GS1 US

The Global Language of Business


Case Study

# IPC/Subway

## Delivering the Promise of End-to-End Traceability Throughout the Subway System

### Challenge

Independent Purchasing Cooperative (IPC), a Subway® Franchisee-owned company, is responsible for the supply chain processes for the more than 43,000 Subway restaurants globally. IPC needed a system to enable full supply chain visibility to optimize its operations. The Cooperative was focused on ensuring food safety for Subway guests and finding business efficiencies that end-to-end traceability would bring. To achieve this challenging initiative, IPC developed a strategy for getting all of its suppliers and distributors on board.

### Solution

IPC has been collaborating with its supply chain partners to continuously build a foundation of GS1 Standards for quality data to meet the information transparency needs of its restaurants and consumers alike.

Today, suppliers and distributors use GS1 Standards to uniquely identify their products and locations as well as exchange product information through the Global Data Synchronization Network™ (GDSN®).

Subway Franchise Owners use a specialized app to capture and use product data at restaurants for the benefit of their operations and customers.

### Benefits

IPC has been able to quantify $1.3 million in annual cost avoidance by maximizing truckload capacity based on accurate product data enabled by GS1 Standards. In addition, standardized product data drives operational efficiencies, reduces supply chain costs, and saves time and labor.


By using quality product data, Subway restaurants can improve their inventory management and ensure enhanced food safety practices with faster and more precise responses to product recalls and withdrawals.

With its business processes built on the foundation of GS1 Standards, IPC and independently owned Subway restaurants are looking to further differentiate and enhance consumers' experiences with customized offers and other innovative approaches to supply chain management.

## Quality Product Data: The First Goal

In 2013, IPC launched an initiative to improve the quality of its product data with the ultimate goal of achieving end-to-end visibility across its supply chain—from supplier sites, through distribution centers, and to Subway restaurants' consumer plates.

IPC had found that inconsistencies in product information was disrupting its supply chain, resulting in significant cost and food safety implications. Inaccurate weight and dimension data meant inaccurate freight calculations, leading to overcharges, delays, and waste.

"We realized early on that we were never going to achieve end-to-end traceability and optimize our supply chain efficiencies if we didn't use quality data," says Lucelena Angarita, director of Supply Chain Systems and Standards at IPC. "So taking the time to lay this foundation was critical."

The first hurdle to overcome was getting its suppliers and distributors to uniquely identify each of their products. IPC chose GS1 Standards for this purpose, using Global Trade Item Numbers (GTINs) for product identification. IPC was then able to use the GS1 Global Data Synchronization Network to share this product data—GTINs along with the products' attributes.

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>
> **Lucelena Angarita**
> Director of Supply Chain Systems and Standards, IPC

"We engaged with our suppliers to help them truly understand the value of using GS1 Standards for product identification and sharing. We understood that everyone could gain tremendous efficiencies and food safety improvements," says Angarita. "We worked (and continue to work) with them step-by-step to make the transition to standards-based product identification and product data sharing."

Today, an impressive 99 percent of IPC suppliers have implemented this guidance, leveraging the global standards. The accuracy of GTINs as reported by distributors has grown to 93 percent of all products. And all suppliers and distributors are consistently using the GDSN as the "one source of truth" when it comes to all product data, required by the IPC system.

To highlight suppliers' progress, IPC publishes a scorecard that shows each supplier's results based on two main metrics: data completeness and accuracy.

Completeness is measured based on what percentage of the supplier's products are published in the GDSN with complete "supply chain data" (product weights and dimensions) and "marketing data" (images, nutritional, allergens).

| Supply Chain Data | Sales and Marketing Data |
|---|---|
| Linear Dimensions (height, width, depth) | Type of Allergen |
| Gross Weight/Unit of Measure | Daily Value Intake (%) |
| Country of Origin | Type of Diet |
| Ti-Hi | Serving Size |
| Brand Name | Nutrient Basis Quantity |
| Declared Net Content/UoM | Type of Nutrient |
| Pack Quantity | Quantity Contained |
| GTIN | Type of Data on Package |
| | Images |
| | Ingredients |

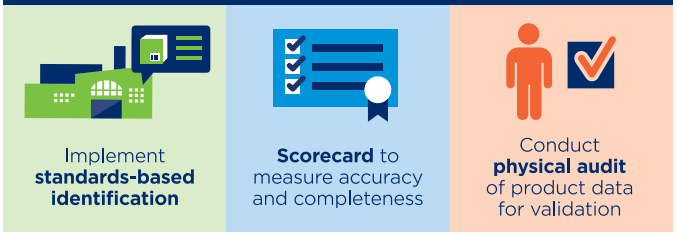
"We ask for core attributes like dimensions and weight that are very critical to the health of our supply chain and distributors," explains Angarita. "They only get a 50 percent completeness rating until the marketing data—for example, allergens, nutritional information and images—are published. That's when they achieve 100 percent."

For accuracy, Subway conducts periodic physical audits as part of its product evaluation process. "Using a Cubiscan, the Subway evaluation team weighs and measures specific product cases and we compare this to the GDSN data published," says Angarita.

IPC notes that setting tangible goals and measuring progress is critical to keep the momentum moving forward to quality data and end-to-end traceability.

"The GS1 US National Data Quality Program has provided us with the needed guidance about what to measure, how to proceed, and many more best practices," explains Angarita.

### Tips to Achieve Accurate and Complete Product Data

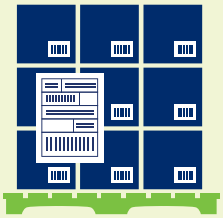



> "We added GS1 Standards because this results in cost savings for our Franchisees. As a sign of that commitment, we require GS1 Standards usage in our supplier and distributor contracts."
>
> **Dennis Clabby**
> Executive Vice President, IPC

## Supply Chain Traceability & Visibility of the Future

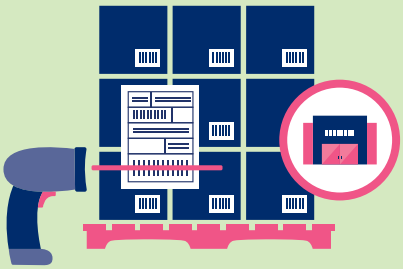

**IPC places an order with a supplier** that provides Subway restaurants with the meatballs for the Meatball Marinara sandwich.


The supplier's plant packs and ships the order of **cases labeled with the meatballs' Global Trade Item Numbers (GTINs) encoded in GS1-128 barcodes.**

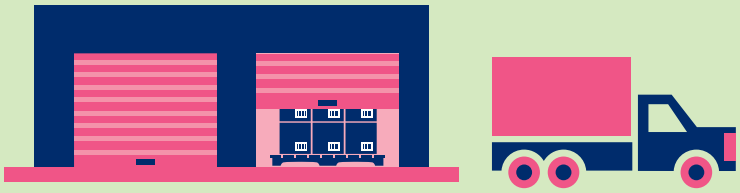


Cases are assembled onto **pallets that can be uniquely identified with Serial Shipping Container Codes (SSCCs)** encoded in GS1-128 barcodes and bound for the distribution center (DC).


An **Advance Ship Notice (ASN)** listing the order's GTINs, quantity, and other useful information, can be **sent to alert the DC of the pending arrival**.



The DC can scan the SSCC (if present on the pallet) to compare the information provided on the ASN. If an SSCC is not present, **DC scans GS1-128 barcodes on cases for inventory and receiving accuracy.**



**The center divides the shipment for delivery** to Subway restaurants that have requested meatballs—**each restaurant identified by a Global Location Number (GLN)**. Each delivery is tied to the original supplier's GTIN, date, and batch/lot information.


As shipments of meatballs arrive in restaurants, **the GS1-128 barcodes can be scanned to manage inventory**, address quality complaints, or identify impacted product in case of a withdrawal.

Throughout this process, all data is captured and stored in IPC's database within the FoodLogiQ Connect platform for reporting and use, in case of a withdrawal and/or recall.

Approximately **99% of products by volume are traceable** with a GTIN and other information encoded in a GS1-128 barcode.

**94% of the Subway suppliers by volume are sending shipment information** (# of cases by GTIN, lot code, and date) to IPC's traceability system.

Product is being scanned at 31% of the Subway system in North America, which is approximately 9,300 restaurants.

IPC's goal is that 50% of its distribution system is **scanning at about 15,000 restaurants by the end of 2019**.

## The Math of Enabling Supply Chain Visibility

**99%** of suppliers are using GS1 Standards

**94%** of suppliers are using ASNs

**99%** of products by volume are traceable

Today **9,300** restaurants → Future **15,000** restaurants

## Harmonizing through Standards

IPC continues to guide new suppliers on how to implement GS1 Standards, engaging their technical teams, labeling staff, and other relevant teams to understand the requirements. A new supplier is usually given 90 days to comply on most requirements, since most are capable of adhering to this timetable.

As part of its program, IPC is also mandating that suppliers and distributors assign a Global Location Number (GLN) to each of their physical locations where products are stored or manufactured.

"We added GS1 Standards because that results in cost savings for our Franchisees," says Dennis Clabby, executive vice president at IPC. "As a sign of that commitment, we require the use of GS1 Standards in our supplier and distributor contracts."

"Quality data practices are now a part of our culture—within the IPC and with suppliers and distributors."

**Lucelena Angarita**
Director of Supply Chain Systems and Standards, IPC

## Part of the Culture

Angarita and her team have a lot of support and help. Executive Vice President Dennis Clabby has made this a top company priority. The purchasing, distribution, and logistics teams have been particularly influential in the company's push toward using GS1 Standards to achieve traceability.

Subway's Food Safety and Quality teams have been strong advocates for standardized data, acknowledging the difficulties and costs associated with recalls without accurate data.

**A Culture of Data Quality**

A team endeavor when everyone speaks the global language of business


"Quality data practices are now a part of our culture—within the IPC and with suppliers and distributors," says Angarita. "We take time to recognize the efforts of our people and partners in instituting the use of standards. Using standards has become a natural way of doing business at IPC and Subway."

## Journey to Traceability

"Our journey has continued with the formation of a traceability program, including a timeline with milestones and targets for our suppliers and distributors," explains Angarita. "This includes the encoding of GTINs, dates, and lots in GS1-128 barcodes for labeling and scanning packages and cases, and using GS1 Serial Shipping Container Codes (SSCCs) for identifying the products contained on pallets. We are also using GS1 Standards in transaction documents like invoices, inventory files, and Advance Ship Notices (ASNs)."

Suppliers generate GS1-128 barcodes that provide a wealth of useful product data for Subway restaurants, including if a product is delivered with a short shelf life or is under a withdrawal or recall. For distributors the added visibility gained with this product data—an essential component of traceability—helps them be more efficient and precise when it comes to tracking and managing inventory.

"Our next big milestone is broader ASN adoption between our trading partners," says Angarita. An ASN provides a method for sharing traceability data, with each notice including the products (GTINs) and batch/lot numbers linked to each pallet's SSCC.


## Technologies Support Traceability

FoodLogiQ, a traceability technology provider and certified GS1 US Solution Partner, helps IPC know where products are by batch/lot number and expiration date, and helps trading partners synchronize supply chain events.

FoodLogiQ data allows IPC to create dashboards and reports that show how many of their suppliers, distributors, and restaurants are scanning deliveries, the percentage of products being scanned and more. Using the dashboards, IPC can identify the gaps across the entire supply chain, enabling transparency in its ever-evolving system.

When using the product data encoded in barcodes, a tech-savvy Franchise Owner, Daniel Riscalla, developed an inventory management application for his California restaurants. IPC has gratefully expanded the app's use to include its entire Subway restaurant ecosystem.

The app scans the GS1-128 barcode to read or capture the encoded product data—the GTIN, batch/lot number, and expiration date—to not only track inventory but monitor compliance with product freshness, as well. The app has made product withdrawals—those based on lot numbers and expiration dates, for instance—much easier and has the potential to reduce waste, and therefore, cost.

It is also integrated with the FoodLogiQ's system, providing even greater visibility for all products scanned with the app. This helps IPC track and visualize the movement of products across its entire supply chain.

## The Bread Stops Here

For IPC and its restaurants, a bread recall demonstrated the power of end-to-end traceability in food safety. IPC was alerted that nine cases of bread with a high risk of contamination, had been shipped to restaurants. Rather than having to call and even visit 733 restaurants served by the distribution center—the procedure prior to the implementation of data standards—the distributor found four of the cases right away. This speedy response was because the distributor had started rolling out the traceability system, and had started to scan GS1-128 barcodes. This enabled IPC to do some quick investigating to find the other cases that were in close proximity.

"Within two hours, we found all nine cases. We didn't have to send product retrieval services out to 733 restaurants, which saved us about $61,000," Angarita says. "And that doesn't count the cost of labor: everybody in the office, at the DC, and in the restaurants that have to look for these products. In the restaurants alone, we estimate an incident like this results in 183 wasted hours of labor, at a cost of $2,196.

To put this in perspective, 64,794 restaurants were contacted during 11 quality incidents in 2017. About 42 percent or 27,757 restaurants had the affected products. IPC estimates that 9,259 hours of labor could be saved annually at restaurants by using traceability for precise communication to only those restaurants that are affected, translating to potential savings of more than $110,000.

Other traceability benefits are incalculable: "At the end of the day, it's the risk avoidance and safety of our consumers that we care about most," Angarita says.

**64,794** restaurants were contacted during **11** quality incidents

**Traceability enables annual potential savings**

**9,259 hours** of labor

more than **$110K**

## Nourishing Benefits

In 2013, IPC's first Six-Sigma study led by Marie Sellas, IPC's director of Supply Chain Analytics, showed that correcting a one-and-a-half-pound weight differential on a simple jar of mayonnaise equated to a $100,000 annual return-on-investment for the company. This helped demonstrate the real impact of inaccurate data on IPC's bottom line, and ultimately, Subway Franchisees.

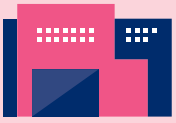
Today, the full impact of using quality data and the GDSN has been assessed at $1.3 million in annual in cost avoidance.

The traceability systems powered by GS1 Standards, and the communications conduit of the GDSN, afford benefits to each supply chain participant from "farm-to-fork," in addition to monetary savings from costly recall and retrieval operations.

Suppliers encode products once to supply hundreds of customers efficiently. Distributors have greater inventory control and avoid waste. Subway restaurants get alerts if they receive products outside of *Subway Gold Standards'* shelf life or can track expired products more readily, and consumers have greater assurance of food safety and quality.

### Benefits of Traceability

**Suppliers/Manufacturers**
- Achieve scalability and efficiency by encoding products once for all customers
- Protect brand reputation



**Distributors**
- Gain greater inventory control
- Avoid waste

**Operators**
- Receive products with longer shelf lives
- Track expired products more readily
- Assure greater food safety for consumers

"Blockchain and other technologies don't change the fact that you need GS1 Standards. As trading partners, we still need to have and use one language."

**Lucelena Angarita**
Director of Supply Chain Systems and Standards, IPC

## The Subway Map

The Subway journey to end-to-end traceability has not been without its challenges, but Angarita offers a map of lessons learned to achieve success. For many stakeholders in the foodservice industry, it may start as it did with IPC—with launching a data quality initiative—and getting expert help and advice from GS1 US and other foodservice professionals.

1. **Just get started.** Don't wait until you have 100 percent perfect barcodes.
2. **Don't try to reinvent the wheel** or come up with your own requirements. Tap into talent at GS1 US and use their data quality guidance documents.
3. **We're here to implement supply chain visibility** as an industry. Take advantage of industry collaboration opportunities to learn and share best practices.
4. **What gets measured, gets done.** Outline your requirements and expectations for trading partners. Regular communications among all players is also important.
5. **Celebrate small wins.** Show progress. Let people see that "Hey, all this effort, it's becoming a reality."

### Ahead on the Track

Just as IPC is always looking for inventive and appealing products for its restaurants, it explores new technologies on the horizon, such as blockchain.

"Blockchain and other technologies don't change the fact that you need GS1 Standards. As trading partners, we still need to have and use one language," says Angarita.

And more immediate goals beckon. Rick Buttner, IPC's senior director of Supply Chain Operations, concludes, "We envision not only end-to-end traceability, but also whole supply chain transparency. The ability to easily share ingredient, nutritional and allergen information as well as images is invaluable for the brand."

### Learn more

Visit **www.gs1us.org/foodservice**.

**About the Foodservice GS1 US Standards Initiative**
The Foodservice GS1 US Standards Initiative represents a broad cross section of industry trading partners. Today, 132 manufacturers, distributors, brokers, operators, industry associations, government agencies, logistics, and technology providers are participating members in initiative activities focused on improving transparency, operational efficiencies, traceability, and food safety with GS1 Standards. www.gs1us.org/foodservice/initiative

**GS1 US National Data Quality Program**
The GS1 US National Data Quality Program provides organizations with a comprehensive approach to data quality. It includes support with validating the data governance process, confirming that proper education and training protocols are in place, and how to conduct regular attribute audits. www.gs1us.org/dataquality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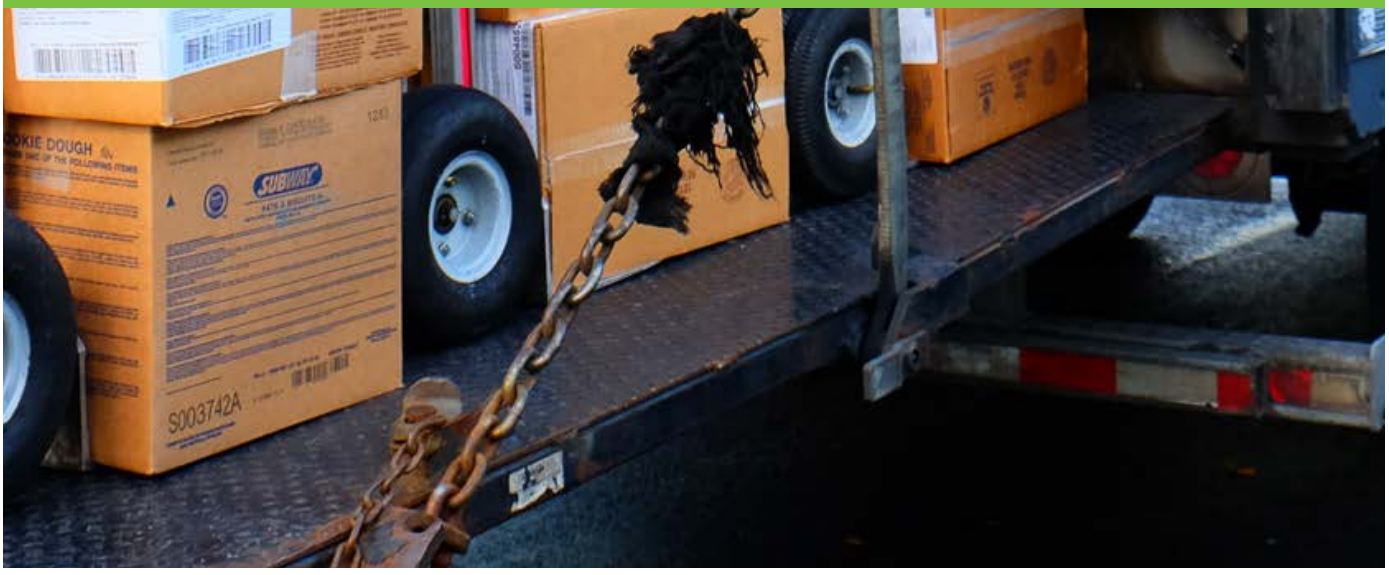
**— RICK BUTTNER**, Senior Director of Supply Chain Operations, IPC



## About the Organizations

### About Subway

Subway offers a fresh alternative to traditional fast food, serving 7 million made-to-order sandwiches a day. Guests choose from over 4.9 billion combinations of quality proteins, fresh vegetables, and bread baked daily in the U.S. The world's largest restaurant chain serves nutritious options and delicious subs, soups, and salads at about 44,000 restaurants in more than 100 countries. The Subway experience is also delivered online at Subway.com, through Subway.com/Delivers, and the Subway® App, available at the Apple App Store and Google Play.

Founded by then 17-year-old Fred DeLuca and family friend Dr. Peter Buck more than 52 years ago, Subway is still a family-owned business, working with more than 21,000 dedicated franchisees in communities around the world.



### About Independent Purchasing Cooperative

IPC is an independent Subway® franchisee-owned and operated purchasing cooperative. The company works with Franchise World Headquarters LLC (FWH) to negotiate the lowest costs for purchased goods and services, while improving quality, enhancing competitiveness and ensuring the best value to Subway® members and their customers. Started by North American Subway® franchisees in September 1996, IPC has experienced international expansion—enjoying a present-day global presence in Europe (IPC Europe), Latin America and the Caribbean (IPC Latin America & Caribbean), Australia & Asia (IPC Asia Pacific), and the Middle East (IPC Middle East & Africa). IPC is a member of the Foodservice GS1 US Standards Initiative. www.ipcoop.com

### About FoodLogiQ

Since 2006, FoodLogiQ has been developing solutions that meet the increasingly complex global food chain issues and vast web of regulations that face all modern food companies. Its mission is to map the world's food chain, make it as safe as possible, and empower people to make informed decisions about the food they eat. FoodLogiQ tracks millions of data points every day and connect thousands of food companies around the world. The company's technology enables supplier management, food safety compliance, quality incident management, recall management, and whole chain traceability – all on a single platform built exclusively for the food industry. www.foodlogiq.com

### About GS1 US

GS1 US®, a member of GS1® global, is a not-for-profit information standards organization that facilitates industry collaboration to help improve supply chain visibility and efficiency through the use of GS1 Standards, the most widely-used supply chain standards system in the world. Nearly 300,000 businesses in 25 industries rely on GS1 US for trading-partner collaboration that optimizes their supply chains, drives cost performance and revenue growth while also enabling regulatory compliance. They achieve these benefits through 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

**GS1 US Corporate Headquarters**
Princeton South Corporate Center, 300 Charles Ewing Boulevard
Ewing, NJ 08628 USA
**T** +609.620.0200 | **E** info@gs1us.org
**www.gs1us.org**

**Connect With Us**



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