Innovative Standards and Technologies

Improving the Apparel Supply Chain and leveraging Export Opportunities

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GS1 Macedonia Textile Event, October 25th, 2016
Overview

- Wrap-up GS1 Standards in Apparel
- Consumer driven Innovations at the Point of Sale
- Source tagging on item level with EPC/RFID
  - EPC/RFID – What’s in it for Apparel?
  - How EPC/RFID impacts textile manufacturers!
- Upstream EDI (Electronic Data Interchange)
- Traceability – the next big thing in Apparel
- Best in class – industry examples
- How GS1 can help
- Summary & Questions
GS1 standards are the global language of business—a language for identifying, capturing and sharing information automatically and accurately, so that anyone who receives that information can understand it, no matter who or where they are.
The global language of business

GS1 standards

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
GS1 Standards and the Apparel Supply Chain

The essential Identifiers for Textile Manufacturers

Company & Location
- Global Location Number (GLN)

Product
- Global Trade Item Number (GTIN)
- Serialised Global Trade Item Number (SGTIN)

Logistics & Shipping
- Serial Shipping Container Code (SSCC)
- Global Shipment Identification Number (GSIN)
- Global Identification Number for Consignment (GINC)

Assets
- Global Individual Asset Identifier (GIAI)
- Global Returnable Asset Identifier (GRAI)

Services & More
- Global Service Relation Number (GSRN)
- Global Document Type Identifier (GDTI)
- Global Coupon Number (GCN)
## GS1 Standards and the Apparel Supply Chain

### Important Data carriers used in the Apparel sector

#### GS1 Barcodes

<table>
<thead>
<tr>
<th>GS1 Barcodes</th>
<th>GS1-128</th>
<th>ITF-14</th>
<th>GS1 DataBar</th>
<th>GS1 DataMatrix</th>
<th>GS1 QR Code</th>
<th>GS1 Composite Barcode</th>
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<tr>
<td>EAN/UPC</td>
<td><img src="image1" alt="Barcode" /></td>
<td><img src="image2" alt="Barcode" /></td>
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<td><img src="image5" alt="Barcode" /></td>
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<td><img src="image11" alt="Barcode" /></td>
<td><img src="image12" alt="Barcode" /></td>
</tr>
</tbody>
</table>

#### GS1 EPC/RFID

- EPC HF Gen 2
- EPC UHF Gen 2
But what about communication?
It is important to speak one language

GS1 Communication standard EDI/EANCOM

- Accurate
- Efficient
- Fast
- Transparent

Low hanging fruits:
- ORDERS for purchase orders
- DESADV for shipments
- INVOIC for invoices

Transactional Data

eCom
Electronic Communication

GS1 eCom standards provide clear guidelines for Electronic Data Interchange (EDI), enabling electronic sharing of accurate business transaction information between trading partners.

What Goes Into It

- GTIN, GLN, SSCC, GSIN, GINC, GDTI, GRAI, GIAI
- Purchase Order
- Despatch Advice
- Transport Instruction
- Invoice
- Payment
Consumer driven Innovations at the Point of Sale

What’s hot and what’s not!
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Retail from a consumer perspective: standards make it possible

Single-Channel

Multi-Channel

Omni-Channel

Providing a **seamless consumer experience** across **physical** and **digital** channels

The Global Language of Business
Fast fashion!
Tablets to support Sales @ Nordstrom
Interactive screens @ Uniqlo
Click&Collect @ C&A
Availability check @ ESPRIT

Article im Store in meiner Nähe verfügbar?

PLZ suchen: Stadt wählen: Store wählen (optional):

Wir haben 47 ESPRIT Stores für Sie gefunden:

Esprit Fliegerstr. 34 40213 Düsseldorf Telefon: +49 211 828 93 10 Fax: +49 211 828 931 10

Esprit Concept Store Schadowstr. 17-21 Schadow Arcaden 40212 Düsseldorf Telefon: 0211 - 158 79 70 Fax: 0211 - 158 797 10
Digital shelf @ German retailer
POS Innovations impact Supply Chain

The speed and dynamics with which retail is changing and consumers adopting new technologies is enormous!

- **Product information** → consumers adopt new ways to collect product information before purchase
- **Stock Availability** → right product at the right shelf at the right time, 24/7 online
- **New collaboration models** → Digital shelf and “longtail”
- **Fashion Trends** → retailers need to create new looks every month
- **Decreasing profit margins** → efficiencies along the supply chain
- **Omni-channel** → Consumers shop across channels
Source tagging on Item Level with EPC/RFID

What’s in it for Apparel?
How does EPC/RFID impact manufacturers?
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Supporting a true end-to-end apparel supply chain

The Source-to-Store Concept

1. FABRIC MANUFACTURER
2. GARMENT MANUFACTURER
3. TRANSPORTATION & LOGISTICS
4. SUPPLIER DISTRIBUTION
5. RETAIL DISTRIBUTION
6. RETAIL STORE
What is RFID?

Radio Frequency  Wireless Communication

Identification  Object (GTIN + Serial number)
RFID in every day life

- Transport Pass
- Libraries
- Sportsevents
- Tickets
- Car keys
RFID in every day life
... and in a number of industries

- Logistics
- Pharmacy
- Automobile
- Textile
- Retail
RFID tag construction

- Paper face sticker
- RFID inlay – includes antenna and a chip
- Backing material
Advantages of RFID

• **Read range of up to a few metres**
• **No need of visible line of sight**
• Resistant to dirt and stains
• RFID Tags can easily be read on the move ...and in quantity (up to 200/sec)
• Every item / piece of garment can be identified individually with a serial number
What’s in it for Apparel?

- **Customer Experience**: Faster check-out, smart mirrors/shelves
- **Trend Forecasting**: Speed-to-Market
- **Distribution Visibility**: Collaborative planning down/upstream
- **EAS (Electronic Article Surveillance)**: Shrinkage reduction (internal & external) by 50%
- **Shelf Availability**: Reduction of NOSBOS (Not On Shelf But On Stock)
- **Stock Monitoring**: Optimisation order process
- **Stock Take, Cycle Count**: Speed and frequency - time-saving of 80.9% e.g. 12,000 (RFID) vs 200 (barcode) items per hour
- **Inventory Management**: Inventory accuracy (up from 60% to 99%)
## Item-level tagging starting point...

<table>
<thead>
<tr>
<th>Process</th>
<th>Manufacturing</th>
<th>Logistics</th>
<th>Store</th>
<th>Time Saving</th>
</tr>
</thead>
<tbody>
<tr>
<td>Goods In &amp; Out Quantity Check</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>up to 100%</td>
</tr>
<tr>
<td>Applying EAS hard-tag</td>
<td></td>
<td></td>
<td></td>
<td>100 %</td>
</tr>
<tr>
<td>Picking control</td>
<td>x</td>
<td>x</td>
<td></td>
<td>up to 100%</td>
</tr>
<tr>
<td>Stock Take, Cycle Count</td>
<td></td>
<td></td>
<td></td>
<td>80-95%</td>
</tr>
<tr>
<td>In-store Replenishment</td>
<td></td>
<td></td>
<td>x</td>
<td>50%</td>
</tr>
<tr>
<td>Cutting out-of-stocks (OOS)</td>
<td></td>
<td></td>
<td></td>
<td>50%</td>
</tr>
<tr>
<td>Product Location</td>
<td></td>
<td></td>
<td></td>
<td>20%</td>
</tr>
<tr>
<td>Check-Out process</td>
<td></td>
<td></td>
<td></td>
<td>60%</td>
</tr>
<tr>
<td>Sales uplift</td>
<td></td>
<td></td>
<td></td>
<td>2-20%</td>
</tr>
</tbody>
</table>

Source: University of Arkansas
...leading to key business benefits

- **For retailers** — Inventory accuracy and productivity, sales lift, streamlined returns, reduce NOSBOS
- **For consumers** — In-stock availability, authentic product assurance
- **For manufacturers** — Inventory tracking/accuracy, efficiency, lower return costs, better information flow

For all: **Right product in the right place at the right time**
The RFID-enabled supply chain

1. RFID tags and labels delivered from Ticket Center or in-plant solution
2. Tag garments at the trim production stage (same as today)
3. Packing plans verified via RFID carton scans
4. RFID outbound Validation scan
5. Inbound RFID receiving & validation
6. Retag via VAS
7. RFID outbound Validation scan
Upstream EDI and EPCIS

Sharing data the GS1 way!
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What part of the Supply Chain is Upstream?
GS1 standards provide the structure to automate data communication between trading partners.

**TRANSACTIONAL DATA**

**EDI**
Electronic Data Interchange

EDI enables the computer-to-computer exchange of business documents between companies using a standardized format.

**MASTER DATA**

**GDSN**
Global Data Synchronization Network

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.

**PHYSICAL EVENT DATA**

**EPCIS**
Electronic Product Code Information Services

EPCIS is the standard for sharing information about the movement and status of goods in the physical world.
EANCOM® implementation

- EANCOM® has been implemented in 43 countries
- The most widely implemented EANCOM® messages:
  - ORDERS (Order)
  - INVOIC (Invoice)
  - DESADV (Despatch Advice)
  - ORDRSP (Order Response)
  - PRICAT (Price/Sales Catalogue)
  - INVRPT (Inventory Report)
  - RECADV (Receiving Advice)
How to order via EDI?

Why?

• An ORDERS transfers details of the products ordered (i.e. quantities etc.)
• It is based on the agreed terms
• Can be generated automatically through the customer’s ERP system
• Can be read and processed automatically through the seller’s ERP system

Time & cost savings, less mistakes; therefore speed to market and efficiencies!
Why send an electronic ASN?

**Why?**

- Electronic equivalent of a delivery note
- As information preceding the delivery of goods itself
- Sharing of details (e.g. Quantities etc.) of goods shipped
- Essential part of a track&trace solution
- Automated matching of order and delivery

**Faster goods inbound reception, improved traceability along the supply chain!**
EPCIS (EPC Information Service): tracking business events

WHAT
Single objects (e.g. SGTIN, SSCC, GRAI...)

WHERE
• Scanning location (e.g. gate, desk)
• Location (e.g. room, shelf)

WHEN
Time stamp of event

WHY
• process (e.g. packaging)
• status (e.g. sold)
Traceability

The next big thing in Apparel
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Traceability from a consumer perspective

Figure 2: Most important information on a label according to consumers surveyed

- **Size**: Important or very important 90%
- **Care**: Important or very important 80%
- **Allergens**: Somewhat important 70%
- **Name of manufacturer**: Somewhat important 60%
- **Flammability**: Not important 50%
- **Environmental**: Somewhat important 40%
- **Country of origin**: Not important 30%
- **Social**: Important or very important 20%
Rapid Alert System for dangerous non-food products

Rapid Alert System for dangerous products – keeping consumers safe
GS1 Standards enable global tracking & tracing solutions

GLN for locations
SGTIN for single items
SSCC for deliveries

EDI for business documents
EPCIS for physical events
How GS1 can help

Your local GS1 Member Organisation is part of a truly global community!
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110+ Member Organisations
Serving Business Around the World
Solving industry needs

Industry Problem/Opportunity

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

Requirements

GS1 helps industry and government define their needs/goals and create adoption plans

Solutions

GS1 develops:
- Standards
- Guidelines
- Tools
- Deployment support
- Education & training

Adoption & Usage

GS1 measures how industry adopts and uses standardised technology
How GS1 helps

GS1 provides Standards that are accepted globally

GS1 offers trainings and educates users in their local language

GS1 connects companies around the world

GS1 drives adoption of standards and supports deployment

Grow the Business
Reduce Costs
Leverage Consumer Insights
Manage Risk
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Thank you very much!