

Microsoft Retail
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Global Data Synchronisation

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Overview

The retail industry is on the verge of a breakthrough...

Standards are critical for business collaboration and a new generation, under the banner of Global Data Synchronisation (GDS), is enabling retailers and suppliers of all sizes to drive costs out of the supply chain.

GDS is the backbone for enterprise collaboration and the foundation for applications like Radio Frequency Identification (RFID) and traceability. As a result, data synchronisation is the essential first step on the path to electronic collaboration.

Designed to help keep the supply chain operations of all trading organisations aligned, GDS ensures that basic product information, such as the description stored by one company, matches that stored by their trading partners. Businesses submit their product details in a set format to data pools around the globe which will then be checked against a global data registry. Any changes will be highlighted immediately to the trading community.

GDS standards are being steered by a group of retailers and manufacturers known collectively as the Global Commerce Initiative (GCI), and are being developed by EAN International and The Uniform Code Council (EAN.UCC/GS1). The standards assign key attributes to product data, enabling manufacturers, suppliers, retailers and other supply chain players worldwide to share and understand it.

The ultimate goal is to enable a manufacturer to have its product catalogue available globally in an efficient and easy to find way, thereby giving retailers improved sourcing capabilities. Then, when they start doing business with their trading partners, data will be exchanged in a seamless, streamlined way throughout the supply chain.

The principal benefit of GDS is that it eliminates 'bad data' relating to product item information, resulting in reduced costs and better ROI for both retailers and suppliers. By standardising and synchronising data businesses can lower supply chain costs by between **one and three per cent**.

Studies by Capgemini, on behalf of the GCI, have shown that the quality of master data currently held by retailers and suppliers is poor, with more than half of the items in company systems containing incorrect data, such as wrong values and duplicate or obsolete entries. The principal reason for this is that, currently, most product data is handled manually and is, therefore, fraught with the errors of re-keying.

Companies who subscribe to the GDS initiative and publish their product information to the data pools will need to make sure that the data is in the set format and is of the required quality to exchange with any third party. All data quality issues should be fixed at source so that mistakes are not proliferated.

According to a study by A.T. Kearney, once there is broad industry adoption of GDS, companies that commit to improving internal processes will see real monetary benefits – roughly \$1 million for every \$1 billion in sales. Results from the study participants include the following:

Benefits to manufacturers:

- 3% to 5% reduction in shelf out-of-stocks
- Two week reduction in speed-to-market for new items (i.e. 14 extra days' sales of faster-moving items)
- 7% to 13% reduction in salesforce time spent communicating basic item information to customers, following up, resolving queries, etc.
- 0.5% reduction in inventory

Benefits to retailers:

- 3% to 5% reduction in shelf out-of-stocks
- Two week reduction in speed-to-market for new items (i.e. 14 extra days' sales of faster-moving items)
- 10,000 to 30,000 hours saved in store labour costs resulting from shelf-tag and scan errors
- 1% reduction in inventory

The benefits of synchronised data are far-reaching, both from an internal and external perspective. The sharing of data between trading partners is now one of the most important supply chain processes, as the integrity of the information is critical for the uninterrupted flow of goods.

The changes that will need to be made aligning various systems and formats are going to be considerable, but the benefits in terms of smarter store operations, merchandising, accounting and supply chains will be enormous.

In the food sector a key driver for investing in GDS is the need to comply with mandatory product traceability requirements, the desire to support technologies such as RFID, and standards such as Collaborative Planning, Forecasting and Replenishment (CPFR).

There is an increasing requirement from governments and policy makers for products to be tracked from field to table. Traceability applications are based on the assumption that basic product data descriptions are uniform and that the systems for exchanging them globally are available, making GDS a prerequisite.

A GDS infrastructure is also essential for the deployment of RFID. Cleaning and synchronising data will streamline the product information sharing processes. Without this RFID cannot create any significant business value.

CPFR has never reached its full potential, in part because of data impurities. It is more likely to become a widely accepted standard from which suppliers and retailers can take advantage, once errors in data are removed.

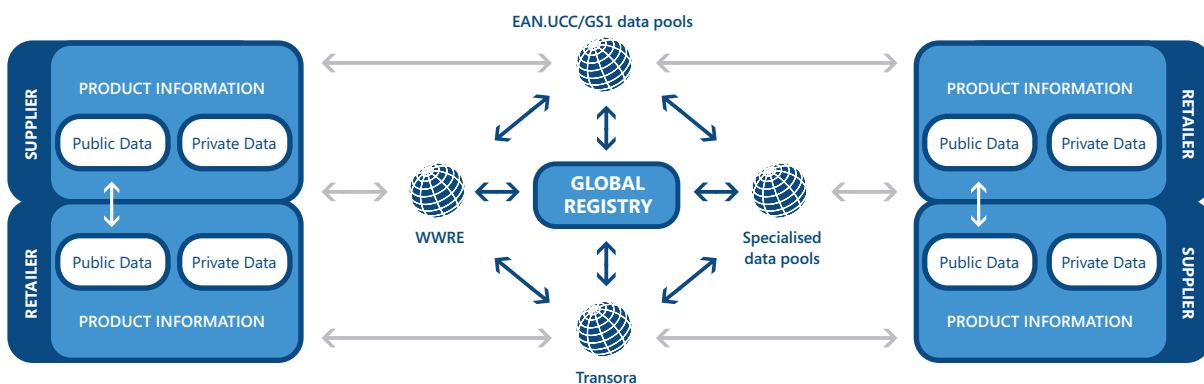
Additional benefits for the retail industry include:

- Increased speed to market
- Increased sourcing opportunities
- Improved relationships with trading partners
- Reduction of invoice mismatch
- Reduction of administration costs

While the initial impetus for GDS is coming from companies based in the US and Europe, its value has been taken on board by businesses throughout the world. In Asia Pacific, for example, it is being seen as a key driver to better streamline the domestic distribution of consumer goods in Japan.

Both retailers and suppliers recognise that GDS will facilitate a more flexible response to the ever-changing market environment and help reduce the investment in human resources and complicated processes currently involved in the supply and recording of product information.

The concept of the international standardisation of online electronic commerce among businesses within the retail sector has all the makings of becoming a reality in the not too distant future.



The Microsoft Proposition for GDS

How to get started...what you need to do...the solutions available...
the expertise on hand

The successful implementation of any new project is dependent on how well a business approaches the integration of new solutions, both internally and externally, alongside the management of the major change in business processes.

With an initiative such as GDS that involves managing huge amounts of data and a whole new set of industry standards, this could appear to be a complicated, tedious and daunting task. However, it need not be.

To help simplify the procedure and reduce the time, risk and cost elements of adopting GDS Microsoft has developed a GDS Platform. This incorporates its tools for integration, managing databases and working with web services, with which a large percentage of retailers and suppliers are already familiar.

In addition, Microsoft has been collaborating with the key GDS stakeholders, which include GCI, EAN member organisations, EAN INT, WWRE, Transora and UDEX, as well as systems integrators such as Capgemini and the GDS focused ISV community, to put together a road map to deliver GDS in an easy, structured, cost-effective way.

Simplistically the challenge for retailers and suppliers is to implement a framework, based on GDS standards, which will enable them to leverage their existing back office infrastructure. The solution must integrate information on all GDS attributes such as product descriptions, category-specific data and also future web services from third-party providers.

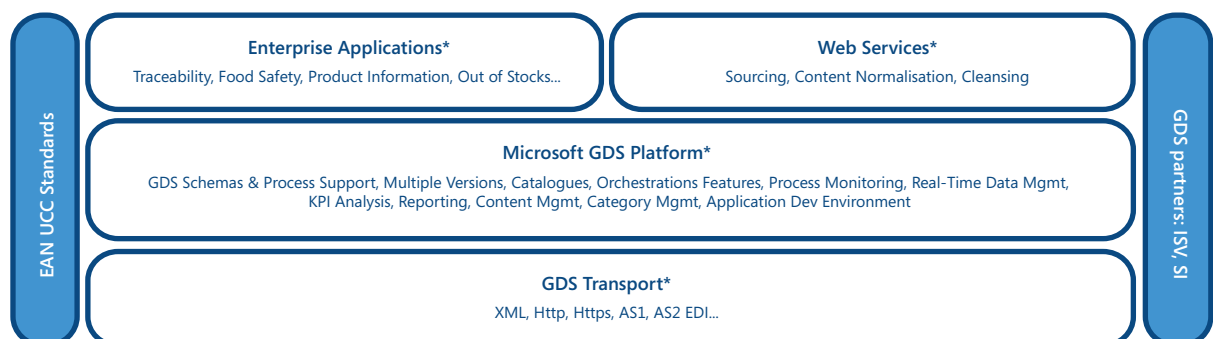
While retailers and suppliers may like to share specific information from their databases according to their own company-specific business rules, they are also keen to configure with GDS compliant systems for sharing supply chain information.

Microsoft has made considerable investment in developing the appropriate solutions for GDS. The Microsoft GDS team, including representatives of the product and retail industry groups, has been working with the key industry bodies to adapt existing components so that they comply with the appropriate standards.

The technology is available for implementation through Microsoft Systems Integrators (SI) and Independent Solution Vendor (ISV) partners.

Microsoft has made considerable investment in developing the appropriate solutions for GDS.

Microsoft GDS Strategy



* GDS features will be available either directly from Microsoft or through GDS partners

The Technology

The technology for delivering GDS centres on the solid foundations of a proven Microsoft solutions framework incorporating:

- **Microsoft SQL Server:** Database for GDS product data, with out-of-the-box analysis and reporting capabilities
- **Microsoft BizTalk Server:** XML-based integration server for GDS messages, business rules, events and process
- **Microsoft Infopath:** GDS data entry tool with workflow and web service capabilities
- **Microsoft Live Meeting:** Web-based real-time collaboration platform for GDS trading partners
- **Microsoft .NET platform:** Development platform for web services-based GDS platform

These five elements will enable businesses to collaborate through standards-based, open, scaleable and adaptable technology.

Microsoft GDS Platform

The comprehensive Microsoft GDS server platform is based on its Windows Server System, with BizTalk Server providing a robust foundation for message exchange, business rules, events and processes, within and across organisations. The platform and Microsoft partner ecosystems provide the software infrastructure to integrate data and services from disparate sources

and applications to make the process of cleaning, consolidating and sharing information – irrespective of transport protocols – in the right standard format as fast and easy as possible. In addition, the platform is configured so that companies can easily stipulate data that needs to remain private and that which is not confidential and can be shared with external partners.

The platform has been customised with the very specific needs of the retail ecosystem in mind. For example, Microsoft worked closely with UCCnet to build the BizTalk Server toolkit for UCCnet connectivity in retailers' and suppliers' editions that support UCCnet schema v2.1. The toolkit is capable of jumpstarting companies that want to connect with the data pool.

The toolkit was updated in October 2003 for UCCnet schema v2.2 and is already in use by retailers and suppliers, including Unified Western Grocers and Ocean Spray in the US. Based on GDS standards, this toolkit can also be used to connect and interoperate with any GDS compliant data pools.

As many of the data pools will be extremely large, and need to embody capabilities for reporting and analysis, Microsoft SQL Server is a good product fit as it has been designed to provide rich capabilities such as catalogue and category management.

Traceability

A key driver for GDS in the FMCG industry is the necessity for traceability. Companies need to be scrupulous about traceability from field to table, providing the customer with as much information as possible about their purchases. Within a large supermarket group product recalls can have a huge impact both logistically and economically. Traceability systems need to allow users to handle these events, quickly and efficiently, so that any serious health issues are minimised, or even allayed, before they reach the consumer. Microsoft has been working on food safety systems in conjunction with its partner Trace One, a leading provider of traceability information management applications for retailers and their suppliers, whose customers include Carrefour, Auchan and Casino. Using Microsoft technology, Trace One has developed GDS-compatible applications that help retailers and suppliers to convey information relating to product content on-line in a highly secure environment. The system also enables use of electronic signatures for documents and deploys traceability stations.

Working the Data

As a supplier creates or updates a product, product data is stored in a local consolidation database, from which a consolidated item record is produced. The item data is then registered with trading hubs like UCCnet or EAN member organisations data pools, WWRE, Transora and industry specific data pools. Once registered, the global registry can be updated and the data published to trading partners. Retailers or other recipients can constantly poll the global data registry for updates and synchronise the data to their local databases.

Smarter Retailing Initiative

The proposition for GDS aligns with Microsoft's Smarter Retailing Initiative (SRI), which focuses on helping businesses improve how they sell and operate through better access to customer and product information.

The SRI Architecture is based on open industry standards for integrating data which will enable vital information about the store, its products, its financials and its supply chain partners, together with other core enterprise information, to be easily integrated with consumer-facing innovations. This can transform the customer experience, deliver competitive differentiation and allow retailers to reap the benefits that integrated data promises.

Steps to GDS

The following steps need to be taken before embarking on a GDS project:

- Assess current systems architecture
- Define IT and business requirements
- Define future systems architecture
- Define system changes/select new solutions
- Define data pool strategy process
- Establish data pool connectivity
- Define step-by-step systems development and integration

The challenge for retailers and suppliers is to implement a framework, based on GDS standards, which will enable them to leverage their existing back office infrastructure.

Best Practice Strategy

Microsoft has combined its expertise and knowledge of standards initiatives with that of partners Capgemini and SRC, to produce a best practice strategy to help retailers and manufacturers deal with the pressing need for GDS. This collaboration provides a methodology, solution and implementation roadmap. SRC offers a Product Data Manager solution that allows manufacturers and retailers to align and manage product data centrally for distribution in whatever format is required for business users to fully exploit. The solution also allows internal synchronisation between different systems, like web catalogues, and external synchronisation with data pools.

Delivering GDS

GDS functions	Microsoft product	Description	Microsoft partners
Product catalogue/ data pool storage	<ul style="list-style-type: none"> – Microsoft Commerce Server – Microsoft SQL Server 	Storage and product information management, product category management	Reqio, SRC
Import/Export of data	<ul style="list-style-type: none"> – Microsoft SQL Server – Microsoft Biztalk Server 	Loading the data pool, exporting from the data pool	Reqio, SRC, Cactus Commerce, Covast
Real-time collaboration	<ul style="list-style-type: none"> – Microsoft Live Meeting Server 	Enable trading partners online collaboration	
Data cleaning*	<ul style="list-style-type: none"> – Microsoft SQL Server – Microsoft Biztalk Server – Microsoft .NET platform with web services 	Keep an up-to-date product database with normalised and clean data/data pool using these tools	Udex
Data schemas, business rules, and workflow management*	<ul style="list-style-type: none"> – Microsoft Biztalk Server 	Repository that enables the storage of retailers' and suppliers' data schemas, business rules and workflow process with versioning	SRC, Reqio, Cactus Commerce
Data pool connector for data synchronisation, UCCnet connector	<ul style="list-style-type: none"> – Microsoft SQL Server – Microsoft Biztalk Server – Microsoft .NET platform with web services 	This connector developed by Cactus is Biztalk Server-based and enables connection to any GDS standards compliant data pools	Cactus Commerce
Light version of GDS platform for small suppliers	<ul style="list-style-type: none"> – Microsoft Infopath – Microsoft Biztalk Server Partner Edition 	Simplified solution to enable suppliers GDS connectivity	SRC, Reqio, Cactus Commerce
Management and supervising*	<ul style="list-style-type: none"> – Microsoft Operations Manager – Microsoft Systems Management Server 	Microsoft management solutions to monitor the overall GDS platform	
RFID enablement	<ul style="list-style-type: none"> – Microsoft Biztalk Server and Microsoft Business Solutions 	RFID enablement out of the box	Manhattan, Trenstar, Globalranger
Web services*	<ul style="list-style-type: none"> – Microsoft .NET platform 	GDS web services to be provided by partners	
Traceability	<ul style="list-style-type: none"> – Microsoft .NET platform, Microsoft SQL Server, Microsoft Biztalk Server 	GDS standards based traceability applications	Trace One, Trace Wise, FXAGroup

* For these functions, Microsoft works alongside a number of partner systems integrators

Microsoft Partner Ecosystem

The following are just some of the partners Microsoft is working with on GDS implementations:

cactus | **Cactus Commerce**
www.cactuscommerce.com renata.oickle@cactuscommerce.com

Cactus Commerce Inc. is a software and services provider dedicated to helping companies bring more efficiency to their complex business processes. A Microsoft Gold Certified Partner, Cactus develops and delivers rapidly deployed, cost-effective and extensible trading partner integration solutions that address the three critical components of e-commerce – to connect, to trade and to settle.

Increasingly, competitiveness and profitability in the consumer packaged goods (CPG) and retail industries depends on the exchange of accurate, up-to-date product data between retailers and CPG manufacturers. According to an A.T. Kearney (a global management consulting firm) study: \$40 billion, or 3.5% of sales, are lost each year due to supply-chain information inefficiencies.

Global Data Synchronisation (GDS) presents manufacturers and retailers alike with a unique opportunity to gain rapid, direct, quantifiable results and is a first step toward maximising their investments on technologies such as RFID.

Working closely with Microsoft, Cactus has developed the Cactus GDS Accelerator for BizTalk, which leverages the robust integration capabilities of BizTalk Server 2004. It helps CPG manufacturers and retailers take full advantage of the power of the centralised Global Registry that connects to numerous data pools around the world, enabling information to be standardised, synchronised and exchanged between trading partners on a near-real-time basis.

 **Capgemini**
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Capgemini, one of the world's foremost providers of Consulting, Technology and Outsourcing services, has a unique way of working with its clients, which it calls the Collaborative Business Experience. Through commitment to mutual success and the achievement of tangible value, the company helps businesses implement growth strategies, leverage technology, and thrive through the power of collaboration. Capgemini employs approximately 55,000 people worldwide and reported 2003 global revenues of 5.7 billion euros.

Product Information Management (PIM) software provider, Reqio, enables organisations to develop a central product data repository to store, manage and validate all product information within the enterprise. The Reqio software suite enables organisations to maintain, analyse and deliver a single view of product information that can be used both internally and across the extended supply chain. Reqio unleashes that information by providing a number of key technologies to support initiatives including personalised product catalogues, Punch Out support for eProcurement, supplier enablement, Global Data Synchronisation (GDS) and RFID.

To support GDS and RFID it is essential to have a reliable clean source of product content to be able to share data on tagged products outside the organisation. While transaction management ERP systems have traditionally held core product information they are rarely capable of extending to give high performance management and access to the full range of data required for GDS and RFID. Reqio's Solution addresses just these concerns, delivering a robust, product information architecture to underpin both GDS and RFID and offering a raft of data-focused benefits including data quality improvements and improved process management. As an example of scalability and fit-for-purpose, Reqio's technology is at the heart of three large-scale public sector eProcurement initiatives – NHS PASA, eProcurement Scotland and Welsh Health Supplies.

SRC provides the most flexible, scalable behind-the-firewall PIM and GDS solution for collecting, completing, managing and synchronising item information. Companies including Sara Lee, Heineken, Beiersdorf, Jumbo Supermarkets, Unilever and Interbrew are using SRC-Product Data Manager (PDM) to create, manage, publish and exchange information via multiple channels and across the enterprise.

SRC-PDM features a highly flexible data model, EAN.UCC templates, customisable workflow functionality with web-based user interfaces and outstanding connectivity functions. With SRC-PDM, retailers and manufacturers can optimise business processes and the management of providing product information to suppliers, customers, and business partners and data pools. Retailers and manufacturers are able to benefit from GDS, using SRC-PDM.

SRC-PDM is developed and executed on the Microsoft Platform. Using Microsoft technology such as Biztalk Server 2004, Infopath, SQL Server 2000 and Windows Server 2003, SRC-PDM offers the business value to retailers and manufacturers in the consumer packaged goods industry.

Workshops

To help retailers and manufacturers get started with GDS, Microsoft, in conjunction with its partners, is providing individually-tailored, one-day workshops, culminating in a proof of concept. To participate, simply contact your Microsoft representative or send an email to **msgdsrequest@microsoft.com** stating your interest in a GDS workshop.

More Information

To find out about Microsoft's Global Data Synchronisation proposition, please visit **www.microsoft.com/smartretail**