infrastructure, safety, and mobility applications. Our technologies are shaping urban and production ecosystems to become increasingly connected and autonomous — ensuring a scalable, sustainable future.

Hexagon's Agriculture division develops and delivers information technology solutions that unleash the full potential of agricultural assets, driving big gains in efficiency, productivity and sustainability. Our solutions convert data into intelligent, actionable information that enables smart planning, efficient field execution, precise machine controls and automated workflows that optimise operations.

Our aim is to accelerate innovation within the agriculture sector with solutions that challenge the status quo — what is — and point our customers towards what should be, the digital transformation of agriculture.

Hexagon (Nasdaq Stockholm: HEXA B) has approximately 20,000 employees in 50 countries and net sales of approximately 3.9 bn EUR.

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