

Driving value in the CPG/retail industry through data synchronization: The basis for trading partner collaboration



An IBM Institute for Business Value executive brief

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Introduction

As retailers and their consumer packaged goods (CPG) suppliers recognize the importance of working more closely in order to improve operational efficiency and service levels, data standards and data synchronization are becoming critical issues for industry executives to address. Yet competing visions and approaches have sown uncertainty in the marketplace. What are the different models for data synchronization and what steps do industry participants need to take to begin exploiting data synchronization's promised benefits?

Executive summary

CPG manufacturers and retailers have reached a crossroads in the way they conduct business. After years of consolidation and market expansion, trading partners are finding that they must increasingly rely on boosting the efficiency and effectiveness of their supply chains to help drive continued growth in earnings and shareholder value. New technologies are making dramatic improvements in these relationships possible through process automation and collaboration. While trading partners recognize the importance of such initiatives, many are uncertain how to proceed to achieve the optimum benefit.

Data synchronization is a critical first step in solving many problems that have long plagued the industry. It can be defined as: ***The timely and accurate updating of any item (i.e., product) information within and across enterprises to ensure a perfect, consistent match of data between the owner/originator of the product data and all users of the data.***

Item information includes core product data (e.g., a trade item descriptor) as well as extended attributes such as price, pallet size, ingredients, image, and potentially many others. Today, such data is shared by retailers and suppliers on a daily basis, but through labor-intensive and inconsistent methods. Critical information is often inefficiently managed by suppliers and communicated to retailers using incompatible media or formats. Improved sharing and processing of this data between trading partners would significantly reduce the time and costs associated with new product introductions, item updates, purchase orders and invoice deductions, while also improving collaboration in areas such as forecasting and replenishment.

To achieve these ends, the industry must adopt a global, standards-based data synchronization model, which will best enable the vision of seamless, highly responsive supply chain collaboration. However, establishing the foundation for data synchronization is proving to be a complicated endeavor, in part because new capabilities must be built both *within* enterprises and *between* trading partners.

For example, retailers often demand much more information than CPG manufacturers currently have available in their systems. The near-term costs to CPG firms of adding supplemental item attributes to their internal systems may prove to be significant. Moreover, standards have not yet been defined for many of the data attributes that retailers need, which extend beyond core item information to relationship or market-specific data.

In order to effectively manage these challenges, companies will need to:

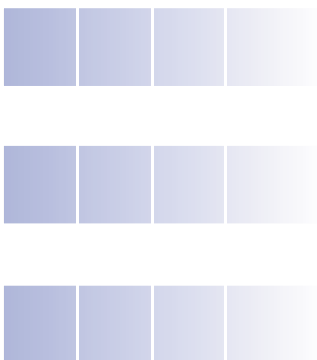
- Drive definition of global standards for a comprehensive range of item attributes
- Begin mobilizing their organizations today to prepare for future requirements
- Take actions that help drive the industry as a whole toward adoption
- Ensure that their partners' systems are interoperable and can scale effectively
- Maintain the flexibility to evolve their systems and strategies over time.

In addition, while the long-term benefits of data synchronization are significant, executives must recognize that they are largely indirect. Preparing for the initial synchronization of core item data will take effort, especially on the part of CPG suppliers. Real benefits (e.g., lower invoice deductions and faster time-to-market) arrive when synchronization encompasses market-, category- and relationship-specific data, such as pricing. Ultimately, the greatest rewards come through the enablement of more advanced supply chain initiatives. Data synchronization provides a robust foundation upon which the full benefits of trading partner collaboration can be achieved and scaled.

Retailers and suppliers need to start building data synchronization capabilities today. Companies should select a few trusted strategic partners to work with, helping to push the development of standards, while maintaining the flexibility to adjust course as new standards and approaches are defined. Industry leaders are already well underway, and others must take care not to be left behind.

Data-sharing challenges – historical and new

The communication, negotiation and agreement of item, price and promotional data are among the most fundamental ways in which trading partners work together. However, in today's marketplace, the process is labor-intensive, repetitive and prone to errors. Manufacturers often communicate item and price information to retailers manually and in an ad hoc manner, leading to the creation of inaccurate data in key retail systems. Retailers are often equally inconsistent in the way they request information, using different forms for different product categories.



Current methods cause a lengthy chain reaction of problems that plague the industry. Inaccuracies in retailer catalogs lead to erroneous purchase orders, purchase order/invoice mismatches, and, eventually, to invoice deductions. Furthermore, the labor-intensive process of communicating and keying item data causes excessive time-to-market for new products and delays to price changes at the store level. These issues, in turn, can lead to out-of-stocks, decreased revenue growth and dissatisfied consumers.

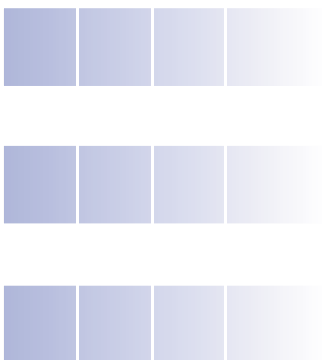
Retailers are increasingly demanding automated synchronization of item information from their CPG partners. There are five basic types of item information:

- *Core* – Basic information that is core to a product's definition (e.g., trade item descriptor)
- *Market-specific* – Item data unique to the market in which the item is sold (e.g., pallet size)
- *Category-specific* – Attributes unique to the item's product category (e.g., freshness date)
- *Relationship-specific* – Information unique to the particular CPG/retailer relationship (e.g., price)
- *Extended attributes* – Additional data or content that helps to define a product (e.g., images).

Retailers may need to define and use item attributes across all five categories. However, while CPG manufacturers maintain many core item attributes in their systems, many of the others often do not exist in their systems today. A typical CPG firm might require only 20 item attributes to manage its products internally, but its retail partners could each require 200 item attributes when managing that product. And many of these additional attributes could vary by market and by retailer! New approaches to data synchronization must enable trading partners to manage this complexity and scale the required systems in a cost-effective way.

Defining a global standards-based approach

Data synchronization aims to address the root cause of the problems outlined above and to serve as the foundation for improved efficiency and responsiveness in the supply chain. The vision for seamless data synchronization begins with product information being entered into an originating system only once, with all subsequent communication of that information being managed electronically, eliminating the need for manual rekeying of the data. Key enablers of this vision include advances in middleware and catalog applications, which facilitate internal

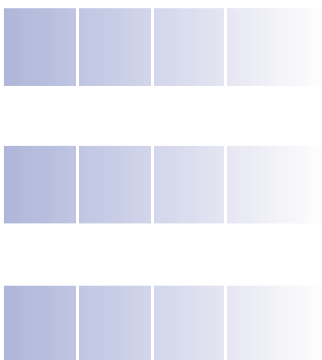


enterprise integration, and the development of industry standards for data attributes and business processes, which make automated communications between trading partners possible.

Since the adoption of the barcode, the retail and CPG industries have long embraced the need for and use of standards. The emergence of the Internet and the globalization of both retailers and suppliers have mandated that these standards now become global in nature. As data sharing is automated using globally accepted standards, it can be easily scaled, cost-effectively, to multiple partners. Key industry associations are driving the definition and adoption of these standards to help ensure that both retailers and suppliers have the same understanding of a given item attribute. Notable standards-building efforts include:

- *Global Data Synchronization (GDS)* – The Global Data Synchronization initiative was established by the Global Commerce Initiative (GCI), EAN International and the Uniform Code Council (EAN•UCC) to define the processes and standards by which information can be cleansed and synchronized. This initiative includes the definition of standards and protocols for synchronization messaging.
- *Global Standards Management Process (GSMP)* – EAN•UCC established the Global Standards Management Process, involving retailers, suppliers and key industry players, to define a single set of item standards that will be used across the industry. To date, the GSMP has defined such core attributes as the Global Trade Identification Number (GTIN), ascribed to unique products, and the Global Location Number (GLN), ascribed to unique locations. The EAN•UCC has set a sunrise date of January 1, 2005 for GTIN adoption, adding some urgency to standards adoption by industry participants. By adopting GTIN, trading partners will be able to scan any of the organization's product identification symbols (e.g., UCC-12/UPC, EAN/UCC-14).
- *Global Product Classification Schema (GPCS)* – GCI and EAN•UCC have worked to establish the Global Product Classification Schema, which enables products to be consistently classified between retailers and manufacturers. The GPCS consists of three parts: 1) The "brick," which serves as a category definition (e.g., bread); 2) "Attributes," which acknowledge the key variants within the category (e.g., color or size); and 3) "Values," which define the attribute (e.g., loaf). AC Nielsen has been selected to implement the GPCS.

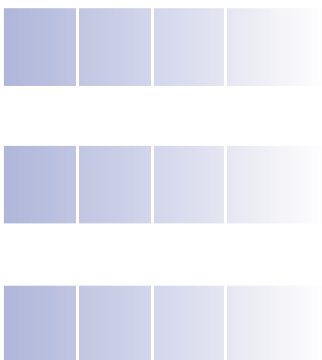
Both retailers and CPG suppliers have a stake in seeing the industry adopt a global standards-based approach. Data synchronization requires significant effort on the part of both retailers and manufacturers, whether conducted regionally or globally. Today, suppliers face the greatest pressure, as retail partners demand synchronization of item data that may not currently exist in the supplier's own systems. The burden of adding and standardizing item data will fall primarily on manufacturers



in the near term. However, over time, retailers will also face challenges, particularly as they globalize their business operations. They will need to deal with regional nuances in item attributes, requiring them to develop their own product information management capabilities to deal with data variations across markets. Thus, all trading partners need to support and invest in standards-based technologies and processes that help them, and the industry as a whole, manage the inherent, growing complexity of their businesses.

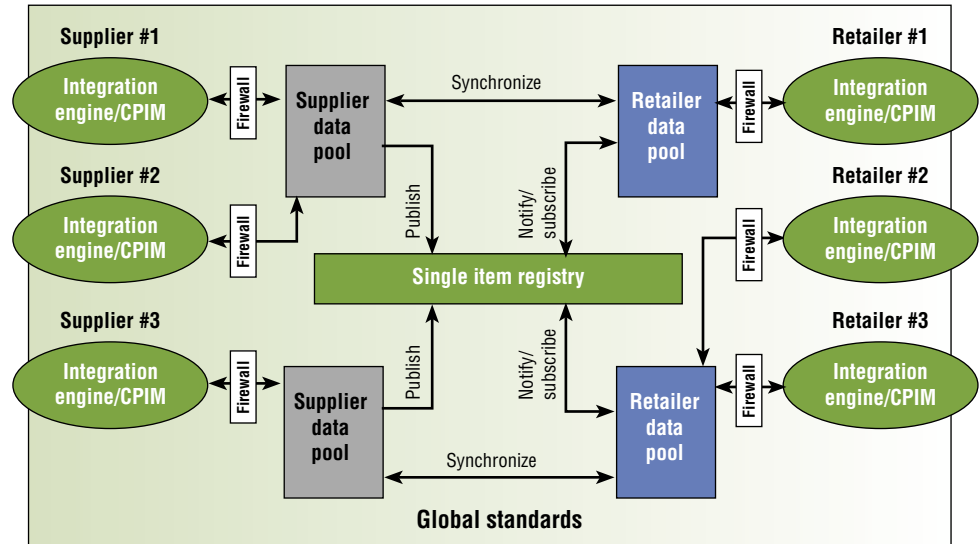
While global data standards continue to be defined, industry participants must choose from among several different models for the implementation of data synchronization processes. There are four key components in any standards-based item synchronization model:

- *Single item registry* – A global, industrywide repository where manufacturers register their trade items by standardized classifications. Retailers can access core item information through the registry. The registry acts as a "telephone book" to look up products and suppliers and to identify where item information is held.
- *Data pool/catalog* – Under a standards-based approach, a data pool is an electronic catalog of standardized item and price data, or a pass-through service of standardized information used to facilitate data exchange between trading partners. A data pool can be maintained either externally by a third party or internally as part of an integration engine or collaborative product information management (CPIM) system. Value-added services (e.g., normalization of data formats) may be provided by data pools.
- *Publication and synchronization engine* – The engine publishes information from the supplier to the retailer and verifies that updates to item information are accurately communicated between trading partners. In many cases, the data pool will incorporate synchronization functionality and manage the information update process.
- *Integration engine/collaborative product information manager* – Some models make use of an internally maintained integration engine or CPIM system, and a separate, external data pool. The CPIM aggregates data from multiple geographic and organizational databases into an internal master catalog. Information can then be cleansed and standardized, making it ready to be used by trading partners. A CPIM system can also customize data for specific partners, which is particularly useful in cases where a retailer requires additional product information beyond that defined by the core item standards.



There are two basic models under which trading partners can implement data synchronization using global standards. The first is a one-to-many model, whereby a retailer or supplier conducts data synchronization with multiple partners using interoperable data pools (see Figure 1). Under this model the data pools are operated by third parties, such as the public industry exchanges or EAN member catalogs. This model will allow trading partners to synchronize not only core data, but any extended attributes supported by the data pools. Trading partners can easily and efficiently scale data synchronization to multiple partners.

Figure 1: One-to-many data synchronization through interoperable data pools.



Source: IBM Business Consulting Services, 2003.

The second approach is through a peer-to-peer model (see Figure 2). This model is pursued by trading partners who desire to synchronize not only core data that is supported by the single item registry, but also relationship-specific data, such as prices and promotions. Trading partners opting for a peer-to-peer approach may also believe (rightly or wrongly) that it affords greater security around the data being shared.

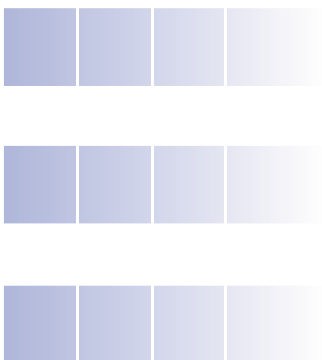
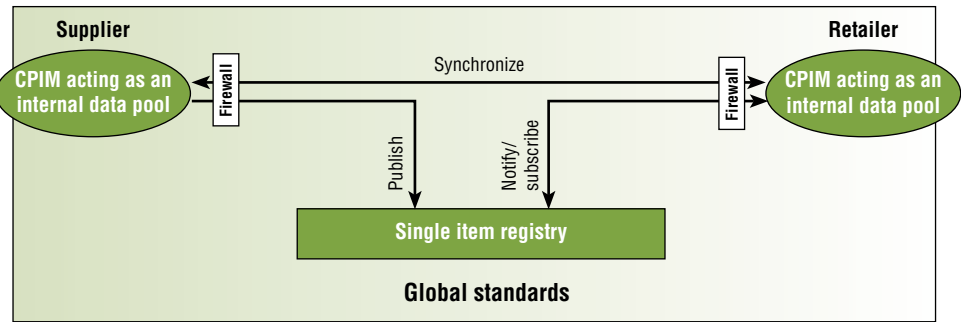


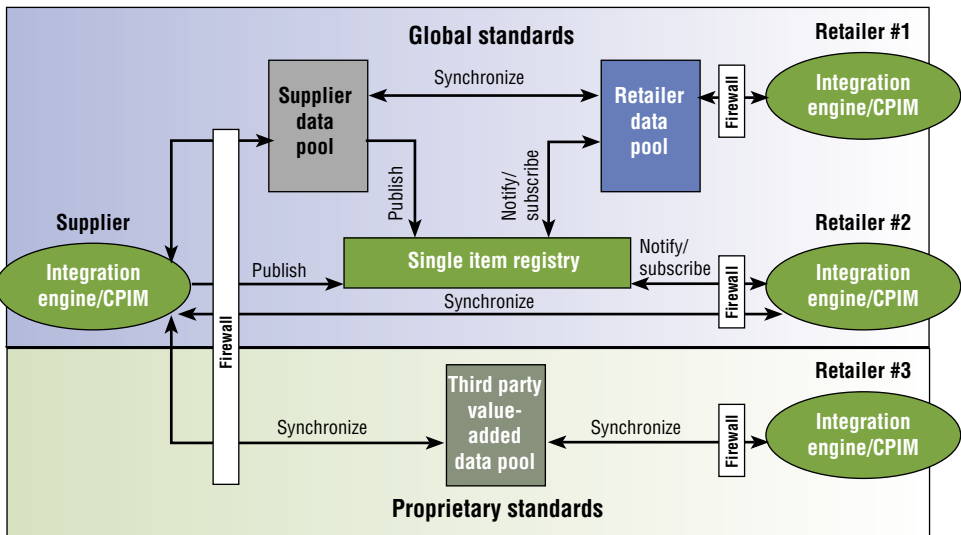
Figure 2: Peer-to-peer global standards-based data synchronization.



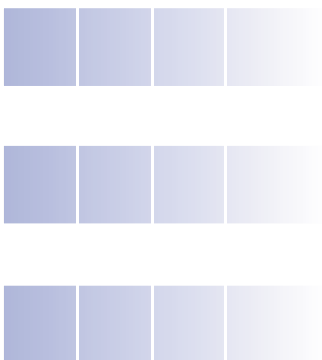
Source: IBM Business Consulting Services, 2003.

Flexibility is key to how data synchronization will play out in reality. A "one size fits all" solution does not exist, given unique partner relationships and needs. In the end, many trading partners will likely use a combination of different models (see Figure 3). A one-to-many approach will support synchronization for the majority of a company's trade relationships. For a select number of key partners, companies might engage in peer-to-peer synchronization to manage crucial relationship-specific data. And there is yet a third possible approach, although it is not, strictly speaking, standards-based: a third-party, value-added data pool may be used by those retailers or manufacturers who are currently unable to invest in the technologies and processes required to support global standards, or are seeking an easy way to connect with "tier 2" or "tier 3" partners of less strategic importance. Such a data pool would act as a shared data of record between two partners, employing bilaterally agreed-upon "standards" with respect to how the attributes are to be defined.

Figure 3: Using multiple models for data synchronization.



Source: IBM Business Consulting Services, 2003.



Case in point: Procter & Gamble Company

Procter & Gamble has long been a proponent of standards-based data synchronization. Beginning in the 1990s, the manufacturer invested in electronic data synchronization using the electronic data interchange (EDI) Universal Character Set (UCS) II standards. However, UCS II proved too cumbersome for industrywide synchronization purposes, since EDI involves custom-made connections for each new partner, resulting in high implementation costs and poor scalability.¹

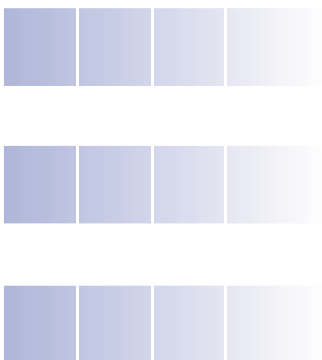
In response to low industry adoption of UCS II, Procter & Gamble put its support behind UCCnet, helping to develop UCCnet's core capabilities. In August 1998, the company joined a six-company pilot team to conduct a proof-of-concept study, setting up a test network to validate information transmission and business practices over UCCnet.² This successful pilot led to its public rollout in 2000.

In November 2001, Procter & Gamble participated in the EAN•UCC XML Trade Exchange Pilot with Metro AG, GlobalNetXchange LLC (GNX) and Transora, using UCCnet as the single item registry. Under this pilot, Procter & Gamble published items to Transora, which in turn transmitted the information to UCCnet and GNX. Metro AG was able to pull this information from Transora through GNX, and purchase goods from Procter & Gamble. The pilot hinged on the ability of Procter & Gamble and GNX to convert information between EDI and Extensible Markup Language (XML) formats. The pilot was facilitated through the use of UCCnet's messaging choreography and standards-compliance monitoring.³

Currently, Procter & Gamble links to UCCnet's global registry through Transora to support synchronization with its trading partners.⁴ Savings from the use of UCCnet's single item registry and Transora's synchronization services will reach roughly US\$25 million, according to the company, generated by increased productivity, faster time-to-market for new products, and reduced invoice mismatches and out-of-stocks.⁵ Procter & Gamble continues to be viewed as a champion for standards-based data synchronization, testing the capabilities of key industry service providers and driving industrywide adoption of global standards.

Assessing data synchronization's benefits

In considering required investments in data synchronization capabilities, companies should focus on the long term, rather than near-term benefits. Particularly for suppliers, the cost of engaging in data synchronization may appear relatively high in the short term. Given retailer demands, suppliers will be forced to invest in creating new item data, standardizing and cleansing that information, and developing electronic synchronization capabilities. Suppliers may also need to invest in integration engines or CPIM systems, allowing them to easily pull information from various departmental or geographic databases in a standard format.

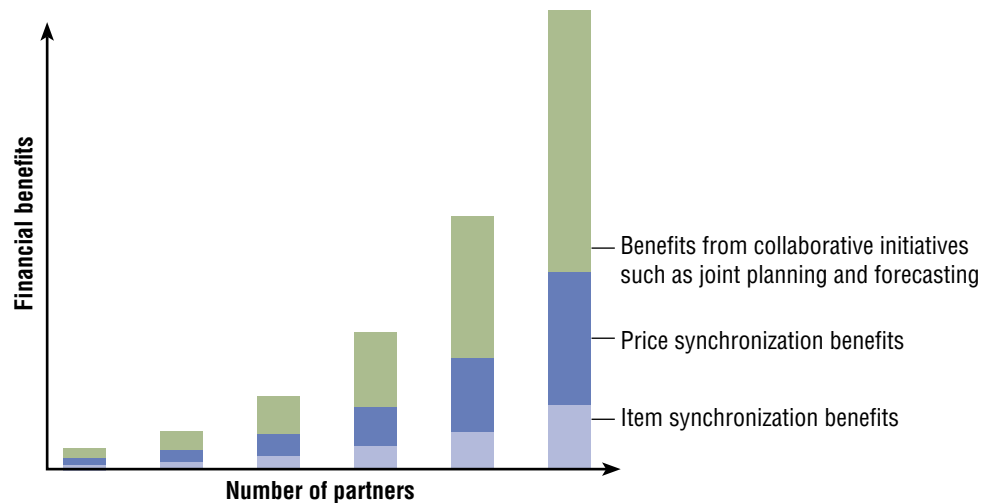


Retailers will have the potential to see the greater return on investment from data synchronization in the short term, by largely avoiding the costs of preparing data for publication and synchronization. In some cases, retailers will need to invest in CPIM capabilities to help them manage data from all of their key suppliers. Additionally, they will need to develop enhanced capabilities to push data from headquarters out to the store level. For both retailers and suppliers, the direct benefits from core item data synchronization will be seen in four specific areas.

- *Item introduction* – Shorter time to collect and transmit new item information into retailer systems. Faster time-to-market for new products.
- *Item updates* – Less time to communicate changes to item information and enter the changes into retailer systems. Elimination of errors caused by manual rekeying of new data.
- *Order quality* – Better purchase order accuracy, reducing the time spent managing inaccurate purchase orders.
- *Invoice matching* – Fewer invoice mismatches as a result of improved purchase order quality.

Greater financial returns can be realized as companies expand the scope of data synchronization and collaboration (see Figure 4). For instance, by synchronizing price information as well, order quality and invoice-matching benefits would be even more pronounced, as the majority of non-quality orders and invoice deductions are due to inaccurate pricing information.

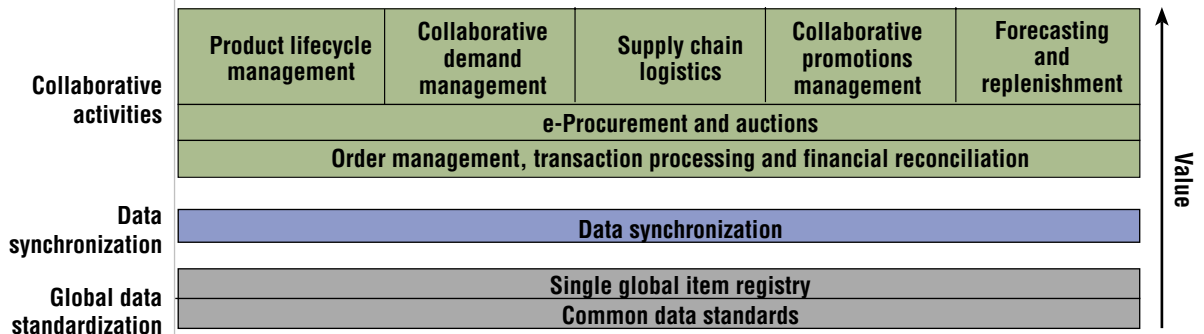
Figure 4: Relative financial benefits of data synchronization and other collaborative initiatives.



Source: IBM Institute for Business Value, 2003.

Ultimately, the true payback comes from the optimization of supply chain relationships enabled by the data synchronization foundation (see Figure 5). While it is not a prerequisite for other collaborative activities, realistically, retailers and suppliers cannot effectively engage in more complex relationships without synchronizing key item and price information. To date, trading partners have worked together based on confidence in the reliability of the data shared. However, “reliability” can be a very subjective term. The only way industry players can be certain that their data is truly reliable is for that data to be electronically synchronized in a consistent manner. The use of global standards is instrumental to the efficient scaling of collaborative activities, helping to ensure that all industry players operate with the same basic information about products in the supply chain. This transformation may eventually extend throughout numerous joint processes, driving increased value in such areas as product lifecycle management, collaborative demand management, and supply chain logistics.

Figure 5: Driving value through data synchronization.

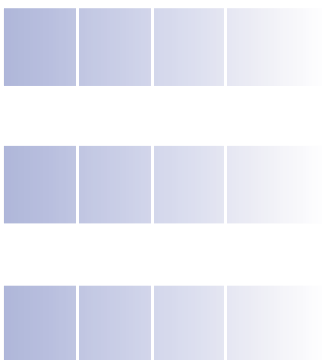


Source: IBM Institute for Business Value, 2003.

UCCnet as the single global item registry

For standards-based data synchronization to work effectively and be scalable throughout the industry, only one item registry should exist. This single item registry will verify that data is standards-compliant and will become the one accurate source for core item information.

UCCnet is poised to become *the* provider of the single item registry. Its strength lies in the fact that it can both monitor data for standards compliance and support a standard messaging choreography that easily enables suppliers and retailers



to synchronize their data. There are a number of important factors working in UCCnet's favor:

- *Key endorsements* – UCCnet has been endorsed by the GCI and EAN•UCC as the provider of a single, central item registry for international commerce
- *Industry support* – UCCnet is backed by over 220 leading suppliers and retailers, many of whom signed or endorsed an open letter in April 2002 calling for the adoption of EAN•UCC global standards and of UCCnet as the provider of the single global item registry
- *Past experience* – UCCnet's current service, a data pool linked to a synchronization hub, is fully operational, and it has completed a number of successful pilots with leading suppliers and retailers in both the U.S. and Europe.

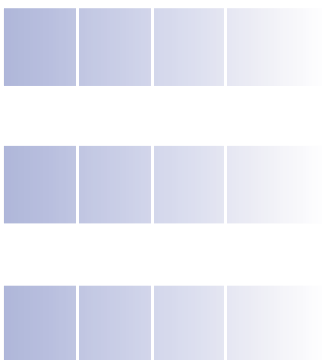
In order to truly assume this key role, however, UCCnet will need to separate the registry from its data pool and synchronization services. EAN•UCC has requested that UCCnet develop this separate registry within six months of all core standards being published.

Case in point: Food Lion⁶

As a UCCnet member for the past three years, Food Lion has been instrumental in helping the company design its synchronization process. In July 2002, Food Lion fully implemented item synchronization with Nestlé Purina PetCare. As part of the process, the trading partners shared information on new products and item updates, including core item attributes such as case weight, volume and dimensions. Says Carolyn Hager, e-business manager at Food Lion, "We do see a reduction in payment disputes, as well as a reduction in errors in invoices, receiving and purchase order creation," through the synchronization effort with Nestlé.

As a result of that successful implementation, Food Lion is currently synchronizing item information with five other suppliers: Procter & Gamble, General Mills, Kraft Foods, Inc., Campbell Soup Company and Kellogg Company, making it one of the top five food distributors engaged in UCCnet-based synchronization. Food Lion is using IBM WebSphere® Business Integration for Retail Distribution system to connect to UCCnet and its single item registry. The IBM solution also provides Food Lion executives with workflow capabilities that allow information to be easily passed from one individual to another.

According to Hager, Food Lion intends "to be in sync electronically with all of our suppliers, including smaller trading partners." In the future, the retailer hopes that UCCnet's synchronization service will support the communication of price and promotion information as well.



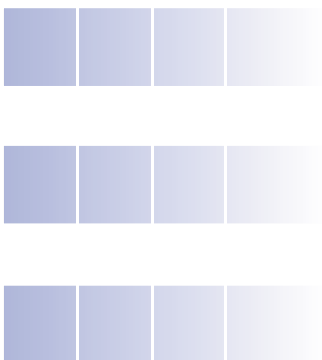
Key courses of action

As retailers and CPG manufacturers move forward with data synchronization, they need to manage a number of internal and external challenges. By proactively addressing these challenges, trading partners will not only hasten the benefits they reap from data synchronization, but also help to determine the path the industry takes in the future.

First, retailers and suppliers must avoid organizational paralysis and begin mobilizing around a data synchronization strategy. Today, the market is beset by competing vendors with conflicting visions and messages about the services they provide, thus slowing the achievement of interoperability. Retailers and suppliers often find it difficult to obtain a clear understanding of available services, the costs associated with those services, and how those services are proposed to work together. As industry executives interviewed by IBM stated, “Retailers and manufacturers don’t know what’s going on,”⁷ and companies “are sitting on the sidelines waiting to find out what services will be provided by third parties.”⁸ To cut through the marketplace noise, industry executives need to focus on those service providers that are both EAN•UCC compliant and are most likely to support the interoperability necessary for a scalable data synchronization solution.

Marketplace uncertainty has contributed to slow commitment and adoption. Firms have become stuck trying to justify investment in item synchronization based on its direct return on investment (ROI) alone, and few have developed a clear vision for how data synchronization should be rolled out within the organization. But data synchronization is fast becoming a competitive necessity. To help eliminate these internal obstacles, a champion for data synchronization should be appointed, assuming responsibility for the development of a vision and business case that links directly to the company’s overall strategy for collaboration. This leader must have experience from both an information technology (IT) and business strategy perspective to ascertain that the vision integrates both technical and business components, and has buy-in from both the CEO and CIO. If the necessary resources cannot be secured at a department level, the CEO may need to force the issue and get data synchronization moved to the top of the corporate agenda.

Second, companies need to invest in preparing their internal item information, the first and most critical step of the data synchronization process. Today, item data requested by retailers is often missing from a supplier’s systems, or is in a format that may not be understood by retailer partners. An internal item management system (e.g., a CPIM) can help a supplier prepare this information,



linking to multiple databases within an enterprise, in order to aggregate, categorize and standardize product data before sending it beyond a company's firewall. A CPIM system becomes especially important when a company receives data from its trading partners, by managing the workflow and deciding how to respond in an automated fashion to UCCnet or partner messages, such as requests for additional item attribute information.

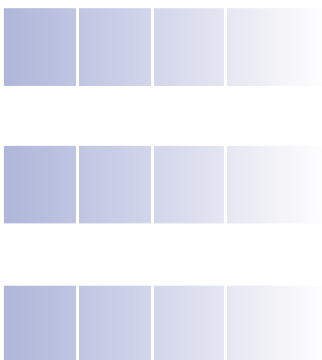
Third, trading partners must determine which data synchronization model(s) to pursue.

In general, manufacturers and retailers will choose a given synchronization model based on the requirements of their unique trading relationships. The ability to scale data synchronization to multiple partners should be a key consideration. Relying on a peer-to-peer model may cause unforeseen headaches and budgetary indigestion for companies looking to scale synchronization to dozens of partners down the road. And while some firms may prefer a peer-to-peer model due to information security concerns, they may be able to achieve more than adequate security through reputable third parties with encoded and safeguarded data transmissions. Nonetheless, in all likelihood, companies will pursue a variety of models to accommodate the requirements of working with different groups of partners.

Fourth, companies must also determine which service providers to work with.

For data pool functionality, they can work with the public industry exchanges (for example, Transora and WWRE), EAN local member catalogs, UCCnet, or other third parties to hold item data. At a minimum, the data pool they choose to work with should be EAN•UCC compliant. Most data pools are likely to develop synchronization engines in order to provide greater value to their clients. However, in some cases, such as the EAN local member catalogs, data pools may link directly to public exchanges or other third parties with synchronization capabilities. In deciding what service providers to use, industry executives must consider several key criteria (see "Evaluating third-party service providers" on page 14).

In particular, they must consider both technical and commercial interoperability. From a technical perspective, standardized message sets allow retailers and suppliers to push and pull information to facilitate synchronization and e-commerce with multiple partners. Compliance monitoring and certification verify that internal systems and third parties comply with global standards, streamlining the synchronization process and facilitating its extension to multiple trading partners. "The only way for data synchronization to work is through the use of a standards-compliant data pool," noted one interviewed retailer.⁹



Commercial interoperability may be more difficult to achieve but is key to realizing data synchronization's longer-term benefits. An underlying success factor is the development of high levels of trust between trading partners, particularly in terms of partner commitment to global standards and preparation of internal systems to support clean and compliant data. "Data synchronization tests the trust level more than anything in the past," observed a CPG company executive.¹⁰

Evaluating third-party service providers

Liquidity – How widely adopted are the company's services? Ideally, the service provider should have a broad client base that includes many of your own key trading partners.

Type of provider – Is the service provider on a public or private platform? Depending on your relationships with your trading partners, the types of data you are sharing, and the level of security you demand, you may want to use only one or work with both types of providers.

Value-added services – What types of value-added services does the company offer? Partnering with a one-stop shop that offers a range of value-added services may be preferable to doing business with multiple third parties.

Technical interoperability – Is the service provider technically interoperable with your other key vendors and partners? At a minimum, any company you select should be EAN•UCC certified.

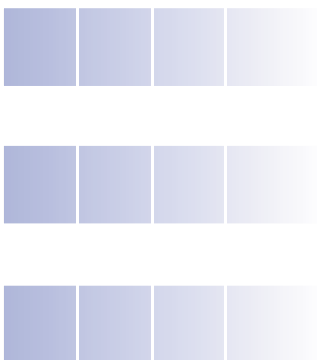
Commercial interoperability – How well does the service provider align with your own business processes and those of your trading partners? The vendor should be able to accommodate the evolving business processes of your organization.

Geographic scope – Is the service provider regional or global in scope? Depending on where the bulk of your business is conducted, you may choose one with either regional or global capabilities.

Moving forward with data synchronization

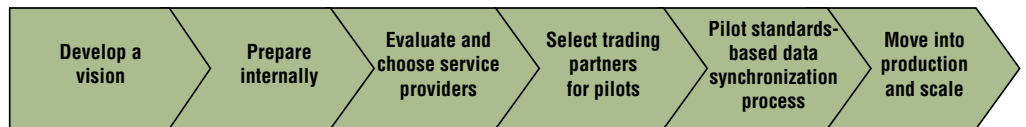
For companies tackling the data synchronization challenge for the first time, we advise a phased approach that is designed to enable the organization to begin developing required capabilities while maintaining strategic flexibility. CPG and retail executives need to prepare their internal organizations, establish strong partnerships, and scale the data synchronization process to other collaborative areas over time (see Figure 6). Key steps include:

- *Develop a vision* – Link the company's overall vision for data synchronization to your strategy for trading partner collaboration, developing a business case that encompasses the long-term benefits of synchronization and optimization of supply chain processes.



- *Get your house in order* – Prepare internal systems and processes to create, aggregate and standardize all required item information. Ensure that your synchronization solution architecture provides optimum flexibility, should the market or your partner needs change.
- *Establish partnerships with third parties* – Work only with companies that are EAN•UCC-certified and actively support an interoperable, standards-based synchronization process.
- *Work with a small, select number of key partners* – Choose from among your most strategically important partners those that are committed to developing the capabilities required to exchange “clean,” standards-based data.
- *Engage in pilots* – Work with these selected partners to build specific foundational data synchronization capabilities. Monitor results closely to make necessary workflow, process and technical adjustments before moving the pilots into full production.
- *Scale the process* – Engage additional partners and work with the strongest partners to identify and prioritize further processes for collaboration.

Figure 6: Approach to data synchronization.

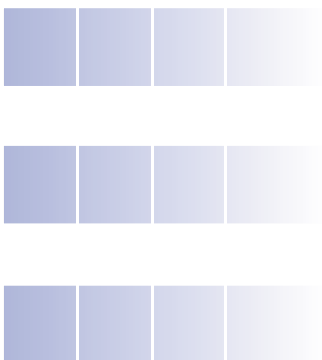


Source: IBM Institute for Business Value, 2003.

Conclusion

The need for data synchronization is clear. Leading competitors in the industry are rapidly moving to achieve greater efficiency and strength in their supply chains. By taking a standards-based approach to sharing key item and price data with trading partners, retailers and suppliers will have the potential to reap the improved long-term profitability and consumer satisfaction that arises from collaborative demand and supply chain management. It is anticipated that in the near future, data synchronization will become a widespread industry practice, with most, if not all, industry players expecting their partners to share clean, standards-based data electronically. The time to act is now, with first movers taking a lead role in defining how data synchronization standards and approaches will evolve.

Integrated, collaborative trading relationships are the key to success in tomorrow’s global, hyper-competitive marketplace. Companies that successfully embrace data synchronization today will be best positioned to create sustained business value in the future.



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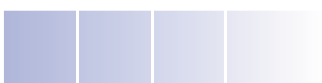
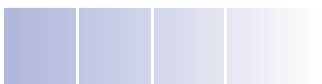
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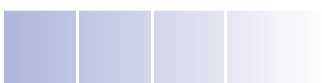
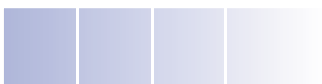
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