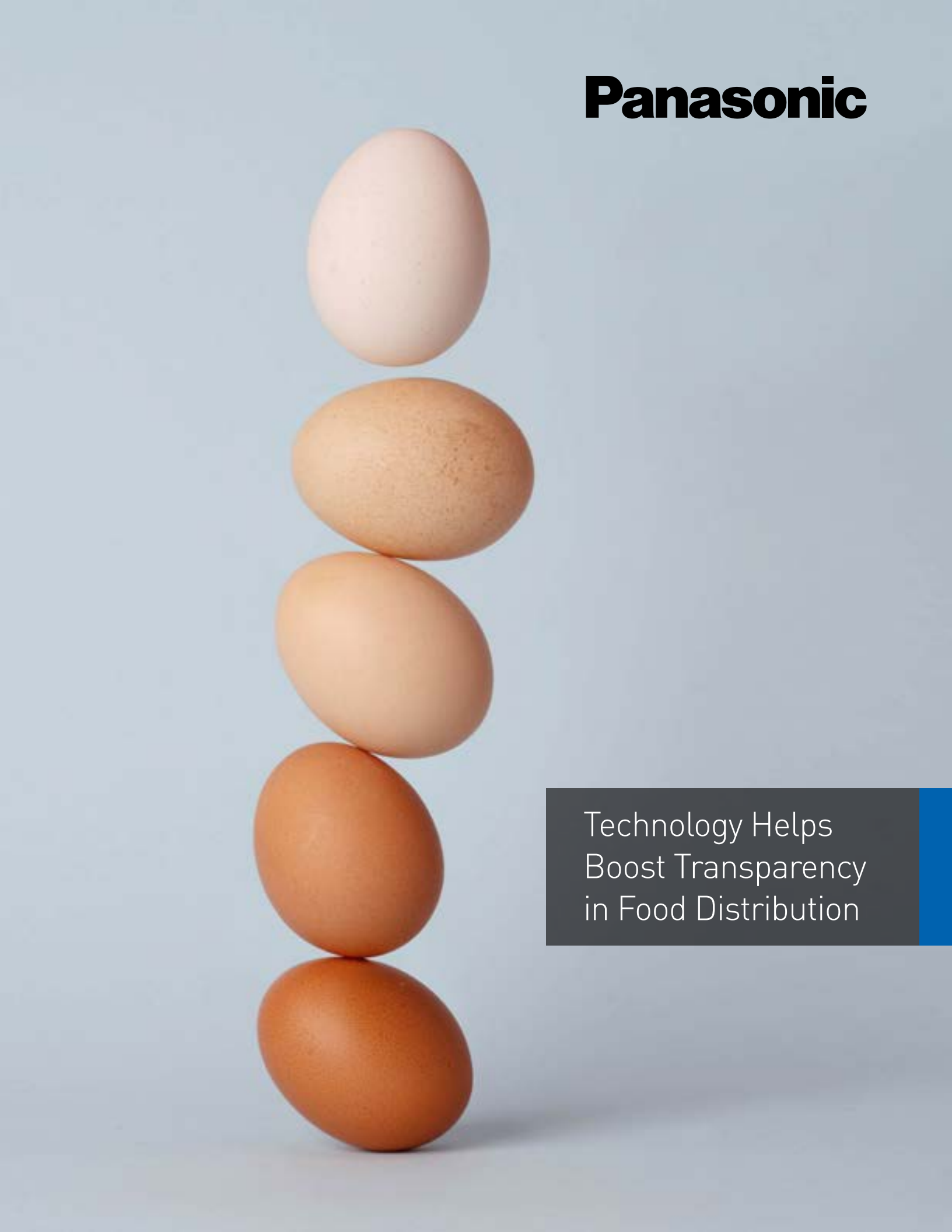
Panasonic



Technology Helps Boost Transparency in Food Distribution



Technology Helps Boost Transparency in Food Distribution

Foodborne illnesses can spread quickly.

A recent example is that of a batch of listeria-contaminated eggs causing one death and seven reported infections across five states. In many ways, the world of food supply chains is encapsulated in this tragedy. The contamination occurred in a single facility in Gainesville, Georgia, but resulted in products from more than 30 brands being pulled from the shelves and recalled. Grocery chains affected included Trader Joe's, Costco, Lidl, Walmart and Kroger.

The beauty of today's food supply chain is that it is so accomplished at getting a single product incorporated and distributed widely in a short amount of time. But it is also its curse. Food recalls are the evil twin of reverse logistics, and the stakes couldn't be higher — human life is on the line. The Centers for Disease Control and Prevention says there are 48 million outbreaks of foodborne illnesses per year. Fortunately, increasingly sophisticated technology helps with both quickly responding to food contamination outbreaks and preventing them in the first place. It also aids in the overall rise in demand for visibility and transparency in the food supply chain.

On the Hook More Than Ever

The FDA Food Safety Modernization Act (FSMA), introduced in 2011, aims to shift the focus from responding to foodborne illness to preventing it. But because FDA recognizes that the prevention-oriented system that FSMA created is not fail-proof, it is also using technology to track and report on the speed of response to problems when they do arise, with a Food Safety Dashboard introduced in September, 2019. One of the metrics being tracked on the dashboard is how quickly a firm issues public notification for a Class 1 recall — the most urgent type — for human and animal food.

In other words, as transparency in the food supply chain increases, individual businesses are more likely to find themselves on the hook for errors in production and other

issues, and therefore in the spotlight. Greater traceability means greater accountability.

Traceability is now a crucial element in the food industry, and most are embracing it. The Produce Traceability Initiative (PTI) was introduced in 2008 as a voluntary initiative to achieve supply-chain-wide adoption of electronic traceability of every case of produce. The goal was to help the industry maximize the adoption and effectiveness of traceback procedures, while developing a standardized approach to enhancing the speed and efficiency of traceability systems for the future.

Much progress has been made; Walmart now refuses to buy produce from anyone who doesn't comply with PTI, while Costco, Sam's Club and Kroger are following suit. Further, the new technology of blockchain offers levels of traceability, right back to the field where a melon was picked or the poultry farm where a chicken was raised, that were impossible or overly expensive before.

Transparency Needed Everywhere

Traceability is just one of the operational pressures on grocery stores and other stakeholders in the food supply chain that continue to mount. Broaden the definition to include transparency, and it plays into almost every aspect of food distribution, not just recalls. Food companies need to keep up with rapidly evolving consumer trends that mean greater complexity, agility and speed in delivery operations that require unprecedented levels of visibility and transparency.

For example, the rapid growth of grab-and-go meals leads to smaller, more frequent, chilled deliveries that need to be monitored closely for freshness and temperature control. The trend toward farm-to-fork food also means food manufacturers, distributors and retailers are all dealing with a vastly increased number of smaller, often new, providers. "In the past, distributors and retailers were able to rely on a subset of very large farmers — whether poultry, seafood, or vegetable — but now that pool from whom they source their products is much bigger, which makes them more vulnerable to a provider not necessarily following stringent regulations," says Jay Voorheis, National Sales Manager of Retail, Manufacturing, Field Service, at Panasonic USA. "There's the risk that someone they're buying from is not playing by the same rules as everyone else." Panasonic offers mobile solutions that provide a range of rugged laptops, tablets and handheld devices to help food distributors and retailers take advantage of cutting-edge technologies, including solutions for warehouse management systems (WMS), blockchain, picking technologies, fleet management, route optimization, IoT and AI.

> "When you design delivery routes to make the final mile as efficient as it can be, that means the product is fresher and of optimum quality."

As online sales escalate, consumers demand more information about the food they buy — not just whether it is non-GMO, organic, vegan, kosher or nut-free, but exactly where it comes from. For example, online grocery delivery provider FreshDirect has experts issuing daily ratings on their produce and seafood to help shoppers make informed selections. All this makes track and traceability critical at every point in the supply chain, from grower or manufacturer to distributor and retail outlet. Further, online shopping, whether for doorstep delivery or curbside pickup, has shifted shopping patterns away from traditionally predictable peak shopping days, making it harder to forecast supply and demand. This is causing in-house delivery or transportation managers and contracted transportation service providers to adjust their fleet mixes for shorter hauls and last-mile delivery, again driving the need for more data in order to stay ahead of the game.

This is where technology shines. Nowadays, Voorheis points out, a case of food typically comes with a label bearing a barcode, which is scanned through every step of the supply chain. "Walmart insists everyone who touches that shipment is part of PTI," Voorheis says. "Growers who were reluctant before have been forced into it. Walmart, Costco, Sam's, Kroger – they all reckoned their liability was enough to make it worth insisting." At every step of the process that gets food into consumers' mouths, information needs to be captured, whether by scanning a traditional or 2D barcode, or from reading an RFID tag if the product is of higher value. That information then gets fed into a WMS system or PTI compliance software, and beyond.

Data Capture in a Tough World

That all makes perfect sense. But the physical equipment required to handle the massively increased

data-capture along the food supply chain can't just be run-of-the-mill. Scanners and other equipment need to be rugged. That's because of where they're used: on muddy farms, in busy warehouses and in a wide range of environments and temperatures. "Time is of the essence when you need to scan a thousand pallets of produce and get them out the door," says Voorheis. "You need that scanner to work, even if you dropped it. In warehouses, where you've got freezers and cold environments, you can't just use any tablet or other consumer-grade equipment. You've got forklifts moving giant loads of chicken or lettuce around. That requires a rugged and reliable platform to complete the process."

The hardware needs to be easy to understand and adopt quickly, too. Voorheis gives the example of the high-profile challenge that happened when fast-food giant Popeyes started selling chicken sandwiches. It hit a worldwide shortage of chicken, and providers were forced to source from poultry farms they hadn't worked with before. That increased their risks, compared with using tried and true suppliers. One poultry processor customer of Panasonic was lucky enough to source from farmers who consented to use the same system, so there was no problem capturing the needed data and introducing it into the wider supply-chain data stream.

Data Drives Everything

The food industry has become a highly data-driven business, Voorheis observes. "Food companies use a lot of analytics these days, and have invested in analytics platforms so they can put in tons and tons of data that help them predict challenges or issues. They're really leveraging the technology, from software to hardware."

Until recently, the food supply chain had remained virtually unchanged for hundreds of years. Now, technology has emerged to manage the proliferation of variables that must be considered to comply with PTI and FMSA, and protect consumer safety. "In the last 20 or 30 years, you have the ability to change genetics to make a chicken grow faster, and many are going in that direction," says Voorheis. "But then you have the farmers who are not interested in doing that — who just want to raise chickens with nature taking its course, and distribute them locally. These new systems allow all that to be tracked, giving customers choice. And there's also full accountability."

Another development has been the rise in route optimization, which also helps with traceability. "The last leg of the supply chain has increased in importance over the last couple of years," says Voorheis. "A restaurant owner never used to have to sign a tablet or scan anything in — there was no tracing or accountability. Today, if a driver has a thousand different boxes of tomatoes being delivered to a hundred different customers, the process of picking from the cooler, even the order in which they deliver them, is very much managed by a route optimization or dispatch system."

When you design delivery routes to make the final mile as efficient as it can be, that means the product is fresher and of optimum quality," Voorheis says. "We're looking at situations now where a grower picks the tomatoes and they've designated where it's going by the time it was picked. Producers have shifted to a first-in-first-out mentality. It's very important that the person ordering the product gets it as fast as they possibly can, and route optimization really helps ensure that freshness. You don't want any product on a truck for longer than necessary. Using available technology makes that easier today than it's ever been."

It also means that fewer people are likely to get listeria from eggs, or allergic reactions from unidentified allergens. Dr. Ben Chapman, an associate professor and food safety extension specialist at North Carolina State University, said in a recent podcast that the increased transparency in the food supply chain gives cause for optimism. "Our food is getting safer because we're getting better at finding the source (of problems)," he said. "We're getting better at limiting exposure and we are better able to connect the dots in an investigation. But a lot of outbreaks in the last months or year have taken weeks or months to find just a potential root cause. The more we look for things, the more we find. And the more we do a better job of removing them from the marketplace from the start, the more we can do a better job for public health."

Visit our food industry page to learn more about how Panasonic is helping to improve supply chain efficiency.

© 2020 Panasonic Corporation of North America. All rights reserved. All copyrights and trademarks are property of their respective owners.