How To Digitize Your End-To-End Food & Beverage Supply Chain



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Supply chain constraints, changing consumer preferences, traceability requirements, new government regulations, and the national labor shortage have had significant impacts on the food and beverage supply chain.

To address roadblocks, smart companies are investing in technology that helps them do more with less, address current disruptions, and plan for the future.

Unfortunately, many businesses still rely heavily on manual systems, spreadsheets, and disconnected software solutions to run their end-to-end food and beverage supply chains. This not only hinders the flow of materials and creates inefficiencies, but it can also impact the quality of finished goods.

By digitizing their end-to-end supply chains, food and beverage companies can work faster, smarter, and more profitably in just about any business condition. They can also improve product quality, produce easily-traceable information about their products, and gain real-time visibility into these critical, global networks.



Once digitized, the food and beverage supply chain also becomes more efficient, greener, and customer service-focused. When supply chain partners can collaborate effectively on cloud-based software platforms, it positively impacts the quality and consistency of products as they move throughout the supply chain.

"Manufacturing is a highly-collaborative effort. Even with strong partnerships across suppliers, there will still be variabilities in the manufacturing process itself," said Brad Armstrong, vice president of sales at Advantive, a software company that provides enterprise solutions for specialty manufacturing and distribution companies. "Digitization automates processes, eliminates the need for redundant quality inspections, and allows all supply chain partners to share data more cohesively."

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Brad Armstrong Vice President of Sales at Advantive





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High Marks for Consistency, Quality, and Reliability

Regardless of where they are in the world, consumers expect Coca-Cola to taste like Coca-Cola the minute they open the bottle or pop the lid on that can. This expectation of quality, taste, and consistency radiates across the entire food and beverage supply chain, where both internal and external suppliers are expected to deliver on customer expectations every single time.

Achieving that goal has grown much more difficult for companies that rely heavily on manual processes to run their supply chains, collaborate with partners, and maintain high levels of product quality. Credit the COVID-19 pandemic with both creating supply chain disruptions and bringing attention to a business process that once operated well below the typical consumer's radar. From baby diapers to semiconductor chips to toilet paper, the importance of the supply chain has really been highlighted for consumers. We're all much more aware of it. This, in turn, puts a larger burden on manufacturers to do what it takes to create and deliver quality, finished goods within the desired timeframes."

Eric Weisbrod

Senior Vice President of Product Management at Advantive







You Can't Run a Modern Supply Chain with Paper and Pencil

As they evaluate today's typical food and beverage supply chain, Weisbrod and Armstrong are shocked to see how many organizations are still using pencil and paper to orchestrate those critical networks. Some use print-out forms while others have multiple spreadsheets housed on individual computers. These approaches inhibit access to necessary, reliable data that all team members require to make fast, educated decisions.

Even creating and sharing something as fundamental as a certificate of analysis (COA) can be difficult when paper, pens, and spreadsheets are involved. These documents are usually issued by the laboratory that analyzed the product and provide information about product composition and quality, including ingredients, shelf life, and nutritional content.

To create the COAs, the lab has to be able to collect data at certain intervals throughout the production process. "A lot of companies are still doing this manually; it's very bare bones," Weisbrod said. "They're writing the information down or keying it into a spreadsheet — the latter of which is often considered the 'digitization' of this process, even though the resultant information isn't very actionable or accessible."

Having COA data written down or captured in a spreadsheet also doesn't allow easy data access to external groups like customers or the Food and Drug Administration (FDA). Manual processes also inhibit overall supply chain visibility and quality, primarily because data is being captured in little clumps along the way, versus being stored in a unified software solution that all stakeholders can access and benefit from.



The New Era of Food Safety

In 2020, the FDA laid out new guidelines for food safety and traceability. The <u>New Era of Smarter Food Safety</u> blueprint outlines achievable goals to enhance traceability, improve predictive analytics, respond more rapidly to outbreaks, address new business models, reduce contamination of food, and foster the development of stronger food safety cultures. The blueprint centers around four core pillars that include both tech-enabled traceability and the use of "smarter tools and approaches" for prevention and outbreak response.

To best meet these requirements, food and beverage manufacturers need digitized tools that centralize their data and enable good collaboration across supply chain partners. "Ultimately, we want to have end-to-end traceability throughout the food safety system," the FDA points out. "We want to explore ways to encourage firms to voluntarily adopt tracing technologies and ways to harmonize tracing activities, which will support interoperability across a variety of technology solutions, working towards outcomes that are achievable for all sectors."







The FDA's newest initiative is very much about traceability and the idea that the individual consumer in a grocery store can buy a piece of produce and see the entire chain of custody from when that product was picked, harvested, shipped, etc. — all the way to making it into their hand.

Eric Weisbrod Senior Vice President of Product Management at Advantive

When using technology to digitize end-to-end supply chains, manufacturers can not only meet these federal mandates, but they also improve traceability, gain higher levels of real-time visibility, operate more efficiently, and improve customer service levels. "The FDA's newest initiative is very much about traceability and the idea that the individual consumer in a grocery store can buy a piece of produce and see the entire chain of custody — from when that product was picked, harvested, shipped, etc. — all the way to making it into their hand," Weisbrod said.



Supply Chain Digitization in Action

Across the food and beverage sector, there are examples of companies that are using digitization to improve supply chain performance and product quality. For example, Advantive recently worked with a large confectionary goods manufacturer that relies on multiple contract manufacturers (CMs) to produce some of its ingredients and products.

For food and beverage manufacturers, CMs may provide access to specialized equipment and expertise, product capacity and production mix flexibility, and/or reduced costs through economies of scale. These companies play an important role in the food and beverage supply chain, but are often left out of the loop when it comes to data sharing, collaboration and visibility.

Food and beverage managers can break through the constraints of their manual systems by using resources like Advantive's <u>enterprise</u> resource planning (ERP) software, Manufacturing Execution System Software (MES), quality manufacturing software (QMS), and <u>supply</u> chain management software (SCM). In return, they find better efficiencies, higher quality products, increased productivity, and easier compliance with regulatory requirements.







In the case of the confectionary goods maker, the company also gained better visibility into the quality of products being produced on its contract manufacturers' shop floors. For example, when the manufacturer installs a piece of equipment at the CM's site, it uses the software to keep close tabs on the quality data and makes quick adjustments as needed.

This gave the manufacturer more visibility into their suppliers' real-time data. The company also now has the continuous reporting capabilities and dashboards that it needs to be able to monitor key, agreed-upon metrics that the supply chain partners can use to ensure continuous, ongoing improvements.

Brad Armstrong Vice President of Sales at Advantive





Taking a Holistic Approach to Digitization

Advantive's portfolio of products accommodates specific requirements within the food and beverage manufacturing space and helps companies digitize their end-to-end supply chains. By providing a centralized system that all supply chain partners can access and use, the software enables good decision-making that, in turn, leads to improved product quality and customer satisfaction.

When they replace their previously-manual systems with a centralized software system, food and beverage manufacturers also get the opportunity to make other improvements that enhance their overall operations and supply chains. Weisbrod said this is a "healthy byproduct" of digitization, and it can produce even more impressive results for the company, its supply chain partners, and its customers.

"When we come in and assess a current manufacturing setup, we're taking a holistic look across the board, versus just focusing on one aspect of the operation," said Weisbrod.

Advantive X ParityFactory

A market leader in mission-critical software for manufacturers, Advantive's statistical process control (SPC) and statistical quality control (SQC) pack are purpose-built for testing quality on the shop floor. These solutions help food and beverage companies measure and control manufacturing quality, meet exact customer specifications unique to the food and beverage sector, and easily reevaluate production processes to increase efficiency, reduce waste, and save costs.

With its recent acquisition of <u>ParityFactory</u>, Advantive extended its scope of solutions to specialty manufacturers and distributors in the food and beverage industry. As the only warehouse management system (WMS) and MES purpose-built for food and beverage manufacturers, ParityFactory's software provides real-time inventory tracing and processing data to factory floors, complementing Advantive's existing manufacturing and distribution capabilities.





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For example, the food and beverage production environment usually requires a lot of hosing down and washing to ensure cleanliness and sterility. It also involves many different devices and electronic equipment that can be damaged by water.

However, if those devices are only a couple of hundred dollars each and store their data in the cloud (rather than on the device itself), then the manufacturer probably doesn't need a \$3,000 stainless steel enclosure to store the devices in every time a hose-down takes place.

"This is just one of many areas where we can help manufacturers save money by taking a holistic look at their operations," Weisbrod added. "It's about understanding their requirements and their end goals right from the outset, knowing that it will shape a lot of decisions involved with the digitization process."





Think Big but Start Small

Digitization helps food and beverage manufacturers improve efficiency by automating tasks, providing real-time operational visibility, and providing a single system where all compliance-related data can be managed, accessed, and shared. To companies that want to begin realizing these and other benefits, but don't know where to begin, Armstrong suggests starting small. Take an area of your production or supply chain operations that's throttled by too many manual processes and a lack of visibility, and find digitized solutions that address that specific area. Then, work outward from there until you have the bases covered.

Throughout the digitization process, a partner that offers a diversified portfolio of software products purpose-built for the food and beverage space can be an invaluable asset. And if that partner takes a holistic approach to your organizational needs — versus just selling you on individual applications that address specific pain points — all the better.

Regardless of which starting point you choose, Armstrong said simply getting started is the best first move in the right direction. "The sooner you get started, the faster you'll see the benefits of your efforts," he explained. "Particularly on the product quality side, it doesn't take a lot of time to get it started and begin seeing the positive impacts of higher product quality within your end-to-end supply chain."

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Advantive makes purpose-built software for specialty manufacturing and distribution businesses that streamline complex processes, increase operational visibility, drive quality improvement, and promote revenue growth. Our valued customers, who include corrugated and packaging manufacturers, equipment and supply wholesale distributors, and automotive and other specialty manufacturers, benefit from our solutions that have been honed over decades in the marketplace. While each of our solutions is designed specifically for the industries where they are used, what they all have in common is specialization, speed, scalability, and simplicity.

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