Product Information Management Advances
the Next Generation in E-commerce.

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Product Information Management: A Definition

Product information management provides an enterprise platform for the active management of *all* product data throughout an organization's supply chain.

When closely coupled with an e-commerce platform, PIM enables the ongoing oversight of product data quality *by the owners of the data*—both internal and external to the organization.

Product information, in all formats, becomes easily accessible to all value chain participants where and when it's needed.

Integrating information delivery through on- and off-line channels offers tremendous competitive advantage.

Introduction

Industry-leading businesses have embraced PIM as the next mission for strategic IT development. What do they know? It's that integrated and accessible product information can deliver the competitive advantage necessary to survive today's business environment.

Whether communicating with customers, manufacturers, partners, shippers or brokers, the message we most often deliver is one about our products. In fact, product information comprises over 90 percent of the content on supply-side e-commerce sites. The product detail we exchange is vital to how we do business. And thanks to the Web, it's *very* visible. It's critical we get it right.

In the aftermath of IT spending on major initiatives such as ERP, CRM and e-commerce, some organizations feel they've achieved sufficient integration and automation, and that PIM is too involved to undertake at this time. Their mistake will be costly—possibly fatal.

For Darwinism governs the world of business, just as it does the natural world. And Darwin didn't stipulate survival of the healthy. Rather, survival is reserved for only the fittest—those who have the edge, no matter how slight, over the next guy.

Product Gotchas without PIM

A price too good to be true.

A national toy retailer designed a promotion around a deluxe edition of a well-known board game. The edition was elegant and featured finely tooled playing pieces stored in velvet bags and other specially crafted features.

The price of the game for the promotion was set at $80 and extra inventory was stocked in anticipation of the campaign.

The individual responsible for entering the product specifics into the e-commerce system was partly to blame, but so was the fact that there was no supervision of the task—no workflow required that the product information be validated or approved. The process was a black box, invisible to all.

That is until the retailer ran out of stock in record time. Only then did the toy chain discover that their Web site was selling the game at the special price of $8.

Risky Business

When product information is wrong, or simply unavailable when and where it's needed, companies give up significant upside opportunity. Why is this? What aspects of business suffer when product information isn't correct, consistent and readily available to customers and partners?

Lengthy times-to-market

In many industries, time-to-market correlates closely with profit margin and market share. Consider industries where:

- *Products have limited shelf lives (consumer packaged goods),* or
- *Falling component prices erode the profit margin of existing products (electronic and computer manufacturing),* or
- *Fashion trends can be unexpectedly short-lived (apparel),* or
- *Optimized just-in-time manufacturing and order fulfillment seek to minimize product cycle time.*

In all of these examples, the take-home message is: a shorter time-to-market means higher profits.

The efficient management of product information can greatly accelerate product introductions and reduce product cycle time. Each interaction—between the individuals, departments and organizations involved in getting a product from design through manufacturing and testing, into marketing and sales and finally to fulfillment—each of these interactions benefits from more readily accessible product information that's correct and dependable. The sum of these efficiencies—that is, the overall reduction in product cycle time—becomes proportional to the complexity of the processes and the number of people involved. The more complex the product introduction process, the more PIM can shorten it.

PIM drives faster time-to-market for new products, quicker rollouts of product changes and compressed specification and approval processes.

Missed marketing and sales opportunities

Many companies invest significant time and money to streamline their supply chain communication and processes, yet fail to fully extend their improved efficiencies to their sales and marketing teams. They produce their products quickly and efficiently, but stumble before they can truly bring them to market.

Integrated and accessible product data is a prerequisite for effective sales and marketing performance. The very purpose of these departments is to communicate relevant and informative product information to customers and thereby aid in purchase decisions. Whether the task is catalog production, development of product literature, identification of product benefits and competitive differentiators or the merchandising of effective promotions, a PIM solution provides sales and marketing teams easy access to the product specifics they need to succeed.

Product Gotchas without PIM

What gift were you hoping for?

Marketers at a leading department store chain needed to relate their products to the appropriate merchandising categories for their e-commerce promotions in the coming year.

Product specifics were stored in disparate systems. Marketing collected the data onto spreadsheets, adding the related categories and the IT department loaded this data into the e-commerce platform.

Online promotions were scheduled to run for all holidays in the upcoming months, but with no audit trail of the changes, no way to oversee the quality and accuracy of the product information, and no way to preview what the Web site would display as of each promotion date, it was hard to prevent what happened…

On Valentine's Day a diamond pendant should have been displayed as the special holiday sale. Instead, under the heading, "For your sweetheart…" was an electric toothbrush.

Eroding customer satisfaction

What company doesn't wish to strengthen customer satisfaction? Yet many fail to associate robust product data with happy customers. Poorly integrated product data can easily lead to customer frustration. Product misinformation, incorrect pricing and unanticipated stock-outs can all contribute to a dismal customer experience.

Conversely, well-integrated product data can raise the level of a customer's shopping experience and build loyalty. For example, a leading outdoor-gear retailer carries a Web page where top-selling bicycles and biking gear are listed beside a helpful article on how to change a flat tire. Surprisingly, the retailer receives almost as many hits on the article as on the page itself. Rich product information presented in an appropriate, situational context is an important contributor to customer happiness.

Poor operational efficiency

Numerous studies have been conducted about the inefficiencies and inaccuracies prevalent within the ordering process—both the manual processes used and the manual intervention required when product data errors occur. All agree that it's a deep, black pit of wasted effort. Incorrect or unavailable product data underlies the problem: purchase orders and invoices cite the wrong product number, price, the wrong parties to the transaction or any number of other defects in the details. Many organizations shrug off these inefficiencies and write them off as a cost of doing business.

While that may have been true in a time when technology didn't offer a better solution, it's no longer true today. Cleaning up internal product data and communicating it reliably to one's partners and customers is vital to the operational health of an organization. Invoice errors that result in deductions can be eliminated, stock-outs and lost sales can be avoided and all the manual resources locked into *fixing* the data can now be freed to conduct business *using* it.

Today, competitors are too predatory and markets too unforgiving for businesses to ignore the risks of inaccurate and poorly integrated product information. As best practice firms embrace PIM initiatives and begin to reap the many benefits of their investment, the message becomes increasingly clear to those left behind. *If you don't want to be selected against in today's world of corporate Darwinism, you'd better make the evolutionary leap—in a hurry.*
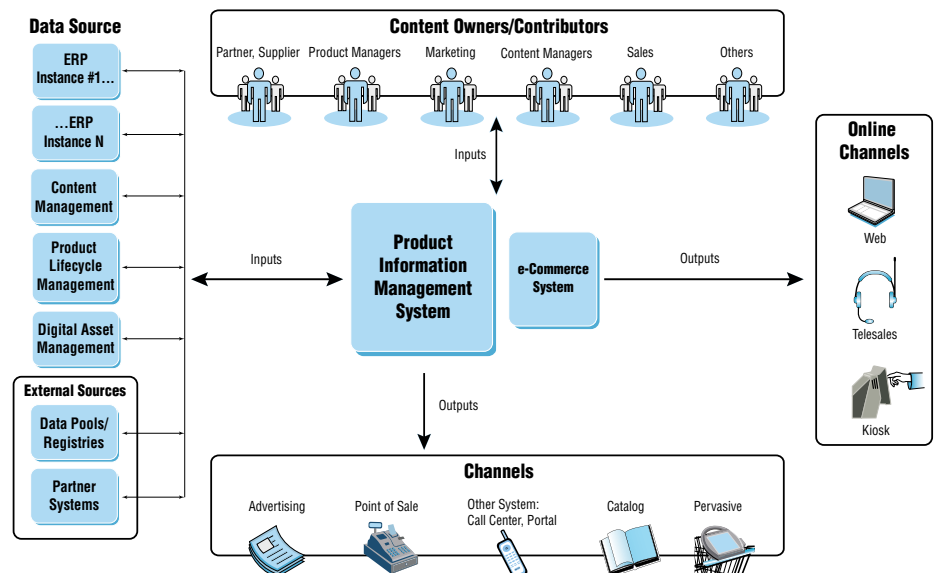
What PIM Isn't

In order to understand what PIM is, it is necessary to first understand what it isn't. Upon hearing about PIM, it's common for business and IT managers to react, "Oh, we already have that." But they don't. The collections of product data within our existing systems do not define a PIM solution. In fact, it's the product-specific limitations within these systems that create the urgent need for PIM.

The product masters of transactional systems, the repositories of product data brought together in data warehouses and marts and the product catalogs of ERP platforms fall well short of the capabilities provided by a successful PIM solution for the following reasons:

- ***They provide only a two-dimensional view of products.*** Ideally, the structures for storing product information should provide a complete, three-dimensional view of our products, their attributes, inter-relationships and locations. While many existing systems allow the definition of product hierarchies that model the families to which our product belong, they typically stop there.

  We need to see a broader picture. What relationship does each product have to another—whether a cross- or up-sell association, an out-of-stock replacement or a related accessory? Where is a particular instance of this product at any moment—not only where in physical space, but also with which of our value-chain partners? What attributes does a product have that are unique to the type of product it is, or the context in which it's used, and therefore not contained in the more general attribute fields shared by all products?

- ***Ownership issues remain unsolved.*** The accepted goal of maintaining a single source of the truth often runs amuck with product data because no single entity owns every aspect of that data. Typically, many different workgroups are tasked with the creation or modification of varying elements of product information, from design and manufacturing, to marketing and sales to fulfillment and support. Few of our current systems provide the extensible workflow and access control necessary to support so many sources of product data creation and management. Thus, product data ownership issues quickly escalate into battles over turf with product data quality becoming the unfortunate victim.

- ***All types of product information are not supported.*** The value of applied product information grows exponentially with the number of different formats supported. This means that by augmenting structured product data with unstructured product information and supporting rich formats such as images, line drawings, audio and video samples, a company can present a meaningful, holistic view of their products. Web content management software cannot do this, nor can enterprise content management systems. While they can contribute to this holistic picture, and in fact should integrate with a PIM solution, neither provides a product-centric perspective nor supports a broad enough range of product information.

The next generation in e-commerce will be an integrated environment founded on product information management. Synchronizing marketing and sales activities across all channels will enable seamless customer experiences and support on-demand business processes.

Much as CRM systems bring together a customer-centric composite of customer data in a single place, PIM centralizes the disparate sources of product information throughout the supply chain and provides a full, 360-degree view of products across all channels. It enables articulated management and communication of product information both within the organization as well as externally to customers and value-chain partners. And because our products define who and what we are as a business, we're only as healthy as our product information.

The 10 Requirements For A Best-Practice PIM Solution

Among leading organizations that have implemented PIM platforms, key features have contributed to the success of these solutions. When viewed in aggregate, these features form a best-practices requirements list for any PIM solution under consideration. They are:

1. ***Central management with change syndication to source systems***
   A PIM solution should store product information in a centralized location. However, data ownership resides with more than one group—possibly even with partners and customers external to the organization. This requires access, security and workflow to allow data owners to make changes. Likewise, product information changes must be syndicated back to source systems to ensure consistent product data throughout the supply chain. For this to occur, a PIM solution must be built upon an open, standards-based architecture and offer strong interconnectivity to source systems.

2. ***Transparent workflow***
   This is one of the key differentiators of PIM from a product repository or catalog. Whether designing a promotion, managing multilingual catalog translations or synchronizing cross-channel product offerings, multiple workgroups will be responsible for creating and modifying different elements of product information. Workflow to assist, authorize and supervise these product-related processes is integral to a successful PIM solution. This includes scheduling, notification and business processes modeling.

3. ***Granular access control based on organizational models***
   Role-based security in the appropriate workflow context should limit who has access to view and change product information, as well as the status of business process tasks. Security should support user profiles that distinguish between internal users (within the organization) and external users such as customers and partners. Full audit-trail capability is a must.

4. ***A flexible product taxonomy with inheritance and reuse***
   The product schema must be extensible and allow for the definition of complex product relationships and category-specific attributes. The user should be able to assign attributes to entire product hierarchies and inherit attributes from other products or hierarchies. This enables the practical management of very large or complex product lines.

Rich Product Information Enhances the Customer's Shopping Experience

A leading manufacturer of industrial cleaning equipment has successfully integrated a PIM solution with their e-commerce platform.

This company sells over 4,000 cleaning machines and more than 35,000 accessory parts to its 14,000 distributors and customers.

Through their PIM implementation, they associate a breadth of search attributes with every product, describing a broad range of product features and benefits.

Online, customers enter the search criteria that are most meaningful to them and the e-commerce platform then offers a choice of three suggested product solutions that best fit the customer's criteria.

The ability to offer their customers choice has been a huge success in building customer satisfaction and loyalty. And it was made possible through PIM.

5. *Support for rich data formats*
   Be leery of PIM products that work only with structured data, or conversely, only with unstructured data. As demand for PIM grows, vendors will tout their relational databases, warehouses, Web and content management products as PIM alternatives. A true PIM solution must be able support a broad range of information formats.

6. *Tight e-commerce integration*
   As a major delivery vehicle for product information to customers and value-chain partners, an e-commerce platform will leverage the benefits of a PIM solution, but only if there's strong interoperability. It's an easy claim for vendors to make, but unfortunately overstatements are not obvious until you're far down the implementation path. When evaluating a PIM alternative, consider its interoperability with your commerce platform. Look for established reference customers with proven success running in both environments.

7. *Scalability*
   Product information management is a big iron solution; that is, it's foundational and at the core of how we conduct our business. A PIM platform is an enterprise-level system. Don't expect viable alternatives from lesser-known vendors. A PIM solution must be robust. Look for reference customers whose scalability requirements match your own. If you'll be supporting large numbers of users, expect to see that demonstrated from any system under consideration. If your product lines are large or particularly complex, ask to see sucessful reference customers running with comparable product depth.

8. *Release management tools that preview the impact of changes*
   When changing product content or developing catalogs or promotions, the user should be able to preview changes in a WYSIWYG (what-you-see-is-what-you-get) view. For future-dated promotions, the user should be able to view the changes "as-of" a specified date, without impacting the current production presentation. The ability to roll back to previous states is a given.

9. *Robust data validation rules and data quality control*
   PIM must provide active management of data quality and not simply serve as a passive repository for product information. The PIM platform should support the tasks of identifying problem data and then provide the appropriate tools to enable the owners of that information to correct the errors and push those changes back to the source system.

10. *Ability to support future product-related mandates*
    A PIM solution should be capable of supporting product-related mandates that may come along in the future, such as global data synchronization (GDS) and radio frequency identification (RFID). At a minimum, a PIM solution should be built on a standards-based architecture that is interoperable with major data pools and registries (WWRE, Transora, UDEX, SINFOS, etc.).

Product Information Management Delivers Competitive Advantage

Wherever internal departments, partners and customers need to communicate about products, PIM provides benefit. How much depends on how many people need to access and exchange product information and how large, complex or simply unreliable that product information is. Because we use product data in innumerable ways, the benefits PIM provides reach across many different aspects of our businesses.

These include:

- Faster time-to-market for new product introductions.

- Quicker rollouts of product changes for existing products.

- Streamlined product information exchange with customers and partners.

- Enhanced customer and partner experiences, boosting satisfaction levels.

- Enablement of more sophisticated customer/partner self-service for product questions.

- Enhanced merchandising, driving greater cross- and up-sales.

- Faster marketing response to time-sensitive promotional opportunities.

- Improved delivery of the product message to sales teams, enabling shorter sales cycles.

- Reduced invoicing errors, minimizing manual intervention and costly deductions.

- Cleaner, more consistent and reliable product data readily accessible across all channels.

The success of early PIM adopters and their proven benefits make a compelling case. And yet there's one more argument for why PIM is so urgently needed. With so many companies launching PIM initiatives—looking for that edge over their competition—how can you afford *not* to?

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IDTech provides consulting services to better enable strategic business technology development, primarily in the data analysis and customer relationship management areas. IDTech balances current and emerging technologies, best management practices, and a thorough understanding of business objectives and requirements to tie technology investments back to the business bottom line.