Redefining the C-Store Experience with 2D Barcodes

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Agenda

- Housekeeping
- About Conexxus
- Presenters
- Presentation
- Q&A

Housekeeping

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About Conexxus

▸ We are an independent, non-profit, member driven technology organization

▸ We set **standards**...

  ▸ Data exchange

  ▸ Security

  ▸ Mobile commerce

▸ We provide **vision**

  ▸ Identify emerging tech/trends

▸ We **advocate** for our industry

  ▸ Technology is policy

Increase Profitability

Improve Viability

Foster Innovation

Advocate for Industry
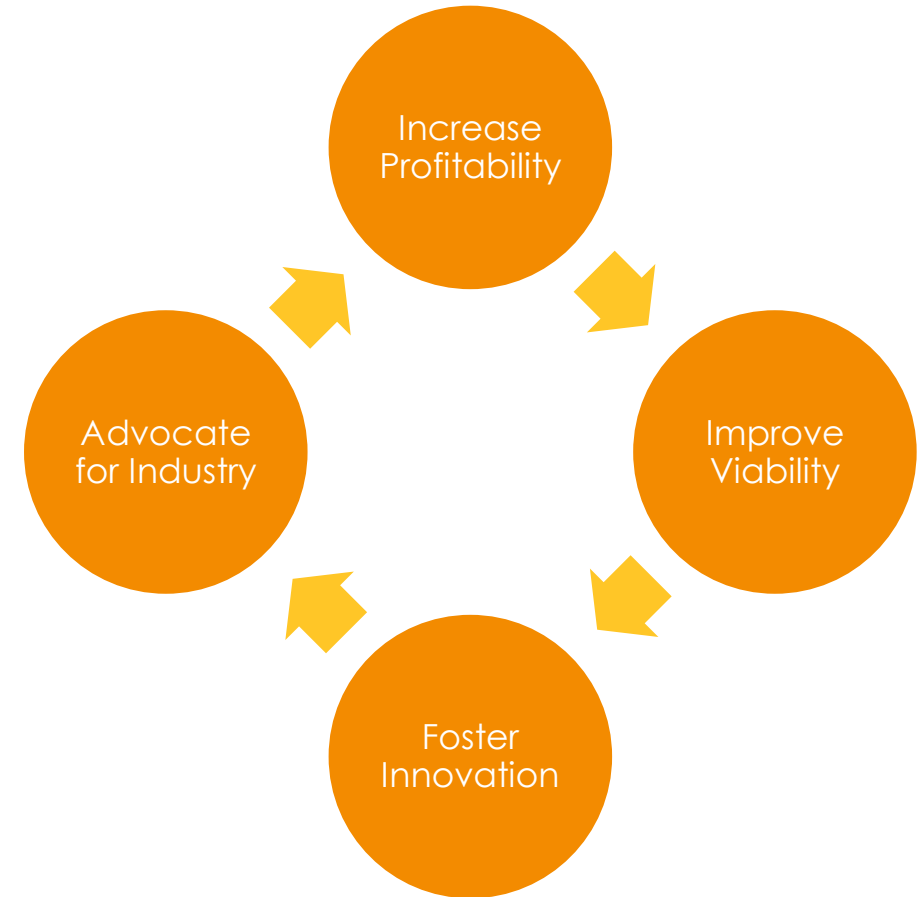
Connect with Conexxus

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Gena Morgan

Vice President, Standards and Technology
GS1 US

Amy Behm

Director of Community Engagement
GS1 US

Who is GS1 US?

One Foundation

GS1 makes it possible for industries and companies of all kinds to move their business forward by adopting GS1 Standards as the **foundation of their business processes.**

More than **10 billion** GS1 barcodes are scanned everyday **1 billion** products carry GS1 barcodes.

GS1 US® serves more than **300,000 businesses** in the United States.

Over **2 million** companies around the world use GS1 Standards

GS1 US serves over **25 industries** including retail grocery, food service, health care, apparel, and general merchandise

More than **40 million** products are registered by brand owners in the GS1 Global Data Synchronization Network™ (GDSN)

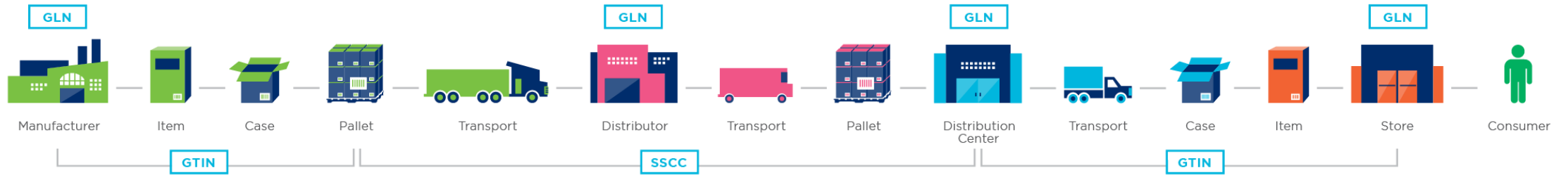Over **45 million** GTINs are in the GS1 US Data Hub Product Tool

GS1 is made up of **116+ member organizations** serving businesses around the world

GS1 Standards: Identify, Capture & Share

Identify: GS1 Identification Numbers

GLN Global Location Number   **GTIN®** Global Trade Item Number®   **SSCC** Serial Shipping Container Code   **EPC®/SGTIN** Serialized Global Trade Item Number

Manufacturer — Item — Case — Pallet — Transport — Distributor — Transport — Pallet — Distribution Center — Transport — Case — Item — Store — Consumer

GTIN   SSCC   GTIN

Capture: GS1 Data Carriers

Barcodes   **EPC-Enabled RFID Tags**   **GS1 Digital Link**

EAN/UPC   GS1 DataBar®   GS1 DataMatrix   ITF-14   GS1-128   HF RFID   UHF RFID   QR Code   Data Matrix
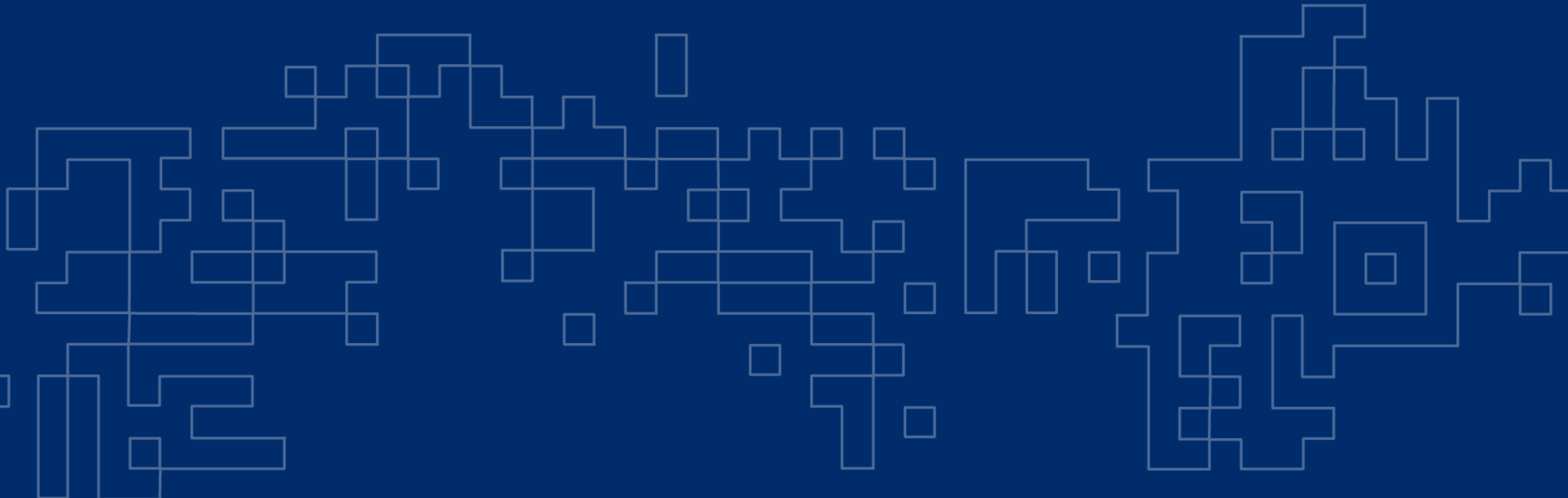
Share: GS1 Data Exchange

Master Data Global Data Synchronization Network™ (GDSN®) and GS1 US Data Hub | Location   **Transactional Data** Electronic Data Interchange (EDI)   **Physical Event Data** EPC Information Services (EPCIS)
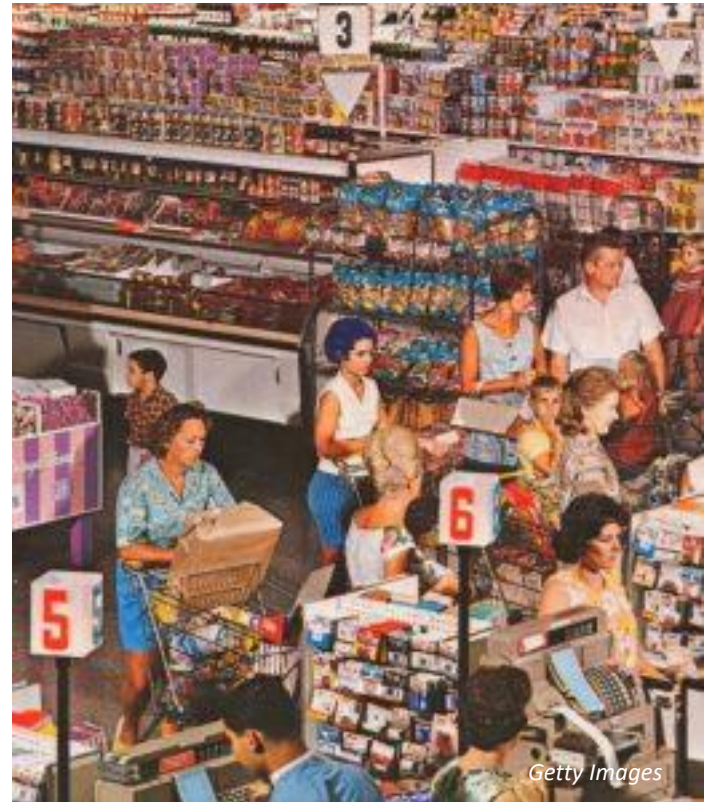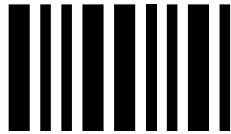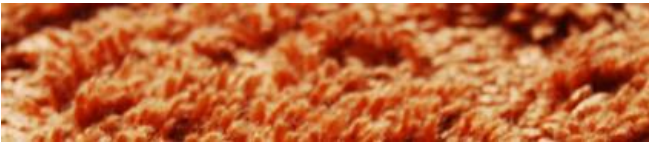
Interoperability

Product Data   Price and Promotion Data   Purchase Order   Planning Schedule   Advance Ship Notice   Invoice   Product Visibility

What is a 2D barcode?

Davis, 2017

1974

$16 Jacket $14 Slacks

Gumball Wiki, 2020)

Getty Images

Timeless Retail Priorities
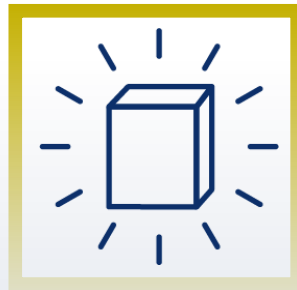
Inventory Management

Sustainability

Traceability

Keeping consumers happy

Safety

Improved Packaging

Whether it is 1974, 2024, or 2074

All retail stakeholders can benefit from getting the right information, to the right place, at the right time.
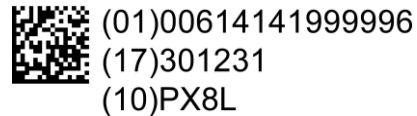
2D Barcodes Deliver Better Access to Information

1D EAN/UPC

CAN CONTAIN:

Primary identifier (GTIN)

2D with GS1 Element String

(01)00614141999996
(17)301231
(10)PX8L

CAN CONTAIN:

Primary identifier (GTIN)
+ attribute data

2D with GS1 Digital Link

(01)00614141999996

CAN CONTAIN:

Primary identifier (GTIN)
+ attribute data
in web-compatible format

A Preview of What 2D Offers

Global Trade Item Number (GTIN): 00614141999996
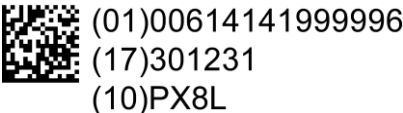Expiration Date: 31 December 2030 = 301231
Batch/Lot Number: PX8L

These barcodes are being used for example purposes. Syntaxes may be used in other barcode types.

(01)00614141999996
(17)301231
(10)PX8L

(01)00614141999996

1D EAN/UPC	GS1 Element String	GS1 Digital Link URI
614141999996	(01)00614141999996 (17)301231 (10)PX8L	https://example.com /01/00614141999996 /10/PX8L ?17=301231

Barcodes, Data, and Beyond

The barcodes hold data for systems to act on.

The standardized GS1 data in the barcode identifies the product.

https://dalgiardino.com/01/**09506000134352**

Where the barcode data takes you can change without changing the barcode.

Bringing 2D Use Cases to Life

Consumer Engagement

Consumer Engagement

Nutritional Information (**57%**), Health & Safety (**55%**), and Ingredient Information (**47%**) are the top reasons for **SmartLabel** usage.

83% of consumers agree that product information that comes directly from the manufacturer is most trusted

83% of consumers are interested in learning more about products they buy, **beyond what is already on the label**.
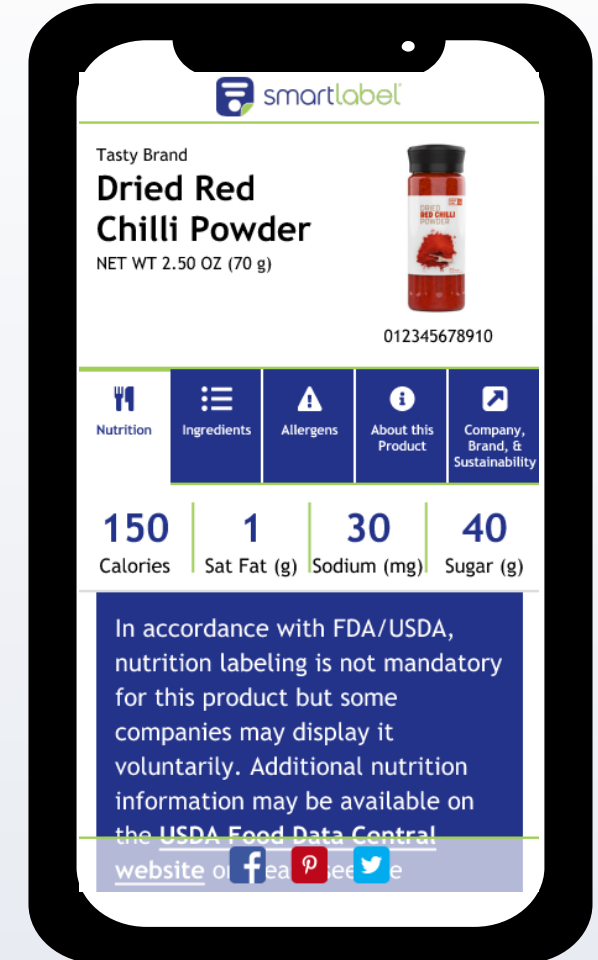
Inventory Management

When it comes to freshness, first in first out does not always cut it.

Dates encoded in barcodes can help.

Inventory Management

More data about products can help with knowing what is available, where it is, and if the product is _the_ product you think it is.

Removing manual entry of that data? All the better.

Safety

Traceability

Need more details about a product's lifecycle?

2D might be a solution for regulators and consumers.

Sustainability

Recycle.

Upcycle.

Reduce packaging.

Raise awareness.

Save the supply chain –
***and the world*.**

Improved Packaging

With demands on packaging piling up, everyone is looking for a way to get things clean and make it easy to find what they want.

The 2D Barcode Options for Retail Products

GS1 DataMatrix with GS1 Element String

Best for those that need **more data** but are not enabling a consumer experience.

QR Code with GS1 Digital Link

Best for those that are enabling a **consumer experience**.

Data Matrix with GS1 Digital Link

Best for those that are enabling a consumer experience **but cannot fit a QR Code on-pack**.

Same GTIN in 1D and 2D Barcodes

Once a GTIN is created for your product, it can be used in the barcode that best suits your needs—even if those needs change over time.

The same GTIN number used to identify your product in a UPC barcode is used in 2D barcodes.

6 14141 99999 6

(01)00614141999996

(01)00614141999996

1D Barcodes Remain Until Systems Ready for 2D

Until systems are updated to scan and process 2D barcodes and the data they contain, 1D barcodes must remain on products.

This means that those looking to leverage 2D barcodes before industry fully enables the capabilities will need to include BOTH a 1D and 2D barcode.

What about 2D Matters Most to Retail Stakeholders?

Consumers

- **>75%** of people believe it's important to have that digital information available at the point of purchase.

- On average, Americans spend **over 4½ hours a day** looking at their phones.

- Consumers want what *they* want.

  - Generation, location, background, income group, eco-consciousness, +

- Depending on the source, 40-55% of millennial and Gen Z shoppers **expect** personalized experiences.

- **Emotionally connected** consumers rate brands higher (71%) than satisfied customers (45%)*

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- Trending with **increased investments** in short-form videos, podcasts, and audio content – or rather, **digital content**.

- 82% of shoppers want a consumer **brand's values to align with their own**.

  - 75% of shoppers say they've **cut ties** with a brand over a conflict in values.

- **Consumer behavior insights** are driving effective campaigns.

- Leveraging **artificial intelligence** throughout the marketing mix will only grow.

- **Cluttered packaging** does not tell a desirable visual story
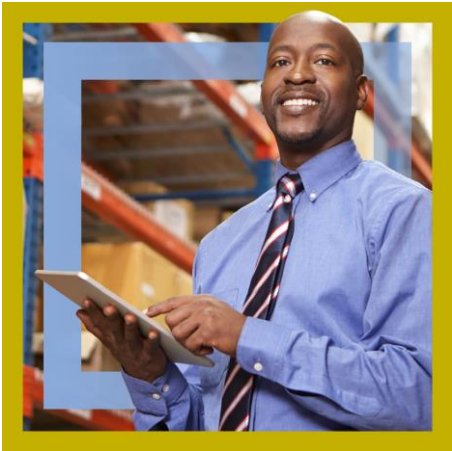
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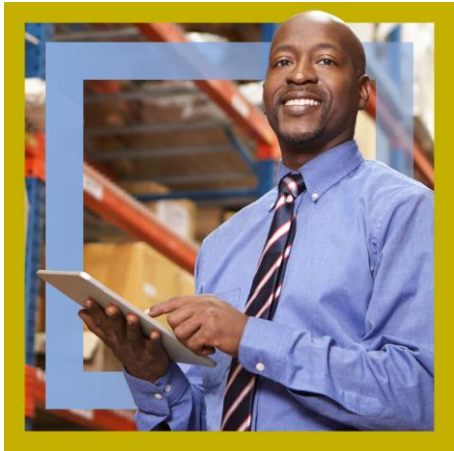- **Cluttered packaging** does not tell a desirable visual story

Supply Chain

- **Packaging is complicated**. Functionality, material sourcing, sustainability initiatives, and costs all have to be balanced.

- Supply chain architecture is a ~~priority~~ **necessity** and companies are looking to make the *right* investments

- Logistics costs, truck availability, and getting things from A to B can feel like **A to AHHHHHHHHHHH**.

- Expanded ability to **track and trace** a product has become a must for many businesses.
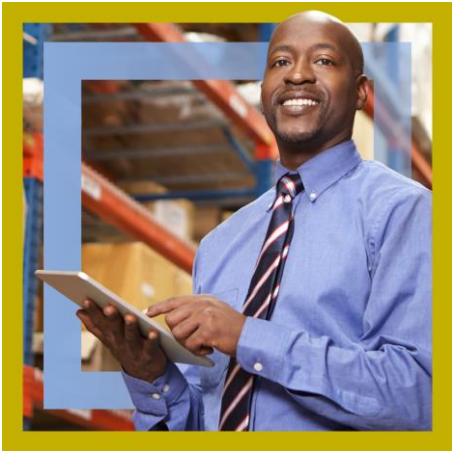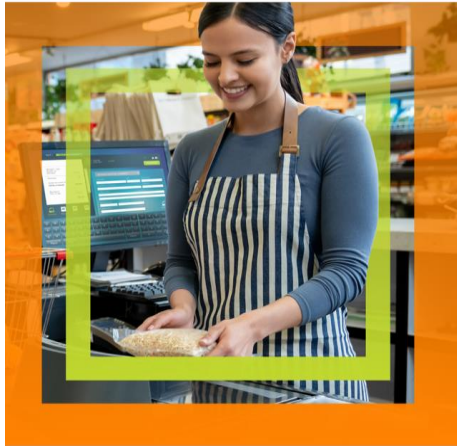
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- Labor shortages, costs, and demands on retailers are all on the rise.
  - **70-80%** of retailers expect that labor shortages will remain an issue.
- **Retail shrinkage** continues to be a problem.
  - A 2023 National Retail Federation Security Survey found that the average shrink rate increased to 1.6%, representing $112.1 billion in losses.
- Inflation, promotions, coupons, and more.
  - Dynamic pricing pros, cons, and headaches.
  - Coupon fraud has plagued the retail industry for years.
    - Serialized coupons utilizing AI (8112) provide protection to retailers and brands.
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Solution Providers

- All the folks discussed so far are looking to you to **bring their *visions* to life**.

  - **2D touches nearly everything…**

- Retrofitting **in-market hardware** for 2D barcodes can require some TLC.

- Creating a successful hand-off between 2D-related solutions can create **new opportunities**.

- Big data, small data, artificial intelligence, business intelligence, consumer insights **– oh my**.

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Key Takeaways and What Comes Next

sunrise2027@gs1us.org

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