PULP AND PAPER

ABB's remote MES implementation helps Domtar quickly onboard new coating facility after acquisition

Domtar, a leading provider of a wide variety of fiber-based products, added the first coating mill to their North American operations in 2020 and needed an information management solution to help run production. Already a user of ABB's Manufacturing Execution System at several sites, Domtar found new opportunities to extend and apply the system's functionality to the coated specialty papers facility.

Expanding in-house capabilities

The West Carrollton, OH, USA mill has been a thermal paper coating operation since 2008. Domtar acquired the mill in 2020, making Domtar the only large-scale North American producer of thermal point-of-sale (POS) paper typically used for receipts. POS paper changes color when exposed to heat and creates a "printed" image such as the details of what you purchased at the grocery – without the use of ink.

"We are excited to add this product line to our portfolio and expand our core capabilities," says Domtar Paper Vice President and General Manager Rob Melton. "The West Carrollton coater, combined with Domtar's low-cost base paper, now positions us to compete domestically and globally in the lightweight thermal paper market, while also providing new options for our paper business' future growth."

Adding more of what works

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Domtar is the only large-scale North American producer of thermal paper, which is used to make receipt slips provided after making a purchase or withdrawing cash.

Domtar chose to add ABB Ability™ Manufacturing Execution System (MES) for pulp and paper to its new West Carrollton operations. Part of the reason ABB was selected was because 20 of their North American sites already use ABB MES and its managed as a standard multi-site application.

"The relationship we've had with ABB, be it Domtar or its predecessor, goes back about 25 years," said Brent Weeres, Senior Manager of IT Manufacturing Services for Domtar. "They know our facilities and business very well. The real question was about the new type of business we were entering into. With consultation from the ABB MES team, we concluded (the coating setup within MES) would not be a lot different from what we were already using."

There is overlap between coaters and paper machines, and with some modifications, a large part of the existing MES application fit into the coating environment.

"A lot of the functionality needed simply hasn't been 'turned on'," said Kevin Lumberson, North American MES Product Manager, ABB. "For example, their mills didn't have off-machine coaters, but the modules already existed in their library. So as operations change and expand, our MES usually can meet a customer's requirements without customization."

Meeting (and exceeding) functionality requirements in a short time span—100% remotely

Since the coating mill was being acquired by Domtar, there were strict and definitive milestones that had to be hit. After co-developing new MES requirements, agreement was made on what new functionality had to be developed and tested in about a six month timeframe.

"The development process went really well. And, rather than starting from scratch, we had a good blueprint to begin of what was standard at other mills," said Weeres.

While Domtar has a corporate support team that helps operationally, this was the first time that the implementation was done with ABB supporting remotely due to restrictions caused by the global pandemic. "We ended up having a three-day shutdown to get the MES, as well as other projects, completed," said Weeres. "This was the first mill we had no one from ABB on-site for go live and it still went very smoothly."

This resulted in a significant cost savings for travel and living expenses that enabled contract hours to be repurposed towards the development and configuration of lower priority features. "We got additional functionality very quickly – maybe six weeks after start-up – which helped make the on-site team's work easier, particularly in customer service," said Weeres.

The benefits of continuous updates in a multi-mill environment
Across the multiple Domtar sites that use ABB's MES, there's about an 80 percent overlap in features. Any specialization is due to inherent differences like a pulp operation versus a paper operation. However, because there is a standard system that is managed from corporate, any functionality that is added at one mill can be added to another.

"When ABB delivers new functionality, they make it configurable," said Weeres. "The configuration setting allows it to be 'turned on' for applicable mills and turned off at others, all within one common version of the application. That's how we share and enhance functionality; ideas from one mill are available for other mills to benefit from, yet still in a manageable way for our team."

Another feature that helps make management of this easier is the continuous software release model. "Once something new is available, customers can create releases as they see fit," said Lumberson. "This could be daily, hourly or whenever it makes the most sense for their operation."

"We'd need three times the people on our IT staff if the ABB release model wasn't continuous," added Weeres.

Part of the Domtar family
Since go-live, the coating mill operations supported by ABB's MES have been going very well. A testament to that is the very few support calls the Domtar corporate IT team gets from the West Carrollton mill.

"Considering this is new MES functionality, for us anyway, that's quite an achievement. The assumptions that we made on how the business was going to run have proven accurate," said Weeres. "Plus, now that we take the quality information from the parent rolls we produce and feed to the West Carrollton operation, the team knows the exact quality of the base stock coming in and can resolve any issues quicker."

The work of the West Carrollton and corporate IT teams hasn't gone unnoticed. "A recent comment from a senior VP concluded how well West Carrollton has been integrated into the Domtar family. That carries a bunch of weight," concluded Weeres.
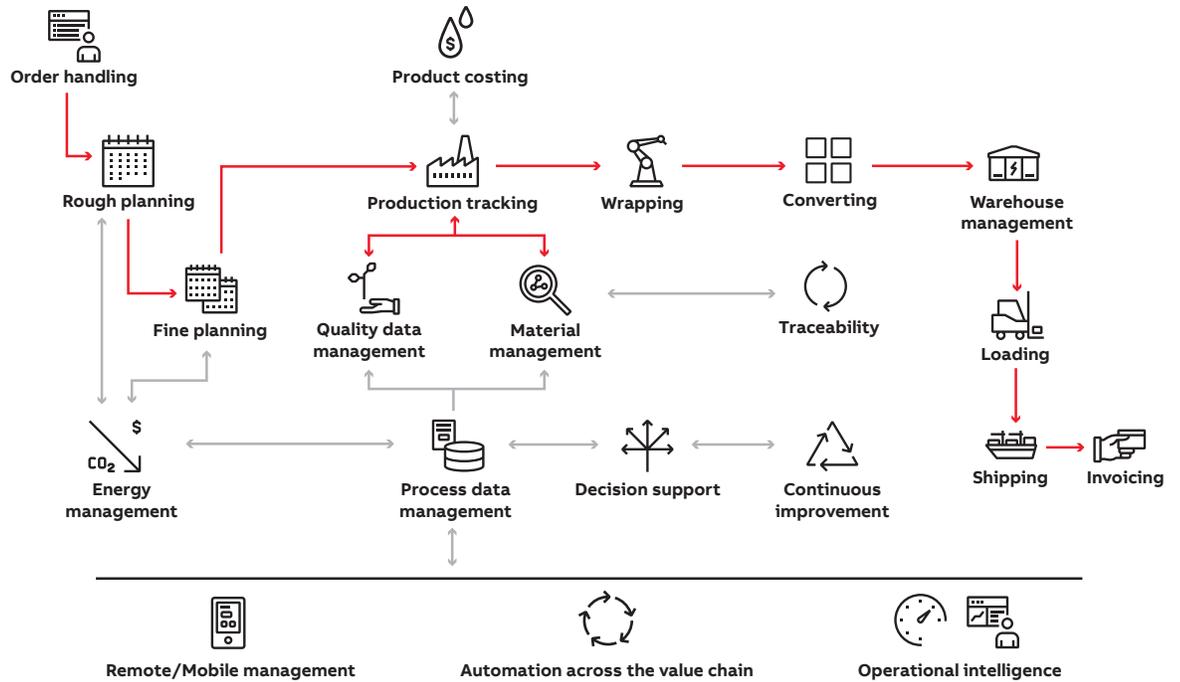
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ABB's MES suite covers the whole order-to-cash process (red lines) and beyond, providing modules that also optimize the product value chain (grey lines).

Diagram labels: Order handling, Product costing, Rough planning, Production tracking, Wrapping, Converting, Warehouse management, Fine planning, Quality data management, Material management, Traceability, Loading, $, CO$_2$, Energy management, Process data management, Decision support, Continuous improvement, Shipping, Invoicing, Remote/Mobile management, Automation across the value chain, Operational intelligence

About ABB Ability™ MES for pulp and paper
Based on decades of experience in supplying information and operational technology to the sector, ABB Ability™ MES for pulp and paper consists of integrated enterprise software modules that bring together business and manufacturing information to help papermakers make decisions based on the financial impacts of production choices. ABB's modular and flexible MES applications cover all core functionalities, from order-through-invoice.

These modules work seamlessly together and can be further enhanced with other ABB Ability™ applications for pulp and paper to help you achieve new levels of operational efficiency.

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