Supply Chain Traceability Technology Tools

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Why Are Supply Chain Traceability Tools Needed?

- Primary concerns include concerns about bioterrorism
- Foodborne illness outbreaks
- Product counterfeit
- Product contamination, quality and safety concerns

Product Recalls

Product recalls are typically costly. This is due to several factors. For companies that do not utilize traceability tools, the payment on the traceability technology investment tends to be rapid. Traceability systems typically pay for themselves during the first product recall. Being able to quickly identify only the products that need to be recalled versus those during a longer period of production can make an enormous difference and minimize the financial impact of the recall

Using technology to enable traceability can have additional benefits. Using technology to facilitate traceability can provide a treasure trove of data that can be used for other purposes to help improve your business and operational processes. In addition, having access to this real time data can help you to improve and streamline your operation and business processes.

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Why Are Supply Chain Traceability Tools Needed?

Governmental Regulations and Large Retailers Are Driving the Use of Traceability Tools

European Union:

Since January 2005, the EU has required traceability systems. Businesses must be able to identify all suppliers of food products and food as well as all businesses to which they supply food or feed. Because of the directive that requires all information must be available to inspection authorities on demand, the information must be stored in a systematic manner for easy access.

United States:

The Bioterrorism Act of December 2005 requires that records are maintained to identify the immediate previous sources as well as the immediate subsequent recipients. This includes both food and packaging.

Tools and systems differ depending upon the size of the country, type of ingredients, supply chain complexity and other factors.

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Why Are Supply Chain Traceability Tools Needed?

Traceability solutions can assist in:

- Documentation and recordkeeping
- Monitoring of goods to help protect consumer safety
- Enabling process improvements
- Better decision making
- Helping to increase brand satisfaction through faster, more effective product recalls
- Identifying and tracking problem products sooner so that consumers can be notified immediately

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Types of Traceability Technology Tools

1. Product Identification and Marking (ID)
2. Traceability Tools and Software
3. Radio Frequency Identification Devices (RFID)

Product Identification and Marking (ID)

Product Identification and Marking Tools are the most commonly used of all the traceability tools. Product identification tools include barcode and imprinting tools that rely on tracking numbers in order to connect data on the production history with that of the finished goods.

QR codes can be used as secondary barcodes for automated product tracking during transport or on conveyor systems. Full product traceability from the point of production to producer can be enabled using QR barcodes.

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Types of Traceability Tools

Traceability Tools and Software

Traceability software and technology tools help in the collection and management of data in order to help improve product quality, security and safety throughout the supply chain.

These track and trace tools can help businesses document compliance with legal requirements, customer and trading partner standards and can be used to track and document whether products are organic, genetically modified or have other special attributes.

Using software designed for product traceability can help your business to compete more effectively in winning the business of retailers. This is especially true when dealing with those that require data exchange via EDI or with retailers that require that product recalls be completed in only a few hours.

Today, some warehouse management systems include track and trace capabilities and there are also various freestanding traceability software systems available.

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Types of Traceability Tools

Traceability Tools and Software

Governmental regulations often require that companies collect and retain data documenting the control of products and raw materials throughout the supply chain. This is especially true of food and pharmaceutical products.

Traceability systems are often used with or sometimes include environmental monitors and product scanners. This enables information to be organized, stored and easily retrieved whenever needed.

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Types of Traceability Tools

Radio Frequency Identification Devices (RFID)

The use of RFID for product traceability is increasing as the cost of this technology has been reduced. Some retailers and governmental agencies use RFID Smart Labeling in order to track product movement throughout the supply chain.

To do this, a smart label or smart tag (a very flat configured transponder positioned under a conventional print-coded label) is placed on a product. The tag relies on radio frequency communications between the smart label and a portable memory device and host computer to exchange data.

RFID tags can be encoded with a variety of information that can then be collected using an RFID reader.

RFID does not require human intervention and can be used passively to track the movement of products within closed systems such as within a warehouse. No scanning of barcodes or labels are needed and multiple RFID smart labels can be read simultaneously.

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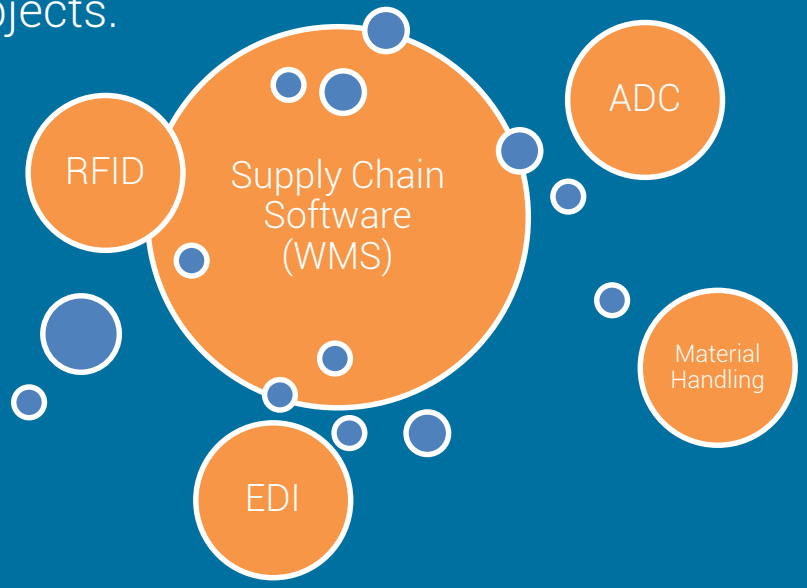
IoT and Traceability

What is IoT?

IoT, the "Internet of Things" is an intertwined system of a variety of technologies that capture data and communicate it through IP networks to software applications. The status of physical objects is monitored and the data from the smart object is stored in a centralized database then sorted into a human-readable format.

The information captured may be generated using either a manual or automated interaction and auto-ID technology is used to enable the communication between devices and objects.



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IoT and Traceability

IoT can aid in:

- Monitoring shipment status
- Providing the real time location of inventory within a facility
- Tracking the point of origin, days until expiration and other attributes of goods
- Provide component/ingredient-level visibility of products, including product lifespan data
- Reducing the labor and errors associated with manual track and trace efforts

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Conclusion

The need for the ability to track and trace products throughout the supply chain has Increased over the past few years due to concerns regarding consumer safety, product recalls, counterfeit products and bioterrorism.

Today, technology can play a vital role in reducing the cost and accuracy of information associated with product traceability. A variety of tools are available to suit company budgets including traceability software, product identification and marking and RFID.

The Internet of Things is making real time product traceability easier and faster. Using auto-ID technology and Internet enabled devices, companies can provide information visibility throughout the supply chain and gain substantial benefits that aid in better management of products and systems.

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