EXECUTIVE SUMMARY ENABLING THE DIGITAL FOOD SUPPLY CHAIN WITH AUTOMATIC IDENTIFICATION AND DATA CAPTURE (AIDC)

“The Food Supply Chain relies on RFID and barcodes to enable the Globally Unique Digital Identities”

Automatic Identification and Data Capture (AIDC) technologies, a subset of Automatic Identification Technologies (AIT) are all around us. Our modern economy wouldn’t and probably couldn’t function without it. Retail stores and food establishments everywhere rely on AIDC and it has become so ubiquitous that even the casual user of the technology recognizes its benefits. Nearly everyone at one time or another has used AIDC whether trying to speed their grocery store exit through the self-checkout line; using an e-boarding pass by scanning a barcode displayed on their smartphone or has utilized a keyless entry system in their home, hotel or place of employment.

New Era of Smarter Food Safety

FDA will release the blueprint in Q3, 2020 which will be used in the coming decade to create a more digital, traceable, and safer food system. Challenges of the 2020 Pandemic make it clear that the actions called for in the blueprint will strengthen the safety and security of the food supply, not just in the normal course of events but especially in times of crisis.

- Tech Enabled Traceability Will Increase Supply Chain Visibility
- Smarter Tools for Prevention, Protections for Foods Ordered Online or In Store
- Food Safety Culture on the Farms, in Food Facilities, and at Home
- Enhance Foodborne Outbreak Response acting in minutes versus weeks

In 2018 there were major recalls of beef and food safety warnings on romaine lettuce. The romaine lettuce E. coli outbreak caused lettuce prices to triple in some grocery stores.

Recalls also cost food producers millions of dollars — sometimes billions. A 2015 study by Ohio State University associate professor Robert Scharff found that medical costs, productivity losses, and losses due to death or lost quality of life caused by foodborne illnesses cost the U.S. up to $93.2 billion annually

https://cfaes.osu.edu/news/articles/high-cost-foodborne-illness-new-study-provides-state-by-state-breakdown
This new initiative is intended to build on FDA’s efforts to implement the FDA Food Safety Modernization Act, FSMA, by leveraging, among other things, the use of new and emerging technologies as well as new approaches to some of the food system’s biggest food safety challenges. In 2020, FDA plans to release a blueprint that outlines critical steps to protect public health and keep pace with the ever-changing global food supply chain.

The first step in developing this blueprint was to start this work internally, engaging FDA experts to provide their insights on how to make this vision a reality. More than 100 experts participated in four brainstorming session on the following topics:

- Tech-enabled Traceability and Foodborne Outbreak Response
- Smarter Tools and Approaches for Prevention
- New Business Models and Retail Modernization
- Food Safety Culture

In Oct of 2019 the FDA held a public meeting in DC to bring together thought leaders to discuss the 4 topics above. The meeting was sold out in person and online. After the meeting there was an open period for comments. AIM Global comments can be found here [https://www.aim-na.org/press-releases/aim-na-submits-written-comments-to-fdas-a-new-era-of-smarter-food-safety](https://www.aim-na.org/press-releases/aim-na-submits-written-comments-to-fdas-a-new-era-of-smarter-food-safety).

About 15% of the US food supply is imported, out of the 210 million tons annually consumed, resulting in 32 million. However, this is not the end of the story in the United States the average meal travels about 1500 miles from farm to plate and changes hands 6 times before you see it. This can make an oblique supply chain making it difficult for everyone from retailers, consumers and regulators to be able to determine food provenance, fit for purpose, and dietary suitability.
The food system is charged with providing safe, affordable and trusted nutrition. This means operating as efficiently and transparently as possible.

Consumer concern over the safety and transparency of the food supply chain is reaching new peaks. Demand for high quality food, food integrity, safety guarantees and transparency is at an all time high. Retail customers are also placing new demands on their suppliers. Operators in the food chain need to balance this against the need to supply affordable nutrition to shoppers. This means that operations have to be as efficient and lean as possible. Food supply chains are reacting to these pressures by implementing systems that improve product quality and ensure safety. Many are leveraging technology to ensure that their actions are as transparent as possible. This is where AIDC technologies and standards development step in to enable globally ubiquitous food traceability from source to consumer.

Global standards organizations such as AIM Global, GS1 and ISO are working together to define standards to enable data sharing by defining data carriers, business relationships, product master data with inter-operable methods of attaching certificates and sensor data to items as they move through the supply chain. There are numerous reasons why every stakeholder in the global food supply needs to be thinking about traceability. When most people think of traceability they think about regulatory compliance. However there are significant business benefits to traceability. Business benefits fall into one of three primary categories: operational efficiency, market access and risk mitigation in the case of intentional and unintentional adulteration of food products.

The USDA outlined the importance of traceability in a recent report the Food Value Chain. Food Value Chains are business arrangements that are distinguished by their commitment to transparency, collaborative business planning and creating shared value. Products from the value chains are valued by consumers and command a higher selling price. In 2019 Food Marketing Institute (FMI) and Label Insights reported that 78% of Americans would switch brands from their preferred to a brand they view as more transparent with over 50% of them willing to pay more to do so.
Building Resiliency by creating the Digital Food Supply Chain

In the new supply chain the key attributes required are sustainability, flexibility and adaptability, these attributes factors make up what is becoming known as the resilient supply chain.

The objective of supply chain sustainability, as defined by UN Global Compact is to “create, protect and grow long-term environmental, social and economic value for all stakeholders involved in bringing products and services to market. Through supply chain sustainability, companies protect the long term viability of their business and secure a social license to operate”.

Flexibility can be built into a supply chain when assets can be globally uniquely identified, located, and determined fit for use. The Digital Food Supply Chain enables this flexibility by creating full chain transparency.

Adaptability is enabled through data visibility. US Food and Drug Administration (FDA) announced that it will hold a public meeting in June 2020 to discuss Agency-level approaches to modernizing FDA’s data strategy, including approaches to data quality, data stewardship, data exchange and data analytics with the objective of becoming more responsive to emerging supply chain disruptions. Industry is already following suit which enabled them to respond to the sudden shift from brick and mortar to ecommerce in grocery during April 2020. According to data from Adobe’s Digital Economy Index, U.S. e-commerce jumped 49% in April 2020, compared to the baseline period in early March 2020. Online grocery helped drive the increase in sales, with a 110% boost in daily sales between March 2020 and April 2020.

AIM NA is your go to authoritative reference providing guidance to regulators, ens users and industry partners.

References

• USDA Food Value Chains

• FDA NEW ERA OF SMARTER FOOD SAFETY
  https://www.fda.gov/food/new-era-smarter-food-safety

• UN SUBSTAINABLE SUPPLY CHAINS
  https://www.unglobalcompact.org/what-is-gc/our-work/supply-chain

• FMI Transparancy Imparative
  https://www.fmi.org/forms/store/ProductFormPublic/the-transparency-imperative-product-labeling-from-the-consumer-perspective

• RAIN RFID - A world of business & consumer connectivity
  rainrfid.org

U.S. dairy farmers dump milk as pandemic upends food markets

From March to June 2020, US dairy farmers are forced to dump as much as 3.7 million gallons of fresh milk per day -- even as grocery stores report milk shortages and millions of jobless Americans go hungry. The disconnect is due to unprecedented disruptions in the supply chain.

• The disruption to supply chains due to coronavirus is caused tons of fresh produce to be wasted in the U.S.
• Despite food shortages and high demand for dairy produce, the Dairy Farmers of America has had to ask farmers to dump their milk.
• The disruption to supply chains means that farmers are unable to get their produce to market.
• The short shelf life and perishable nature of dairy products, means the effects of coronavirus have hit them harder, and faster, than other agricultural industries.