At a Crossroads: Food Safety Hinges on Tech-Enabled Traceability

By Angela Fernandez, Vice President, Community Engagement, GS1 US

CSCMP

Educating and Connecting the World's Supply Chain Professionals.™

The food industry is undergoing massive changes. Along with shifting consumer preferences, shopping and eating habits underwent a massive change in 2020, markedly accelerated by the pandemic. As those global challenges unfolded, the importance of agility in the food supply chain became clearly apparent as well as the need for the digital modernization of our food system.

While addressing these shifts, the food industry has been working to come up to speed on the New Era of Smarter Food Safety Blueprint, released in July 2020 by the US Food and Drug Administration (FDA). This initiative outlines a commitment to dramatically improve food safety and calls for a new, technology-driven approach to modernize the food system.

This can only work, however, if the data used to track and trace products through distribution is complete and standardized so that the information recorded at every stop can be understood and shared by all stakeholders in the chain of custody. To meet weary consumers where they are, adequately inform trading partners and to meet new regulatory requirements, global GS1 Standards are foundational to supply chain evolution in several ways.

INCREASING FOOD SAFETY THROUGH DIGITIZATION AND CONSENSUS

The New Era Blueprint provides a rationale and guidance for industry adoption of technology-based traceability systems. By enabling vast improvements in product and location traceability, New Era digitization strategies can revolutionize the food supply chain and bring about better prevention and mitigation of foodborne illness outbreaks. It also seeks to enable faster, more accurate identification of an outbreak's origin and the efficient removal of products that are implicated.

The FDA Blueprint specifies that "existing consensus standards" should be used to enable traceability and ensure systems are designed with interoperability as a foundation. It calls for the use of global data standards to help industry speak the same language in transmitting product, location, and event information across the supply chain. It specifically cites GS1 as a standards body that can help harmonize industry and regulatory agencies' processes. Together, GS1 US and the food industry have been collaborating with the FDA to understand how GS1 Standards can be futher leveraged to enable better traceability and address future FDA requirements. The basics are covered by standards that govern processes to "identify, capture, and share" product and location data across the supply chain.

Another key driver of standards use to support food safety is the FDA's proposed traceability rule, Section 204(d) of the Food Modernization Act (FSMA) released in September 2020. Required data fields under this rule can be populated with GS1 Standard identifiers. A GS1 Global Trade Item Number® (GTIN®) is used to uniquely identify a product, which can be linked to specific events like creating, harvesting, packing, shipping, receiving, etc. and the locations where those transactions occur, represented by GS1 Global Location Numbers® (GLNs®). Combined with a shared language for data sharing, these two essential standards enable the end-to-end traceability that can truly impact food safety in a positive, sustainable way. Itcan also be used with multiple technologies, creating a globally accepted foundation to enhance systems compatibility.

CSCMP
Educating and Connecting the World's Supply Chain Professionals.™

ENHANCING SUPPLY CHAIN RESILIENCY THROUGH INTEROPERABILITY

The FDA acknowledged the pandemic highlighted a need for "more real-time, data-driven, nimble approaches to help ensure a strong and resilient food system and keep all Americans safe during a crisis, whether they are federal employees, food industry workers, or consumers."

The interoperability of supply chain partner systems and data is the key to enhanced supply chain resilience, so that future spikes in consumer purchase activity do not leave blind spots and barriers that cause product shortages and empty shelves. If all systems can communicate seamlessly with each other, partners know where products are at all times and can make faster decisions and move products to where they are needed.

Of growing interest in the food industry, a GS1 data-sharing standard called EPCIS (Electronic Product Code Information Services) has enabled more flexible, transactional data sharing between trading partners, as it records the "what, when, where and why" associated with supply chain events. It enables businesses to capture and share supply chain information about the movement and status of goods, both within their enterprise and with their business partners. EPCIS also provides a read on the business process step that occurred, such as receiving or shipping. It provides the state of the item (e.g., saleable, expired, or in transit) or current conditions like temperature, which is key for cold chain applications in the food industry and can support better freshness and quality of products. The standards is already widely used in the pharmaceutical supply chain to show a product's chain of custody.

SUPPORTING A MORE LOW-CONTACT, HIGH-VALUE PURCHASE PATH

Data sharing standards like EPCIS will also be important to enable automation technology that is widely discussed in the context of a modernized, next-generation food system. The New Era Blueprint is focused on food safety, but FDA also lays out the benefits to retail modernization (the blueprint's third pillar), which has the powerful potential to improve the delivery of products to consumers.

Changes in consumer shopping preferences and habits are driving transformational purchase/delivery options that will benefit from more accurate ordering and inventory control resulting from end-to-end product traceability. Now that shoppers have experienced online shopping, click-and-collect, home delivery, and contactless purchasing options, they want and expect these alternatives to remain available. Improved track-and-trace will provide suppliers, retailers and restaurants with better supply chain visibility to help prevent the frustration of out-of-stocks and product substitution missteps. So no matter how people shop, the need for greater insights enabled by technology and supported by data standards is ubiquitous.

Every industry is facing new, or newly exposed and increasingly urgent, imperatives for change. The collective experiences and impacts of COVID-19 on trade, commerce, production, distribution, and product availability have propelled these issues to the forefront. Hardships and system breakdowns have exposed the ultimate costs of outdated systems. At the same time, food supply chain stakeholders are equally motivated by the FDA's drive to improve food safety, mapped out in the New Era Blueprint and the Additional Food Traceability Proposed Rule. To recover and thrive, industries must adapt, modernize, and embrace technology-driven improvements that continually earn consumers' trust.

Angela Fernandez is the vice president of community engagement at GS1 US, where she collaborates with food industry leaders to solve supply chain challenges through the implementation of GS1 Standards.