

Columbus®



Managing Fresh

How food manufacturers are optimizing supply chains for greater visibility, safety and profitability

Amy's Kitchen, a food manufacturer of prepared organic vegetarian and vegan frozen foods, prides itself on its high-quality ingredients, sourced from all over the world.

Aiming for the perfect flavor profile—and ultimately customer satisfaction and loyalty—the company maintains a complex supply chain from the vegetable patch to the consumer's table.

Meeting their customers' high expectations is everything. As a result, Amy's can't afford a breakdown in their value chain. Amy's, and companies like them, are managing complex global supply chains from farmers, processors and factories, to a distribution center, and eventually to a store shelf. They depend on this supply chain to fuel their business. At the same time, they must comply with a growing number of strict and important regulations that keep consumers safe.

Food culture is always changing, influenced by health and wellness, shifting lifestyles, and higher expectations around "farm to table" and sustainability.

Food manufacturers are working hard to adapt and keep up with the pace of innovation, while meeting the needs of their customers.

Keeping everything in balance requires strict processes, clear visibility and the right technology.



Challenges facing food manufacturers





Food safety

One of the key challenges facing food manufacturers is food safety. Foodborne illnesses, recalls and failed inspections have been getting more and more attention each year. Consider this: **About 48 million people in the U.S., or 1 in 6, get sick, 128,000 are hospitalized, and 3,000 die each year from foodborne diseases.**

Food recalls can happen for a variety of reasons, classified by the chance that consuming a product would result in health consequences. Allergens are a major driver of food product recalls; about a third of recalls in 2018, for example, were due to undeclared allergens, according to *Food Safety Magazine*. Consumers are on high alert and, thanks to the internet, food safety news spreads faster than it ever has. The impact of negative press can devastate a company.

News like last year's "E. coli-tainted romaine lettuce" make the biggest headlines. The CDC reported that 167 people were infected with E. coli from 27 states, due to contaminated romaine lettuce harvested from the Salinas Valley growing region in California; 85 hospitalizations were reported, but no deaths.

The negative press and impact on the market lingers, with consumers moving toward other greens and away from romaine. Impact included losses for growers, a drop in sales for retailers and a scramble by restaurants to find alternatives to the lettuce, according to *Fortune*.





The cost of a food recall can reach \$10 million, not to mention brand damage and lost sales, according to a joint study by the Food Marketing Institute and Grocery Manufacturers Association as detailed in FoodDive. Costs include logistics associated with pulling products, disposing of the products, litigation, government fines and more.

Food manufacturers must keep their customers safe, avoid the costs of a food recall and meet regulations set forth by various government agencies. And those regulations continue to be tightened. The FDA Food Safety Modernization Act's newer stricter rules are meant to improve food safety and meet the challenges of a global industry. The rules encourage companies to take an intensely proactive approach to preventing food safety emergencies, rather than a reactive approach in the event of an outbreak.

The FDA continues to increase inspections and demand thorough documentation, driving the trend toward strict compliance by food manufacturers. Companies are dedicating more time, resources and manpower to keeping up with new standards.

According to *Food Processing's* recent 2020 Manufacturing Survey, recalls grew 10% from 2013 to 2018. Whether that's due to increased vigilance or actual growing danger, food manufacturers responding to the survey are prioritizing employee training, as well as increased focus on sanitary equipment and standards in their facilities. They are also upgrading technology for improved traceability, digitization and automation that helps them move quickly in the event of a food safety issue.



Demand for greater supply chain traceability

A traceable supply chain allows a food processor to easily track compliance and failures. Ahead of the product journey, they can ensure sources and suppliers are complying with regulations. After the journey, it's easier to identify issues that may have led to problems with the product. Traceability holds many benefits, not the least of which is a speedier and more efficient resolution to problems and the reduction of risk overall.

Demand for traceability is coming from multiple stakeholders. Consumers want to verify food contents and assess factors like sustainability and ethics along the product journey. Regulators want to keep food manufacturers true to their labels and promises.

However, the main reason traceability is a high priority right now is its role in food safety. No matter the source of this trend, it has increased the standard by which food manufacturers are measured, and it has increased costs and time spent on compliance.

To synchronize traceability across the industry, the FDA is encouraging companies to use digital processes. Through their New Era of Smarter Food Safety program, the FDA hopes to equip companies with the knowledge and resources necessary to apply technology in their food-safety protocols.



Rise of Sustainability

Consumers want more sustainable options in food and beverage.

According to the International Food Information Council Foundation, consumers' focus on sustainability and climate change will lead manufacturers to look closely at agricultural production practices, how food waste is managed and how they transport their product.

That requires both greater visibility from beginning to end, but also greater traceability.

“According to a Tastewise report, U.S. consumers make food and beverage decisions based on sustainability 23% more than they did a year ago.”





Stricter labeling requirements

In 2020 and 2021, the FDA's new food and nutrition labeling standards are slated to go into effect. Companies are expected to adhere to stricter rules around what is considered "organic" or "healthy," and there are new rules that dictate nutritional fact requirements and proper serving sizes.

The FDA is also encouraging a standard for dating labels on food products to better inform consumers and reduce waste, though they haven't made an official rule for it. The popular claim is that a clear "best if used by" label is better practice than "best by," and discussion around this topic is trending in the industry.



Ongoing trade uncertainty and tariffs

The withdrawal from the North American Free Trade Agreement (NAFTA) had a short-term negative effect on the industry until an agreement was reached to keep access to Canadian and Mexican agricultural markets, and even improve access to the Canadian dairy market. On the other hand, tariffs on steel and aluminum have hit processors hard, increasing costs for those that use those materials for packaging.





Labor shortage

On the labor front, baby boomers are retiring, and attracting younger workers is becoming more difficult. Manufacturers will spend more than \$25 billion on internal and external training for new and existing employees in 2020 to combat this shortage, according to the Manufacturing Institute.

In a 2018 study, The Manufacturing Institute found that a lack of qualified talent could cause the U.S. to lose \$48 billion in manufacturing GDP a year, and this could grow to \$454 billion by 2028.

Interestingly, automation was fifth on the list of priorities for food manufacturers in the same survey. One industry leader suggested it was because automation isn't always synonymous with flexibility in many manufacturing companies' minds, despite low employment numbers. Companies were also concerned about the skills needed to maintain more sophisticated machinery. That's leading more companies to invest in training in-house and recruiting technicians.

The 2020 Manufacturing Survey by *Food Processing* magazine found that companies are planning to increase production—but not with the aid of more equipment or labor. Instead, they are focused on improving efficiencies and spending “longer hours on existing lines.”



Maintaining profitability

Margins for food and beverage producers vary wildly, depending on a number of factors, including company size, target market, commodity inputs and more. Factors affecting profitability for food manufacturers may include:

1

Fluctuating
commodity
prices

2

Labor costs

3

Marketing
costs

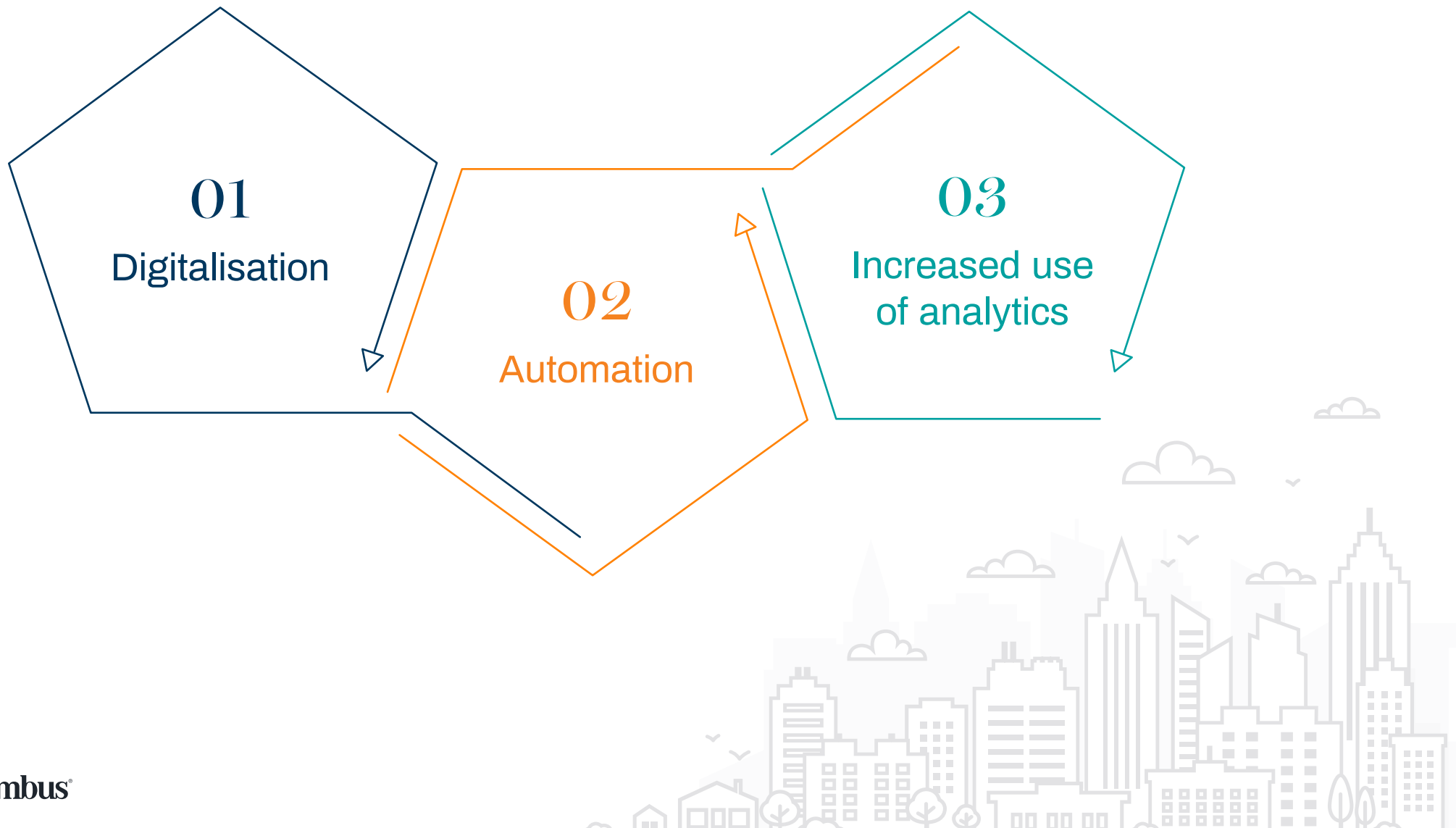
That said, the demand for healthier, organic and sustainable foods in the market has opened opportunities for some food manufacturers to grow margins, as consumers are more willing to open their pocketbooks for these options.

Choosing the right partners is also critical. For example, in the produce industry, produce companies interact with thousands of cases coming through the door from countless grower-shippers each day. Like in many food and beverage facilities, space is a premium. To maximize profitability in a temperature-controlled facility, companies have to continually understand the profitability of each grower-shipper and commodity to make a business case for working with those businesses. Factors include: quality, brand recognition and a food processor's relationship with the grower-shipper.



Rise of technology

Meeting new standards, documenting compliance activities, preventing foodborne illnesses, tracking product journeys—it's a lot to manage, no matter the size of your company. Food manufacturers are turning to technology to manage and improve these processes.





01

Digitalisation

Going digital is one of the top trends in food processing. Companies are moving to digital systems to conduct and document safety checks, manage and rotate their inventory, record temperatures and more. This removes several steps in documenting compliance, reduces errors and makes information readily accessible as needed.

02

Automation

Automated processes are great for optimizing your employees' time, but it can also make for more efficient operations and fewer food safety risks. Companies are using automated options for functions as minute as temperature monitoring, as hands-on as food prep and as high level as inventory management and procurement.



Increased use of analytics

The need for real-time data in the production process has become critical in 2020. One area is in preventive maintenance. With IoT sensors and Advanced Analytics with AI, manufacturers can reduce production failures, stay on top of equipment maintenance and refine the production process, no matter the product. This results in less downtime and more dollars to the bottom line.

Another area where analytics has become critical is in inventory management and planning. In the produce industry, for instance, planning can be difficult because most items have a short shelf life. This is especially true when you take into consideration the impact of weather and yields. Industry experts plan to the best of their ability to forecast and meet demand, but often spot market purchases are made to reconcile the difference between product availability and actual supply and demand.

As an example of the power of analytics, a food manufacturer that processes shelled and unshelled almonds, as well as almond paste, used a largely manual process driven by one key employee to determine which almonds by quality and size went into which production process. That limited the company's ability to scale operations. Using Advanced Analytics in Microsoft Azure AI, Columbus worked with the company to model their process to automate production decisions for greater efficiencies in inventory management now, and improved planning for the future.

Benefits include:

Increasing revenue by 1 cent/pound, on an annual processing volume of 75 million pounds

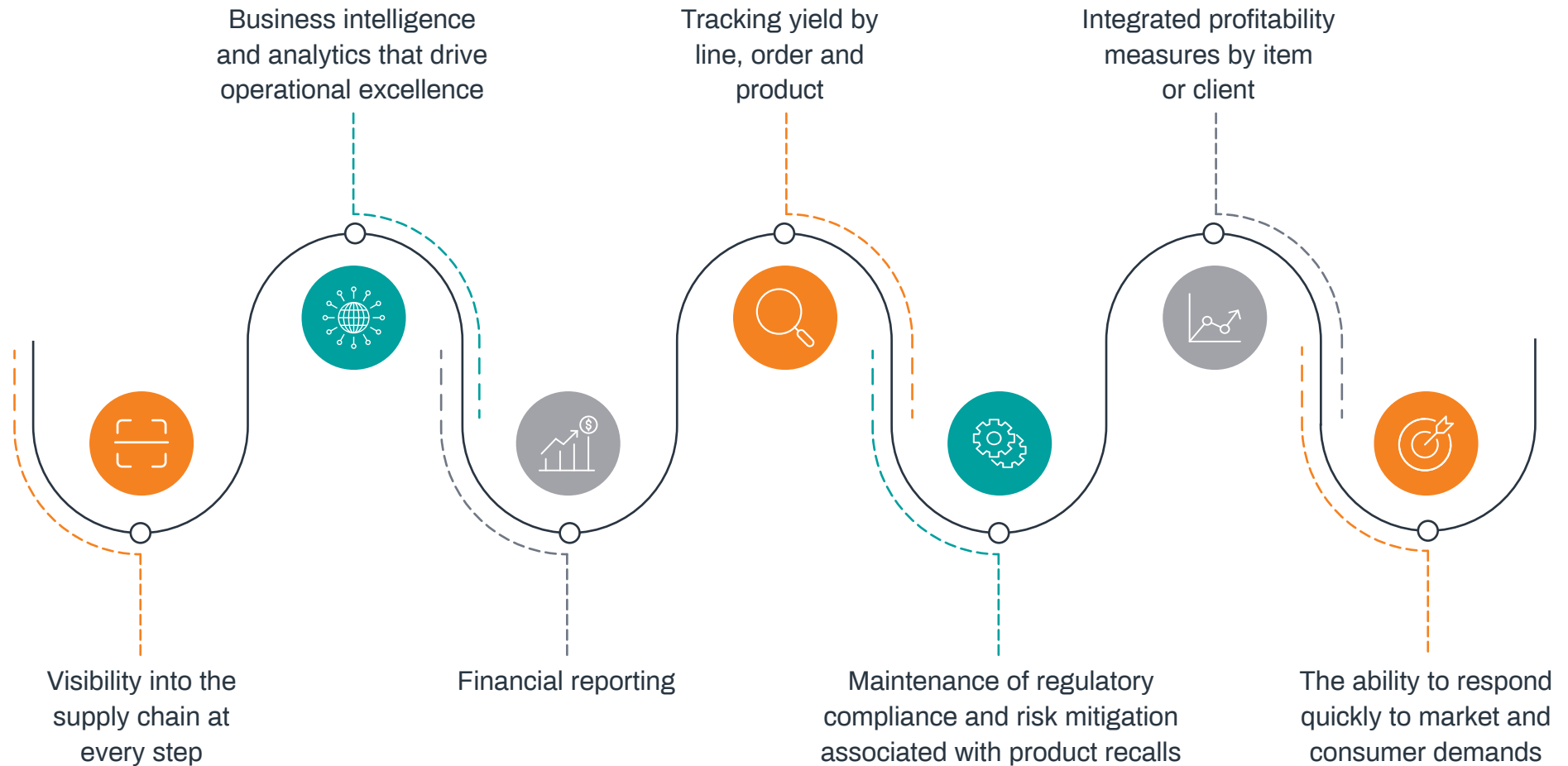
Ability to access and analyze data to control distribution of almond inventory by quality and size

Assisting distribution lead in the forecasting of product needs and processing plan

Enabling scalability by automating production decisions with AI

What food manufacturers need

To keep up with a fast-changing market and variables they can control—and many they can't—food manufacturers need:



What food manufacturers need

Food and beverage companies have realized that they can increase efficiency, minimize risks, enhance forecasting and improve user experience using automation and AI. Digital transformation in your business can be ushered in by cloud, mobility and advanced analytics. These attributes play a key role in addressing various challenges faced by food and beverage companies.

Amy's Kitchen was operating a patchwork of legacy systems that didn't tie well together. Columbus' team spent six months with the Amy's team to map pain points across functional areas to bring teams together and evaluate processes. Amy's then migrated from AX 2012 on-premise to Microsoft Dynamics 365 in the cloud. They are using the solution to manage everything from growing agreements to order management and beyond. Amy's also implemented Power BI to deliver better insights more efficiently to leadership teams.



Segment-specific solutions

A general technology solution won't be enough to meet the challenges of today's global food supply chain. An integrated solution like Microsoft Dynamics 365 combined with food and beverage-specific functionality is required. Food processing companies need to seamlessly integrate functionality like batch sizing, lot traceability, production scheduling, growth calendars, sales promotions, farm lot segmentation, country tracking and more into their technology solution to mitigate risk and maximize profitability.

ColumbusFood is an ideal solution for merging food processing safety and technology. It has several options, including:



Bakery



Brewery



Dairy



Meat and Poultry



Confectionary



Produce

Each version of ColumbusFood has functions in place to help companies keep up with—and ahead of—food safety trends and regulations. These include functions like lot tracking for greater supply chain traceability and risk mitigation, production and process management tools, automated data collection and quality compliance controls. With capabilities like these, companies are better positioned to respond to market changes, recover from food safety emergencies and comply with evolving standards.

Sources:

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[Trump Signs USMCA](#)

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[Food Industries' Healthy Margins](#)

[Is that shipping worth the space in your warehouse?](#)



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