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RFID in Food Chain Virtual Event

QSCC RFID Pilot

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What You Will Learn

- What is RFID and what is the business case?
- How we performed an RFID pilot in a restaurant
- Pilot Findings
- Benefits extend beyond traceability

About Quality Supply Chain Co-op

- QSCC is an independent, not-for-profit cooperative in Dublin, OH
- Third-largest cooperative in the quick-service restaurant industry with nearly $4 billion in buying power
- Part of the Wendy's extended family
- Negotiate with suppliers in purchasing, distribution & logistics, equipment and services

Next-Gen Traceability Solutions

- QSCC continues to research and evaluate next generation technologies and solution platforms

- Key Technologies
  - RFID
  - Internet of Things (IoT) enabled scanners
  - Blockchain

- Restaurant-level RFID Pilot
  - In coordination with Avery Dennison (RFID providers) and Zebra Technologies (RFID scanners and reporting portal), QSCC conducted a restaurant-level RFID pilot at a franchise restaurant in Dover, OH

Restaurant-Level RFID Pilot Scope

- Pilot within the four walls of the restaurant
- Mid-November through early May
- Inclusive of all items delivered by foodservice distributor
  - Food, packaging, cleaning supplies, etc.
- Assumptions
  - Cases have barcode
  - If no barcode or unreadable barcode have a printed list of barcodes in restaurant
- Keep product in cases even if partially used

How does RFID work?

RFID Labels

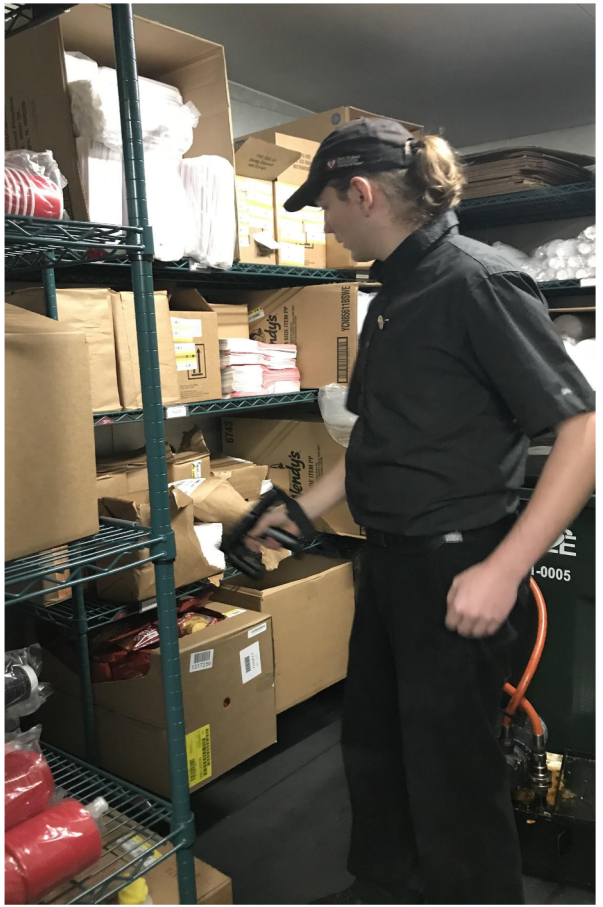
Product data is linked to the RFID microchip and can be read by the RFID reader

RFID Readers

RFID readers pick up the signal of hundreds of labels per second and transmit data to the software platform

Software

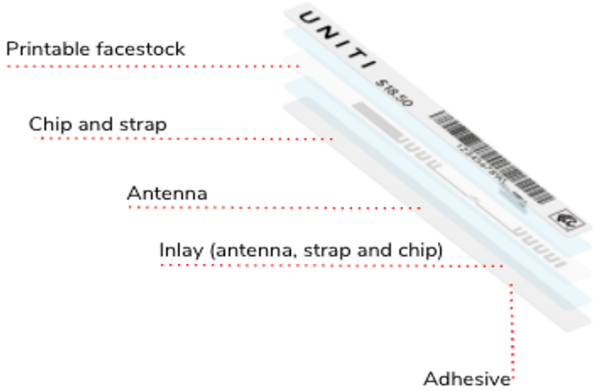
Software processes the data to guide in-restaurant operations and feed accurate data to backend systems



RFID Tags

Provided by Avery Dennison

- Integrated consumable label that can leverage current print process to drive item level identification and automate reading multiple items simultaneously
- Pre-serialized rolls of tags with barcode and human readable
- Adhesive for use for all purpose food service
- Integrated Label with AD-238 UHF RFID inlay
  - Average corrugate read range: 10 feet
  - Ability to read in a mixed environment without line of site



Handheld Reader

Provided by Zebra Technologies

- Integrated UHF RFID Android mobile terminal
- 1D and 2D barcode scanning
- Keypad and Large Touchscreen
- Cycle Count and Geiger counter functionality

Pilot Initial Preparation

Performed prior to receiving items at pilot onset

- Obtain RFID labels
  - Each RFID tag has a unique serial number
  - Keep unused labels in a metal container so reader won't pick them up during cycle counts
- Tag and associate all inventory in restaurant
  - Provided baseline for subsequent cycle counts
- Training is critical for success
  - Receiving
  - Cycle counting

Process Overview

Receiving

- Receive items from distributor and apply RFID tag to cases
- Scan GTIN then scan barcode on RFID tag to associate to product
- Cycle count newly received cases using RFID reader
  - New Receipt Report can be used to compare to Invoice
- Put cases away in designated areas

Process Overview

Cycle Count

- Count inventory
  - Full cases
    - “Paint” the storage areas throughout the restaurant with the handheld reader
  - Partial cases
    - Barcode scan with handheld reader the RFID tag of a partial case
    - Enter quantity or percent to adjust appropriately
- Manually enter amounts into backoffice using dashboard report or if integrated leverage API to automatically feed data collected into back office system

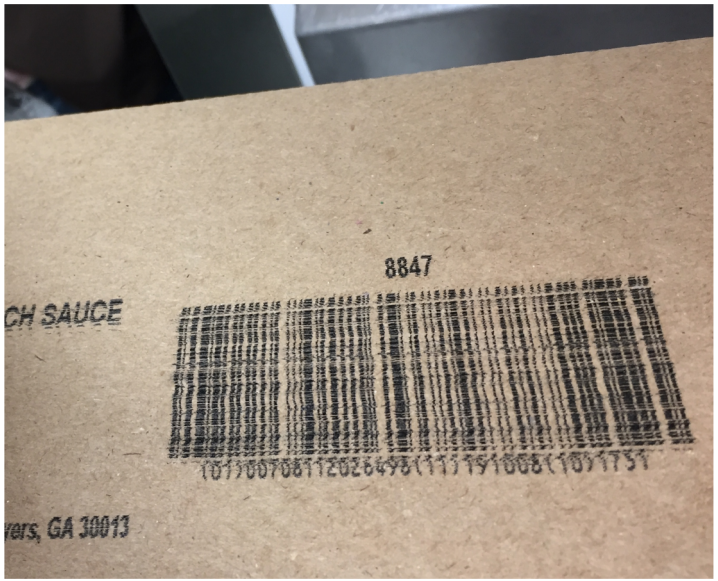
Pilot Findings

Findings addressed

- Validate that you can read all barcodes on cases
  - Barcode present
  - Check for quality/scannability
  - Utilize audit report to identify unassociated RFID tags
- Have a process in place to manage partial cases if in scope
  - Keep RFID tag with box when removing flaps
- Utilize reports to compare receiving counts to distributor invoice and to facilitate cycle count data entry into backoffice

Pending Opportunities

- Validate need for 100% wi-fi coverage, including coolers and freezers, to associate product for key-drop deliveries
- Lack of backoffice integration
- Apply RFID tag at supplier
- Product expiration report



Potential Labor Opportunity

Receiving	Daily Cycle Count (2x's)	Weekly Cycle Count	Monthly Cycle Count
• **Attended delivery**: 30 minutes • **Manual RFID:** 45 minutes *(Tagging and associating in restaurant)* • **Future state RFID:** 3 minutes *(Source tagging)* • **Annual savings** *(with source tagging)* 3X delivery per week: 70 hours 2X delivery per week: 47 hours	• **Pre-RFID:** 15 minutes manually • **With RFID:** 7 minutes • **Annual savings:** 97 hours	• **Pre-RFID:** 120 minutes manually • **With RFID:** 60 minutes • **Annual savings:** 40 hours	• **Pre-RFID:** 120 minutes manually • **With RFID:** 60 minutes • **Annual savings:** 12 hours

Observed: A**nnual estimated restaurant labor opportunity: 110-123 hours** (Range for delivery frequency)
Future State: (tag at source) Annual estimated restaurant labor opportunity: 266-290 hours
(Range for delivery frequency; deducts manual key entry and scan/scan receiving)

Key Take-Aways

Food Safety / Brand Protection

- Traceability & increased legislation
- Social media
- Improved product handling and rotation
- Enhanced customer engagement

Save Labor

- Wage increase, labor shortage and turnover
- Mitigate risk by removing mandatory labor activities
- Digitize manual labor tasks: receiving, cycle counts, replenishment
- Automate decisioning and reduce restaurant manager workload

Sustainability

- Reduce inefficiencies and food waste
- Reduction in out-of-stocks and restaurant-to-restaurant transfers
- Opportunity for proactive replenishment

THANK YOU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Quality Supply Chain Co-op, Inc.
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