

# Product Information Management

**The foundation of supply chain excellence in  
the consumer products and retail industries**



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# Executive Summary

Product data is of vital strategic importance to the consumer products and retail industries, yet in many companies data quality and data management do not rate as senior management priorities. Without a firm foundation of high-quality data, no manufacturing or retail organisation can generate the information required to make intelligent business decisions.

Unfortunately, independent research suggests that most organisations suffer from poor quality product data, with as many as 50% of records containing errors. The impact on both manufacturers and retailers is severe, and may increase overall supply chain costs by as much as 3%.

Product information management (PIM) provides the disciplines and tools to address this problem. PIM has two main elements: internal data alignment focuses on getting the data 'clean' and keeping it clean; and global data synchronisation provides a mechanism to exchange clean product data among trading partners.

The first priority, then, is internal data quality. The availability of complete, consistent, accurate and timely product information is critical to ensuring maximum return on investment from any supply chain initiative - from radio frequency identification to collaborative planning, forecasting and replenishment, vendor managed inventory and, of course, global data synchronisation.

And the returns are significant. High-quality product data delivers increased sales, improved productivity and reduced costs.

Product information management transforms data and creates a corporate asset. It provides a foundation for more informed business decision-making and improves the quality of information that flows through the supply chain. Ultimately, it helps the enterprise to make more money and do it for less. It is time for senior management to take product data more seriously.

*In this white paper we discuss the importance and value to an organization of taking a strategic approach to addressing the problem of poor product information.*

# 1. Data: The Bedrock of Intelligence

## Data and decision

In the past, most senior managers devoted little time or attention to data, often with disastrous consequences. Only recently has there been an increasing awareness that, at all stages in the supply chain, intelligent decision-making is dependent on high-quality product data.<sup>1</sup>

For manufacturers, who want to know what to produce and when, intelligent decision-making means greater agility and responsiveness to changing customer requirements. For retailers, it means better, more informed buying decisions with fewer stock-outs and more satisfied customers. Across the supply chain, intelligent decision-making means more control over the business.

All of this is dependent on the data. Intelligent business decisions are based on accurate and timely information drawn from a reliable data source. The data describes your products; the information tells you what is happening to those products; and the intelligence drives the business decisions that you make in response to these events.

Without high-quality data, business leaders will struggle to make effective tactical or strategic decisions.

Business processes will become laboured and inefficient when they rely on data that is obsolete or of questionable accuracy. Data, therefore, deserves our full and urgent attention.

## The flow of information

To conceptualise the importance of information that is based upon high-quality data, consider the structure of the supply chain. It can be understood in terms of three primary flows:

The first is the physical flow of goods and services. The second is the resulting flow of financial payments. And the third - our focus here - is the flow of information. This information includes descriptions of goods and services being traded or in our inventory and also our transaction information.

Listing the information flow last reflects the fact that information management has long been neglected as an enterprise activity in favour of the more tangible physical and financial elements of the value chain. It is time to rethink those priorities.

*Too often the consequences of poor product data only become apparent further down the supply chain, when the costs of remedial action are higher, impacting all parties in the trading relationship.*

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<sup>1</sup>From this point onwards, for purposes of readability when we use the term "data" we shall implicitly be referring to "product-related data."

**The strategic role of product data**

As they set the strategic agenda for the management of their organisation, decision-makers must ensure that there are strong and specific links between day-to-day operational activity and well-defined key performance indicators (KPIs). Data is the key to establishing these links, and to achieving an accurate assessment of operational performance against strategic measures. Management should be able to visualise what is happening in the business as it happens, and take speedy corrective action when reality and strategy begin to diverge - and this can only be done with good data.

# 2. The Problem of Bad Data

## Bad data is everywhere

It is an unfortunate fact that the product data within most organisations is anything but good. Too often it exists - and is frequently duplicated - within a multitude of different applications across a wide range of departments, business functions and enterprises. Rarely is product data managed on anything approaching an integrated, let alone collaborative, basis. Instead, it tends to be found in departmentally managed silos of information that are often:

- incomplete
- inconsistent
- inaccurate
- out-of-date.

This is what we mean by bad product data, and it is a problem that is pretty much endemic to business. UDEX, the UK-based data quality organisation, revealed in 2004 that 51% of new consumer units submitted to its quality assurance service in late 2003 contained incorrect data. Further, 72% of suppliers were responsible for submitting erroneous data. The UDEX findings confirmed earlier research by Capgemini and the Global Commerce Initiative<sup>2</sup> that showed that over 50% of items in company systems contain errors.

Regrettably, the consequences of these errors often only become apparent further down the supply chain. By the time that a delivery is rejected, or the product is found not to fit on the shelf, the costs of remedial action are high, and all parties in the trading relationship are affected.

## Bad data is expensive

To better understand the impact of all of this bad data, it is possible to visualise the problem as having both breadth and depth. The breadth of bad data is its scope; a scope sufficiently large that it affects many business functions within the organisation and across each side of the trading relationship. The depth is demonstrated by the volume of product data inaccuracies that companies are working with, and the lack of confidence that this engenders. When breadth and depth are multiplied together, the result is a problem of major significance.

Figure 1 shows that these errors translate into a significant cost impact for both manufacturers and retailers. As we shall see later, these mistakes can add perhaps 3% to total supply chain costs. Appropriate attention to data, on the other hand, can increase profitability by 10-15% (see the Capgemini paper "Creating the Business Case for Global Data Synchronisation in Your Company")<sup>3</sup>.

<sup>2</sup>The Global Commerce Initiative is a global, voluntary user group created in 1999 by manufacturers, retailers and sponsors, whose primary aim is to improve the performance of the global consumer goods supply chain. The GCI believes this can be made possible through the collaborative development and implementation of global business standards and key business processes. For more information see: <http://www.gci-net.org>.

<sup>3</sup>See the Capgemini paper "Creating the Business Case for Global Data Synchronisation in Your Company".

Figure 1 How bad data affects manufacturers and retailers

The Cost of Bad Data	
Suppliers	Retailers
Reduced sales orders due to inaccurate replenishment	Lost sales due to out-of-stocks
Lost revenue due to badly-synchronised trade promotions	Lost sales due to planogram mismanagement
Wasted hours spent responding to and correcting retailer product data inaccuracies	Wasted hours spent checking, chasing and correcting bad product data
Wasted hours spent dealing with mis-shipped items and product returns	Frustrated customers due to checkout scanning issues
Lost revenue due to invoice deductions and penalties	Higher inventory levels caused by product misidentification in ordering processes
Lost revenue due to invoice deductions and penalties	Higher inventory levels caused by product misidentification in ordering processes
Wasted time spent disputing erroneous invoices and purchase orders	
Less trustworthy and less timely corporate decision-making	

How well do organisations understand these costs? People and departments usually appreciate the cost of individual bad data incidents when they occur. However, they, and the organisation as a whole, often need help in recognising and understanding:

- the aggregated total impact of such costs to the organisation
- how such costs might be permanently avoided in future
- how improvements in efficiency and speed of internal processes can be driven from accurate and reliable data
- how the business can exploit the opportunity to gain significant competitive advantage.

*People and departments appreciate the cost of individual bad data incidents when they see them, but rarely does the organisation recognise the true breadth and depth of the problem.*

# 3. The Solution: From Bad Data to Good

Bad data is costing business dearly, but the good news is that help is at hand. For any given organisation, it is now possible to assess the extent of the problem of bad data, to define a strategy for resolving the problem, and to measure the resulting benefits.

Organisations embarking on this journey will need to apply the disciplines of product information management (PIM). In essence, PIM is the process of organising and governing product data to the best possible advantage, usually with the aid of specialised software tools.

Capgemini, in cooperation with the global commerce initiative (GCI), has taken a leading role in developing

thought leadership around product information management (see links at the back of this paper) and is working in partnership with many organisations to help deliver the value that PIM promises.

Individual companies can develop a product information management strategy which will enable them to define, maintain and employ clean, complete and consistent product data. What is more, they will be able to do this not just across the enterprise, but also across the supply chain.

There are two main elements to a product information management strategy: internal data alignment and global data synchronisation.

*The endgame of these efforts would be to create "one version of the truth" for product data within the organisation.*

### Internal Data Alignment (IDA)

IDA is the process of creating a robust improvement in the underlying quality of data. This stage is composed of two main steps:

- **"Getting data clean"**- an initial, one-time activity to clean up the current inaccuracies within all appropriate data sources: a process of modelling, checking, mapping and aligning.
- **"Keeping data clean"**-requires taking steps to ensure that the root causes of data inaccuracies are addressed in a permanent manner.

Success will depend upon on three key factors:

**People and ownership:** Ownership of data is often unclear, and inter-dependencies among data elements may not be obvious; when one department makes a change to data, the knock-on effects across the rest of the organisation, and its partners, may not be known. Effective data management can only be achieved when there is clear data ownership by defined business users. Persuading users to accept ownership of data will require buy-in from senior management, who must emphasise the importance of high-quality data as a foundation upon which other business initiatives can be built.

**Systems and applications:** Product data is typically stored in different systems in different formats with different rules and standards for different parts of the organisation. By incorporating all product data within a single repository, it is possible to improve data management and control, and integrate all of the systems, users and processes that need to share that data.

**Processes and procedures:** Managing accurate and consistent product data often involves multiple business functions (e.g. input may be required from buying/merchandising, supply

chain, sales and marketing), but well-defined, cross-functional processes are rare. In most organisations, product information is usually managed through a series of ill-defined and highly fragmented data management practices. To ensure the integrity of product data, it is necessary to implement common data management processes across the entire organisation. These processes should be embodied in appropriate procedures and workflows that all departments can follow. Such processes cannot be grafted on at a superficial level - they must become part of the way the organisation does business.

Through improvements in each one of these key areas an organisation can move towards a 'single version of the truth' for all product data. In practical terms, the organisation may decide to create either one consolidated physical application or else a logical data repository linking several physical ones. In both cases, data consumers across the enterprise can reference a single data source, and data producers can update it either directly or via other systems.

### Global Data Synchronisation

Organisations can gain additional return on their IDA investments by engaging in data synchronisation. That is, by taking advantage of collaborative initiatives to derive maximum benefit from keeping a "tidy ship".

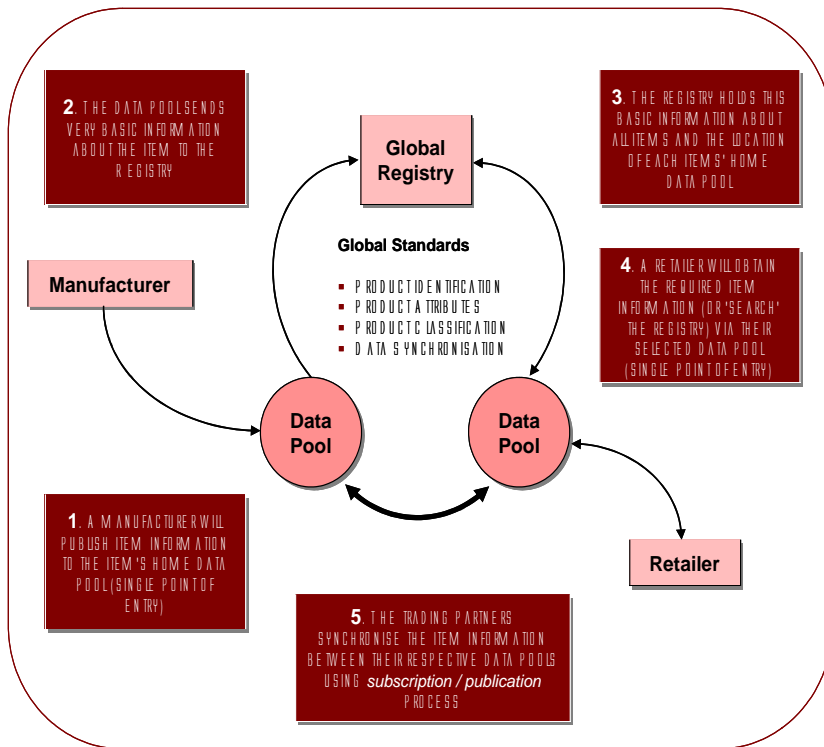
*"To fully optimise GDS effective product information management must exist 'behind the firewalls' and high-quality data must consistently flow through the network."*

*Ruud van der Pluijm, VP B2B eCommerce at Royal Ahold*

Foremost here is global data synchronisation (GDS), an initiative that Tesco chief executive Sir Terry Leahy has referred to as "a boring subject with exciting consequences". GDS is a collaborative mechanism for communicating product data between trading partners. It comprises a simple process of publish-and-subscribe, based on global standards and a network of services, such as those provided by the Global Data Synchronisation Network (GDSN). The GDSN enables the exchange of product data on a global basis via a network of "data pools" in which accredited service providers carry out synchronisation on behalf of participating business.



Figure 2 The global data synchronisation network



GDS and related initiatives (e.g. collaborative planning, forecasting and replenishment (CPFR), radio frequency identification (RFID), vendor managed inventory (VMI), etc.) rely on the high-quality product data that is achieved through IDA. As Ruud van der Pluijm, Vice President of B2B eCommerce at international supermarket operator Royal Ahold, has observed, synchronising data between trading partners is not enough: "To fully optimise GDS, effective product information management must exist 'behind the firewalls' and high-quality data must consistently flow through the network."

# 4. The Payback: The Benefits of Product Information Management

The benefits of addressing poor product information and inefficient data-dependant processes can be grouped into three main categories:

## Increased sales

Firstly, companies can expect to increase sales, through:

- Increasing speed-to-market for new product introductions.
- Increasing on-shelf availability (by reducing out-of-stocks).
- Optimising promotions.

Johnson and Johnson, reduced new item lead time with Wal-Mart from 10 to 2 days, and virtually eliminated data integrity related out-of-stocks on synchronised items, lowering its total out-of-stock volume by 2.5%.

In Colombia, Unilever reduced item creation times from an average 3-4 weeks to an average 3-5 days. Self-evidently, the faster an item can be set-up, the faster it can be ordered and sold.

## Productivity increases

Secondly, companies can expect significant productivity increases, through:

- Reducing item set-up and maintenance effort.
- Reducing warehouse management effort.
- Reducing error reconciliation effort.
- Transforming working practices through information-driven workflows.

Capgemini client Albert Heijn, the Dutch grocer, reported a 30% increase in productivity in its data management department by implementing GDS with four trading partners on top of a 'behind the firewall' PIM solution.

AEON, a leading Japanese retailer, is initiating GDS with private label suppliers. Based on initial results, it expects to reduce its item management costs by \$2 million. The reductions come from the automation of new product registration and error handling processes, and the elimination of paper-based catalogue maintenance for own-brand products.

Working with participating trading partners in South America, Gillette has been able to eliminate purchase order (PO) discrepancies for price, product dimension and GTIN<sup>4</sup>, thereby reducing average PO reconciliation time from 10-30 minutes per PO to 4-5 minutes. In Latin America, Procter & Gamble reduced PO discrepancies relating to obsolete products from 3.6% of orders to 0.78% of orders by combining internal data cleansing activities with synchronisation efforts.



*Unilever reduced item creation times in Columbia from an average 3-4 weeks to an average 3-5 days. Self-evidently, the quicker it can be set-up, the quicker it can be ordered, and the quicker it can be sold.*

*Albert Heijn, the Dutch grocer, reported a 30% increase in productivity in its data management department.*

<sup>4</sup>GTIN: Global Trade Identification Number-in essence, a globally unique product identifier, which extends the concept of bar codes to global use.

### Reduced costs

Finally, companies can reduce costs. Research by Capgemini and the GCI shows that by combining product information management and synchronisation, retailers and suppliers can typically expect to reduce total supply chain costs by 1-3%.

In particular, companies can expect:

- reduction in the cost of data maintenance
- reduction in invoice deductions
- reduction in transport costs - return shipments and freight utilisation.

Leading Japanese retailer AEON has significantly reduced its item management costs with multiple

suppliers of private label and national brand products. As mentioned above, it now expects an immediate \$2 million reduction in item management costs; these savings result primarily from the automation of new product registration and error handling processes. In addition, AEON has achieved internal improvements in the product development process and reduced discrepancies between systems.

Johnson and Johnson, mentioned above, expects to see significant improvement on its truckload planning capability as a result of GDS. Synchronisation has also allowed it to eliminate data integrity related invoice deductions.

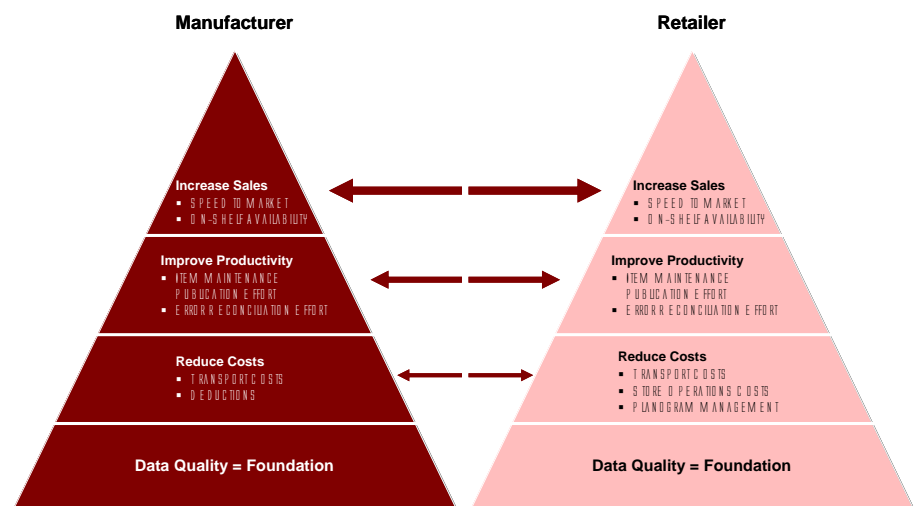
*Capgemini and GCI research shows that retailers and suppliers, by leveraging PIM initiatives with effective synchronisation efforts, can typically expect to benefit from a reduction in total supply chain costs of 1-3%.*

# 5. Where Does That Leave Us?

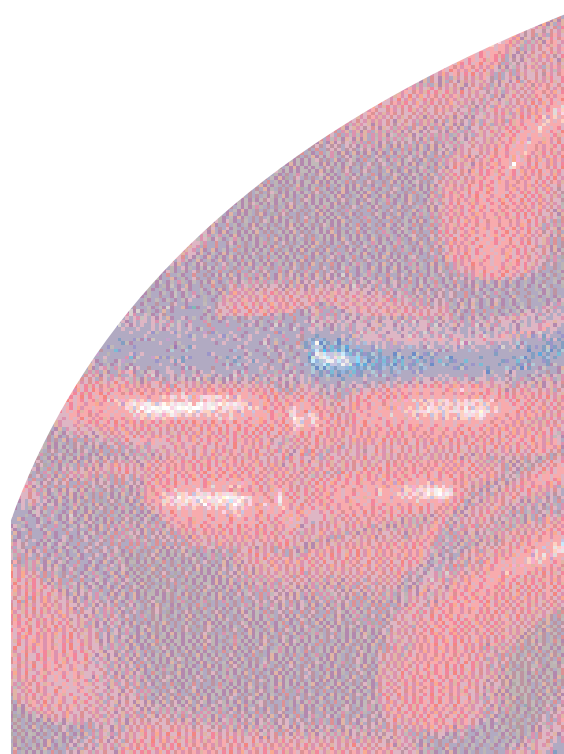
*Information is the bedrock intelligence and product information is the bedrock information in the consumer products/retail sector.*

This paper has outlined the need for consistent and reliable product data as a basis for operational improvements, competitive advantage and effective trading partner collaboration. It argues that clean data is the foundation for intelligent decision-making and improved business control. The benefits of high-quality product data are summarised by figure 2.

**Figure 3** The GDS key performance indicator (KPI) model for measuring the business impact of GDS



*Is product data holding you back or is it already enabling your business above that of your competitors?*



Having examined the impact of bad data in terms of wasted effort, inefficiency and poor customer service, etc., you may have been prompted to ask certain questions about your own organisation:

- How clean is our product data?
- How much is this costing us to manage?
- How is this issue impinging on our customer service?

You may also wish to consider how your organisation can create a sustainable 'single version of the truth' that can be used both internally and externally. In the case, you may wish to know:

- What do we need to do to achieve a reliable single source of product
- How seriously are we currently taking this fundamental

- Are we under pressure to synchronise data, firstly within our organisation and secondly with our trading partners?

The payback for an investment in product information management can generate a significant increase in sales and productivity increases and a substantial reduction in costs.

Looking around your own organisation, you may want to ask:

- What benefits are there for us in more efficient product information management?
- What could we achieve if we implemented this improvement?
- How much could we expect to increase sales and productivity, and how much could we reduce costs by doing so?

# 6. Capgemini, PIM & the Collaborative Business Experience



## About Capgemini and the Collaborative Business Experience

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, Capgemini helps businesses implement growth strategies, leverage technology, and thrive through the power of collaboration. Capgemini employs approximately 61,000 people worldwide and reported 2005 global revenues of 6,954 million euros.

More information about individual service lines, offices and research is available at [www.capgemini.com](http://www.capgemini.com)

## Capgemini's work in this area

Capgemini is helping numerous companies in the consumer products, retail and distribution (CPRD) industries gain the benefits of new enabling technologies such as global data synchronisation, RFID, mobility and in-store customer interaction solutions. Capgemini's Collaborative Business Experience makes CPRD companies stronger by combining what they do best with what we do best to improve performance. Thousands of practitioners with expertise in these industries help clients in more than 30 countries. To learn more, click on **INDUSTRIES WE SERVE** at [www.uk.capgemini.com](http://www.uk.capgemini.com).

## Further reading

For more information related to this product information management paper please go to the Capgemini website <http://www.uk.capgemini.com/> link to **Industries We Serve**, select **Consumer Products Retail and Distribution** and then **Thought Leadership** or alternatively follow the links below:



## The Internal Data Alignment Report

[http://www.capgemini.com/resources/thought\\_leadership/internal\\_data\\_alignment\\_learning\\_from\\_best\\_practices/](http://www.capgemini.com/resources/thought_leadership/internal_data_alignment_learning_from_best_practices/)

## GDS at Work in the Real World: Illustrating the Business Benefits

[http://www.capgemini.com/resources/thought\\_leadership/global\\_data\\_synchronisation\\_at\\_work\\_in\\_the\\_real\\_world/](http://www.capgemini.com/resources/thought_leadership/global_data_synchronisation_at_work_in_the_real_world/)

## Creating The Business Case for Global Data Synchronisation in Your Company

[http://www.uk.capgemini.com/industries/consumer/thought\\_leadership/the\\_case\\_for\\_global\\_standards/](http://www.uk.capgemini.com/industries/consumer/thought_leadership/the_case_for_global_standards/)

Alternatively go to the Capgemini website and type GDS in the Search box or contact:

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