

Colfax Accelerates IoT Initiatives Across Businesses with ThingWorx and Microsoft Azure IoT

COLFAX

Colfax is a leading diversified industrial technology company that provides products and services to commercial and governmental organizations across a wide range of industries, through two business platforms: Howden, a manufacturer of precision air and gas handling equipment, and ESAB, a producer of welding and cutting equipment and consumables.

The Goal

Building upon more than 100 years of manufacturing expertise, Colfax recognizes the need to continually evolve its businesses to stay relevant and achieve results in today's increasingly competitive marketplace. To do so, the company has embarked on the path of digital transformation with a focus on the Internet of Things (IoT).

As with many industrials, Colfax's wide range of assets and the long service life of the equipment pose challenges in terms of state of IoT-readiness and complexity of deployment patterns. Colfax also utilizes a lean and federated management process, with growth through acquisition as a key strategy, which equates to a very heterogeneous automation infrastructure and IoT practices across businesses.

Colfax launched its internal program, Data Driven Advantage (DDA™), focused on building value and differentiation into existing products with digital technologies, as well as creating new opportunities. IoT and related technologies would enable Colfax and its Howden and ESAB businesses to better enhance product functionality, create added value for customers and stakeholders, and enhance value from future acquisitions. However, when digitally-enabling its various product lines, Colfax experienced many of the typical roadblocks that impede transformation efforts, limiting both scope and impact.

The Solution

Recognizing that a successful digital transformation journey starts with establishing an effective IoT strategy to address business needs, Colfax conducted several pilot efforts across its businesses, specifically aimed at adding value to the core products they already offered. This approach allowed access to an installed base of customers and sales and support teams that were bringing more value to solutions they already know. However, as Colfax moved to scaling the offerings and applying DDA across its businesses, it sought a more efficient way to build and accelerate a foundational IoT infrastructure to fuel the effort.

The company originally built a technology framework in house, but soon realized deploying and maintaining it wasn't operationally or financially beneficial. Maintaining such an infrastructure would simply require too much



time and effort from employees' focus on the core competencies of the business.

Colfax sought out a ready-built IoT solution that could integrate seamlessly across business units and geographies, support industry-leading cloud offerings for centralized data sharing, offer flexible deployment options, and serve as the foundation of its IoT initiatives. After researching and evaluating several offerings, Colfax proceeded with an integrated solution comprised of PTC's ThingWorx Industrial Innovation Platform and Microsoft Azure IoT.

Colfax chose to leverage the cloud as the foundation for its IoT initiatives and selected Microsoft Azure for its superior ability to address varied deployment configurations and for its deep understanding and expertise delivering industrial solutions that drive its technology vision. Azure IoT offers a rich set of built-in connectivity and device security features, which would enable reliable and secure bidirectional communication between millions of IoT devices - whether in cloud, on-premise, or hybrid deployments.

Colfax selected PTC's ThingWorx Industrial Innovation Platform for PTC's position as a leader and innovator in IoT, and for its scalability, breadth of portfolio, and global reach. The ThingWorx platform would essentially "future-proof" its operations - Colfax would be able to easily add and integrate the latest IoT innovations and platform functionality into its solutions while still maintaining focus on its core business operations.

For Colfax, ThingWorx and Azure together provided a simple, but powerful solution - offering strength in industrial connectivity, rapid application development, and built-in integration capabilities. It was important to Colfax and its business units to be able to integrate

the solution easily into existing systems to streamline processes, prevent unnecessary challenges or errors, and more easily ensure security. Furthermore, considering the varied environments across its customer base, it was important to Colfax to select technologies that would be easily integrated by its customers as well. ThingWorx and Microsoft Azure IoT was ideal solution to meet these requirements.

The Results

Since implementing ThingWorx as part of their DDA strategies, both Howden and ESAB have quickly advanced their digital transformation journeys. What the businesses previously spent years working on developing in-house is now being seamlessly rolled out, in some cases, in a matter of months. With the flexibility and scalability of ThingWorx and Azure, both business units are building and delivering cutting-edge products – and retrofitting previous versions – to enhance functionality with powerful new capabilities and deliver added value to customers.

With its Uptime offering, Howden is building ThingWorx technology into its highly-engineered compressors to gather and analyze critical equipment data that will enable customers to optimize equipment performance and operational efficiencies. Predictive and prescriptive analytics can be used with connected equipment to monitor operations and determine normal patterns of behavior, enabling the customer to easily identify or be alerted to deviations from the norm that might result in a potential machine failure. By servicing machines before they actually fail, companies can prevent the challenges and costs associated with unplanned downtime and better-align overall maintenance strategies – which were previously based only on conjecture and after-the-fact analysis. Howden customers using the Uptime solution are already experiencing improvements in their maintenance operations, including more uninterrupted uptime, process efficiencies, and cost reductions.

In the ESAB business, ThingWorx is being applied in WeldCloud and CutCloud to enable to improved productivity, documentation and asset management across various geographies. By connecting to welding and cutting equipment, ESAB customers can better monitor equipment usage data and evaluate the productivity of production assets. With the powerful, automated analytics capabilities of the ThingWorx platform, performance can be assessed by analyzing any number of attributes, from the simple to the complex. Like Howden, this increased visibility across both individual projects and fleets of equipment also allows ESAB to detect patterns and anomalies in similar products/applications, improving the company's response rate to field issues, and to help customers optimize their performance. An added benefit is that the wealth of data collected automatically by the ThingWorx platform can be easily gathered and assembled in documentation for submission to regulatory bodies, simplifying the documentation process and improving the quality of information reported.



ThingWorx not only supports our existing businesses, but can also contribute to more rapid integration of acquisitions. With ThingWorx and Microsoft Azure IoT, we can focus more on what we do best and improve customer experience."

- Ryan Calahane
Vice President, Digital Growth, Colfax

By incorporating ThingWorx and Microsoft Azure IoT into its products, Colfax has enabled new visibility into manufacturing equipment data transforming how it services and supports its products. With the flexibility of the ThingWorx platform, Colfax can continue to expand the digital capabilities of products to deliver more value to customers.

The Future

As the roll-out of its ThingWorx-enabled products continues, Colfax has been able to very quickly grasp the impact on its customers' operations. The next step for Colfax is implementing ThingWorx and Microsoft Azure into its own operations to both enable operational improvements and close the loop between production and field use of smart, connected products. This "smart, connected value chain" would enable Colfax businesses to better understand the impact of manufacturing processes on quality and service lifecycles, better match demand - especially in the consumables businesses, and provide more rapid feedback on new designs to achieve faster time-to-market and more successful product launches. Additionally, collaborating with suppliers around this common reference architecture would enable similar gains to be passed on without the need for suppliers to undertake lengthy and complex IoT pilots of their own.

Within its product lines, the company plans to explore deeper analytics capabilities, augmented reality and more. Colfax is confident that with PTC as a trusted partner, it is better-prepared for the smart, connected world of the future than ever before.

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