Product Data Maze: Finding the Path to Operational Excellence

Presenters:

Liz Sertl

Reid Jackson

Agenda

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

Housekeeping

This webinar is being recorded and will be made available in approximately 7 days.

- YouTube (youtube.com/conexxusonline)
- Website Link (conexxus.org)

Slide Deck
- Survey Link – Presentation provided at end

Participants
- Ask questions via webinar interface
- Please, no vendor specific questions
- Our webinars may be used toward PCI continuing education credits. Please contact arussell@conexxus.org for questions regarding a certificate of webinar attendance.

Email: **info@conexxus.org**

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Presenters

Conexxus Host & Moderator

    Allie Russell

    Standards Coordinator

    Conexxus

    arussell@conexxus.org

Speakers

Liz Sertl	Reid Jackson
Sr. Director, Community Engagement	Sr. Director, Corporate Development
GS1 US	GS1 US

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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**

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2020 Conexxus Webinar Schedule

Month/Date	Webinar Title	Speaker	Company
January 23, 2020	How to elevate your business through digital transformation	Dean Marier	Cybera
February 27, 2020	Progress in the "API Sprint"	Gray Taylor David Ezell	Conexxus
March 18, 2020	Data Security Beyond PCI: Securing the Enterprise	Ed Adams Mark Carl Chad Kobayashi Sam Pfanstiel	Security Innovation ControlScan Maverik ControlScan
April 2, 2020	Product Data Maze: Finding the Path to Operational Excellence	Liz Sertl Reid Jackson	GS1 US GS1 US
April 2020	Ransomware protection and how a managed security service provider can help oil & gas retailers from being the next target	Ajith Edakandi	Hughes Network
May 2020	POS Managed Service Program	TBD	Joint MNSP's
June 2020	Penetration Testing	Geoff Vaughan	Security Innovation

Conexxus: Data Security Committee
Meeting Date: January 16, 2020

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2020 Conexxus Webinar Schedule

Month/Date	Webinar Title	Speaker	Company
July 2020	PCI DSS 4.0	Troy Leach	PCI SSC
August 2020	Vulnerability & Patch Management—Retail Operations	TBD	POS Vendors
September 2020	TBD	Scott Cheek	SageNet

Conexxus: Data Security Committee
Meeting Date: January 16, 2020

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Antitrust Caution

GS1 US is committed to complying fully with antitrust laws.

We ask and expect everyone to refrain from discussing prices, margins, discounts, suppliers, the timing of price changes, marketing or product plans, or other competitively sensitive topics.

If anyone has concerns about the propriety of a discussion, please inform a GS1 US® representative as soon as possible.

Please remember to make your own business decisions and that all GS1 Standards are voluntary and not mandatory.

Please review the complete GS1 US antitrust policy at:
www.gs1us.org/gs1-us-antitrust-compliance-policy

How it all started…

The Retail industry needed to solve a problem

Who We Are

GS1 is...

- Neutral and not-for-profit

- User-driven and governed

- Global and local

- Inclusive and collaborative

We bring communities together.

GS1 by the Numbers

1.5 million
companies around the world use GS1 Standards.

More than 6 billion
GS1 barcodes are scanned every day.

25 million
products are assigned U.P.C.s in the GS1 US Data Hub | Product tool.

More than 30 million
products are registered by brand owners in the GS1 Global Data Synchronization Network™ (GDSN®).

What We Do

We are in the business of progress.

GS1 brings industry leaders together to revolutionize the way they do business:

- Envision the future

- Solve an industry problem

- Engage their communities

- Exemplify best practices

Global Reach

110+

Member Organizations
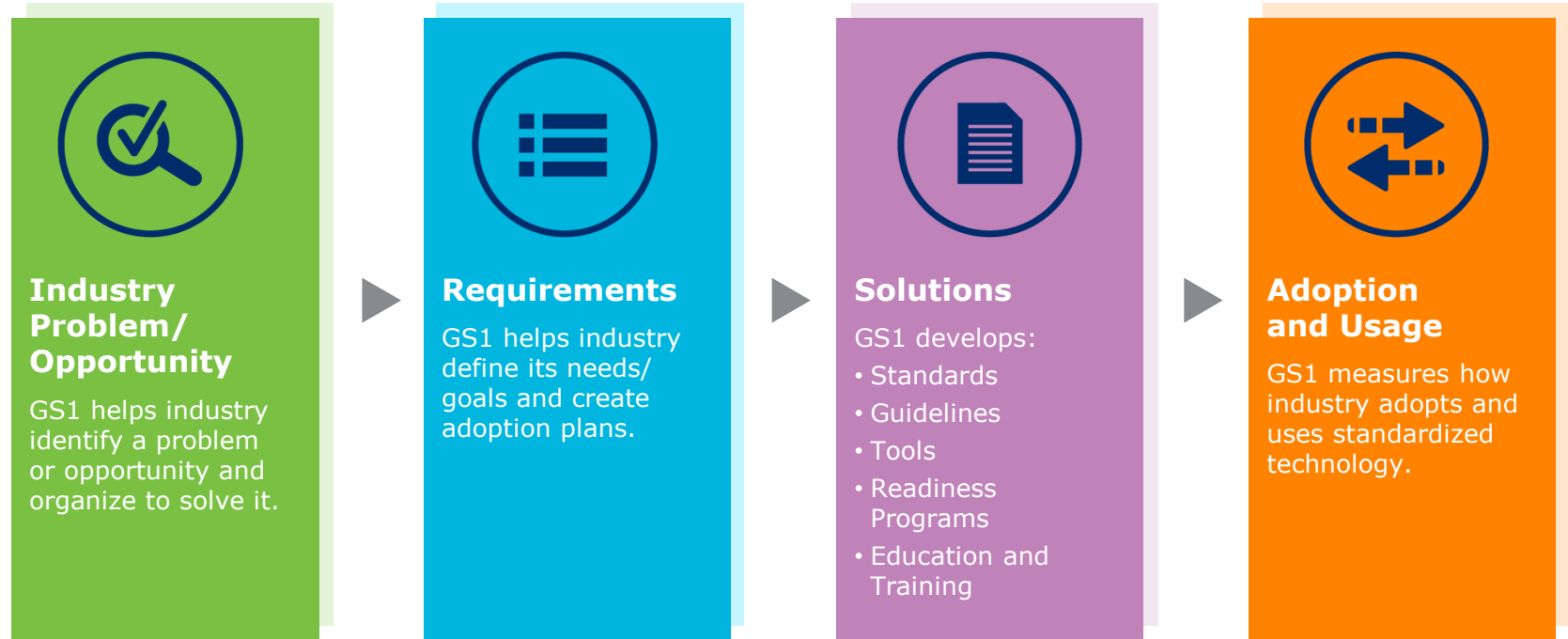Serving Business
Around the World

About GS1 US

GS1 US® serves more than 300,000 businesses across 25 industries in the United States.

- Leading industry initiatives in Apparel and General Merchandise, **Foodservice**, Healthcare, and **Retail Grocery**
- Administrating the GS1 System of Standards
- Providing support services, tools, education, and training
- Connecting communities through events and online forums

GS1 US is the pioneer of the Universal Product Code (U.P.C.) and the Electronic Product Code (EPC®).

Solving Industry Needs

Industry Problem/ Opportunity

GS1 helps industry identify a problem or opportunity and organize to solve it.

Requirements

GS1 helps industry define its needs/ goals and create adoption plans.

Solutions

GS1 develops:
- Standards
- Guidelines
- Tools
- Readiness Programs
- Education and Training

Adoption and Usage

GS1 measures how industry adopts and uses standardized technology.

Consumers Want to Know…

Do they use eco-friendly chemicals?

Does it contain GMOs?

Can I order online?

Is it grown, harvested, or made in a sustainable manner?

Can I click and collect?

Is it sugar-free?

Is there an image online?

Is it whole grain?

GROCERY STORE

RESTAURANT

Do they have a vegetarian, vegan or gluten free option?

Is it locally sourced?

What is the calorie count?

Search

Search

What ingredients does it contain?

Is it Kosher?

Does it contain allergens?

Do they use organic produce?

Do they have special dietary needs options?

Do they use recyclable produce?

What are the ratings on social media?

Consumers Want to Know...

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Do they use recyclable produce?

What are the ratings on social media?

C- Store

GS1 Standards: The Basics

Identify   GS1 Identification Numbers
Companies, Products, Locations,
Logistics, Assets, and Services

Capture   GS1 Data Carriers
Barcodes and
EPC®-enabled RFID

Share   GS1 Data Exchange
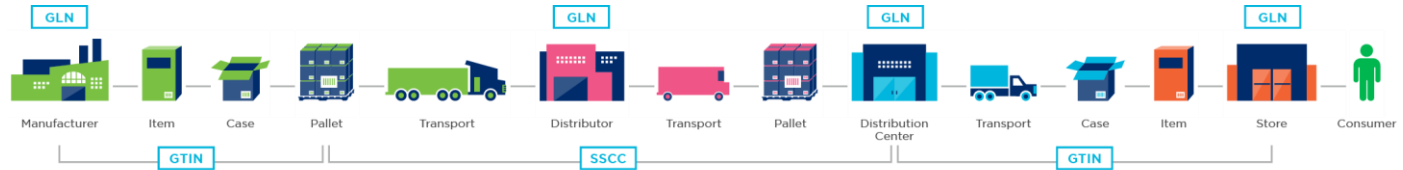Master Data, Transactional Data,
and Physical Event Data

Where It All Starts

GS1 Company Prefix

GS1 Company Prefix

GTIN
GLN
SSCC
EPC
GIAI
GSRN

EAN®/UPC

6 14141 98765 8

Company Prefix
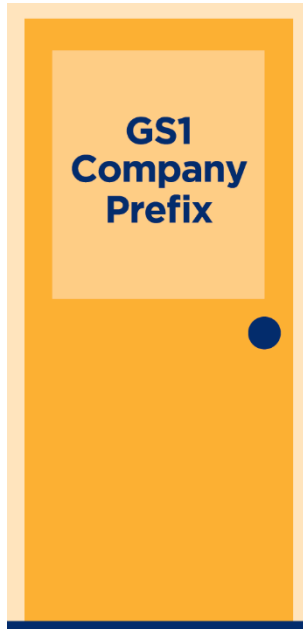
Identify: GS1 Identification Numbers

GS1 Standards begin with **GS1 Identification Numbers** used to uniquely distinguish all products (trade items), logistics units, locations, assets, and relationships across the supply chain from manufacturer to consumer.

Company	Location	Assets
Global GS1 Company Prefix **GLN** Global Location Number	**GLN** Global Location Number	**GIAI** Global Individual Asset Identifier **GRAI** Global Returnable Asset Identifier

Product	Logistics	
GTIN® Global Trade Item Number® **EPC®/SGTIN** Serialized Global Trade Item Number	**SSCC** Serial Shipping Container Code **GSIN** Global Shipment Identification Number	

Capture: GS1 Data Carriers

GS1 Data Carriers
are capable of holding varying amounts of data to accommodate different needs such as Batch/Lot information and expiration dates.

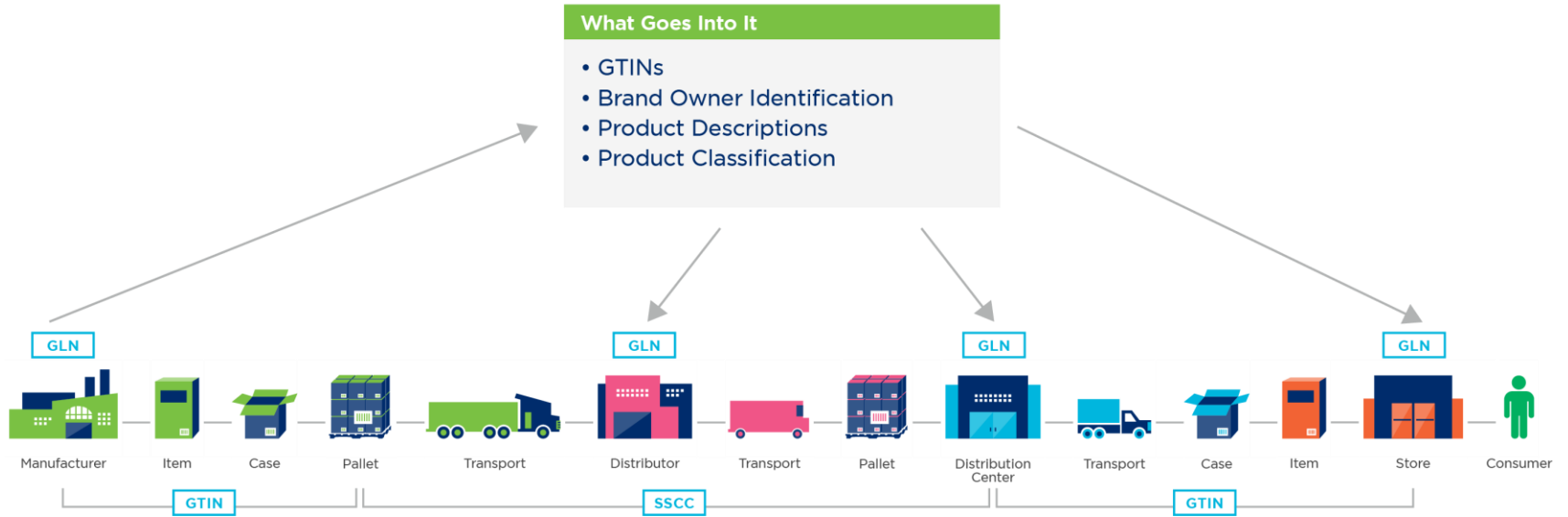| Item	Case	Pallet
EAN®/UPC Carries a Global Trade Item Number® (GTIN®)	**ITF-14** Carries a GTIN	**ITF-14** Carries a GTIN
6 14141 98765 8	2 06 14141 98765 2	5 06 14141 98765 3
Or	**Or**	**Or**
GS1 DataBar® **Stacked Omnidirectional** Carries a GTIN	**GS1-128** Carries a GTIN with extended data such as Batch/Lot Number	**GS1-128** Carries a GTIN or a Serial Shipping Container Code (SSCC)
	(01) 2 06 14141 98765 2 (10) A1B2C3002	(00) 0 0614141 0000098765 8
	Or	**Or**
	EPC®-enabled RFID Carries a Serialized GTIN (SGTIN) or an SSCC	**EPC-enabled RFID** Carries an SGTIN or an SSCC

Share: GS1 Data Exchange

Interoperability, made possible by identification standards, data capture standards, and **data exchange standards**, allows product information to flow through the supply chain.

Product Master Data	Transactional Data	Physical Event Data
GDSN®	**EDI**	**EPCIS**
Global Data Synchronization Network™	Electronic Data Interchange	Electronic Product Code Information Services
The GDSN connects trading partners to the GS1 Global Registry® via GS1-certified data pools, enabling the immediate electronic sharing of standardized, up-to-date, accurate information.	EDI enables the computer-to-computer exchange of structured information between companies using a standardized format.	EPCIS is the standard for sharing information about the movement and status of goods in the physical world.

What Goes Into It

Product Master Data	Transactional Data	Physical Event Data	
• GTINs	• GTIN®	• What	GTIN
• Brand Owner Identification	• GLN	• Where	GLN
• Product Descriptions	• SSCC	• When	Date and Time Stamp
• Product Classification		• Why	Business Step and Product Disposition

EDI Document Types

• Purchase Order
• Advance Ship Notice
• Invoice
• Payment

Share: GS1 Data Exchange - GDSN

Product Master Data With GDSN®

What Goes Into It

- GTINs
- Brand Owner Identification
- Product Descriptions
- Product Classification

GLN

GLN

GLN

GLN

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

GTIN

SSCC

GTIN

Share: GS1 Data Exchange - EDI

Transactional Data With EDI

What Goes Into It	EDI Document Types	
• GTIN® • SSCC • GLN	• Purchase Order • Advance Ship Notice	• Invoice • Payment

Purchase Order - 850
ASN - 856
Invoice - 810
Payment - 820

This illustration shows transactional data exchange with EDI between any two parties in the supply chain.

Purchase Order - 850
ASN - 856
Invoice - 810
Payment - 820

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

GTIN — SSCC — GTIN
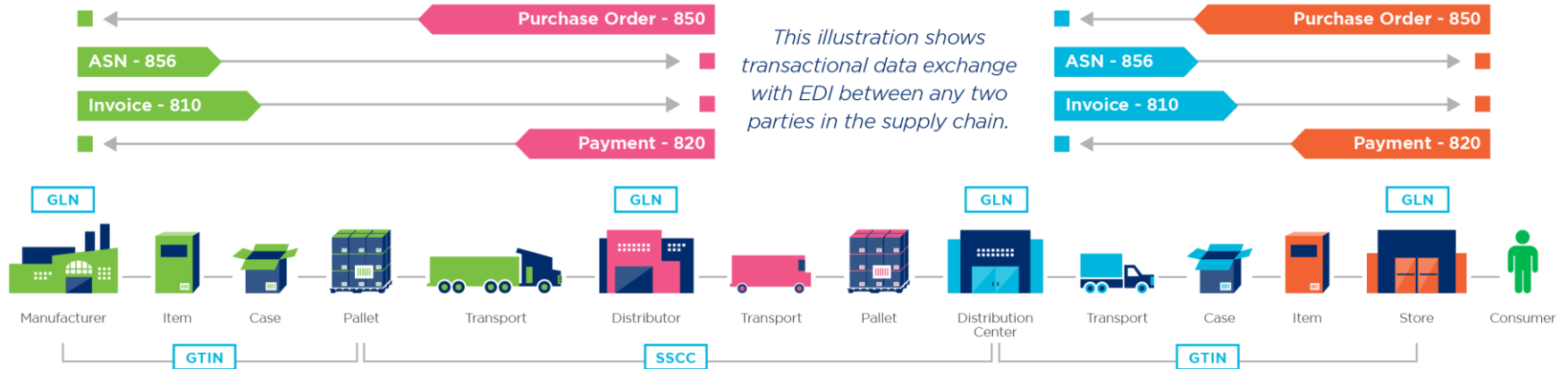
Share: GS1 Data Exchange - EPCIS

Physical Event Data With EPCIS

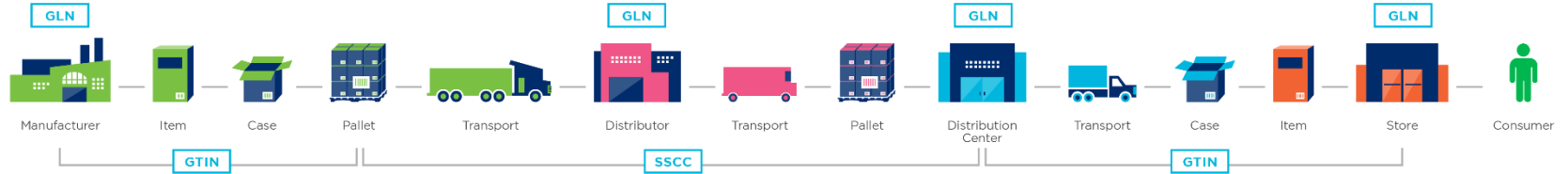| What Goes Into It	
What	**GTIN**® (04000001.000001.2)
Where	**GLN** (04000001.00300.0)
When	**Date and Time Stamp** (2017-10-27 10:00:00)
Why	**Business Step** (receiving) and **Product Disposition** (discarding/destroying product)
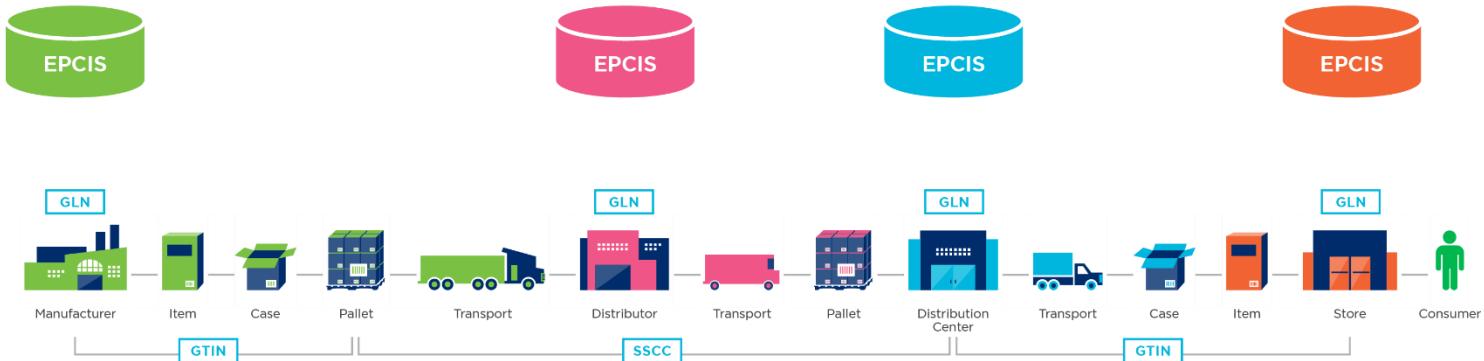
GS1 Standards for Convenience

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

GLN — Manufacturer
GLN — Distributor
GLN — Distribution Center
GLN — Store

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**

EAN®/UPC   GS1 DataBar®   GS1 DataMatrix   ITF-14   GS1-128   HF RFID   UHF RFID

EAN/UPC: 6 14141 98765 8

GS1 DataBar: (01) 0 0614141 98765 8

GS1 DataMatrix:
(01) 00614141987658
(17) 120831
(10) A1B2C3D4E5
(21) 00098522

ITF-14: 2 06 14141 98765 2

GS1-128: (01) 2 06141419 87652 (10) A1B2C3D002

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 Data Quality?

Data Quality is having:

- Consistent
- Complete
- Accurate
- Standards-based
- Time-stamped data

And most importantly the shared responsibility of trading partners.

Measurement of Data Quality

Electronic Data → ← Physical Data

Most recently shared data matches the physical data

GS1 US Data Hub

**GS1 US Data Hub®
combines three powerful
online tools to easily
identify, create, manage,
use, and verify data
through one convenient,
data-sharable platform.**

Learn more: www.gs1us.org/datahub

GS1 US Data Hub | Product
Taking the guesswork out of creating barcodes and managing and sharing product information

GS1 US Data Hub | Location
Driving reliable location identification and information to improve business efficiencies

GS1 US Data Hub | Company
Accessing validated U.P.C. and company information for better business processes

GS1 US Education & Advisory Services

GS1 US offers education and advisory services to help individuals and companies leverage GS1 Standards to improve their business processes.

GS1 US® certificate courses and workshops

Online training courses & live educational webinars

Advisory services & implementation support

Learn more: www.gs1us.org/university at www.gs1us.org/advisoryservices

Emerging Drivers and Trends

GS1 US - Corporate Development Intro

Reid Jackson

Sr. Director, Corporate Development

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GS1 US Corp Dev – What we do

We look at the intersection of emerging technologies, trends, and standards to solve business problems.

GS1 US Corp Dev – What we do (cont.)

- Strategic Focus Areas:
  - Digital Convergence   Digital Identity
  - Emerging Data Carriers   Internet of Things (IOT)
  - Blockchain Interoperability

- A subset of technologies that we are engaged with (but not limited to)
  - Computer Vision   Conversational Commerce (NLP)
  - Artificial Intelligence   Machine Learning
  - Robotic Process Automation (RPA)   AR/VR

GS1 US Corp Dev – What we do (cont.)

8 Proof of Concept projects in 2020

- Emerging Data Carriers
  - DNA, Sound, Smell, Shapes & Colors
  - (Partner Examples Adrich.io and Aanikabio.com)

- Digital Link integrations - https://www.gs1.org/standards/gs1-digital-link

- Autonomous Retail - Unmanned Checkout / Back Office & Warehouse
  - Computer vision and AI solutions
  - Scan and go technologies
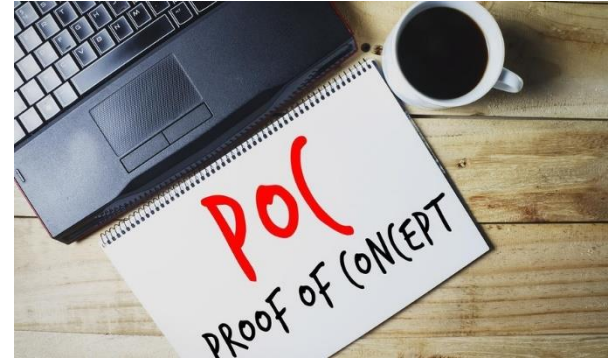
GS1 US Corp Dev – What we do (cont.)

Additional Things we do:

Hackathons – Trace-a-thon

Podcast – Decoded by GS1 US

https://decodedpodbygs1us.simplecast.com/

Think Tank Dinners – 4-6 per year

Startup Lab - $10K first prize

GS1 Standards – Trends we are seeing

These are specific to Retail, Grocery and Convenience Stores.

- Loyalty programs with personalized offerings
- Digital Coupons from CPG providers
- Frictionless checkout
- Digital Signage – Checkout, gas pump, food areas
- Computer Vision
- Last mile Delivery and last 100ft.

C-Stores are well positioned to survive the E-Commerce take over.

Computer Vision

Personalized Service

Theft Detection & Traffic Flow

Automated Delivery

Warehouse Automation

Vision-Based Checkout

Inventory Check

Computer Vision

It's here, it's now and it's futuristic.

Computer Vision – Use Cases

- Frictionless Check out

- Contextual Information – Mobile apps

- In-Store Advertising

- Automated payments

- Shelf & Inventory Management

- Employee Performance

- Compliance

- Theft Prevention & Safety

- Facial Recognition
  - Customer data collection
    - Demographic info
    - Customer loyalty
    - Customer Patterns

Computer Vision Design & Thoughts

- Off the Shelf Solutions

- Custom made solutions

- All require a data set to learn from

    - 50, 100, 300 images

    - We need a new Standard for CV imaging.

    -

- Leverage investments 1:Many

- Research your ROI

- Plan ahead steps 1 though 10 or 100

Question for you

How likely are you to purchase Amazon's Just Walk Out Technology

- A - Very likely
- B – Somewhat likely
- C – Not likely

Contact Information

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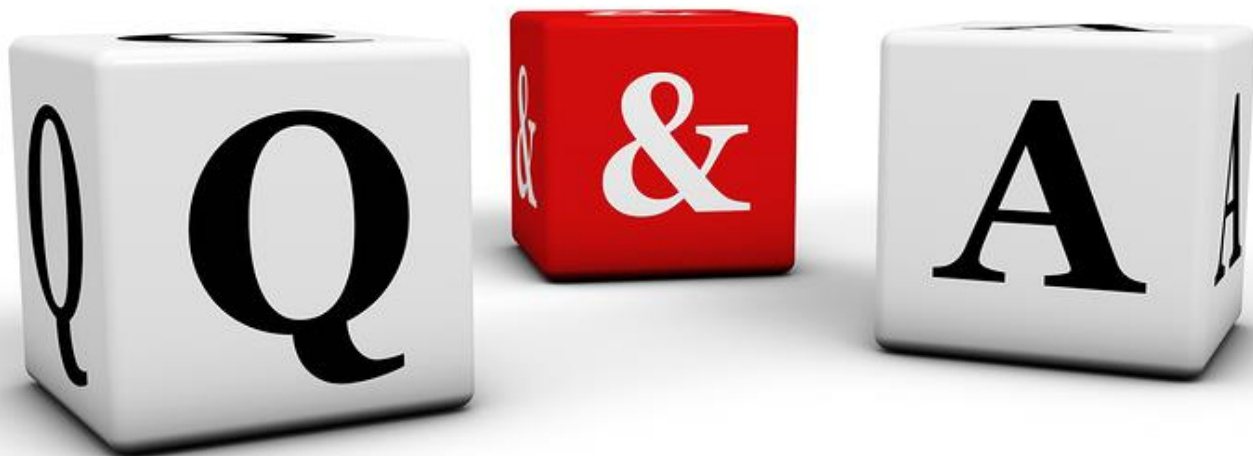Sr. Director, Corporate Development

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Thank you!

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