



PACKAGING PERSPECTIVE

Preparing for the Future: The Impact of Predictive Analytics

By Jill Thiede, Smart and Connected Leader at PCMC

Packaging companies have always worked to forecast production needs and make proactive estimates about facility operations to improve efficiency. However, the future of packaging involves painting an even clearer picture of what happens next, and that future is already here. Converters and manufacturers of all sizes stand to significantly improve overall equipment efficiency (OEE) as we move into the Fourth Industrial Revolution (Industry 4.0), but first things first.

The questions many converters and manufacturers face as the innovations of Industry 4.0 become widely adopted are where to start and how to make the most from investing in advancements.

There is a lot of change happening in manufacturing, and packaging operations are often at the center of it. From machine learning and artificial intelligence to fully connected smart factories and the Industrial Internet of Things (IIoT), while the opportunities for improvement are exciting, they can also be overwhelming.

With so many bells and whistles available to packagers, it's easy to get distracted, chasing shiny objects in the name of gaining a competitive edge. Others may feel paralyzed by the technological options available to them.

As the saying goes, the only way to eat an elephant is one bite at a time. So, where should your organization take its first bite into Industry 4.0?

The Connecting Thread

The Fourth Industrial Revolution is all about connectivity. Partners across the supply chain are able to connect to im-

prove communication and transparency, and connected machinery stands to deliver major boosts in efficiency on the production floor.

At the heart of it all is data. Every device, drive and motor is producing information that packaging operations can access, store and analyze. Advanced packaging equipment can even use data to close the loop and automatically operate more efficiently. More often, however, data informs humans on when, where and how to make incremental changes.

The biggest challenge of big data is what to do with what can seem like information overload, and the biggest opportunity is the potential to predict the future, using data to guide manufacturers' next moves.

The implementation of predictive analytics helps organizations use historical data and modeling to make proactive decisions. It's like a fact-based crystal ball that can offer insights into supply and demand trends, labor needs and production and maintenance schedules.

For many packagers, focusing on predictive maintenance is an advantageous place to begin implementing Industry 4.0 innovations. The reason being, it is an effective way to reduce equipment downtime, which halts production, disrupts schedules and impacts profitability.

Emphasizing production speed isn't always as important as concentrating on uptime, and predictive analytics are increasingly playing a key role in maximizing assets such as packaging equipment.

For example, predictive analytics can alert a facility manager that a particular part is likely to need a replacement in the near future. Without predictive maintenance a facility would

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have to wait for the equipment to unexpectedly break down, troubleshoot the problem, order a replacement part and fix the machine all while production gets disrupted.

But with predictive maintenance, packaging engineers have a much better understanding of equipment health and know what to expect. They can order a replacement part ahead of time, and the facility can schedule changeovers around planned maintenance, which minimizes disruptions to production.

Put simply, predictive maintenance drives actions that help packagers get more cases out the door. Before you can take those actions, however, you need specialists who understand the story equipment data is telling.

Data, Insights and Action

Data is useless unless it drives insights. Insights are useless unless they prompt action. Packaging operations can analyze equipment data all day, but unless it informs actionable change and improves OEE, it is all in vain.

While larger companies may have the resources, time and talent to interpret data and make recommendations, many small- to mid-sized converters hit a roadblock when it comes to the in-house expertise needed to gain insights from data and turn those insights into beneficial actions. That's where the right partnerships can provide support and guidance.

Both IT solutions providers and the original equipment manufacturer (OEM) may be able to help packagers leverage data for process improvements. For example, an OEM that provides a service involving predictive maintenance for its products ensures its customers get the full benefit of the technology without forcing that company to immediately invest in training and hiring.

As packagers make purchasing decisions around Industry 4.0 modifications, they should seek out OEMs that not only sell smart and connected equipment but also act as a strategic partner, providing coaching and analysis based on their existing resources and knowledge base.

In many cases, OEMs and packaging operations are able to integrate so that the manufacturer can give guidance by monitoring equipment health remotely through the cloud. But there are also opportunities for companies that aren't quite ready for cloud migration and would rather have their data stored on-premise. OEM partners can still have experts examine the data in person

and come up with action plans for improving efficiencies, allowing their customers to move to the cloud when it makes sense.

Doing nothing in terms of adopting Industry 4.0 innovations runs the risk of losing out to the competition. Taking on too much new technology is daunting and inefficient. It cannot happen all at once. Technology will keep changing at a rapid pace and so will consumer behaviors and the nature of supply chain partnerships. Much like lean manufacturing, this is an ongoing journey of continuous improvements.

Packagers need to choose a path and start on that journey, one step at a time. The benefit of pursuing predictive analytics solutions as the first step is packagers will be able to see what lies ahead, allowing for increased efficiency, more agility and a competitive edge. ■

About the Author:

Jill Thiede has a bachelor's degree in electrical engineering and MBA and has been a passionate leader in the Tissue and Automation industries for almost 30 years. Driven to bring new technologies to the converting industry, she leads the PCMC team bringing Industry 4.0 solutions focused on improving customer efficiencies and productivity.

