The Global Language of Business

GS1 eCom Standard (EDI) and its Benefits

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Mexico, 15 July 2015

Agenda

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#	Topic	Description	Timing
0	Introduction	Welcome Purpose Introductions Practical information Expectations & adjustments of the programme	9.00 – 9.15
1	Intro to eCom	What is eCom and EDI at GS1 Current priorities	9.15 – 10.30
		Coffee break	10.30 – 11.00
2	Order to Cash	The O2C process Benefits Implementation aspects Experiences & use cases	11.00 – 12.20
3	Closing session	Conclusions Q&A	12.20 – 12.30

Objectives

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- A non-technical workshop on a technical matter

- If I am too technical …
- If I am not enough technical …

- Please do not hesitate to ask

GS1: Who are we?

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GS1 is a not-for-profit standards organisation

38 years of experience

112 member organisations representing **all points** in the supply chain

Over a **million** companies doing business across **145** countries

Over **20** represented sectors (FMCG, healthcare, transport, defence…)

Countries with GS1 Member Organisations

Countries served on a direct basis from GS1 Global Office (Brussels)

What is GS1 eCom?

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- GS1 eCom stands for **standards in electronic business messaging**
- GS1 eCom is the GS1 term for Electronic Data Interchange (EDI)

What is electronic business messaging?

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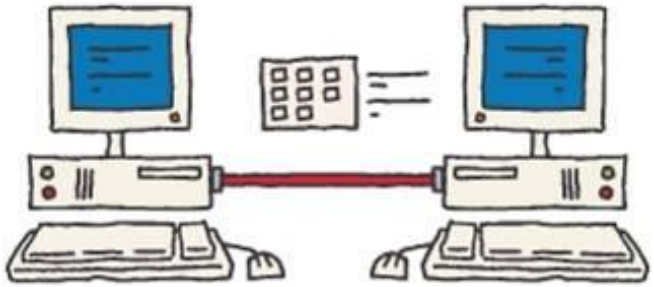

- EDI is an acronym for Electronic Data Interchange, it can be defined as:
- The interchange of structured data according to agreed message standards, by electronic means with minimum human intervention

GS1 standards portfolio

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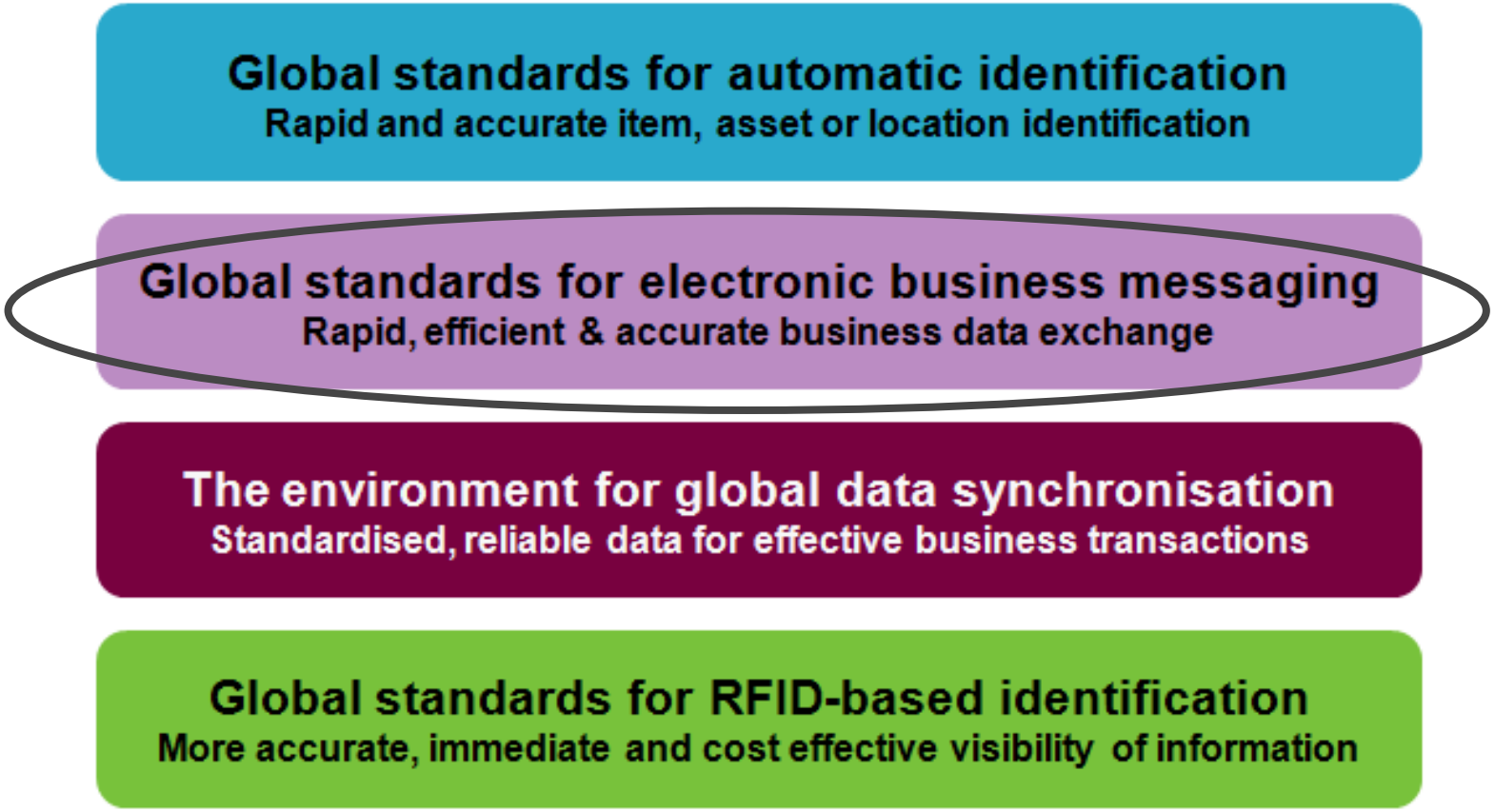
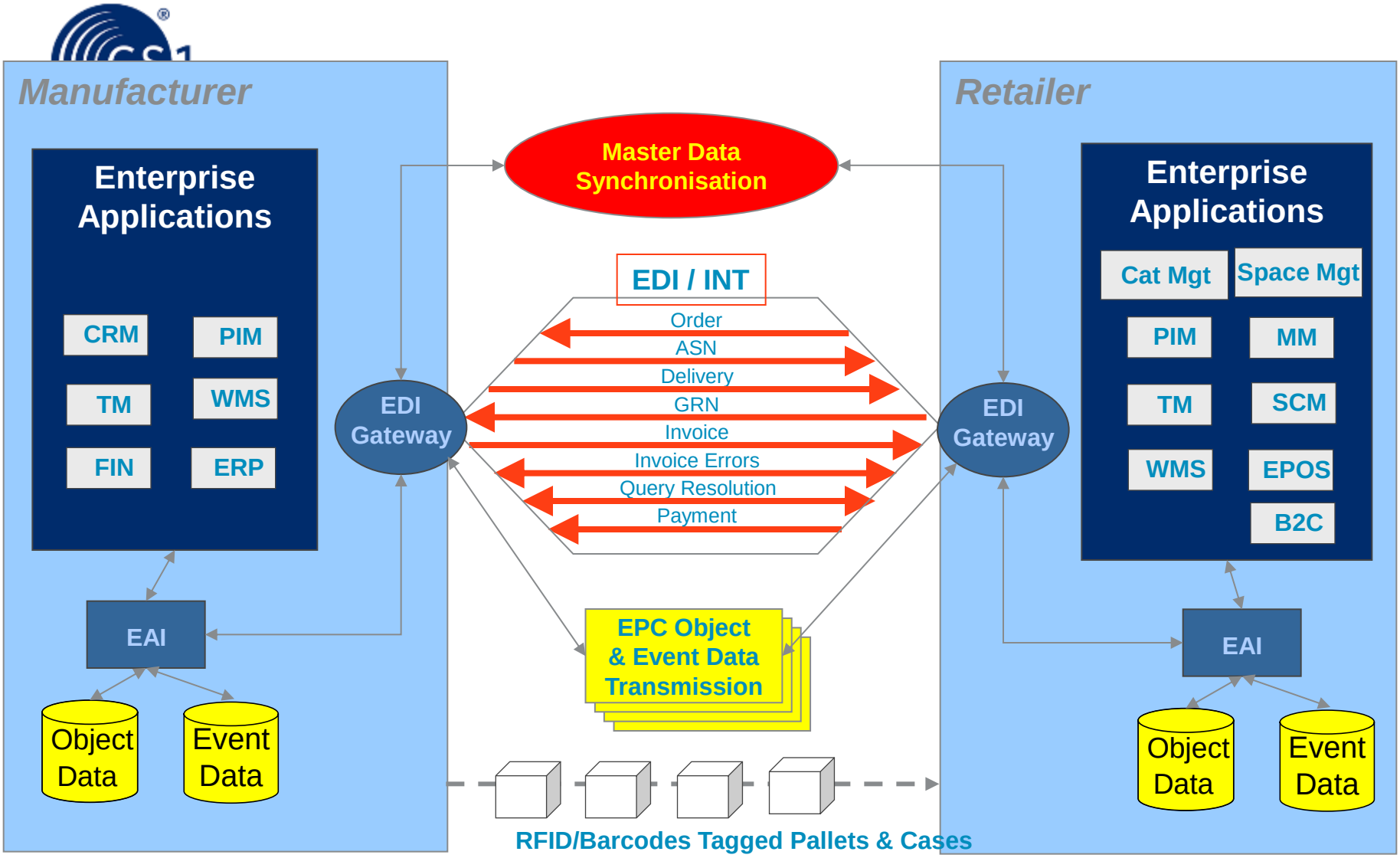
- GS1 has a portfolio of products improving the supply chain



Supply chain visibility according to GS1



The GS1 System

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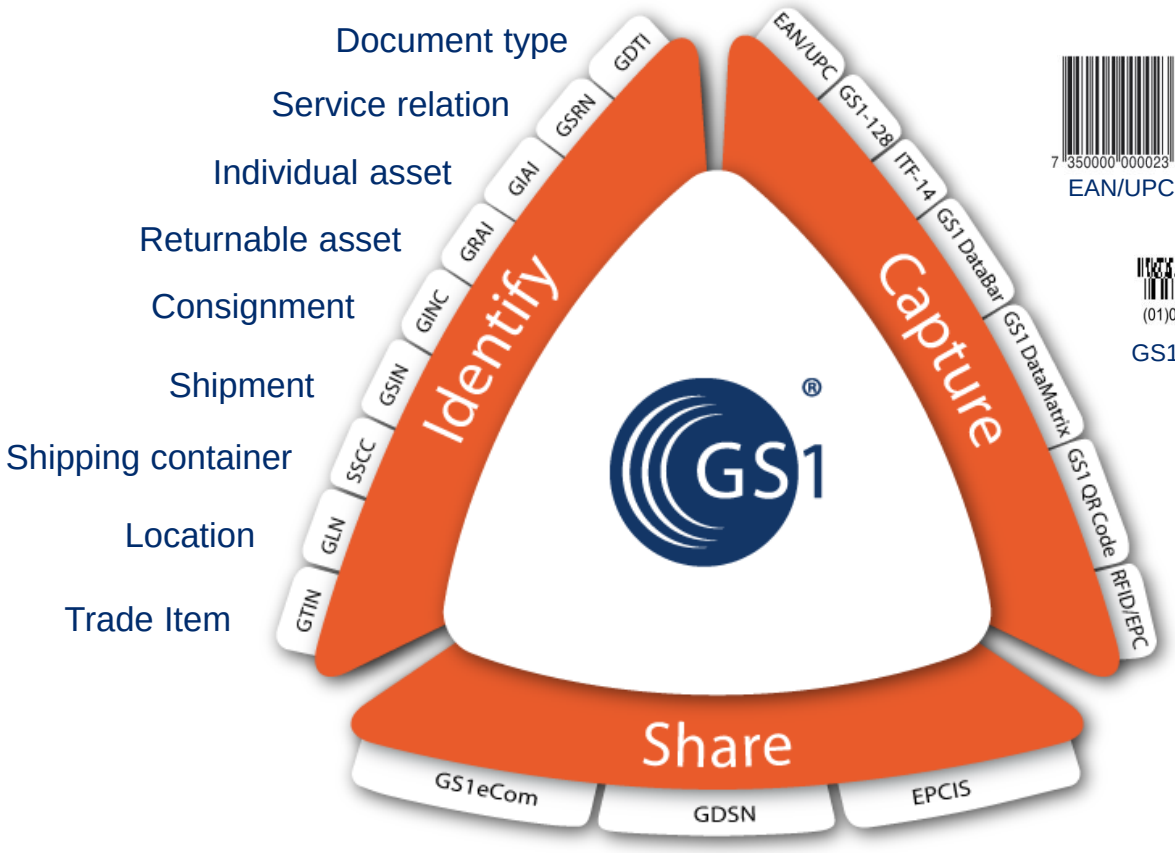

Document type

Service relation

Individual asset

Returnable asset

Consignment

Shipment

Shipping container

Location

Trade Item

EAN/UPC

ITF-14

GS1 DataBar

GS1-128

GS1 DataMatrix

RFID/EPC

GS1 QR Code

Transaction Data

Master Data

Event Data

GS1 eCom standards

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- GS1 has three complementary eCom standards
  - **GS1 EANCOM®**
  - **GS1 XML**
  - **GS1 Profiles of UN/CEFACT XML**

GS1 EANCOM®

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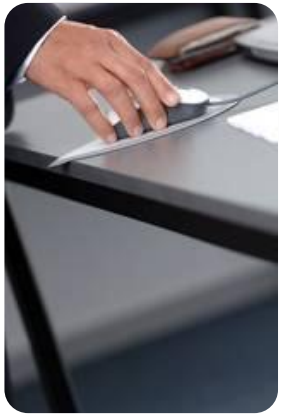
- EANCOM® is a GS1 standard for classic EDI, a simplified subset of UN/EDIFACT
- EANCOM® retains only the message elements relevant for GS1 users
- EANCOM® includes GS1 identification keys, allowing integration of physical goods flow with information sent electronically
- EANCOM® messages are an equivalent of paper business documents
- EANCOM® is used by more than100,000 companies worldwide



GS1 EANCOM® example

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BGM+220+128576+9'	Order number 128576
DTM+137:20080530:102'	Message date 30 May 2008
PAI+::42’	Instruction to pay in Bank Account
ALI+++136’	Group conditions apply to the entire ORDER
RFF+CT:652744'	Order based on contract number 652744
DTM+171:20080425:102'	Contract date 25 April 2008
NAD+BY+5412345000013::9'	Buyer is identified by GLN 5412345000013
NAD+SU+5712345001110::9'	Supplier is identified by GLN 5712345001110
CUX+2:GBP:9+3:EUR:4+1.3’	Order curr. = Pound; invoice curr. = Euro, exchange rate = 1.3
DTM+134:2008050120080530:718'	Period of the exchange rate date: 1 May 2008 – 30 May 2008
TDT+20++30+31‘	Use a truck as the main carriage transport for delivery
TOD+3++CIF:2E:9'	Terms of delivery are to be Cost, Insurance and Freight
LIN+1++5712345001110:SRV'	First product order is identified by the GTIN 5712345001110
QTY+21:48'	Ordered quantity is 48 units

GS1 XML

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- XML has been designed for information exchange over the internet
- GS1 eCom uses XML for electronic exchange of business messages
- GS1 provides a set of XML Schemas that describe the structure and content of business documents
- GS1 XML contain business information for a specific scenario that do not always reflect the paper business documents

GS1 XML example

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```
<order:order creationDateTime="2003-11-03T11:00:00.000" documentStatus="ORIGINAL>
  <contentVersion>
    <versionIdentification>2.4</versionIdentification>
  </contentVersion>
  <orderIdentification>
    <uniqueCreatorIdentification>PO-02109</uniqueCreatorIdentification>
    <contentOwner>
      <gln>5412345000013</gln>
    </contentOwner>
  </orderIdentification>
  <orderPartyInformation>
    <seller>
      <gln>4098765000010</gln>
    </seller>
    <buyer>
      <gln>5412345000013</gln>
    </buyer>
  </orderPartyInformation>
  <orderLogisticalInformation>
    <shipToLogistics>
      <shipTo>
        <gln>5412345000037</gln>
      </shipTo>
      <ultimateConsignee>
        <gln>5412345000020</gln>
      </ultimateConsignee>
    </shipToLogistics>
```

What does GS1 standardise in eCom?

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- The GS1 standards provide the common language used in eCom
  - **Structured data** – e.g. ordered quantity, price, delivery address
  - **Business terms definitions** and their mapping to message components
  - **Message standards** – GS1 EANCOM® and GS1 XML
  - GS1 eCom messages are developed using the **commonly accepted syntax** (UN/EDIFACT and XML)
- Guidelines on other, related standard, e.g. Internet protocols
- All GS1 standards & guidelines are developed together with the user communities

Electronic Exchange Scenario

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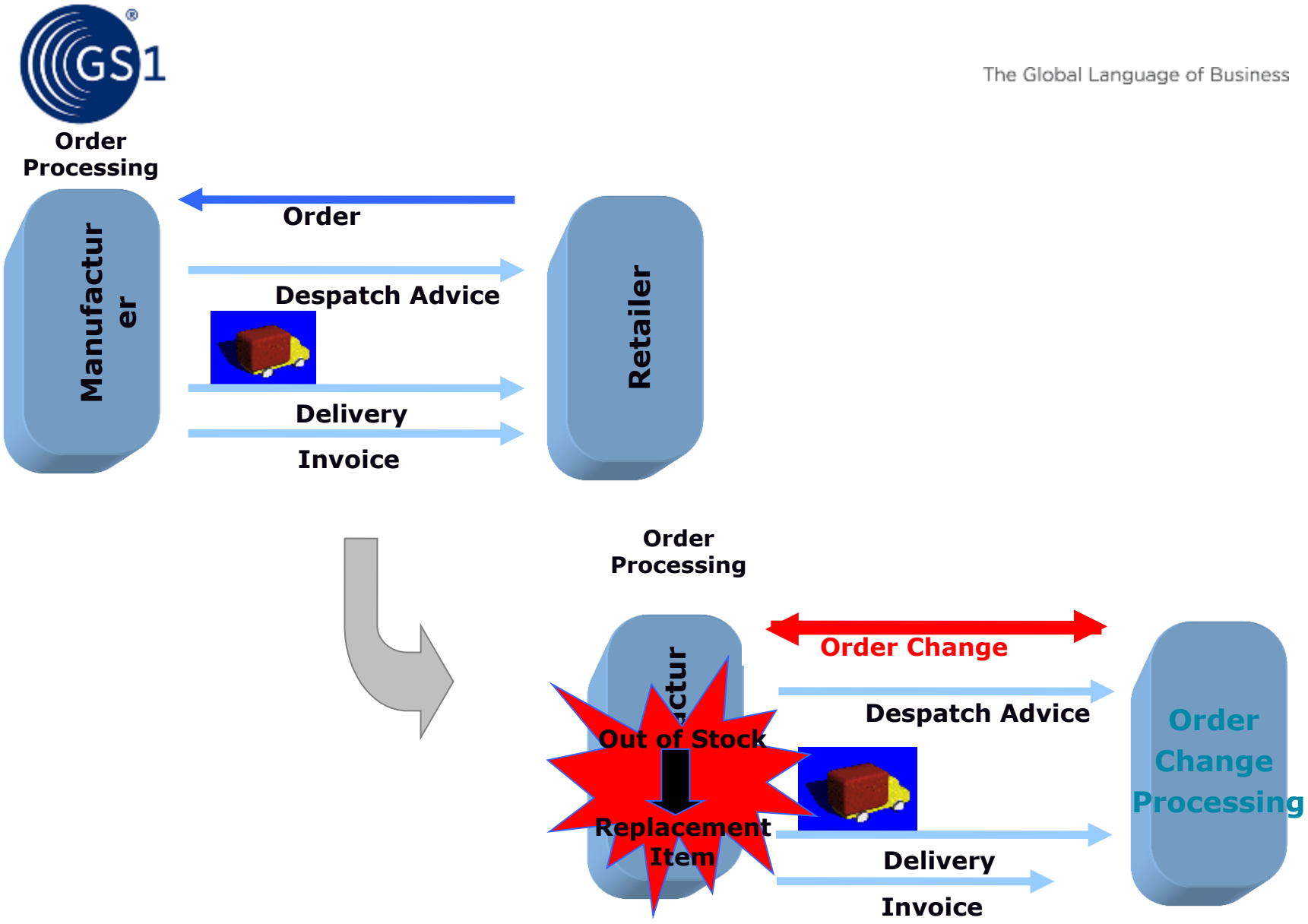

Electronic Exchange Domains

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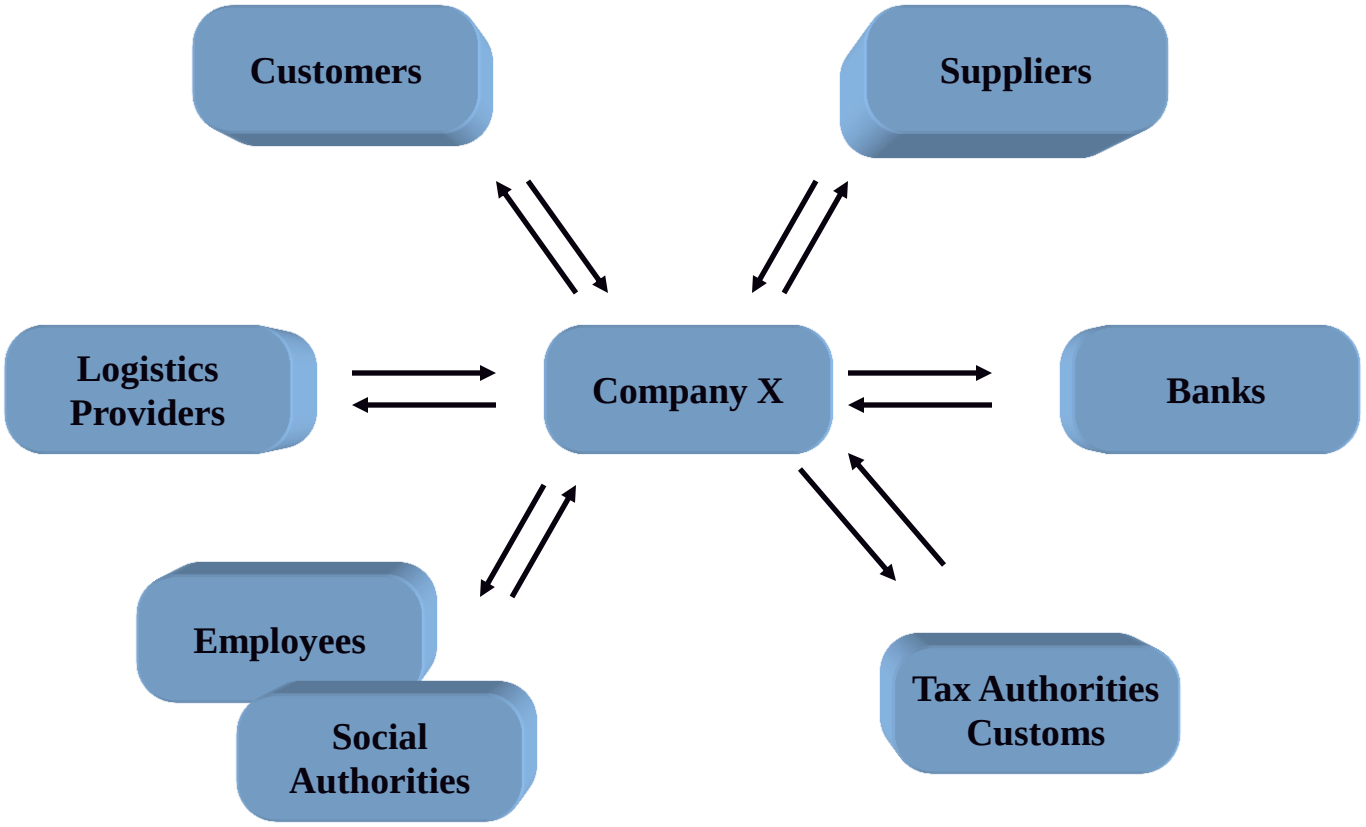

General trends in the eCom world

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- Shift from message standards to process standards
  - Logistics Interoperability Model (LIM)
  - Upstream standards (UIM, GUSI)
  - Food services
  - Collaborative Product Design
  - Trading Partner Performance Management
- Supply Chain Management is changing
  - RFID technology (EPC)
  - Food safety
  - Waste management
- Increased involvement from authorities – directly or indirectly
  - eInvoicing
  - Trade facilitation – example WTO in China
  - Risk management

Main Strategies

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1. ***Decoupling technology and business content***
   - ***Interoperability***

2. ***Increased implementation support***
   - ***SME***
   - ***Developing countries***

3. ***Increase value add for installed base***
   - ***Cost effective improvements***

Available message standards

GS1 Standards Knowledge Centre

XML Business Message Standards, version 3.1

eCom Trade Messages

- **Align**
  - Item Data Notification
- **Order**
  - Order
  - Order Response
  - Configure to Order
- **Deliver**
  - Despatch Advice
  - Receiving Advice
  - Consumption Report
  - Inventory Report
  - Despatch Advice - Meat Product Extension
- **Pay**
  - Invoice
  - Settlement
  - Debit Credit Advice
  - Advanced Remittance Notification
  - Request for Payment
  - Buyer Reconciliation of Request for Paymer
  - Claims Notification
- **Plan**
  - Goods Requirements
  - Goods Requirements Response
  - Replenishment Request
  - Replenishment Proposal
  - Purchase Conditions
  - Performance Measurement

eCom Logistics Messages

- **Transport Planning**
  - Transport Capacity Requirements
  - Transport Capacity Plan
  - Transport Capacity Booking & Response
- **Transport Execution**
  - Transport Instruction & Response
  - Transport Status Request & Notification
  - Transport Pick-up Drop-off Request & Confirmation
- **Warehousing**
  - Warehousing Inbound Instruction & Notification
  - Warehousing Outbound Instruction & Notification
  - Warehousing Operations Instruction & Notification
  - Logistics Inventory Report Request & Report

eCom Other

- **Product Recall**
  - Product Recall
- **Application Level Messages**
  - Application Receipt Acknowledgement
- **Artwork Content and Response**
  - Artwork Content and Response
- **Common**
  - Shared Common Library
  - eCom Common Library

Available EANCOM messages

Common Libraries

Common

Data elements & code sets directory

Business Transaction Messages

Pre-Order Messages

CNTCND (The Contractual Conditions Message)

QUOTES (Quotation)

REQOTE (Request for Quotation)

Order Messages

ORDCHG (Purchase Order Change Request)

ORDERS (Purchase Order)

ORDRSP (Purchase Order Response)

OSTENQ (Order Status Enquiry)

OSTRPT (Order Status Report)

Transport and Delivery Messages

DESADV (Despatch Advice)

HANMOV (Cargo/Goods Handling and Movement Message)

IFCSUM (Forwarding and Consolidation Summary Message)

IFTMAN (Arrival Notice Message)

IFTMBC (Booking Confirmation Message)

IFTMBF (Firm Booking Message)

IFTMIN (Transport Instruction)

IFTSTA (Transport Status Message)

INSDES (Instruction to Despatch)

RECADV (Receiving Advice)

RETANN (Announcement of Return)

RETINS (Instruction for Return)

Payment and Financial Messages

COACSU (Commercial Account Summary)

COMDIS (Commercial Dispute Message)

INVOIC (Invoice)

PAYMUL (Multiple Payment Order)

REMADV (Remittance Advice)

TAXCON (Tax Control)

Report and Planning Messages

APERAK (Application Error and Acknowledgement Message)

BANSTA (Bank Status Message)

CREMUL (Multiple credit advice)

DEBMUL (Multiple Debit Advice Message)

DELFOR (Delivery Schedule)

DIRDEB (Direct Debit)

FINCAN (Financial Cancellation Message)

FINSTA (Financial Statement)

INVRPT (Inventory Report)

MSCONS (Metered Services Consumption Report)

QALITY (Quality Data Message)

SLSFCT (Sales Forecast Report)

SLSRPT (Sales Data Report)

Other Messages

CONDRA (Drawing Administration Message)

GENRAL (General Message)

Syntax and Service Report Message

CONTRL (Syntax and Service Report)

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eCom implementation trends

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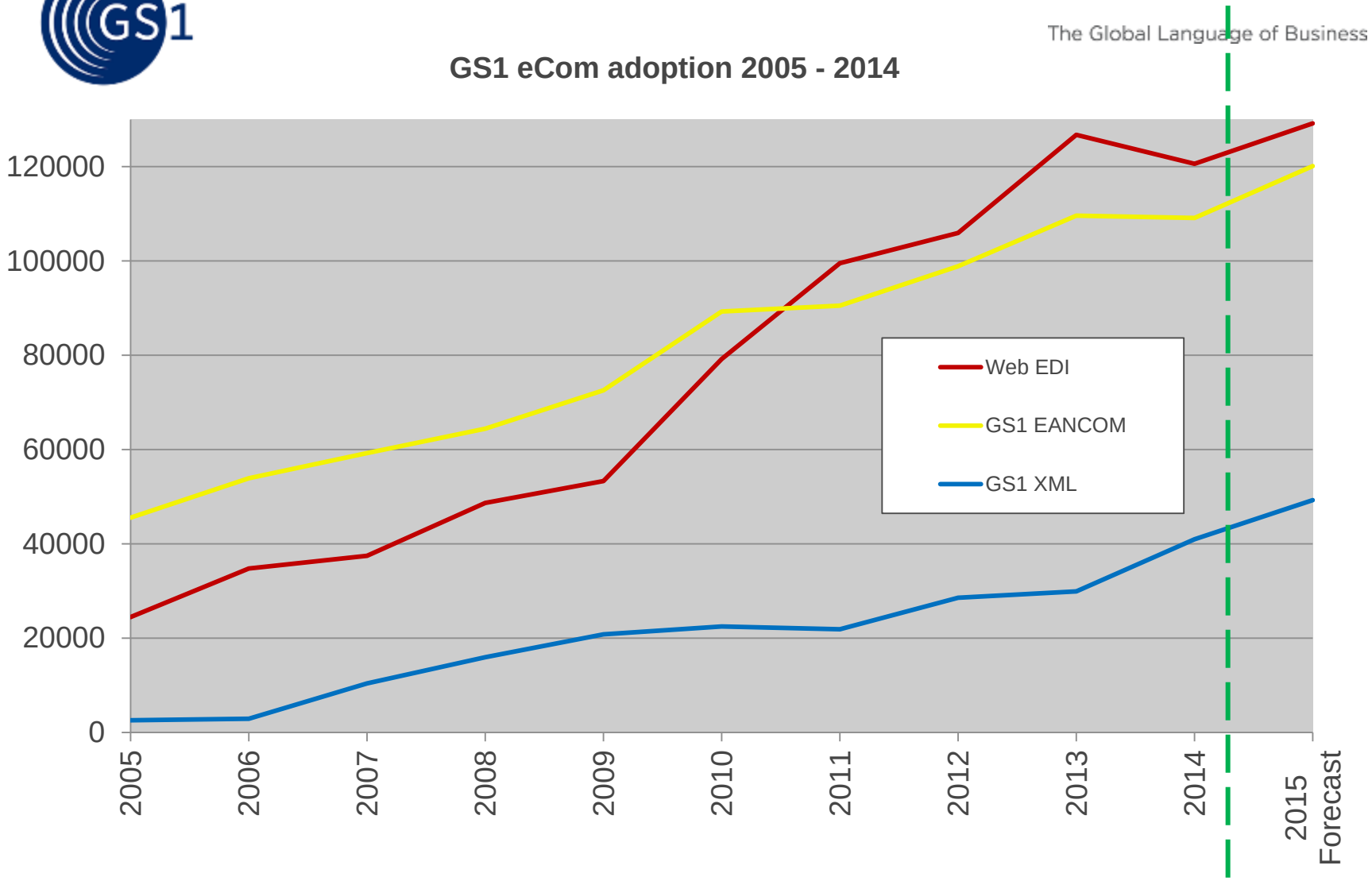

GS1 Identification Keys and Logistic Labels

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GS1 identification keys

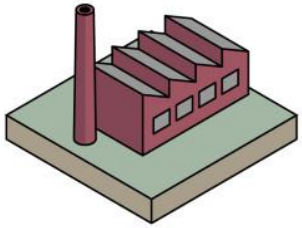
Serial Shipping Container Code

SSCC

Global Trade Item Number

GTIN

Global Location Number



GLN

Global Returnable Asset Identifier

GRAI

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What is the SSCC?

The SSCC is an 18 digit number used to uniquely identify a logistic unit.

Extension digit	GS1company prefix	Serial reference	Check digit
X	54MMMMM	XXXXXXXXX	C
X	54MMMMMM	XXXXXXXX	C
X	54MMMMMMM	XXXXXXX	C

2012 GS1

Uniquely identifying logistic units

- Definition :

A logistic unit is an item of any composition established for transport and/or storage which needs to be managed throughout the supply chain.

- Identification key:

SSCC (Serial Shipping Container Code)

2012 GS1

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Who allocates the SSCC?

The creator of the logistic unit allocates the SSCC (e.g. the party who palletizes). This can be the:

- Manufacturer
- Wholesaler
- Logistic provider
- Retailer

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Why a GS1 logistic label?

- Unique identification and traceability of the logistic unit
- Data transmission :
  - on the logistic label
  - preferably in combination with the EDI despatch advice
- Standardised logistic label, everyone knows exactly where to find all information.

2012 GS1

Logistic label and GS1 Application Identifier (AI)

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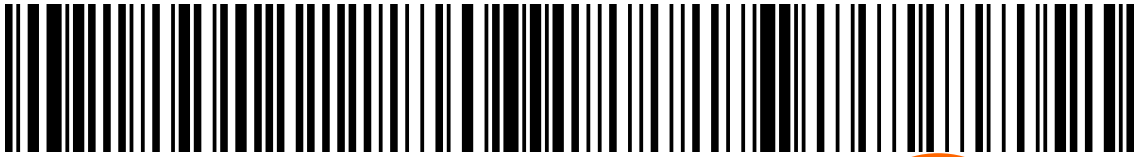

(02)03451230000006(37)56(15)030303(10)ABCDEF

✓Application Identifier (AI), is a 2, 3, or 4 digit numeric prefix in front of the data to tell what the data means.
For example, the AI for CONTENT is (02), COUNT is (37), BEST BEFORE is (15) and LOT is (10).

✓Data - AI's contain either fixed or variable length data. Their structure is either predefined or free.

Example: Batch/Lot = variable length data with a maximum of 20 alphanumerical characters. Its structure is free.

Structure of the GS1 logistic label

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Top section : free text

Middle section: human readable interpretation of the barcoded data

Below : GS1-128 barcode; SSCC always in the lowest barcode (mandatory)

eCom benefits

Why use eCom instead of paper?

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- The traditional paper-based document exchange:
  - Is time consuming
  - Is error-prone
  - Involves a lot of resources

Why use eCom instead of paper?

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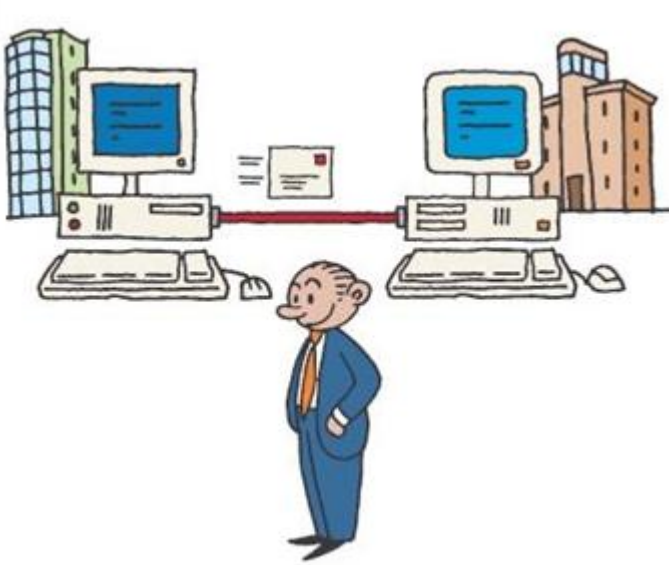
- The electronic document exchange, in which two or more computers communicate directly:
  - Takes much less time
  - Business data are instantly available (no re-keying)
  - Reduces errors as no human intervention is needed
  - Requires little resources when in operational stage
  - Eliminates paper processing and cost of:
    - Printing
    - Posting
    - Manual data keying
    - Archiving of paper
    - Waste of trees and therefore save environment
- **Enables new business processes**



Benefits examples – GS1 standards

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- From Global Scorecard Consumer Goods Forum & IBM
  - 4,400 Key Performance Indicator Scorecards submitted by consumer product companies
  - showed the following relationships between the usage of the GS1 standards and business results:
    - 5.2% points savings of distribution costs
    - 1.5% points increased invoice accuracy
    - 5.9% points increased fill rates (percent of orders shipped within order due date - when requested)
    - 61 hours reduced lead time (from the moment the customer places an order to the moment it is received by the customer)
    - 5.8% points reduced out-of-stocks rate

Effects of eCom and SSCC implementation

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- From Global Scorecard Consumer Goods Forum & IBM

Competitive advantage

Efficiency	Customer Satisfaction	Improved Quality	Sustainability
• Time saving • Cost reduction • Improved supply chain operations • Improved visibility • Increased understanding of retailers needs - become preferred collaboration partner • Increased sales	• Improved client relationship • Improved customer satisfaction • Better information availability	• Improved data quality • Fewer invoice-disputes	• Improved Image & Brand • Less Waste • Optimized usage of resources • Better overview of inventory

Improvements through implementation

- **Store Service Level ↑**
  - → SSCC
  - → EDI for orders
  - → EDI despatch advice

- **Out of stocks ↓**
  - → SSCC
  - → EDI for orders
  - → EDI for despatch advice

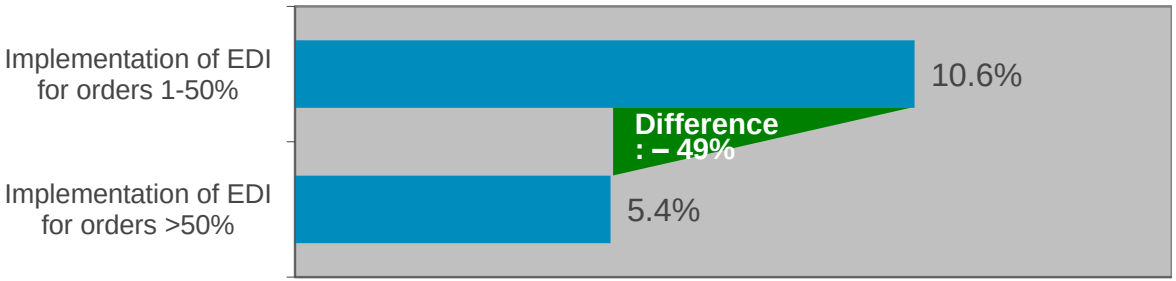
- **Invoice accuracy ↑**
  - → EDI for invoices (manufacturers)

Global Scorecard – Order

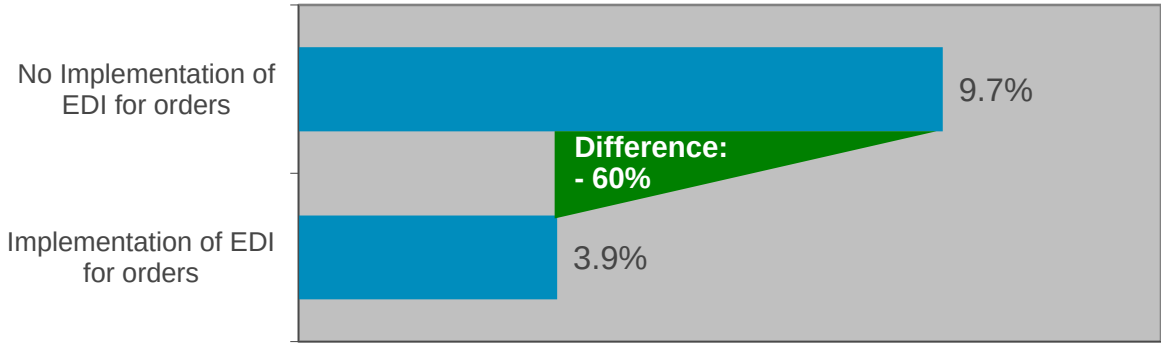
The Global Language of Business

- Global Scorecard Consumer Goods Forum & IBM

Distribution costs with the use of EDI for orders



On-Shelf/POS Out-of-Stocks with the use of EDI for orders



Cost saving examples – Order

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- **Order** message
  - 18 € savings for each transaction in France
  - 12 € savings for each transaction in Germany
- Some cost items taken into account in France
  - Generating and mailing paper order (1.5 €) vs. generating and sending electronic order (0.01 €)
  - Cost of manual entering the paper order into ERP system (1.4 €) vs. electronic order (0 €)
  - Cost of handling disputes for paper order (4 €) vs. EDI order (3 €)
  - Number of ordering errors is 25% lower with EDI

Global Scorecard – SSCC

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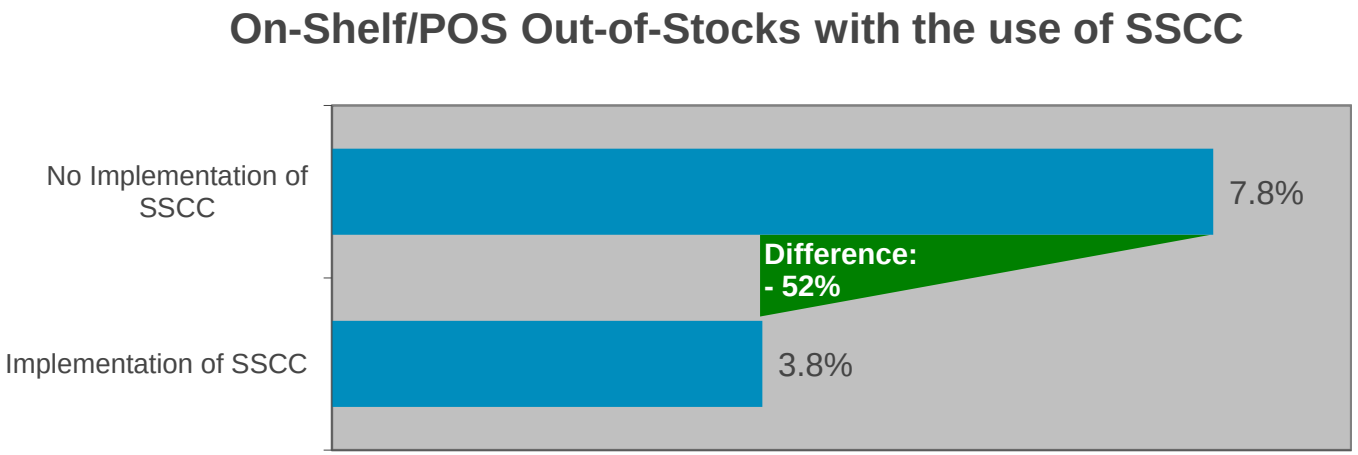
- Global Scorecard Consumer Goods Forum & IBM



Cost saving examples – Despatch Advice + GS1 Logistic Label

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- **Despatch Advice** message + **GS1 Logistics Label**
  - 12 € savings for each transaction in France
  - 15 € savings for each transaction in Germany
  - 5 $ savings in USA when Despatch Advice is used for simple confirmation purposes to as much as 50 $ when used for visibility and automated receiving
- Some cost items taken into account in France
  - Number of disputes per day without GS1 standards (4) vs. with GS1 standards (2)
  - Number of ordering errors is 50% lower with EDI
  - 30 minutes saved on reception per truck with GS1 standards

Global Scorecard – Invoice

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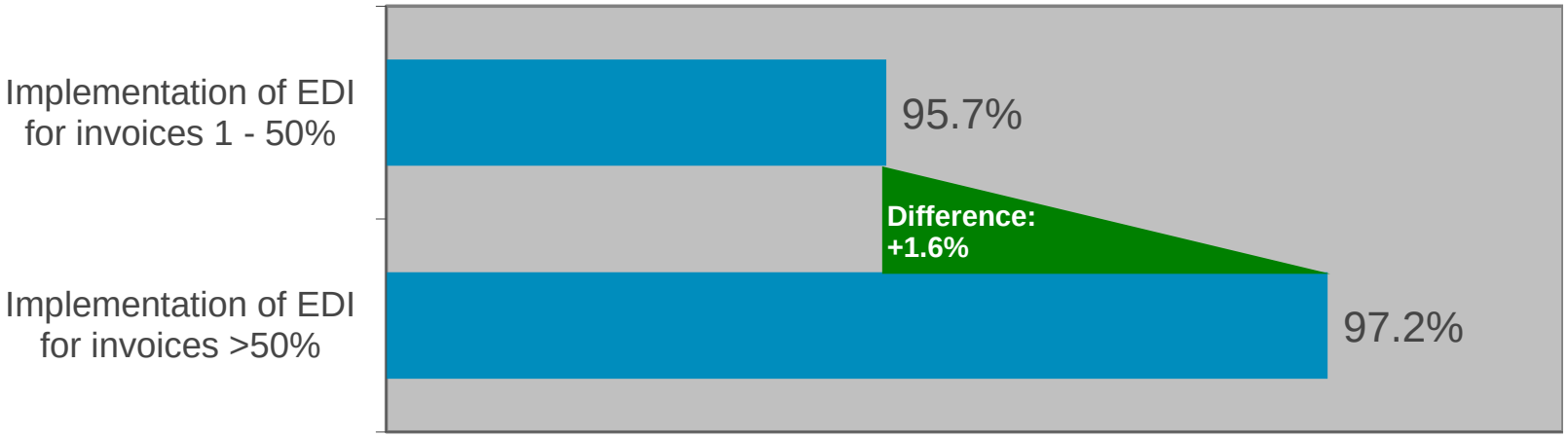
- Global Scorecard Consumer Goods Forum & IBM

Invoice accuracy for manufacturers using EDI for invoices



eInvoicing in Spain

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e-Invoicing in Spain

- Currently over 5,600 companies use e-Invoice in Spain
- Monthly 2.5 million invoices are sent electronically
- Main savings:
  - Supplier: 1 €/invoice
  - Retailer: 2.8 €/invoice
  - Annual cost saving for entire sector: 76 million €/year
  - 10 km of paper storing space
  - Over 10,000 trees saved

ROI Calculator

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documents per day	5		The ROI is:	0.44	
working days per month	20		Interpretation: EDI generates annually	44.04	%
costs per hour in €	12.5		of the investment made.		

costs per document	without EDI		with EDI		time savings	costs savings
	minutes	€	minutes	€		
Generate Order	15	0.00	0	0.00	15	0.00
Printing and forwarding	15	1.00	0	0.00	15	1.00
Complaints	25	0.00	15	0.00	10	0.00
Other	0	0.00	0	0.00	0	0.00
Total	55	1.00	15	0.00	40	1.00

ROI
0.440362225

Payback time (decimal)
2.270857814

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