



**White Paper**

metagroup.com



800-945-META [6382]

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# **Putting Products in Their Place With Product Information Management:** *An Overview of Product Information Management*

*A META Group White Paper*

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*“The current disjointed state of the product information environment has been the catalyst for product information management (PIM) initiatives within many Global 2000 organizations. Companies are seeking PIM solutions that enable creation of a “single version of the truth” for a given product, so that it may be used throughout the enterprise as well as with global trading partners and customers during its effective product life cycle.”*



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## **Executive Summary**

Two significant entities of every industry and enterprise are the products and the customers. Although managing the information that defines a product can appear to be simple, it can be challenging for enterprises. Issues such as mergers and acquisitions, multiple enterprise resource planning (ERP) systems, globalization, and varying data types for product content have increasingly become barriers to the assembly, sharing, and distribution of accurate product information. This product information must be specific and contextually based on the category/type, location, and trading partner as well as variables regarding time. This requires retailers and manufacturers to evaluate their current legacy solutions, which do not support these requirements.

Indeed, other recent industry trends and initiatives such as radio frequency identification (RFID), business-to-business supply chain collaboration, and global data synchronization continue to expose data inaccuracies of products and weaken the value of exchanging product content related to that data. More importantly, these issues increase the need for manual intervention to correct and maintain product data and content. These manual efforts increase costs as well as the friction within core business processes that are both key to enterprise performance and critical to ongoing interactions with customers and trading partners.

The current disjointed state of the product information environment has been the catalyst for product information management (PIM) initiatives within many Global 2000 organizations. Companies are seeking PIM solutions that enable creation of a “single version of the truth” for a given product, so that it may be used throughout the enterprise as well as with global trading partners and customers during its effective product life cycle.

META Group research indicates that PIM solutions will help companies drive integration of product information into a single virtual source that will be used for population of e-commerce Web sites/portals, global data synchronization, association with RFID tags, and many other enterprisewide operations and business processes. Furthermore, PIM solutions will be the consolidation hub and integration point for product information and content references that are housed in various ERP, product life-cycle management (PLM), and enterprise content management (ECM) systems. This will increase the accuracy of product-related content and reduce redundant data stores and product entries. By providing this central PIM repository, downstream efficiencies can be realized through information owners having direct access to product data, which enables the redesign and optimization of often unwieldy business processes for managing product information.



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Indeed, global data synchronization industry mandates issued by retailer leaders such as Wal\*Mart will act as a catalyst for other industries such as automotive, financial services, and insurance. Wal\*Mart's 2005 mandate will bring to light issues related to unification of product content within the enterprise and to distributing product information to many locations, with information tailored to the trading partners based on each location's complex needs (i.e., contextual delivery). Therefore, companies should begin PIM initiatives before mandates occur in their respective industries. Through 2007, PIM solutions will evolve and enable unification of many disparate sources of product data and content. In addition, PIM solutions will increasingly drive industry-specific standards for semantic layers of business-to-business communications.

By 2007/08, PIM solutions will be the single source point for distribution of product information and content to multiple channels (e.g., e-commerce Web sites/portals, personalized printed customer catalogs, digital multimedia). This will enable a single unified view of product information for all channels of communication and interaction.

### **The Roots of Product Information**

Many Global 2000 enterprises are feeling the strain of having to support multiple product content and data sources (e.g., UCCnet, trading exchanges, EDI, digitized documents, images, audio, video, paper-based documents). This information comes in both structured formats (e.g., description, price, units, invoices, sales reports/models) and unstructured formats (e.g., images, documents, rich media, XML), and is typically stored in multiple disparate applications and repositories. These applications and repositories include systems for management of ERP data and transactions, enterprise content, Web content, digital assets, brand-related materials, product catalogs, and product life cycles and data — all of which have objectives other than creation of a single repository for product data and content.

Indeed, these systems tend to focus on the support and improvement of a single set of business processes silos, and many of these applications use standard relational databases as the repository or index for product content. This leads to the lack of a single source for all product data (e.g., description, price, units) and content (e.g., images, documents, rich media, XML), which is the experience of most organizations.

META Group research correctly predicted that the multitude of enterprise and Web content management (WCM) facilities would consolidate into a single ECM



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platform layer. However, consolidation of the enterprise content management market failed to address the linkage between structured product data located in enterprise applications and the enterprise content stored in ECM systems.

Furthermore, since structured product data is located in multiple applications and repositories, this creates a significant challenge for assembly of all current content or data for a given product. Numerous applications provide capabilities for storing some portion of product information, and each application has a specific set of strengths and weaknesses.

Successful PIM initiatives will need to provide a complete view of product information across the organization. Structured product data must be consolidated and unified across all applications to create a link to all related unstructured enterprise content associated with that product data.

### **Core Product Information Management Capabilities**

META Group research indicates that PIM solutions will address issues in several problematic areas, such as streamlining internal content management processes for all product-related content regardless of the content's source (e.g., ERP, EDI, external sources like UCCnet or trading exchanges). This enables access to a single source of product information for use by employees as well as by customers and trading partners through customer and partner portals. Moreover, through use of PIM solutions, enterprises will be able to reduce the space and effort required to maintain, update, and retire product information.

Based on this premise, following are the key PIM capabilities and steps users should undertake to create a unified view of product information and publishing product data.

### ***Locating the Appropriate Product Data***

Structured product data held in multiple business applications must be located and consolidated into a single repository (virtual or physical) to create a foundation for PIM. This functional requirement will vary for each enterprise, since some enterprises use standard ERP solutions (though versions can vary) across all business units, and others will have several ERP vendors (and other relevant applications). Legacy applications and external sources of product data can hinder the location process since these sources may not be clearly documented. In any case, a single source is the desired goal rather than redundant sources.

### ***Accessing Structured Product Data***

Since PIM data population can be an issue for organizations that need to move product data from a source system to a synchronization platform, we recommend that any product evaluation include assessment of the vendor's extract, transform and load (ETL) capabilities. These capabilities can also be viewed through assessment of enterprise application integration (EAI) systems and how well they can be leveraged. ETL capabilities of product information management tools should enable integration of the tool with the source platform for data extraction. Once this is done, the transformation capabilities must be equivalent to those used in most data warehousing applications, in which transformation enables the rationalization and normalization of data as well as the creation of a usable taxonomy based on the data's attributes. The product load capabilities must also be able to handle timing requirements for bulk data loading as dictated by the business process latency.

### ***Cleansing Data and Related Content***


This capability involves removal of expired products and confirmation of correct, current, and consistent product data. This process can be time-consuming depending on the number of lines of business (LOBs) and the products within each. Moreover, the initial create and capture processes should be evaluated to minimize the volume of incorrect data that forces this process. Given this, many clients choose to start with their top-performing products, using the 80/20 rule. Indeed, this product-vetting process alone can achieve substantial cost savings for suppliers that were using IT resources to retain and maintain data for products no longer being sold or supported.

### ***Identifying and Creating Missing Product Information***

Product information refers to much more than the basic information about items contained in standard ERP and other transaction systems (e.g., item number, description, unit of measure, net contents, suggested retail price). Product information requires additional context and specificity to be useful. For example, to sell a digital camera effectively (through a store or Web sales channel), the information must be specifically relevant, such as:

- Maximum image resolution (3.2 mega pixel, etc.)
- Built-in flash availability (Yes/No)
- Usable with external flash (Yes/No)
- Special features such as night-vision, red eye reduction etc.

This is termed as category-specific product information, and often it is missing in base item information from ERP and other legacy transaction systems, since



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transactional systems such as ERP are focused on manufacturing and distribution, not on merchandising and sales.

Based on where a product is sold, additional contextual, location-specific information is needed. For example, selling food products in Europe requires specifying whether a product contains genetically modified ingredients, and green-dot specification for packaging is needed before a product can be sold in countries such as Germany. Safe-handling, storage, and disposal instructions for products containing hazardous chemicals (e.g., batteries, industrial parts) can vary based on country, state, and even province or county. In addition to government, regulatory, storage, and handling considerations, product information also needs to be tailored to appeal to local taste and preferences. Marketing benefits such as “all organic” are featured more prominently for sale in western Europe and in coastal markets in the US, while “low-carb” or “Atkins-friendly” benefits may be featured prominently in the US only.

The trading partner dimension brings in additional context and specificity to product information. From a manufacturer’s perspective, product packaging, handling, pricing, and promotions vary by customer (e.g., distributor, value-added reseller, retailer) and even by each customer’s target/sales market or region. For example, a consumer electronic manufacturer will have different volume purchase agreements, order lead-time commitment, and promotions planned for a new product with the various discount retailers (e.g., Wal-Mart, Target) and specialty retailers (e.g., Circuit City, Best Buy) retailers. Promotions for new products may be global, specific to a country (e.g., the US, Germany), or limited to a particular target market (e.g., northern California) or particular retailer in a sales region.

The bulk of this specific product information for category, location, and trading partner is missing, and manufacturers need a product information management solution to create and maintain it.

Much of this information changes as time goes by, and some of it is valid for a specific period of time. Prices and promotions typically are time-sensitive and can vary by month, week, or even time of day, depending on the sales channel (e.g., e-commerce promotions). Manufacturers and retailers should look for a product information management solution that supports “date-affectivity” — that is, the ability to model and manage information that can vary in time and have different effective dates.

### ***Connecting and Transmitting***

Global data synchronization of product data requires connection to data hubs and trading exchanges through a wide array of integration, transmission, and



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connection types. For example, Wal\*Mart's mandate for suppliers to communicate product data electronically by 2005 based on EAN.UCC standards for global data synchronization creates a need for support of those global standards. Currently, data pools such as UCCnet and Transora support ebXML, EDI, and EDIINT frameworks. We believe this approach will continue to mature through 2006 and will evolve by 2008 into product content services that will be exposed to applications for consumption through a service-oriented architecture.

Although several of the largest food retailers and a large number of manufacturers are pushing the market toward standardization on product data synchronization based on EAN.UCC standards, not all retailers have adopted this. Consequently, PIM solutions must support a wide array of connection and transmission types, since trading partners will seek different forms of connection (e.g., one-to-one connection, trading exchanges, data hubs).

### ***Unifying and Relating a Single Product Instance to Multiple Types of Content***

Since product information management solutions are all about the product, these solutions must integrate various types of data and content to deliver a complete and accurate view of a product. Therefore, a PIM solution must unify the follow types of data and content:

- Descriptive data (e.g., description, SKU, size, color, style, price, units of measure)
- Rich media (e.g., images, drawings, diagrams, video)
- Related complex documents (e.g., installation manuals, material safety sheets, nutritional information, bills of material, e-mail)

This core unification capability will enable the organization to manage all related product content as a single virtual entity across many types of deployments and cross-functional departments, where the authoritative knowledge about this content resides. For example, exposing the same product record to finance, marketing, and logistics ensures that product data is current, accurate, relevant, and properly linked across data types. Moreover, this capability ensures that product data and content are synchronized across all internal and external touch points and applications.

PIM workflow engines will then enable the connections and collections phase of the content supply chain, in which these solutions will support connections to many sources of content and keep track of where the content is being held.





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Indeed, content middleware tools will play a key role in this process, since they will enable aggregation of content and protect integration efforts if new sources are brought into an organization or others become obsolete. By 2007, life-cycle management and policy management services will begin to be productized to address these increasing needs, driven by the current success of these services in the ECM domain.

### ***Distributing Product Information From a Single Source***

Getting product information into the hands of consumers and trading partners in a form they can readily use is a critical business process. Delays in this area can prevent an enterprise from becoming a leader in the market. Although many companies recognize this, most are still mired in manual processes with disjointed systems that prevent the timely release of useable product information. Companies have been known to jump through hoops to assemble a single product package for delivery to the Web, only to jump through another completely different set of hoops to publish to paper, at nearly double the cost and effort.

For example, an enterprise may run an extraction program that obtains structured product data and transports it to a Web-based content tool. This data is then linked to Web assets such as images, templates, and video files. Once this is complete, pricing data may need to be extracted from yet another system and assembled and linked for Web publishing. Likewise, a similar set of steps may be followed for print publishing and global data synchronization for various regions. Consequently, organizations should seek PIM solutions for more than just global synchronization requirements. Instead, a “publish once” environment that supports multiple business processes and channels (as illustrated above) should be a core requirement of a PIM solution.

The following capabilities are necessary to support a publish-once environment.

### **Enable Cross-Media Publishing of Product Catalogs**

This will enable the organization to create master product content that can be deployed across any medium. This is particularly advantageous for product images that can be costly to create and deploy in many formats, such as Adobe (PDF/XML), Macromedia (Flash), and Microsoft (WML/XML approach).

This capability enables an organization to reuse product content (both structured and unstructured) for deployment in a single business process across many media types (e.g., Web B2B, B2C, and B2B2C models; image-intensive print; interactive CD-ROM). Moreover, this eliminates the redundant and unique efforts that are undertaken to assemble and prepare product information and content for multi-channel distribution.



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### **Support Layout for the Medium**

Another time- and resource-consuming process is preparation of the product content and layout for a particular medium (e.g., labels, print ads, CDs) for which users should be able to select product content through a single user interface. For example, an organization must first assemble all product information and images and then place that content into a layout tool that supports the medium of deployment (e.g., labels, print ads). This means that product content is placed into an ECM or WCM tool for Web deployment and into a publishing tool for print. By 2007, we believe single product interfaces will provide a layout tool for multimedia deployment, with integration and adapters playing a key role.

### **Support a Wide Array of Publishing Technologies**

Enterprises will need to support multiple points of interaction, which can be enabled by a wide array of publishing technologies (e.g., HTML, XML, ODBC, COM, ASP, Windows, PDF, JPEG, Macintosh, CD-ROM, paper). PIM solutions can address the product distribution issue in a manner similar to portals acting as a framework for multiple applications. Indeed, this is necessary because product content will be scattered throughout an enterprise's application portfolio, and access to that content and data will be preferred over moving the content outside the source application into another application or creating redundant sources. To address this, a service-oriented approach to PIM will enable the enterprise to access product content from the consuming application regardless of publishing technologies, making it available to users at various points of interaction.

### **Create Personalized Catalog Views**

A personalized view of the catalog is particularly important for multi-channel delivery (e.g., Web, print) in which users gain access not only to products they desire to have made available to them but also to all related content, including the ability to personalize it to their tastes and preferences (i.e., contextual delivery). This personalization can occur in many ways — for example, it can be the personalization of a Web product catalog for a key customer's business process such as e-procurement, or it can be the real-time assembly of product content and data during the online configuration of a product (e.g., car, PC, network solution).

Personalization does not stop here. It enables product search from many viewpoints so that users can get to the products they desire as quickly as possible. (Although this function is available only in digitized formats, it is crucial to overall sales, since online users quickly move to other suppliers if products cannot be located.) In addition, the product is linked to the necessary information for consumers to complete their decision process. For example, a consumer who is evaluating an investment option should be able to access the prospectus of that



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investment, or a person evaluating a component for a kitchen upgrade should be able to access the product specifications and installation guides.

### **Enable Multilingual Catalog Creation And Deployment**

In the current global economy, enterprises can no longer think and communicate in a single language. Companies must reduce the effort required to create product catalogs for use in global markets and across multiple media types. For example, it is not necessary to create new images or static data such as style or product number, but descriptions and units of measure may need to be translated and converted for the localized catalog, Web site, or portal.

### **Support Integration With Digital Asset/Rights Management Systems**

Integration of PIM solutions with digital assets/digital rights management (DAM/DRM) technology will also play an increasingly important role in securing and protecting branded digital assets from theft or misuse. This integration can be critical to industries such as entertainment (e.g., digital music) and to software technology companies that provide downloadable software for purchase. In these cases, the product information and content is also directly linked to the actual product.

## **PIM Opportunities for the Enterprise**

Following are examples of product information management opportunities in four industries (i.e., retail, financial services, automotive, and high technology). These industries were chosen because they each have demonstrated historically that an enterprise's disconnected processes can easily become uncoordinated and create a higher-cost structure for the enterprise. When product information is not managed in a coordinated manner, automated business processes are corrupted, requiring manual intervention for correction. Indeed, each industry can have a set of unique product content assembly, and deployment processes for its paper and digitized product catalogs. These examples are not intended to suggest that capabilities of PIM benefit only these four industries, but to highlight core PIM capabilities.

### ***Retail Example***

Retailer and supplier organizations must collect product data and content from hundreds, if not thousands, of multiple resources using a wide variety of integration facilities, such as direct connections to suppliers (e.g., EDI, Internet-EDI), indirect models through business services such as UCCnet, or trading exchanges such as the WorldWide Retail Exchange (WWRE), GlobalNetXchange (GNX), and Transora. This problem is further compounded by the large number of SKUs (store keeping units) that retailers carry and the large number of suppliers needed to provide these goods.



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In addition, that same data and content must have a product life-cycle workflow that includes appropriate product data approvals, validation, internal/external notifications, and internal data integration. The objective of this process is to take new or updated product data and content from creation to its being a valid product ready to be purchased (e.g., new product introduction). Upon successful completion of this process, product data will be included within legacy systems as an item to be purchased and sold.

Next, the system must allow the retailer to add supplemental data attributes and override supplier-provided data attributes, so that the retailer can customize the product's attributes to its business. Furthermore, the system must associate unstructured content (e.g., product images, complex documents, manuals) with the unified structured data components of the product. This association of complex documents (e.g., material and safety-handling sheets, user and installation manuals, specifications) will be enabled by the content exchange and integration capabilities of a PIM platform. In addition, all product data and content must be made available to multiple users through browse/search functions in which the product data must be tagged and made available.

The company will also need to support the distribution and synchronization of location, pricing, and trading partner information. In the case of location, manufacturers will need to synchronize the product information needed for the location receiving the goods (e.g., store level, distribution center level). Therefore, goods going to the US will be synchronized with data that is applicable to the US (e.g., weight in ounces and pounds, while in Europe the weight will be stated in grams and kilograms). This location support provided by PIM will also enable synchronization of product information that may be required only within a specific region such as genetically modified organisms in Europe (see [http://europa.eu.int/comm/food/index\\_en.htm](http://europa.eu.int/comm/food/index_en.htm)).

Over time, suppliers will be able to synchronize the receiving party's specific location information beyond the current ship-to and bill-to information and move to synchronization of store and distribution center product information and location. This synchronization will use the Global Location Number (GLN) and a Global Trade Item Number (GTIN). With these numbers, manufacturers will be able to manage all locations within retailers' facilities, using unique identification numbers to track total inventory, shrinkage, misplaced inventory, and movement of goods with current bar code-based technology, and with RFID technology by 2007.

Furthermore, this capability will then evolve to incorporate trade conditions such as price, content owner, GLN, mode of transport, and limits (e.g., minimum/maximum,



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effective start date/end date) that are associated with the product and pricing information that accompany trade conditions used in product promotions.

Although this example may be supplier-, retailer-, and discrete-product-focused, the principles can be applied to many industries. The key capabilities required to assemble product information into a single instance — so that it can be accurately distributed to all parties regardless of the medium used — remain the same across many industries other than retail.

### ***Financial Services Example***

The financial services industry can benefit from PIM solutions as much as retailers and manufacturers. For example, a financial services investment institution can have a 401(k) fund that has structured data to track the ownership and performance of that fund. This same 401(k) fund will also have various documents such as a prospectus, research, or annual performance reports that must be synchronized with that structured data and may be available to clients across many touch points and media.

Not only must this data and content be synchronized, but it will also be distributed to various locations (e.g., branches), users (e.g., relationship managers), and partners (e.g., other financial institutions) for use, just as retailers use product information supplied by manufacturers in their stores and distribution centers. Consequently, an institution will need to enable a unified view of the product's information and manage that product information by location and role of the user. Moreover, this information can be associated with the segmentation information of various customer relationship management systems and be used for marketing and communication of the product being offered to investors.

For instance, in the case of a credit card offering, the product will have differing sets of services and terms based on a target demographic. The issuer will need to synchronize product information for that credit card with the CRM campaign management system that is determining who shall be offered which products in which campaign. Indeed, a PIM solution can assist with other industry-related challenges, such as improving the accuracy and timeliness of personalized service offerings or the creation of new dynamic offerings such as “usage-based” auto policies. This can all be accomplished while providing adherence to company standards and conventions for service offerings.

For example, if a company sells various types of insurance policies (e.g., home, automobile, boat, commercial property), different pieces of product information are applicable depending on the category or type of policy. For instance, the home insurance policy will contain information regarding location of the home (e.g., ZIP



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code, demographics, age of home, type of foundation, type of roof) — these attributes are specific to a home insurance policy and do not apply to an automobile policy.

These companies can also tune their offerings based on various location-specific requirements. For example, for automobile insurance, the state of California requires that drivers purchase insurance that covers up to \$15,000 of bodily injury liability payment for one person injured in an accident and up to \$30,000 for all bodily injuries in an accident. The same limit for the state of Florida is \$10,000 and \$20,000 dollars respectively. Insurance companies that are selling automobile policies in California, Florida, and all other states must design their policies to account for these types of regulatory requirements.


Similar to manufacturers, financial services companies must manage trading partner-specific product information. For example, an insurance company can offer a home policy at different prices based on the sales channel (e.g., captive agents, independent agents, Web). Therefore, products and services offered by companies can vary in price and terms based on the sales channel to which they are selling.

Therefore, we recommend that enterprises not think of PIM solutions as only beneficial for finished goods and as not applicable to services. Instead, these enterprises should consider PIM solutions to assist in the management of product data and content for intangible products such as policies and funds, where document automation systems traditionally have been used.

### ***Automotive Example***

The automotive industry as a whole is awash in product data and content systems (e.g., PLM, CAD/CAM, ERP) for managing data and content in a specific process. Whether product data is in a product life-cycle system that keeps track of the bill of materials and designs of parts and assemblies, or production systems are used to assemble the cars themselves, the data is in context only for the process those systems support. This environment is not much different from consumer electronic companies that supply retailers with products and are required to perform global data synchronization with Wal\*Mart.

Indeed, automotive enterprises not only must manage product information across a diverse set of locations of their own (e.g., plants, dealers, OEMs), but the information is also distributed to many automotive repair shops who are themselves retailers. Moreover, PIM challenges exist across the entire automotive value chain. Whether OEM or supplier, original equipment or aftermarket, there



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are common challenges in managing, integrating, and distributing information about parts and products.

These companies must manage parts data from both their own systems and their suppliers, and then distribute specific views to internal systems, external portal and commerce sites, and trading partners, which could include dealers, distributors, retailers, or independent jobbers. These systems are not integrated, and the processes are largely manual and involve many parties.

In this industry, unification of a large collection of engineering data (e.g., specifications, electrical, fluid and mechanical data) as well as complex documents (e.g., installation, repair and owner's guides, schematics, bills of materials) is critical to the overall operation and long-term relationship with dealers, repair shops, and consumers. Moreover, this product information must be localized throughout the total life cycle of the product, which can span many years.

For example, in the repair of an automotive item, the region for which the item was manufactured and in which it was purchased can affect the product information associated with that item (e.g., California-only models, European-only models). This issue then requires the automotive manufacturer to maintain separate product information in several systems. These systems are more concerned with the proper relationship of the construction of the vehicle than with the packaging of this product information for use by such departments as marketing or service.

Moreover, manufacturers must manage the disposal information of various components, which can vary according to local disposal requirements, thereby creating a need for automotive manufacturers to track and maintain disposal information by locale. This local association for product disposal information is similar to the association of manufacturers with retailers by location. The automotive industry also shares the same pricing-to-partner management challenges that manufacturers face with retailers, in which pricing of particular automobiles and parts is based on the region, volume, and partner to whom they are being sold.

Likewise, PIM challenges exist across the entire automotive product life cycle, from design processes managed in the PLM and product data management (PDM) systems, through the marketing, sales and service/support phases. Therefore, there are multiple catalysts (e.g., catalogs, e-commerce, portals, RFID) driving the need for automotive companies to better manage their product information.



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Lastly, the automotive industry faces a dual distribution issue regarding synchronization. This issue is driven by the need to publish both paper and electronic versions of the product information. This information must be made available to various trading partners in multiple mediums, such as Web-based portals, CDs distributed by repair shops, independent software vendors, and paper-based catalogs. Consequently, not only will the unification capabilities of PIM be of value to automotive companies, but also the ability to distribute product information from a single source can be used.

### ***High-Technology Example***

In the world of high technology, multi-channel e-commerce initiatives have driven the use of PIM solutions to perform product data synchronization across multiple instances of ERP systems. This ERP instance synchronization enables the selling of products in multiple channels such as the Web, call centers, and printed catalogs by delivering a single product view to all touch points. Furthermore, this industry seeks to enable integration of data that is stored in product life-cycle systems with the systems that deliver product information (e.g., the Web, call centers, printed catalogs) to customers of all types.

Indeed, many high-technology companies use PLM solutions and mistakenly believe that they provide complete product information management capabilities. META Group believes that this is an incorrect assumption, since PLM systems typically are designed to support management of specifications for use by engineering and design personnel. They are not easily leveraged by the marketing, communications, and sales personnel who develop the market demand to generate campaigns and product materials for these new products.

High-technology companies have the same problems as retail manufacturers in that they may have multiple ERP solutions or versions and must pull together the product information from those systems to enable sale of the products specified by those systems. Commonplace mergers and acquisitions in the high-tech industry further aggravate this problem. In this case, companies can use a PIM solution to pull together the new product information of an acquired entity quickly so that it may begin to sell those products within its own distribution channels. Therefore, the benefit of PIM to high-technology enterprise is in the management of product information integration across a multitude of sources, whether internal or external, which is very similar to the global data synchronization requirements for retailers.

### **RFID and Electronic Product Code Relationships to PIM**

Currently, retailers and suppliers involved in global data synchronization and RFID initiatives are simultaneously assessing the linkage between these two initiatives.





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META Group believes that, over time, more retailers will join in global data synchronization and that the product data vetting process will contribute to this increased membership, as retailers and suppliers begin to recognize the value of clean and accurate data. Moreover, initiatives such as RFID will require that retailers and suppliers associate the same data content with a tag providing a unique electronic product code (EPC).

Once the global data synchronization hurdle has been passed by retailers and their suppliers, further initiatives such as collaborative planning, forecasting, and replenishment (CPFR) as well as vendor-managed inventory (VMI) and direct store delivery (DSD) will provide even more value to retailers and suppliers, since the accuracy of information on products will increase (2008/09).

Concurrently, RFID initiatives can begin to leverage synchronized product data, which can be embedded into the tags to increase supply chain efficiency. By 2008/09, retailers and manufacturers will have effectively enabled content and collaboration capabilities (i.e., contextual collaboration), enabling trading partners to share and synchronize unstructured product content such as images, video, manuals (e.g., instruction, installation), drawings, and schematics. This synchronization will drive virtual teams to assemble and handle scheduled events (e.g., training for new product introduction, product upgrades). It can also support unscheduled events such as product recalls, enabling retailers and manufacturers to react faster to these events.

Consequently, we believe that linkage of PIM solutions will directly contribute to the long-term success of RFID initiatives, since PIM provides the common language between the retailer and suppliers, while RFID provides the basic identification of a product.

### **Bottom Line**

We believe enterprises should invest in product information management solutions during 2005/06 — if they have not already been mandated to perform global data synchronization in their industries — to enable the cleansing and unification of product data and content. These initiatives and technologies will help organizations prepare product information for use by multiple constituencies and will drive accurate and reliable multi-channel distribution of product-related structured and unstructured content between trading partners.

PIM solutions will evolve to a service-oriented architecture approach by 2007. This will enable integration of product information with any composite application and business process. Indeed, product information management investments made to unify multiple sources of product data and content will lay the foundation for



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product information-related services to be used by any type of consuming application or business process. Moreover, investments in PIM will address a multitude of product data and content issues (e.g., assembly, distribution, maintenance, retirement) that exist both internally and externally.

Industry mandates for sharing product information and market pressures to distribute product information through the Web will accelerate investments in product information management through 2006/07. Concurrently, enterprises will seek to reduce the manual intervention needed to correct problems in business processes generated by incorrect and uncoordinated product information, which will lead to an increase in product purchases of PIM solutions.

*Gene Alvarez is a vice president with Enterprise Application Strategies, a META Group advisory service. For additional information on this topic or other META Group offerings, contact [info@metagroup.com](mailto:info@metagroup.com).*



## About META Group

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