

A woman in a white lab coat and blue hairnet is looking at a tablet in a food processing plant. In the background, there is a conveyor belt with yellow food products. The image is partially covered by a green curved shape on the left side.

EBOOK

Digital Transformation in Food & Beverage: Why It Starts with Your Workforce

How to modernize your food and beverage plant by connecting your workforce.



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INTRODUCTION

Manufacturing is all about consistency and efficiency. At the end of the day, you need to produce enough high-quality products to hit your quota while meeting regulatory requirements.

If you're like most food and beverage manufacturers who've maintained good operating margins for years, or even decades, changing your processes may be the last thing on your radar.

Because if it's not broken, why fix it?

Bad news: If you haven't started digitizing your plant's operations, you're falling behind the curve — fast.

Demands on the food and beverage industry are becoming increasingly complex (think changing consumer demands, supply chain crises, workforce hiring challenges). To stay ahead of these forces, manufacturers need to modernize their plants with digital technologies that drive efficiency and continuous improvement across each stage of production.

In this eBook, we'll uncover why digital transformation is critical for food and beverage manufacturers to stay competitive in today's economy — and why the best place to start your transformation is with your workforce.



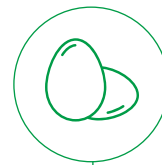
WHAT WE MEAN BY FOOD AND BEVERAGE MANUFACTURING

We understand food and beverage manufacturing is the process of turning primary agricultural commodities into consumable goods. Meat and poultry, dairy, baked goods, bottled beverages, canned goods, and confectionery manufacturers all share processes and procedures that benefit from digital transformation.

Of course, the stages of food and beverage manufacturing vary based on the type of food or drink in production. But if you're like most manufacturers in the food and beverage space, your production process likely resembles the steps on the right.

Each stage of production involves the potential for mishaps that could cost your business thousands or even millions of dollars. From adding the wrong ingredients to improperly sealing cans, both human and mechanical errors can cause days and even weeks of unplanned downtime.

In the next section, we'll explore the common challenges food and beverage manufacturers face — and how smart factory technology can help you overcome them.



Sourcing raw materials and ingredients. Produce, animal products, minerals, spices, and other ingredients are transported to the plant before production begins.



Primary processing. This includes washing produce, slaughtering animals and cutting meat, pasteurization of milk, grain milling, and other types of preparation.



Secondary processing. This stage can involve a wide range of steps that can include mixing of ingredients, cooking, dehydration and rehydration, adding or removing ingredients, and more.



Packaging. Widely considered the final stage of secondary processing, packaging protects the food from contamination and extends the food's shelf life. This stage requires extreme precision and attention to detail; just one error can lead to a massive recall.



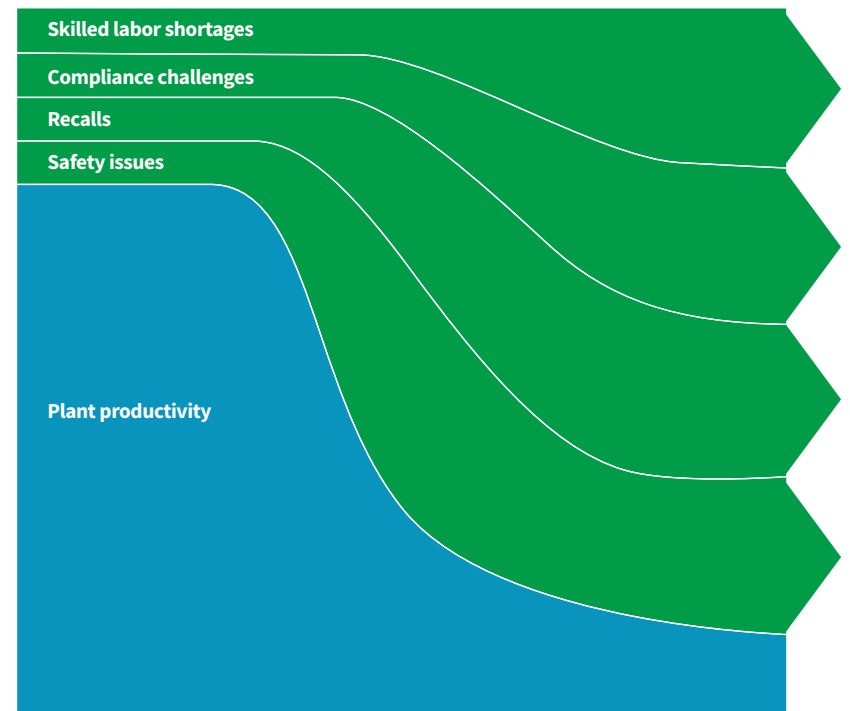
Distribution. Once properly packaged and labeled, the products are shipped to distributors, wholesalers, or retailers.

CHALLENGES IN FOOD AND BEVERAGE MANUFACTURING

From recalls to labor fluctuations, many factors contribute to plant disruptions. Here are some of the most common challenges facing food and beverage manufacturers today.

Skilled labor shortages. Even the most advanced smart factories need skilled workers to operate. However, finding the right labor at the right time is a tough balancing act for many food and beverage manufacturers, especially if they're only fully operational during specific times of year. A plant that cans mandarin oranges in California, for example, may employ 700 migrant workers during harvest time, but needs only a dozen to maintain the factory equipment in the off season. Plus, training new workers adds a layer of complexity to scheduling challenges — especially when language barriers are present.

Compliance challenges. No matter the product, plants processing substances for human consumption must adhere to strict state and federal regulations. All machinery and equipment needs to be completely sanitized, ingredients need to be properly mixed and sorted, products and any potentially contaminated materials must be properly disposed of — among many other requirements. Just one contaminated or mislabeled product could lead to fines or even factory shutdowns.





Recalls. Whether by failure to comply with regulations or an unpreventable event, many food and beverage manufacturers will experience a recall: where food suspected to be contaminated is removed from the market. Recalls can vary in severity. Sometimes, the contamination can be traced to a single batch; other times, thousands of tons of product must be thrown out. The better each product's traceability, the faster a factory can respond in these situations.

Safety issues. Food and beverage manufacturers must maintain a safe and sanitary plant environment at all times. Not only does the product need to be safe from contamination, but working conditions need to be safe for everyone on the factory floor. Equipment failures, hazardous surfaces, lack of protective gear, and failure to follow standard operating procedures (SOPs) can result in serious injury or even death. This is why plant leadership needs full visibility into factory floor operations.

While you can't prevent every plant issue, you can dramatically reduce their occurrence and respond faster when these events happen. The key is people-first digital transformation.

BRIDGING THE GAP: DIGITAL TRANSFORMATION FOR FOOD AND BEVERAGE

Implementing a digital transformation strategy in your factory can be the difference between success and failure. But first, let's define digital transformation and why it's critical for optimizing your plant's performance.

WHAT IS DIGITAL TRANSFORMATION?

Simply put, digital transformation refers to digitizing non-digital processes and equipment for the purpose of making a business more efficient, profitable, and innovative. In manufacturing, digital transformation involves transitioning from analog operations to digital — usually beginning with the shop floor.

WHY SHOULD FOOD AND BEVERAGE MANUFACTURERS INVEST IN DIGITAL TRANSFORMATION?

The past decade has seen major technological advancements in the manufacturing space. Today, we're in the midst of what experts call the Fourth Industrial Revolution, or Industry 4.0 — the integration of smart technologies like artificial intelligence (AI), machine learning (ML), and augmented reality (AR) into traditional manufacturing processes. Concurrent changes in health and safety regulations, consumer preferences, and new ways of working make digital transformation imperative for food and beverage manufacturers. The old ways of operating don't allow for the agility and efficiency required from manufacturers today; modernizing your plant is no longer optional.



BENEFITS OF DIGITAL TRANSFORMATION IN FOOD AND BEVERAGE MANUFACTURING

From regulatory compliance to meeting production quota, consistently hitting benchmarks is critical for long term success. And maintaining a high-performing plant has become nearly impossible without digitized operations.

But digital transformation is about much more than “keeping up with the times.” It’s about empowering your workforce, from the factory floor to the C-suite, to perform tasks as effectively and efficiently as possible.

Let’s take a closer look at the benefits your food or beverage plant can see from digital transformation:



Improved safety and sanitation. In manufacturing, safety will always be the number one priority. Digital technologies, such as a smart manufacturing platform, help you keep your workers safe and your products free of contamination in a number of ways. For example, you can view real-time data on asset performance and worker safety compliance on simple dashboards. This improved visibility into plant operations allows your team to take action faster when safety or cleanliness issues do arise.



Better regulatory compliance. With improved safety and sanitation comes better regulatory compliance. With all of your factory data in one place, auditors have a much easier time running through compliance checklists. Plus, having real-time data and actionable insights at your fingertips helps you find and fix issues, such as improper machine temperatures, as soon as they arise — instead of during an audit.



More efficient people and processes. Digital transformation's greatest value will show up in your workforce. The people on your shop floor are the heart of your business. Without them, production would come to a standstill. That's why digital transformation begins with the people. By incorporating technologies that make their work easier and less frustrating, they'll be able to get more done in less time, often with fewer resources. With innovations like connected worker solutions, you can automate repetitive tasks, collect and analyze performance data from people and assets, and even use AI to break down communication barriers on the shop floor.



More yield, less waste. Every food and beverage manufacturer knows that yield will always be lower than input. But most don't realize how much waste is actually preventable. With today's smart factory features, like Internet of Things (IoT) sensors and advanced data analytics, you have full visibility of your throughput and shop floor performance. This lets you identify and address issues like bottlenecks, inefficient processes, poor inventory management, and malfunctioning equipment much faster — reducing waste and increasing yield.



Lower maintenance costs. When a machine breaks down, production can come to a screeching halt. Unplanned downtime can be incredibly costly for food and beverage manufacturers, especially those who handle perishable products. But with technologies like predictive maintenance solutions, you can spot mechanical problems before they turn into expensive repairs or replacements. Plus, AI integrations let technicians know which tools they need to complete various jobs, allowing them to work faster and with less frustration.



More uptime. Ultimately, your goal as a manufacturing leader is to keep uptime high and costs low. Digitally transforming your plant increases uptime in a variety of ways: optimized maintenance schedules, improved safety and regulatory compliance, reduced waste, and, most importantly, an engaged and empowered workforce. When you equip your teams with tools that foster seamless collaboration and boost productivity and efficiency, your plant's performance will improve.

GETTING STARTED: CONNECTING YOUR FACTORY FLOOR

At its core, digital transformation is empowering workers with the technology and knowledge to perform at their best. No matter how advanced your technology is, it only works if the people on your shop floor see its value. So how do you digitally transform your frontline workforce?

Here's where connected worker technology comes into play in food and beverage manufacturing.

WHAT IS A CONNECTED WORKER?

A connected worker is someone who is integrated with their environment through digital technology. On the factory floor, this could look like:

- **A technician** receiving automated notifications on their phone or tablet about a change in a bottle washing machine's temperature on their phone or tablet
- **A mixing line worker** using wearable technology, such as AR glasses, to diagnose a mechanical problem and receive automated suggestions for next best actions
- **A packaging machine operator** taking a live video of a jammed bag sealing machine as a maintenance technician on the other end helps them reset it
- **A plant manager** pulling up an SOP compliance dashboard to monitor workers' adherence to safety regulations — data captured by wearable safety devices

Connected worker solutions use advanced digital technologies to align people, assets, and processes on your shop floor and drive continuous improvement across your plant. They enable clear communication among people and devices while giving you a complete picture of your plant's performance.

HOW DOES A CONNECTED WORKFORCE BENEFIT YOUR BUSINESS?

A connected workforce is a tremendous advantage in any manufacturing business. Not only does connected worker technology offer detailed visibility into worker and asset performance, but it also enables your workers to take the right action, faster.

That's why your digital transformation journey should begin by implementing a connected worker platform: a system that connects your devices, machines, and workforce. Think of it as an ecosystem in which people and assets can share information in real time.



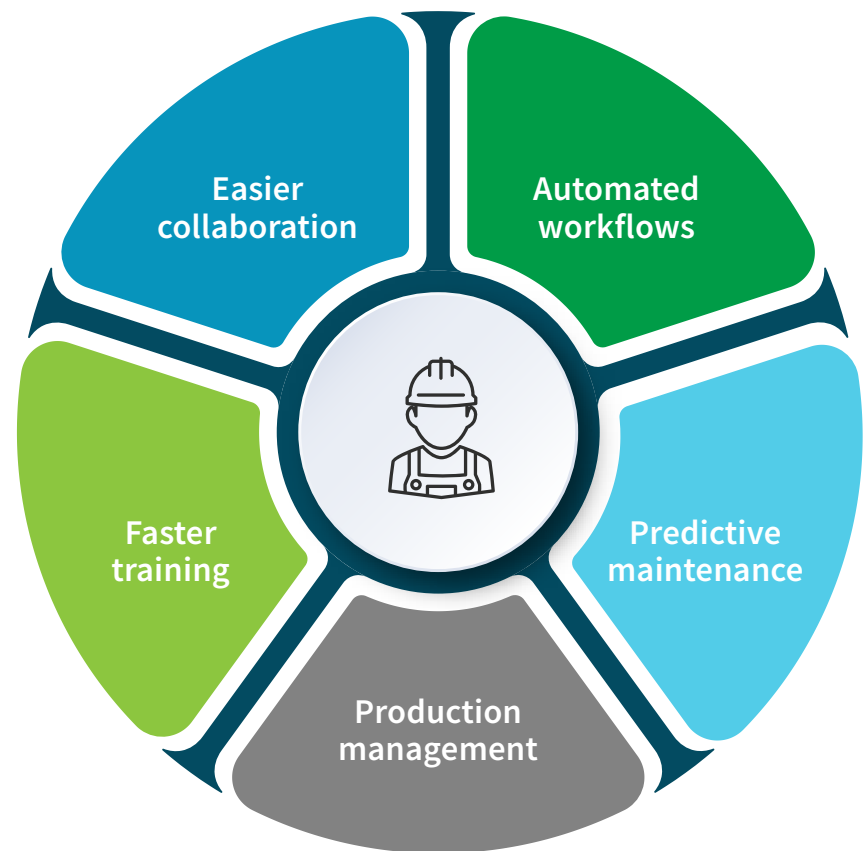
THE ADVANTAGES OF A CONNECTED WORKER PLATFORM

As we've learned, connected workers are more efficient and productive, helping you drive continuous improvement across the business. Here's how a connected worker platform can help you reduce downtime and maximize yield — safely:

Automated workflows. Disruptions happen in every plant. Whether it's a pasteurizer malfunctioning or someone mixing in the wrong ice cream ingredients, disruptions require immediate attention. Connected worker platforms use event-based triggers to create automated workflows that notify the right personnel of the issue and provide guidance on solving the problem.

Predictive maintenance. While some disruptions are inevitable, many can be avoided with the right predictive maintenance technologies. Connected worker platforms help you get ahead of disruptions by leveraging IoT-based asset monitoring. If a machine starts to overheat, for instance, you can automatically alert a nearby technician and equip them with a custom dashboard that guides them through the repair process.

Production management. By collecting and analyzing data across all plant operations, connected worker platforms help you identify inefficiencies, maximize throughput, and reduce waste. Leadership can view actionable insights on simple, intuitive dashboards, helping them easily find new ways to streamline production management.





Faster training. Instead of using a tedious, classroom-based approach to training, you can use a connected worker platform to get new hires up to speed in hours instead of days or weeks. Technologies like AI-guided tutorials, wearable devices (like AR glasses), and video tutorials provide an immersive, hands-on learning experience that is not only faster than older training methods, but keeps idle time to a minimum.

Easier collaboration. One of food and beverage plants' biggest challenges is maintaining open lines of communication among workers as well as ensuring that everyone has a shared view of critical data. A connected worker platform like L2L, for example, features translation capabilities that allow non-native speakers to view instructions, comments, and more in their own language. And with manuals, reports, training materials, SOPs, and other documentation centralized on a digital platform, anyone can access the right information at the right time.

Lower costs, faster payback. Contrary to popular belief, innovation doesn't need to break the bank. In fact, connected worker technology is generally much less expensive than traditional manufacturing software. It also generates ROI much faster due to increased efficiency, a reduction in scrap, and far less downtime. Moreover, connected worker solutions can be set up in weeks — not months.

CONCLUSION

Digital transformation should be a journey that begins with people. Solutions like connected worker platforms enable people of all occupations in your plant to do their best work with the help of smart manufacturing technologies. When you optimize your workforce, you also optimize your plant's performance. And with the right solutions in place, you can begin to see ROI in as little as a few months.

Ready to get started?

Ready to set your workforce and your business up for success? Book a demo today, and discover why L2L is the industry leader in connected workforce solutions.





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