Unified Foodservice Purchasing Co-op, LLC
Putting Traceability to the Test

Unified Foodservice Purchasing Co-op® (UFPC®), is the exclusive supply chain management organization for Yum! Brands, Inc. and its five national restaurant systems: A&W, KFC, Long John Silver’s, Pizza Hut and Taco Bell. Based in Louisville, Kentucky, Yum! Brands is the world’s largest restaurant company with more than 38,000 restaurants in 110 countries and territories.

“UFPC negotiates procurement of food, packaging and equipment – basically, anything that goes into Yum! Brands restaurants,” explains Brenda Lloyd, director of Equipment Purchasing and Distribution for UFPC. An experienced foodservice professional, Lloyd understands the Yum! Brands supply chain from multiple vantage points.

“In my current role, Lloyd’s major goal is to drive costs out of the supply chain. “We provide an uninterrupted supply of specified products, and do this at a manageable cost,” explains Lloyd. “We’re focused on increasing efficiencies. A major way to do this is to gain visibility into our supply chain.”

**Foundation for Traceability**

Barcodes are part of the GS1 System of standards – an integrated system that provides companies with supply chain visibility through the accurate identification, capturing and sharing of product and location information.

Lloyd adds, “At Yum! Brands, we have adopted GS1 barcodes since they provide the foundation for tracing products from our suppliers and distributors to our operators.”

“We began our project in 2005 using standardized barcodes on our product cases, anticipating benefits for all our business partners. As we now begin to realize some of those benefits, we are excited to share our learnings with the industry.”

– Daniel E. Woodside, President and CEO, Unified Foodservice Purchasing Co-op, LLC
Product tracing, also known as traceability, refers to a company’s ability to follow its products (or ingredients) forward and backward through its supply chain.

Passed by the U.S. Congress in 2010, the Food and Drug Administration (FDA) Food Safety Modernization Act and the Bioterrorism Act of 2002 require that all players in the country’s food supply chain be able to quickly trace from whom they received a food product and to whom they sent it. Called “one step forward, one step back” traceability, the requirement is designed to make it easier for the FDA to identify the source of an outbreak of food-borne illness, trace its path and swiftly remove it from the food supply.

“We have been actively working with our trading partners in Washington on achieving traceability,” says Lloyd. “Even before last year’s legislation, there was significant work being done in our industry on product tracing.”

In fact, in November 2009, the Institute of Food Technologists (IFT) released its report, “Product Tracing in Food Systems,” on using critical tracking events (CTEs) and key data elements (KDEs) as ways to enable product tracing.

Here’s how they work. As products move through a company’s supply chain, they are subjected to specific events or CTEs that define their ultimate path. At these points in time and location, data or KDEs need to be collected to make possible the “tracing” of these products. KDEs may be transactional in nature (e.g., shipping date, receiving location) or tied to the actual physical product (e.g., product lot numbers, manufacturing location). For each CTE in the supply chain for a given product, there is an associated physical event that affects product traceability; which if untracked, would break the chain of events that allows upstream and downstream product tracing.

“Each CTE must be carefully analyzed to ensure sufficient KDEs are collected to allow traceability. By definition product tracing is comprised of all KDEs created by multiple players in the supply chain,” explains Lloyd. “The real challenge comes with handing off the product data to a trading partner in a form they can understand. This is where GS1 Standards come in. With standards in place, addressing CTEs and KDEs is achievable.”

Support from Meat and Poultry

Traceability pioneer – Doug Bailey is the CIO of the U.S. Department of Agriculture’s Agricultural Marketing Service. Bailey and representatives from all sectors of the meat and poultry supply chain have created a non-profit organization called the Meat and Poultry Data Standards Organization (mpXML).

“At the mpXML, we are advancing the use of data standards to support e-commerce in the meat and poultry supply chain,” says Bailey. “About three years ago, product tracing became one of mpXML’s top issues, and it remains a top priority today.”


“We thought the inclusion of CTEs and KDEs made a lot of sense since they help solve one of the major challenges associated with whole chain traceability – the many trading partners that handle a product on its way to consumers.”

For example, meat and poultry suppliers can produce consumer-ready packages labeled with barcodes and ship them directly to stores for purchase by consumers. In this situation, tracing these packages is somewhat straightforward. Yet, consider when a store re-packages multiple cuts of meat from different suppliers.

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– Doug Bailey,
CIO, Agricultural Marketing Service, USDA
Board of Directors, Meat and Poultry XML

UFPC, on behalf of Yum! Brands, led the traceability pilot with participation by its multiple trading partners and support from Airclic, mpXML and GS1 US.
“Our company participates in the Produce Traceability Initiative, and we’re on course to implement its recommended plan for electronic traceability.”

– Steve Ish, Vice President of Business Development, Taylor Farms

“A lot of product information is potentially lost in the cutting room along with the ability to trace the multiple cuts back to respective suppliers,” advises Bailey. “This is why CTEs are so important. They account for the steps along the way where different trading partners handle the product and possibly transform it. And, KDEs provide the needed data to fully understand what happened and when.”

For the meat and poultry supply chain, Bailey managed mpXML’s work effort to identify the CTEs and KDEs that should be tracked and reported among trading partners – valuable information that Brenda Lloyd would use.

From Concept to Pilot
“GS1 US™ standards experts introduced me to Brenda,” recalls Bailey. “As we shared our traceability work and ideas, we came up with the concept of conducting a traceability pilot using the Yum! Brands supply chain.”

Lloyd adds, “Early on, we decided to base the pilot on GS1 Standards since we understood proprietary codes would be a barrier for whole chain traceability. Doug also shared the CTEs and KDEs from the meat and poultry supply chain.”

Lloyd invited three major trading partners to trace four products, from order-to-receipt by one of Yum! Brands’ restaurant systems.

Two suppliers, Tyson Foods and Taylor Farms, participated along with distributor, McLane Foodservice (McLane).

“We wanted to use high-velocity products – fresh foods like diced onions and shredded lettuce with limited shelf lives,” explains Lloyd. “We selected the restaurants based on where we had scanners since barcode scanning would be such a critical step.”

From the beginning, all trading partners were fully engaged and on-board.

“We have been GS1 compliant for some time,” says Lela Tripp, senior enterprise strategic architect at Tyson Foods. “Being part of the pilot allowed us to validate our existing traceability processes and show that no additional processes would be required to support traceability.”

Steve Ish, vice president of Business Development at Taylor Farms, adds, “Our company participates in the Produce Traceability Initiative, and we’re on course to implement its recommended plan for electronic traceability; so we were excited to be part of the pilot.”

McLane was equally supportive. “We have been using GS1 Standards and barcodes for some time,” says Syndee Stiles, vice president of Operations Support. “Yet, we recognize trading partners can do better when it comes to sharing product information throughout the entire supply chain. The pilot gave us an opportunity to test traceability with multiple partners, and determine how to make it truly work.”

Just a few months after initial discussions, Lloyd, Bailey and the team kicked-off the pilot. The major goal: Understand “what is possible” and “what is needed” for end-to-end traceability.

Additional goals included:

• **Data elements**: The team was interested in learning how the selected CTEs and KDEs would perform – whether they would provide the needed data for traceability.

• **Data capture**: They wanted to learn about the most appropriate data sources; for example scanning case- and pallet-level barcodes to capture KDEs at critical tracking events. Another consideration was capturing data from transaction documents like invoices and advanced shipping notices (ASNs).

• **Data management**: The team also wanted to better understand the needed systems and technologies for collecting and managing data – ones that could easily interoperate and handle the volume of data elements.

Lloyd recalls, “We realized from the beginning that we would learn a lot. We just didn’t realize how much!”

“McLane is a $34 billion supply chain services company, providing grocery and foodservice supply chain solutions for thousands of chain restaurants, military locations, drug stores and mass merchants, as well as thousands of convenience stores throughout the U.S. With 38 sophisticated distribution centers and one of the nation’s largest fleets, McLane optimizes the purchase, flow and sale of products from thousands of suppliers to over 54,000 locations.

www.mclaneco.com

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Steps to Traceability

Data elements: Planning started with specifying the needed KDEs to identify all trading partners’ locations and the suppliers’ products. “We leveraged mpXML’s prior work and used GS1 Standards such as Global Location Numbers and Global Trade Item Numbers®,explains Lloyd.

A Global Location Number (GLN) is a globally unique identification number that can be used to identify a physical location such as a distribution center, a processing plant, or a restaurant, etc. The GLN is exclusive for one location and has defined attributes like name, address, and location type (e.g., ship to, bill to, deliver to, etc.). A GLN can also identify a functional entity such as a purchasing department or a legal entity like a corporation.

In the pilot, GLNs were used to identify each of the trading partners’ locations and attributes: the Yum! Brands purchasing function, McLane’s distribution center (ship to), Tyson Foods’ and Taylor Farms’ distribution centers (ship to and ship from), and Yum! Brands’ two restaurants.

The Global Trade Item Number (GTIN®) is the unique GS1 System Identification Number used for trade items (products and services). The term “trade item” refers to any product or service upon which there is a need to retrieve pre-defined information; this product or service may be priced, ordered, or invoiced at any point in the supply chain.

For each of the four pilot products, Lloyd designated that GTINs combined with lot numbers and production dates would serve as KDEs. Lloyd adds, “Tyson Foods also used its GS1 Serial Shipping Container Codes (SSCCs) that supply useful logistics information.”

Part of the GS1 System of standards, GLNs, GTINs and SSCCs enabled the trading partners to speak a common language as the products traveled through their multiple hand-offs in the supply chain – something proprietary codes can’t do.

“Standards used across the entire produce industry are most welcomed,” says Ish at Taylor Farms. “If we have 50 customers using 50 proprietary codes, this brings a great deal of complexity to our plants. Gaining alignment around what data goes in the barcode can greatly simplify our business.”

Traceability Tip!

To speak a common language, trading partners should transition from using proprietary numbers to GS1 Standards like GTINs, GLNs and SSCCs.

Data capture: “One of our major discussions revolved around the barcode labels, and how we were going to get them on the cases and pallets,” adds Lloyd.

Data elements such as GTINs, GLNs and SSCCs are encoded in barcodes. The GS1 System uses approved barcode symbologies to “capture” data elements – the Universal Product Code (U.P.C.), ITF-14, GS1-128, and GS1 DataBar™. The barcodes are read by scanning that speeds data collection and eliminates manual data collection errors.

“We were already using and scanning barcodes at the case and pallet levels. For the pilot, we just added the production date to our labels,” explains Paul Lothian, business solutions architect at Tyson Foods.

Vincent Remkus, IT manager with Taylor Farms describes their actions. “We created and applied the new labels to the cases of our packaged, raw products. The major change for us was adding labels to our pallets to provide the product-level details. Since the pilot, we have implemented pallet tagging in three of our plants.”

“Two critical areas were barcode quality and label placement,” says Stiles with McLane. “They need to be consistently applied and ‘scannable.’ During the pilot, we worked closely to quickly resolve any issues – a definite requirement for trading partners to achieve accurate product tracing.”

Data elements can also be captured and shared between trading partners via transaction documents like invoices and advanced shipping notices (ASNs). As part of its natural supply chain process, Tyson Foods uses ASNs to communicate essential information about pallets being shipped.
For both of our products, our distribution centers produced detailed ASNs to communicate the shipment and key data element information,” says Lothian. Each ASN contained the GLN, GTIN, and SSCC identifying the distribution center [GLN], the products loaded on the pallet [GTIN], and the transportation details [SSCC] for tracking the order, if needed.

**Traceability Tip!**
With GS1 Standards in place, trading partners can create barcode labels and transaction documents that support uniform, accurate and efficient data capture throughout the supply chain.

Data management: Next came the identification of CTEs – points in the supply chain or times when the data elements would be collected. “Each time the products were shipped or received, this was a critical tracking event,” says Lloyd. “So, the plan called for scanning the labels at these points in the fulfillment process.”

This meant getting the needed technology in place. Airclic, a provider of mobile software products and member of the GS1 US Solution Partner Program, supported the pilot with its Fresh Perform® product.

“For the pilot, we used the Airclic technology to scan the cases to collect the data,” explains Stiles with McLane. “In a real-world situation, we would use our own systems and equipment; but, to prove the concept, Airclic offered an effective way to collect and integrate data across trading partners.”

Another important step: Training the employees who were handling the pallets and cases. During the CTEs at Taylor Farms, McLane and the Yum! Brands restaurants, employees were expected to flag the pallets of designated products, scan the labels and upload the data to the Airclic database. The same information from Tyson Foods was provided in the ASN produced by standard processes already deployed within its logistics network.

“We conducted training in our restaurants with individuals identified as accountable,” says Lloyd. “The pilot was a new process, so our training centered on ‘what and when to scan.’ Scanning at the right times to collect all the data proved to be more challenging than expected. Yet, that’s what a pilot is all about – learning from shortfalls and making adjustments.”

All trading partners agree with a major learning from this phase: Training once may not be enough; on-site monitoring, especially in the initial stages of the new process, is needed to help employees institutionalize the new process.

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Unified Foodservice Purchasing Co-op, LLC

Employee turnover is another important consideration. Stiles explains, “We believe it will be more reliable to have our [McLane] drivers scan at the points of delivery [restaurants] since we historically have less turnover than in the restaurants. This is just one example of why we need to think about the whole supply chain, and just not our own small piece.”

Lothian at Tyson Foods summarizes, “For trading partners to forget to scan the barcodes – in a way, this wasn’t a big surprise since we were conducting a pilot and that meant changing the way people work. Never the less, it was a valuable lesson demonstrating the difficulty of managing one-off processes.”

Stiles agrees, “Once we have a consistent process and scan each case and pallet in the same way, then that noise goes away.”

“‘Our portfolio of Perform products was designed with the industry in mind – suppliers, distributors and operators that want to track and trace the path of their products.’

– Steve Tremitiere, Vice President of Strategic Accounts, Airclic
Each time products are shipped or received, this is a CTE. The labels are scanned at CTEs to capture KDES.
All captured data was uploaded to the Airclic system, then downloaded to the pilot’s spreadsheet for analysis by Bailey and GS1 US.

“We managed the data row-by-row for each critical tracking event,” comments Bailey. “In this way, we could easily see where critical tracking events were missing as well as how CTEs present linked together.”

Lloyd adds, “Even with our challenges, we were very encouraged to see how the data, when captured and analyzed, could help us make traceability work.”

**Traceability Tip!**

Training and on-site monitoring are both needed to ensure employees learn and consistently scan barcodes at the critical tracking events.

**Possibility to Reality**

As the participants reflect on the pilot, the lessons are apparent.

“The good news is that we don’t have to ‘re-invent the wheel’ with the availability of GS1 Standards,” says Lloyd. “The data elements and data capture methodologies are globally defined and in-place.”

Tripp from Tyson Foods agrees, “Many suppliers in the meat and poultry segment are already using GTINs and lot numbers on their products today. With the entire foodservice supply chain increasing the use of standards, it’s just a matter of time before end-to-end traceability becomes a reality.”

Ish with Taylor Farms reminds the team of the importance of process management. “The process has to be tight. Pay close attention to the basics. Train your people well and implement quality checkpoints along the way to confirm compliance and accuracy. Something as simple as running low on ink will cause major problems when barcodes can’t be scanned.”

Perhaps one of the most important lessons is summarized by Stiles. “We held one of our planning meetings in a distribution center. All of us walked the dock together and shared our respective processes. We listened to each other’s different perspectives – what each of us was doing and how it ultimately impacted everyone. It was truly enlightening.”

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Brenda Lloyd verifies all supplier barcodes using the Airclic software residing on a handheld device.
CASE STUDY: Unified Foodservice Purchasing Co-op

CONTACT US
To learn more about GS1 Standards and how GS1 US can support your business with traceability practices, contact Steve Arens, director at GS1 US, at sarens@gs1us.org.

ABOUT UNIFIED FOODSERVICE PURCHASING CO-OP, LLC
Unified Foodservice Purchasing Co-op is the exclusive supply chain management organization for Yum! Brands, Inc. and its five national restaurant systems: A&W, KFC, Long John Silver’s, Pizza Hut and Taco Bell. With purchasing teams based in Louisville, Ky., Plano, Texas, Irvine, Calif., and Fort Lauderdale, Fla., UFPC negotiates procurement of food, packaging and equipment for over 21,000 restaurants. www.ufpc.com

ABOUT GS1 US™
GS1 US is a not-for-profit organization that brings industry communities together to solve supply-chain problems through the adoption and implementation of GS1 standards. More than 200,000 businesses in 25 industries rely on GS1 US for trading-partner collaboration and for maximizing the cost effectiveness, speed, visibility, security and sustainability of their business processes. They achieve these benefits through GS1 US solutions based on GS1 global unique numbering and identification systems, barcodes, Electronic Product Code-based RFID, data synchronization, and electronic information exchange. GS1 US also manages the United Nations Standard Products and Services Code® (UNSPSC®). www.GS1US.org

ABOUT MEAT AND POULTRY XML
Meat and Poultry XML (mpXML) is the non-profit, business-to-business data standards organization pioneering the development and use of the standards that support electronic commerce among all segments of the meat and poultry industry. The organization is comprised of representatives from all sectors of the meat and poultry supply chain. www.mpxml.org

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Airclic is a global provider of mobile software products that improve the performance of an organization’s supply chain, logistics and field services operations. The Company currently serves more than 300 global customers across multiple vertical markets. Airclic has developed its Perform® product line which combines the Company’s Mobile Performance Platform® with industry-specific features and functionality. Airclic is a GS1 US Solution Partner. www.Airclic.com

LEARN MORE
Read these recommended traceability reports from GS1 US, ITF and mpXML.
• "How GS1 Standards Support Product Tracing, Critical Tracking Events, and Key Data Elements."
• "Product Tracing in Food Systems: Developing a Product Tracing Plan Using Critical Tracking Events and Key Data Elements."

CASE STUDY: Unified Foodservice Purchasing Co-op

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