# A Practical Implementation of Data Synchronisation for Retailers/Buyers

## Earl Lappen

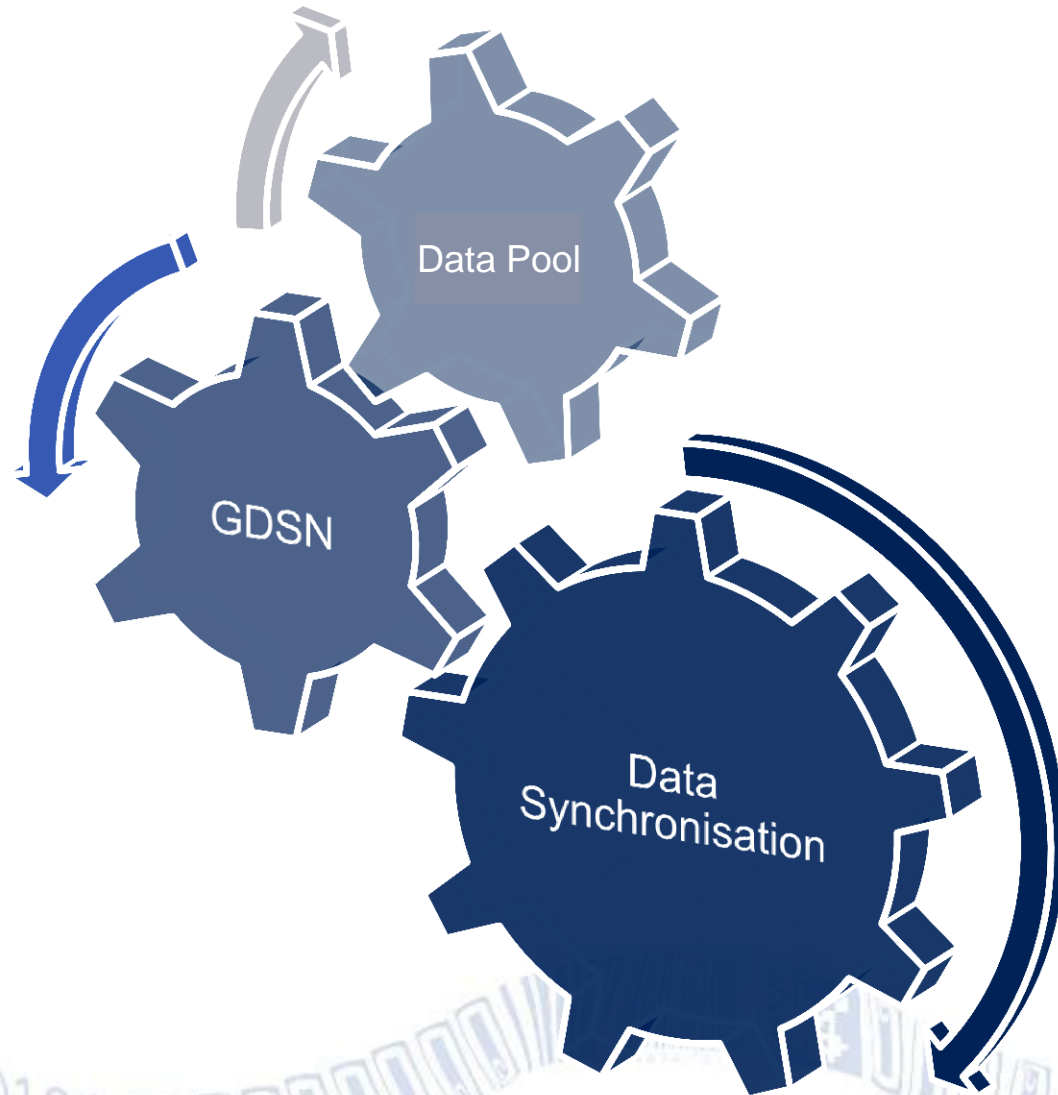Senior Professional Services Advisor

# Session Content

**An introduction to:**
- Data Synchronisation,
- GS1 Global Data Synchronisation Network (GDSN), and
- GS1net

**Understanding the Business Case for Data Synchronisation**

**Practical Steps to Commencement**

**Lessons and Tips from Our Experience**

**Services and Support**
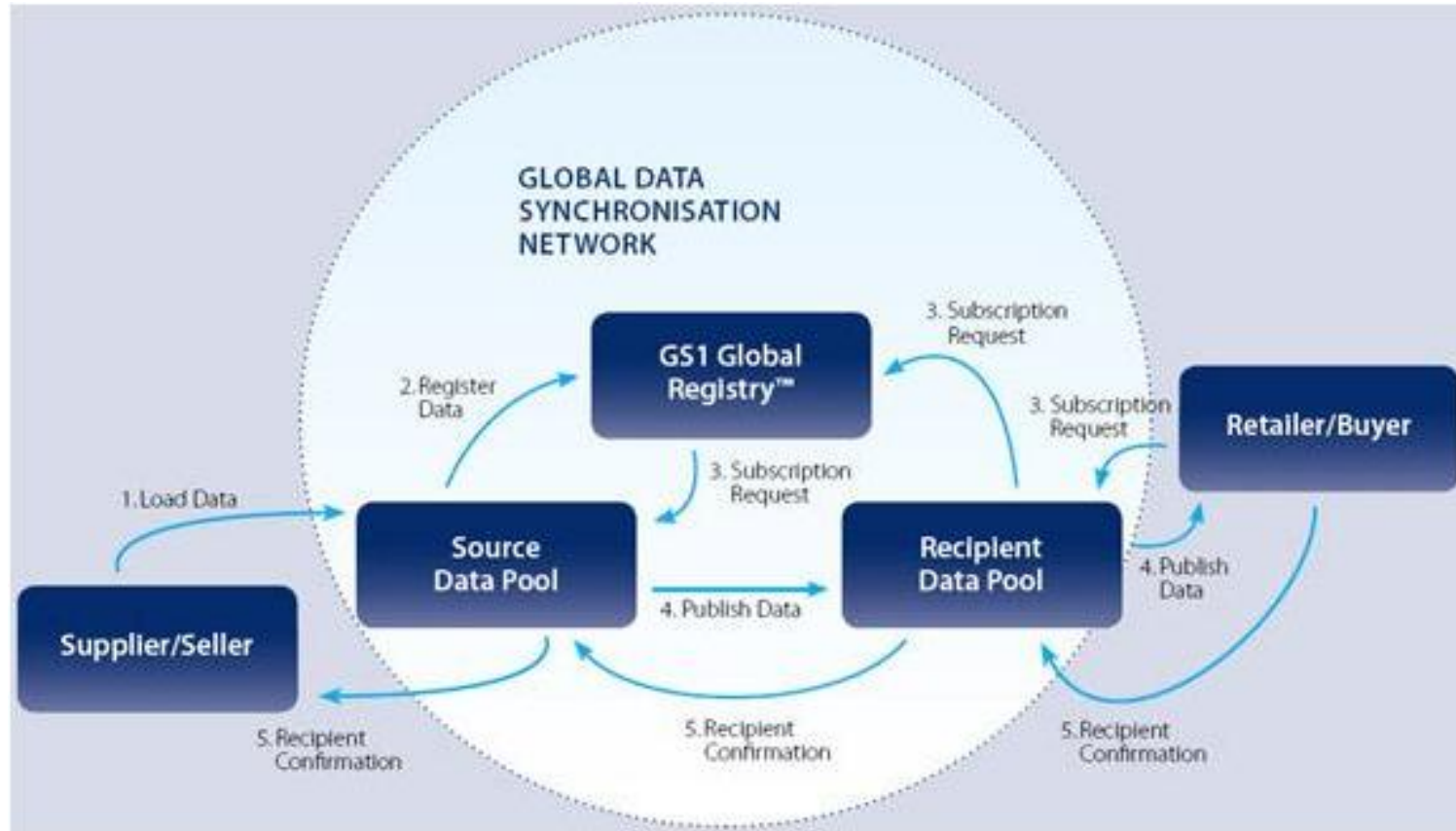
# What is Data Synchronisation?



The continuous and automated exchange of standardised item master data within and between organisations.

# GDSN

# Data Quality Awareness

## What is the Master Data Problem?

These are primarily:

**Data integrity problems** (completeness and conformity of data)

**Data Quality problems** (accuracy, consistency, reliability).

These include:

- Missing/Incorrect GTINs
- Same GTIN attached to multiple retailer item codes
- Missing Middle Levels of Packaging
- Item/Pack/Case level L,W,H dimensions missing/incorrect
- Item/Pack/Case level weight missing/incorrect
- Hard "Packaging Quantity" Errors
- Unit of Measure Confusion/Misuse
- Incomplete Item Descriptions
- Manufacturer Name Problems
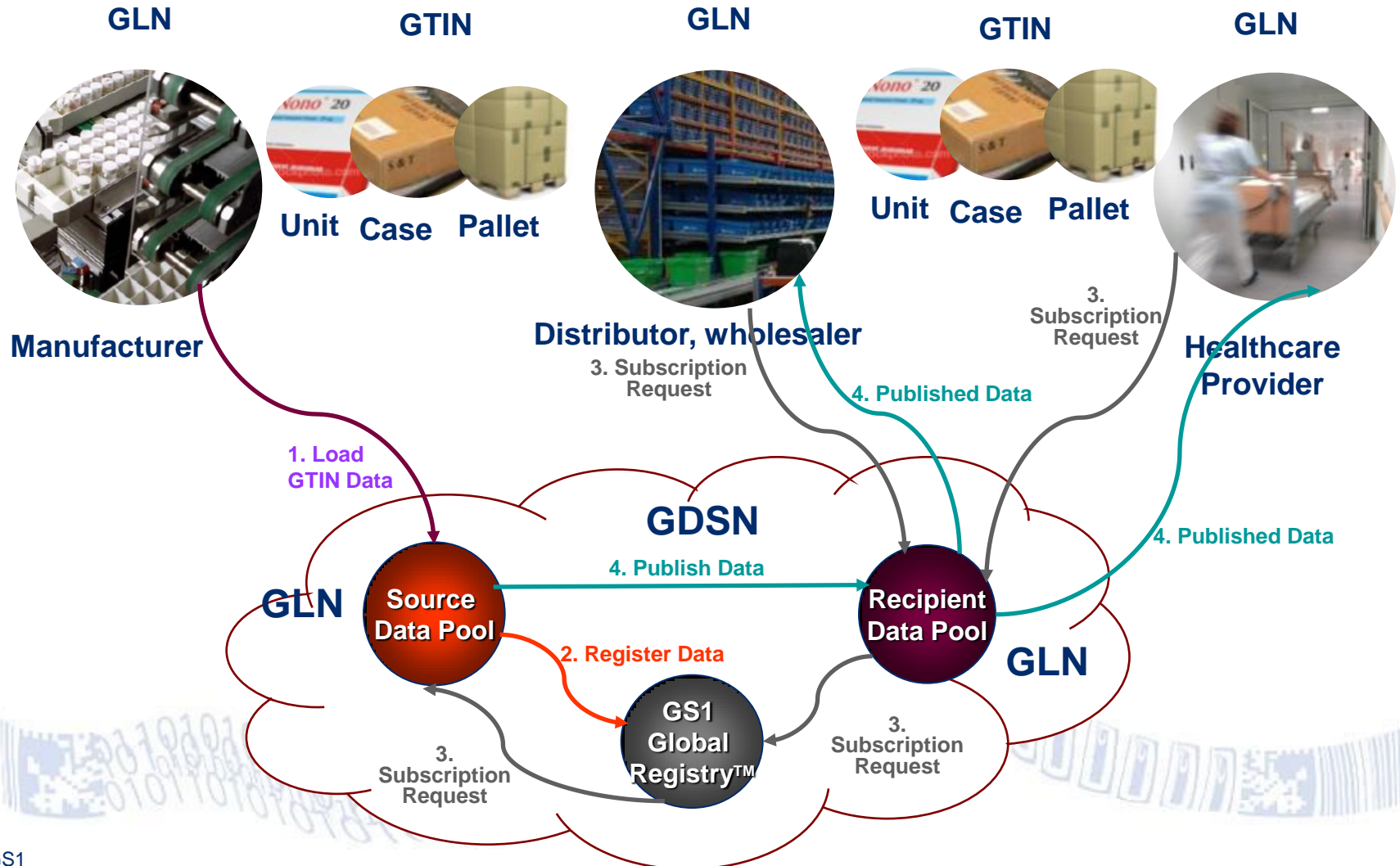- Missing Product Brand Names
- Obsolete Products

**Poor data quality across various industry sectors**

**Incorrect data which will impact on Patient Safety**

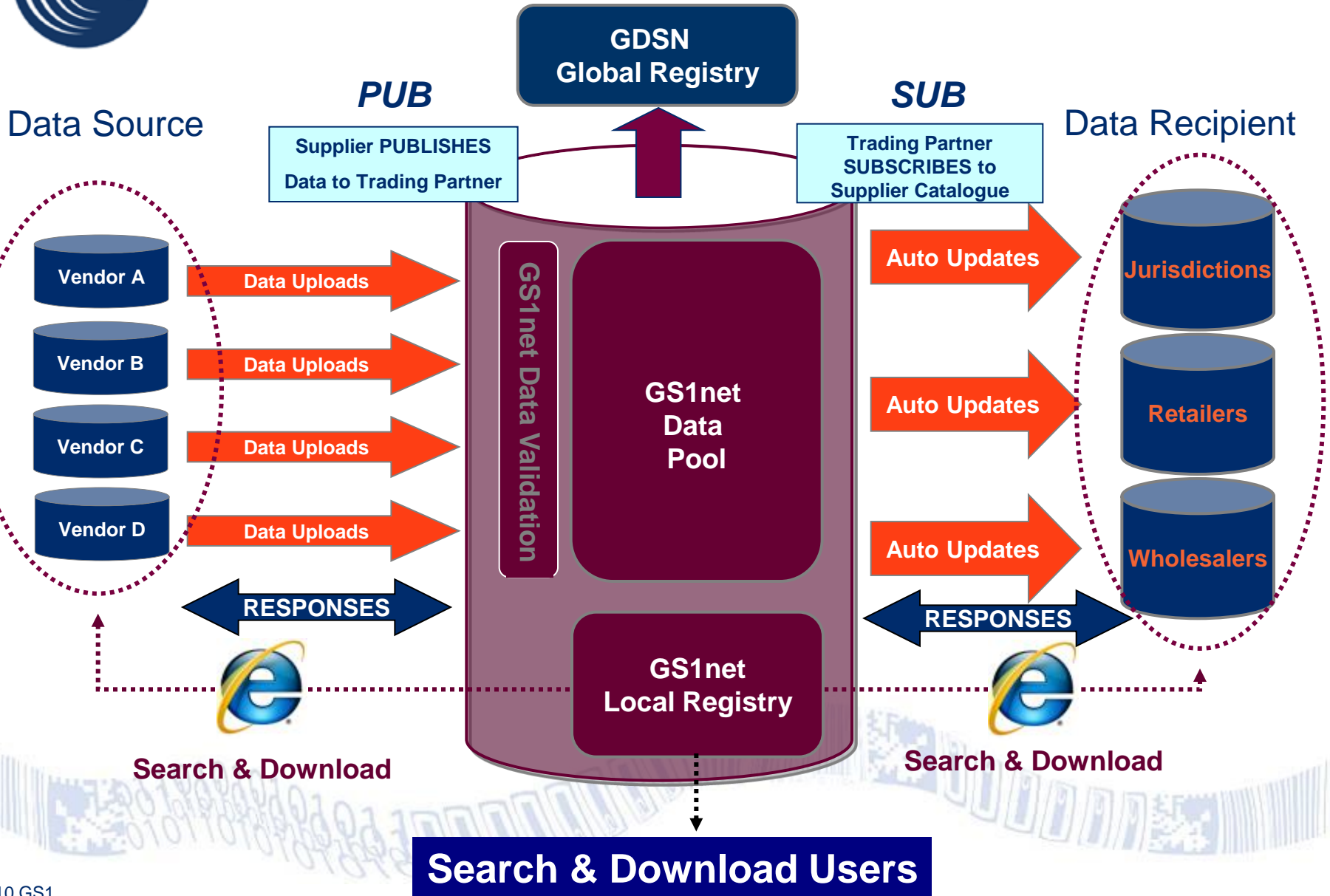**Bad data costing companies millions of dollars**

# GDSN can be used to solve the master data problem and more

GLN

GTIN

GLN

GTIN

GLN

**Unit  Case  Pallet**

**Unit  Case  Pallet**

**Manufacturer**

**Distributor, wholesaler**

**Healthcare Provider**

3. Subscription Request

3. Subscription Request

**4. Published Data**

**4. Published Data**

**1. Load GTIN Data**

**GDSN**

GLN

**4. Publish Data**

**Source Data Pool**

**Recipient Data Pool**

GLN

**2. Register Data**

**GS1 Global Registry™**

3. Subscription Request

3. Subscription Request

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# GDSN Compliant Data Pool

**GS1**

**GDSN Global Registry**

*PUB*                                              *SUB*

Data Source

Supplier PUBLISHES Data to Trading Partner

Trading Partner SUBSCRIBES to Supplier Catalogue

Data Recipient

| Vendor A | Data Uploads | |
| Vendor B | Data Uploads | |
| Vendor C | Data Uploads | |
| Vendor D | Data Uploads | |

GS1net Data Validation

**GS1net Data Pool**

Auto Updates → Jurisdictions

Auto Updates → Retailers

Auto Updates → Wholesalers

RESPONSES

RESPONSES

**GS1net Local Registry**

Search & Download

Search & Download

**Search & Download Users**

# Before Data Synchronisation

11. Delayed Settlement

5. Adjusted Purchase Order

4. Query Order Errors

3. Purchase Order

Fax/ Mail/File transfer

1. Product Info sent

Errors in transposition

2. Product Info entered

Errors in Translation
Errors in Delivery / Transmission

Incorrect
Item #s
Prices
Desc
Qty

**Supplier / Broker**

**Buyer**

6. Despatch Advice

7. Goods Delivered

8. Query Delivery Errors / Claim for credit

9. Return Incorrect Goods

10. Adjusted Delivery

# With Data Synchronisation

GDSN Data Pool

**Supplier / Broker** → **1. Populates** → GDSN Data Pool → **2. Auto Updates** → **Buyer**

11. Delayed Settlement

5. Adjusted Purchase Order

4. Query Order Errors

**3. Purchase Order**

**6. Despatch Advice**

**7. Goods Delivered**

8. Query Delivery Errors / Claim for credit

9. Return Incorrect Goods

10. Adjusted Delivery

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# Data Synchronisation Benefits

| | | |
|---|---|---|
| **Business Benefits** | **Right product ordered** | |
| | **In the correct quantity** | which ensures that the product is available when needed |
| **Improvements in supply chain management efficiency** | **Monetary benefits** | invoice claims reduced |
| | | reduction of error reconciliation cost |
| | **Improved speed to market** | |
| | **Improved receiving times** | |

# Benefits for Buyers

**Creation of one standard process for receiving item and price details from sellers.**

- The replacement of existing paper forms and specification sheets with one electronic system

**Reducing the effort and cost involved in communicating product and price information to trading partners.**

- Providing a solid basis on which to build electronic messaging systems for electronic collaboration (e-procurement etc.)

**Significantly reducing the time and cost of introducing new products into the market.**

- Accurate and synchronised data will eliminate many manual item setups and maintenance processes

**New product data, data changes and data corrections flow through seamlessly.**

- Eliminates duplicate data entry errors
- Reducing ordering errors and costs associated with processing invoice reconciliation, credit claims and returns

**Data Synchronisation will improve operational efficiencies at the store and the customer's shopping experience**

- Better visibility to more supplier products allows for more ranging options

**Streamlining data provision processes to some regulatory authorities**

# Understanding the Business Case

# The Business Case

The data synchronisation project and its on-going sustainability should be framed within a business case that depicts:
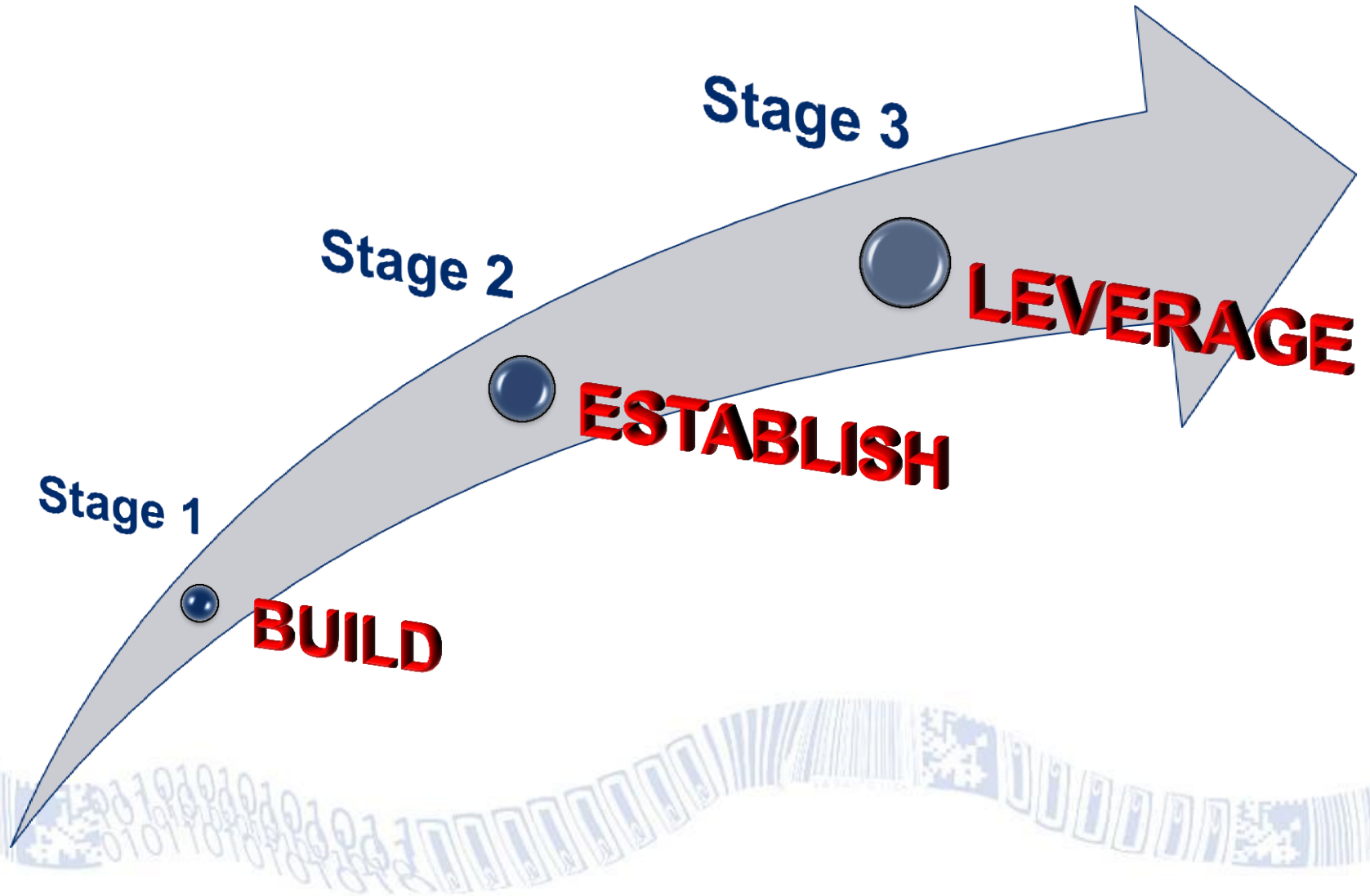
**How your organisation currently receives product and pricing data from Suppliers, and where savings can be made**

**How many errors arise from incorrect or out of date data in your systems, and where efficiencies can be gained**

**How would you receive images and other documents related to your supplier's products for centralised access, and what new opportunities can be uncovered**
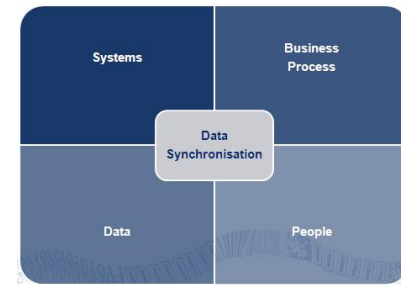
# The Vision



Stage 3

Stage 2

LEVERAGE

Stage 1

ESTABLISH

BUILD

# The Data Synch Environment

**Systems**

**Business Process**

**Data Synchronisation**
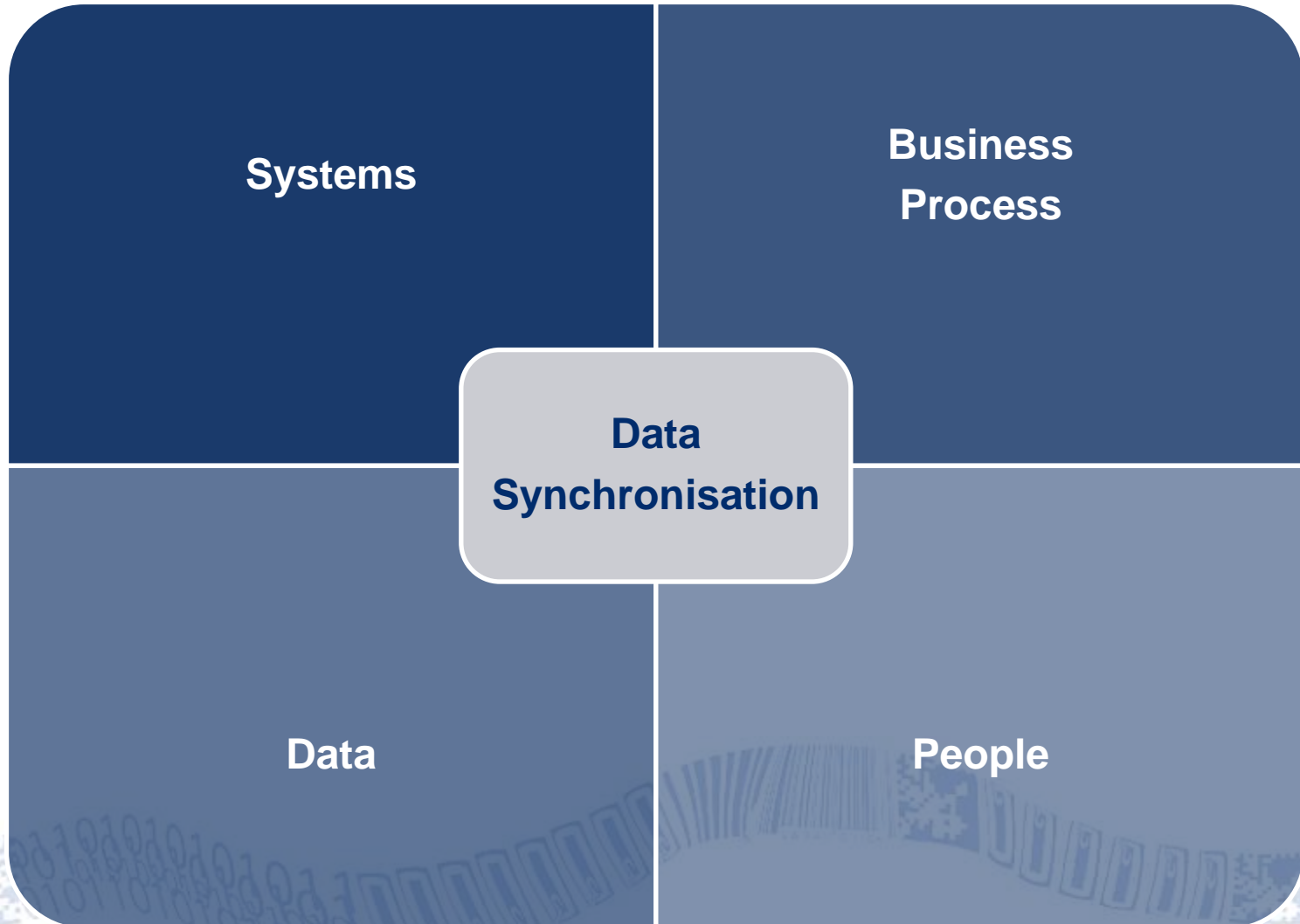
**Data**

**People**

# Concerns

**PEOPLE:**
- *Most business executives don't perceive data as a critical asset until they've been burned by poor quality data.*
- *Shared services and corporate information management is viewed as an impediment to getting things done (as they have a hard time staying ahead of business needs).*
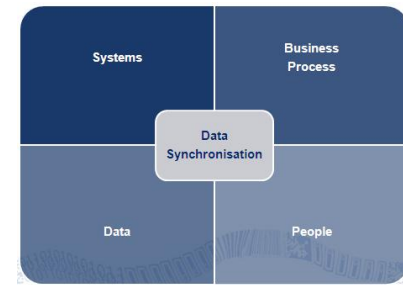
**DATA:**
- *Many commonly used terms often mean very different things to different people within your organisation*
- *Poor Data Quality (where data is not Clean, Consistent or Complete) creates business inefficiencies for all parties.*
- *Content errors can go undetected and inconsistent product classification is common.*

**SYSTEMS:**
- *So many different applications manage their own portion of their siloed master data.*
- *ERP systems do not capture all of the required attributes of an item.*
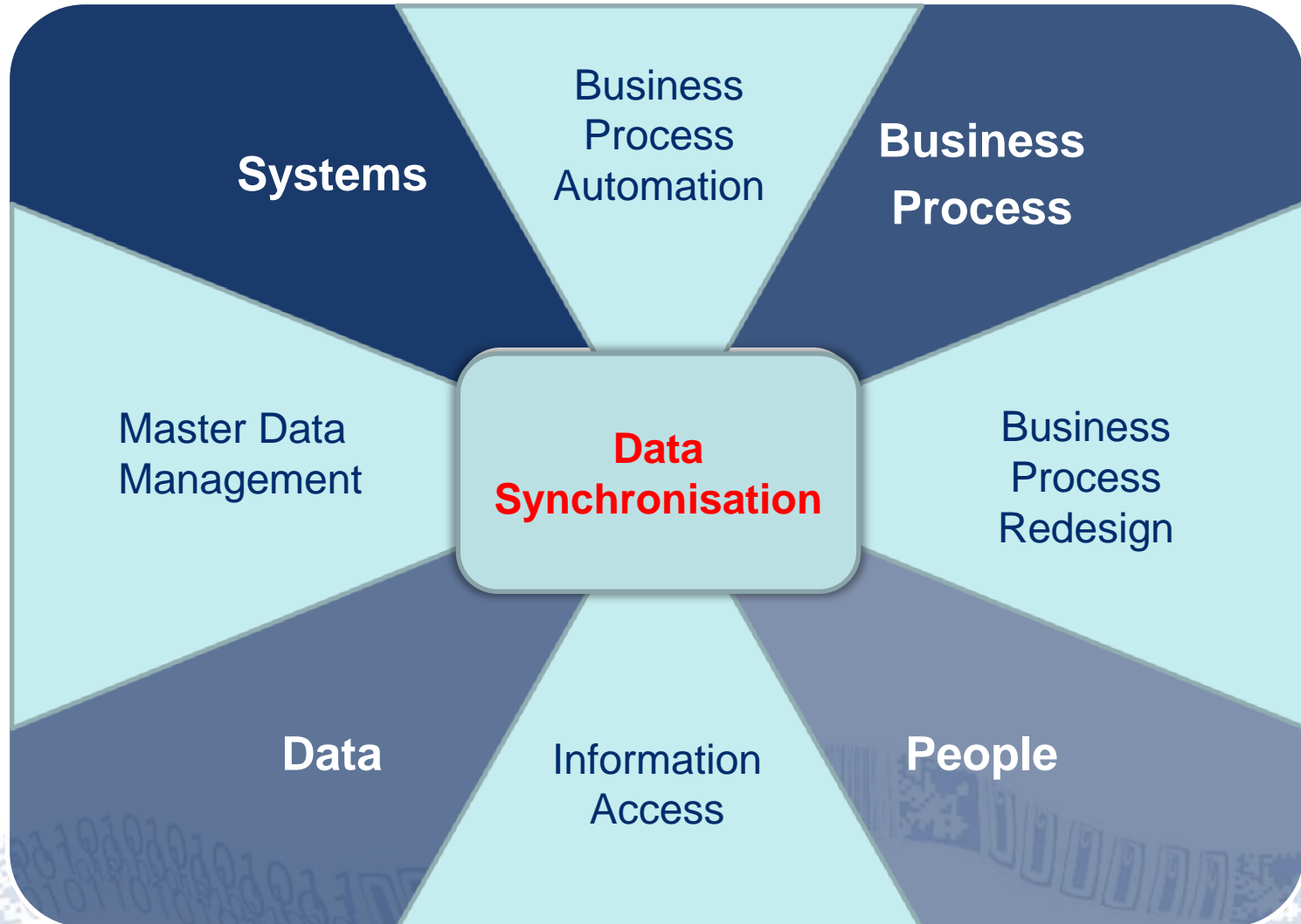
# Concerns (continued)

## BUSINESS PROCESS:

- *Data Management Processes lacks ownership and accountability, and is complex due to the cross-functional nature of the data*
- *The need to integrate data content within business processes*
- *The need to maintain governance and control over content to support collaboration and regulatory compliance requirements.*
- *Reconciling enterprise (head-office) and local requirements for data.*
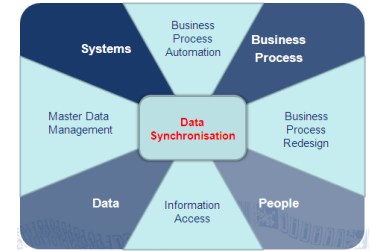- *There are many manual processes in the item setup and maintenance process.*

# The Reality

Business Process Automation

**Systems**

**Business Process**

Master Data Management

**Data Synchronisation**

Business Process Redesign

**Data**

Information Access

**People**

# The Challenge



On-going data synchronisation requires the **integration and alignment** of Data, People, Systems and Business Processes **into Business Critical Operations**. This is achieved through:

## Master Data Management & Data Governance
- aligning Data and Systems

## Business Process Redesign
- aligning Business Processes and People

## Business Process Automation
- aligning Systems and Business Processes

## Information Access
- aligning Data and People

# Practical Steps
# to
# Commencement

# **Practical Steps to Commencement**

**1**
- **Establish executive sponsorship, business ownership and a mixed team of dedicated resources**

**2**
- **Establish Catalogue and Internal System-to-System connectivity and integration**
  - One integration project to provide the mechanism for all content acquisition

**3**
- **Connect and Align Business Information and Processes**
  - The steps for total Internal Data Alignment includes:

**3a**
- EVALUATION - Where information is gathered about the business and its data
  - **I. Foundation** (An investigation of the overall picture of the data attributes, systems and functions)
    - *Use industry endorsed GS1 Global Standards* as the basis for your own internal standards.
  - **II. Mapping** (Create a view of the relationships between data attributes, systems and functions.)
    - Start with "getting data clean" through mapping, checking and aligning.
    - *Apply GS1:*
      - *Data Quality Audit*
      - *Data Quality Framework Implementation*
      - *Data Cleansing & Validation*

# **Practical Steps to Commencement**

**3b**
- **ANALYSIS** - Create a true reflection of the total data landscape of the business from the information gathered during the Evaluation Phase.
  - **III. Analysis** (The current data situation is assessed and the next required steps are determined.)
  - **IV. Ownership** (The current data owners and users of data are determined and decided as to who they logically should be.)

**3c**
- **IMPLEMENTATION** - Implementation is undertaken to change the data landscape such that Internal Data Alignment is in place and sustained.
  - **V. Internal Processes** (Appropriate processes for data alignment are created across the business.)
    - In-house
    - *Consider GS1MO Implementation Assistance*
  - **VI. Data Purification** (Ensuring that clean data with Internal Data Alignment processes and systems in place.)

**4**
- **Supplier Engagement**
- Broadly share business processes, objectives & KPIs
- Clarify and confirm expectations for Data Synchronisation
  - Collaboration along the lines of structured rules of engagement and clearly defined processes
- Gauge Supplier readiness
  - In-house
  - *Consider GS1MO Supplier Engagement Support*
- Manage External Data Alignment

# Practical Steps to Commencement

**5**
- **On-Boarding**
  - The process of identifying, engaging and developing Suppliers knowledge to deliver an online catalogue that will meet data synchronisation requirements.
    - In-house
    - *With GS1MO Data Recipient On Boarding Support*

**5a**
- **IDENTIFY** - the trading partner (supplier)

**5b**
- **PREPARE** - analyse trading partner structure and item data, spot audit item characteristics and price attributes received

**5c**
- **SUPPLIER ENGAGEMENT ROLL-OUT** - invite the trading partner to commence on-boarding activities

# Practical Steps to Commencement

**5d**

- **Data Alignment & Validation**
  - Downloading trading partner catalogue for data discrepancy activities
    - Data Discrepancy report - list the fields where the article or price data published differs to that stored in the recipients
  - Data Cleansing and Maintenance activities to ensure data is in parity, so that there is no discrepancies between supplier and recipient data:
  - Fix Data - Supplier
  - Fix Data - Recipient

**5e**

- **Message Validation**
  - Commence message validation activity with trading partner

**5f**

- **Go-Live**
  - Once all testing scenarios are passed and Go-Live date agreed proceed to discontinue the use of paper based forms and some manual processes.
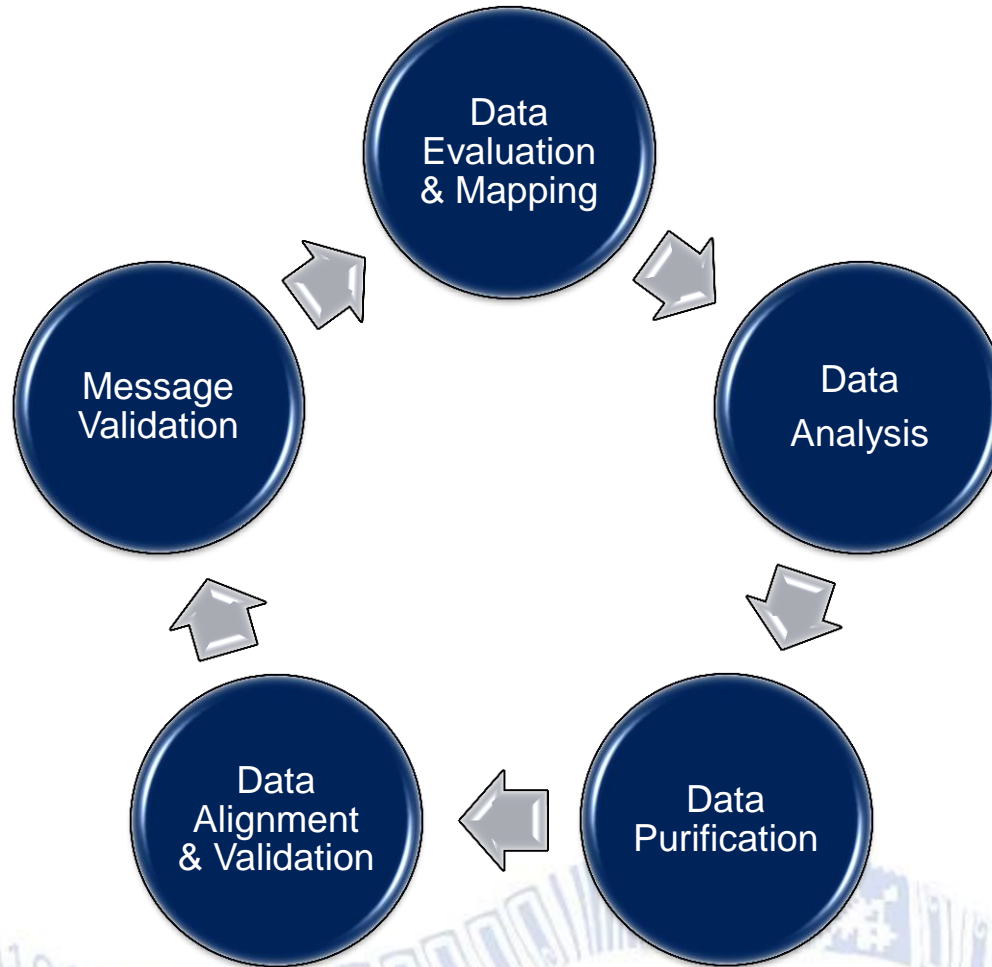
**6**

- **Maintain On-Going Sustainability**
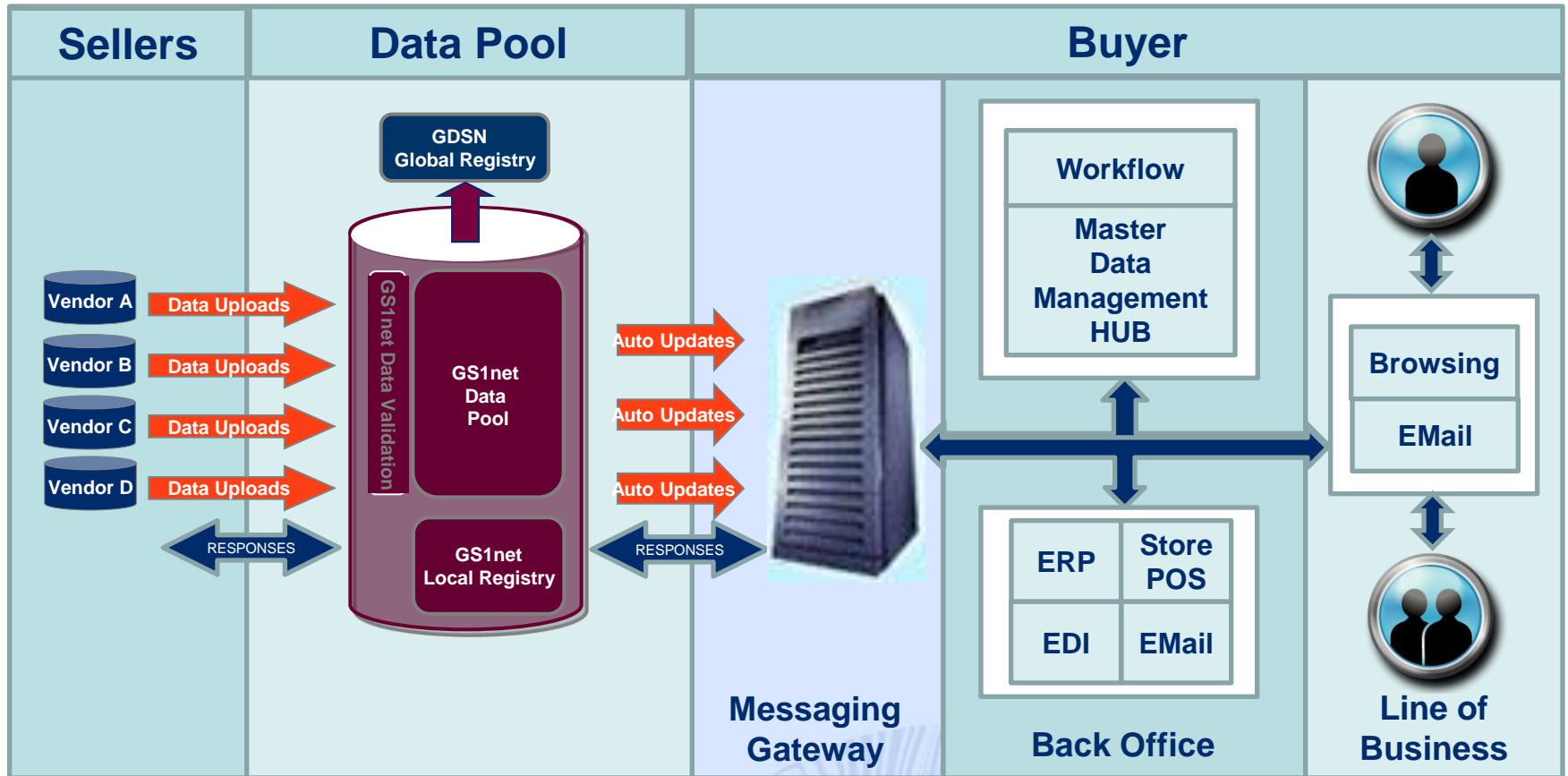  - Business As Usual (BAU) Operational Data Synchronisation

# Data Related Activities

# Data Synchronisation & Master Data Integration Architecture



| Sellers | Data Pool | | Buyer |
|---|---|---|---|

**Sellers**

Vendor A — Data Uploads →
Vendor B — Data Uploads →
Vendor C — Data Uploads →
Vendor D — Data Uploads →
← RESPONSES →

**Data Pool**

GDSN Global Registry

GS1net Data Validation

GS1net Data Pool

GS1net Local Registry

Auto Updates →
Auto Updates →
Auto Updates →
← RESPONSES →

**Messaging Gateway**

**Buyer**

Workflow

Master Data Management HUB

| ERP | Store POS |
|---|---|
| EDI | EMail |

**Back Office**

Browsing

EMail

**Line of Business**

# Data Integrity & Data Quality

## DATA INTEGRITY

- **ensures completeness and conformity of data**

  **with respect to:**

  - **GS1 numbering standards**
  - **Global industry standards.**
  - **Industry-specific business rules**
  - **Trading partner specific business rules**
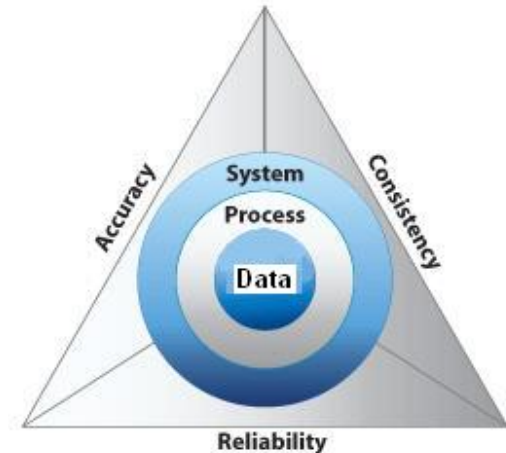
**GS1 works with and across Industry sectors to develop optimum data sets and data quality through:**

- **Documentation**
  - **GDSN**
  - **Industry**
  - **Data Recipient**
- **Validation**
  - **Business & Industry Validation Rules**
- **GS1 Services Support**
- **GS1 Data Quality Audit Service**

## DATA QUALITY ensures:

# Lessons and Tips from experience

# Tips

**Tip #1:** "Every organisation faces challenges with their data, as they try to manage relations with customers and the products and services they sell."

**Tip #2:** "Know where all critical business data is located, including the 'unofficial' repositories."

**Tip #3:** "Data Synchronisation is conceptually simple, but it can be practically difficult if organisations do not plan for it accordingly, by implementing sound practices and technology to manage it."

**Tip #4:** "Improving data quality is a critical step in improving the effectiveness of the supply chain. Data Quality should be one of the key indicators that suppliers and buyers discuss at performance reviews."

**Tip #5:** "There is tremendous supply chain value in making data accurate. Implement data management to ensure data accuracy, availability and accessibility."

**Tip #6:** "The catalogue provides a single master data synchronisation channel for master product and item data to recipients and will lead to an overall reduction in supply chain costs for both suppliers and buyers."

# Tips

**Tip #7: "**High quality, synchronized information is foundational to a productive trading relationship."

**Tip #8: "**Leveraging information is a competitive supply chain advantage. Leading companies are realizing the greatest benefits."

**Tip #9: "**Strategic sharing of data with partners will enable business growth."

**Tip #10: "**Accurate and synchronised data will eliminate many manual processes and requires the design, introduction and alignment of processes which will need on-going sustainability."

**Tip #11: "**Build organizational confidence in GDS and collaboration, data should be used to interact and operate differently inside and between companies."

**Tip #12: "**Work with industry groups to provide a roadmap, clearly define measures and monitor mutually established goals, define process changes and timing, learn and build confidence through pilots. This is not about technology, implementation and sustainability should be business driven, as internal process will be impacted. Get the business units engaged early."

# Data Synchronisation is predicated on:

- **The continuous flow of information between Suppliers and Buyers**, via GDSN Compliant Data Pool:
  - by which agreed items are ranged to the individual Buyers,
  - all ranged items have current pricing in accordance with agreed Trading Terms & Conditions and Price Agreements, and
  - all information is accurate and up-to-date
- **Maintaining good communication:**
  - between Suppliers and Buyers and the Buyer's Data Synch Team,
  - with the GDSN Compliant Data Pool, and
  - with the GS1 Support Services team (as required)
- **Efficient Business Processes:**
  - aligned with Industry and Trading Partner Guidelines, Catalogue functionality and Supplier internal processes
- **Effective Business Support:**
  - Data Management: To ensure data quality (accurate, consistent and reliable data)
  - Roles and responsibilities: To ensure sustainability and Catalogue knowledge:
    - Having good product knowledge and understanding of internal as well as buyer related processes
    - Expert users in the method of uploading and maintaining data to the catalogue
    - Enter, validate, store and maintain all item and pricing data together with related attachments in a single location

# Some Realisations….

**Many companies have come to realise the following at various stages of there data synchronisation project (through planning, implementation and post-implementation)**

| THEN | NOW |
|---|---|
| They had poor product identification. | They now have accurate product identification using GTINs for all packaging levels |
| They had multiple sources of the same pieces of data being maintained by different people, within different systems. Sharing of information was done largely in a manual way and often on a one-to-one basis. | They now maintain a single source of truth for each data attribute and share data using a GDSN certified data pool . Some have resolved to use their catalogue data to update their back-office systems. |
| They did not have designated data owners  within their business. | They have either identified data owners or have designated (master data resources or shared services support resources) that have responsibilities and accountability for their data. |
| They had poor communications with their trading partners and customers and poor  adherence to Industry and GS1 Standards | They have improved communications and agreement with their trading partners, for the adoption and adherence to agreed Industry and GS1 Standards. |
| They did not have common (standardised) process to deal with internal master data. | There is increased process consistency and alignment and some have undertaken workflow automation to assist. |
| They had poor systems that needed improvement or enhancement to provide both data and access to data. | They have identified or addressed these system short-comings with either short term or longer term solutions. |

# Lessons Learned
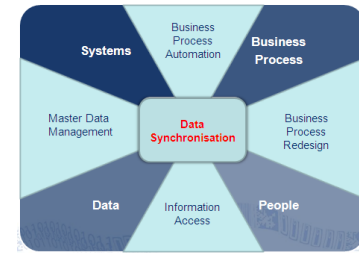
- Data Synchronisation is '**Business as Usual**' and "**Critical**", for both Suppliers and Buyers

- Buyers have to **ensure product data across the various business systems are consistent, complete, accurate and available in a timely manner**

- Internal master data management, data alignment and sustainability requires the **alignment of Business Processes** and **on-going Business Support:**

  - A Data Synch champion

  - Established Data Pool and Internal System-to-System connectivity and integration

  - Connected and aligned business information and processes

  - Staff skilled in supplier engagement and supplier on-boarding, and responding to supplier publications

  - Documented Business Processes (SOPs)

  - Maintaining catalogue knowledge through participation at user group and trading partner updates, and receiving Catalogued Essentials updates (and acting upon these as required)

- **Where available use technology to assist / enforce process workflow**

# Sustainability
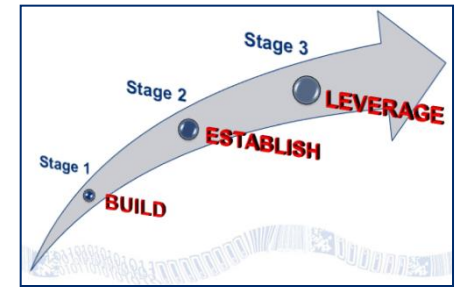
**Definition:**

- The capacity to maintain a certain process or state indefinitely

**Importance** – Why be sustainable?

- Sustainability **ensures continuity**
- Sustainability **protects investments**
- Sustainability **maintains desired outcomes**
- Sustainability **provides a solid foundation for further development**
- Sustainability **builds confidence**
- Sustainability **validates strategies**
- Sustainability **avoids 'reinvention of the wheel'**
- Sustainability **minimises 'ad hoc' costs**

# Services
# &
# Support

# Implementation Assistance



- **GS1net Support Services**
  - Delivery of "Essentials"
  - Telephone and email support
  - Data validation
  - Dedicated Services Support Advisor
  - Free GS1net Webinars



- **Professional Services**
  - Implementation arm of GS1
  - On-site assistance
  - Full project management
  - Cost recovery basis

# Implementation Assistance

Talk to your local GS1MO and they will be able to provide you with assistance and point you to your appropriate data pool.

Visit the following websites:
- The GDSN website
  www.gs1.org/gdsn
- The getting started general guide
  http://www.gs1.org/gdsn/it
- The Data Synch section of the GS1 Healthcare website
  http://www.gs1.org/healthcare/library

# Support & Implementation Services

The environment for global data synchronisation

**Different Data Pools offer different service levels!**

- **GS1net Implementation Assistance**

- **GS1net Fast Track**

- **GS1net Implementation Learn & Knowledge Training**

- **GS1net Webinars**

- **GS1net Sustainability**

- **GS1net Certification**

- **GS1net Audit**

- **GS1net Data Maintenance**

- **GS1 Data Quality Audit Service**

- **GS1net Supplier Engagement Support**

- **GS1net Data Recipient On-Boarding Support**

# Guides, Tools & Certified Products

- <u>GS1net User and Technical Guides</u>
    - GS1net User Guides for Suppliers / Buyers
    - GS1net Technical Information/Cook Book
    - GS1net Connectivity Options / File Formats

- <u>GS1net Tools</u>
    - GS1net Data Loading Tool (Browser Template)
    - GS1net Validator

- <u>GS1net Certified Products</u>
  GS1net Certified Products are applications that have successfully completed the GS1net Certification Program. Therefore these applications fully comply with GS1net requirements.

# Thank You!