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Capgemini's Industrial IoT solution connects machines, manufacturing operations and people across BHGE's Italian sites

Transformed shop floor processes and manufacturing execution system have enabled the BHGE TPS business to achieve productivity gains and prevent valuable machine downtime

Paris, September 25, 2019 – Capgemini has successfully helped Baker Hughes, a GE company (BHGE) to create and implement an Industrial Internet of Things (IIoT) solution that gathers data from all manufacturing devices and machines, including machine tools, furnaces, cranes, and the Manufacturing Execution System (MES). The solution provides operators and engineers with a new level of insight and the ability to adjust production at a moment's notice.

Over the last few years, the oil and gas industry has gone through a significant transformation that has forced both key players and customers to take a close look at how they are doing business. As the world's first and only fullstream provider of integrated oilfield products, services and digital solutions, the BHGE Turbomachinery & Process Solutions (TPS) business wanted to improve the productivity and visibility into its manufacturing process to maintain its leadership role within the highly competitive oil and gas industry. Moreover, the company wanted to have the ability to make decisions and manage production in real time based on data drawn from all relevant devices and machines. To do so, BHGE required modern digital technology and to collaborate with an organization that had a thorough enough understanding of digital manufacturing and the Manufacturing Execution System (MES) to create and implement a powerful solution.

Capgemini has an extensive understanding of shop floor technology and a well-established track record in digital manufacturing solutions. After an in-depth analysis of BHGE's existing manufacturing processes, the two organizations agreed to utilize Capgemini's unique, agile methodology to connect Information Technology (IT) and Operational Technology (OT) into a single solution. As a result, BHGE and Capgemini delivered an innovative IIoT solution.

"*Together with BHGE we formed a strong team and a collaborative approach to transform its shop floor processes. Through our Digital Engineering and Manufacturing Services we combined our deep expertise in IoT and connected products, smart engineering and digital manufacturing to manage for BHGE the convergence of the physical and digital worlds, to create what we at Capgemini refer to as 'intelligent industry',*" explains Lalit Khandelwal, Industrial Market Unit Head and Executive Sponsor for BHGE at Capgemini.

With this solution, every machine on BHGE TPS shop floors in Italy is now connected within a network that compiles data in order to generate a comprehensive report on the state of the production process. The solution draws upon numerous data sources, including machine tools, furnaces, cranes, the Manufacturing Execution System (MES), and the Computerized Maintenance Management System (CMMS) to create an overall view of the shop floor. This ensures complete coverage and a total view of machine performance, which can then be shared with external systems.

While connecting manufacturing devices and machines, Capgemini also implemented standardized processes throughout the BHGE TPS Florence' shop floor, in effect aligning all plants on a common way of working. As a result, operators no longer need to contend with location-specific challenges and can respond to disruptions in a uniform manner, substantially enhancing the speed and effectiveness of their adjustments.

"*This solution allows all our different equipment to talk to each other and provide real time data for us to take the right decisions and drive efficiency. It has brought many advantages such as an improved capacity due to the reduction of downtime, an increase of uptime, productivity gains and a net fixed capital optimization. For example, in Florence, where the main production line comprises 94 machines, we avoided 26,000 hours of downtime in just five months,*" said Davide Marrani, VP Global Supply Chain, Turbomachinery & Process Solutions at BHGE.

Following the success of this delivery, the two organizations agreed to transfer ownership of the project IP to Capgemini and, in doing so, the organization executed upon its core principle of design, operate, and transfer. BHGE and Capgemini will now continue to develop the solution by adding state-of-the-art IoT and Big Data technology to bolster the already substantial success, while ensuring that BHGE's manufacturing operates on an even more effective infrastructure.

To learn more about the story or watch the video, click here.

About Capgemini
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