



**Integrating PLM & PIM
for Maximum Value**

Table of Contents

Executive Summary	3
PLM and PIM - Overview	3
The Overlap as a “Record of Reference”	4
The Increasing Importance of PIM.....	5
How PIM and PLM should be used in the organization.....	6
Designing and Implementing Product Management Solutions	7
The Coordination of PLM / PIM with SOA Initiatives	8
Recommendations	9
About Hitachi Consulting Corporation.....	10
About Hitachi	10

Executive Summary

Historically, Product Lifecycle Management (PLM) has focused on driving product profitability by shaping the cash flow curve and getting answers to where to invest, how to maximize revenue, and how to control product transitions and minimize after-market costs. PLM goals have included:

- Shortening the time to market for new product innovation
- Providing operational efficiencies and reduced costs
- Raising product quality, and
- Improving the success rate for new product adoption

Going forward, PLM must evolve to include within its scope an associated business strategy that has evolved in parallel – Product Information Management (PIM). PIM is focused more on the commercialization aspect of products. It integrates data from varied sources across the company including data on marketing, sales and finance. And a PIM solution can also extend to business processes outside of a company - to business partners, customers, suppliers, and others in the supply chain.

The future is to marry these two strategies into a single source of product-related knowledge to enhance information sharing and improve the business processes *beyond the boundaries implemented in traditional PLM systems*. By including more of a commercialization view of product information, companies can make a much greater impact in the integrated processes that span sales, marketing and service.

PLM and PIM - Overview

Product Lifecycle Management (PLM)

PLM is the set of solutions designed to change the flow of product-oriented business processes and manage critical business data. Successful implementations show that PLM will shorten time to market for new product innovation, provide operational efficiencies and reduced costs, raise product quality, and improve the success rate for new product adoption.

Typical PLM implementations address the up-front activities around product innovation, including the introduction of entirely new products, revisions to core product, extensions of existing product lines, and the repositioning or augmentation of products. PLM covers the workflows needed for market assessments, product designs, engineering changes, manufacturing and product launch, along with the associated data management and tracking capabilities

The promise of PLM is about driving product profitability by creating a fundamental shift in the shape and magnitude of the cash flow curve. The aim is to manage the product lifecycle: where to invest, how to drive and maximize revenue, how to control product transitions and minimize after-market costs. This includes everything from gathering early requirements for a product through multiple stages of product concept, design, prototyping, commercialization and eventual product retirement or replacement.

“Globalizing our product development processes and system was critical to our strategy of delivering on our brand promise”

Director, Process Improvement
International Direct-Selling Company

PLM is focused on driving product profitability by creating a fundamental shift in the shape and magnitude of the cash flow curve.

Product Information Management (PIM)

PIM is an associated business strategy that has evolved in parallel to PLM. PIM focuses on the management and synchronization of product information from multiple data sources, including PLM, and is centered around product master data creation and management. Successful implementations of PIM result in improved accuracy of product data, standardization of data, and improved completeness and validity of the data across the enterprise.

The promise of PIM is to have the single source of product-related knowledge with enhanced information sharing and synchronization that will improve the sales, servicing, and marketing processes.

PIM is focused on being a single source of product-related knowledge with enhanced information sharing and synchronization

The Overlap as a “Record of Reference”

Both PLM and PIM manage product-related information. And both offer similar business benefits of creating operational efficiencies and improving profitability of products. But while both PLM and PIM may act as the “source of truth” for product information, fundamentally, PLM solutions approach data management differently than PIM solutions.

PLM’s viewpoint is item-centric with a technical focus on the materials and components that aid in design, sourcing, and building a product. This focus helps create efficiencies that reduce costs in the product development process.

To collect its product information, a typical PLM solution is tightly integrated with “data-authoring tools” like Computer Aided Design (CAD) software, Engineering Change Requests (ECs), and Bill of Materials (BOMs). The PLM system *attempts* to be the single repository of record as multiple departments develop their product data, specifically the technical, Item-centric data.

But this Item-centric view is restrictive when taking a commercialization view of the product development process. Product Commercialization, the process of introducing a new product to market, supports aspects such as pricing, promotional information, channel requirements, and customer service information. PLM systems are not typically used to collect, collaborate, and synchronize this kind of company-wide product information.

A PLM solution seeks to centrally collect product information while

the PIM solution actively consolidates and distributes information to applications across the enterprise and beyond.

PIM systems, on the other hand, consolidate information from a wider range of sources, and integrate systems that are already in place in various business areas. As product information is generated, it is captured and consolidated into the PIM hub. This allows business rules to be applied to resolve conflicts in data that results from changes applied via another business application. Data standardization and normalization will occur, and product data quality improves.

PLM has an item-centric view focused on the design, sourcing and product build processes. PIM extends the “item-centric” view to include information that helps in the commercialization of products.

Business applications are also *consumers* of the product data. A good PIM solution also pushes information back upstream, making the hub an active repository. This bi-directional propagation of data is an essential component for collaboration of product information. Additionally, a PIM solution can extend to business processes outside of the company by distributing information to business partners, customers, suppliers, and others in the supply chain.

The Increasing Importance of PIM

A recent survey of consumer-packaged goods (CPG) firms conducted by Forrester Research, found that over half of the firms complained that retailers give them nothing in exchange for their data synchronization investment. “What’s in it for me?” they asked. The answer is starting to look more and more like the ability to continue to put their products on the retailers’ shelves. Retailers have turned up the heat on their suppliers and will continue to relentlessly ratchet up the pressure on CPG firms to deliver complete, accurate, relevant and timely product information.

Product information usage in many CPG companies tends to be a bucket brigade between many disparate operational systems, business functions, and silos of information, ranging from enterprise resource planning (ERP) systems to Excel spreadsheets and Word documents. Business processes must coordinate the activities of these disparate business functions then integrate and synchronize the product information required to fuel them — this is the essence of effective product information management (PIM).

Fragmented internal product data and business processes plague CPG firms. Multiple ERP instances are a part of the problem.

In a recent pilot with consumer goods manufacturer Procter & Gamble, data synchronization was credited with:

- A 75 percent reduction in invoice deductions
- A 30 percent improvement in accurate purchase orders
- An 80 percent improvement in “speed to retail” for new items, price changes and promotions

- A 99.8 percent retail scanning accuracy

In reality, it was the synchronization of perfect product information that achieved such stunning results. Perfect product information management is the ability to deliver product information internally and to a customer that is complete, accurate, relevant, on time and in perfect condition. A Product Information Management strategy is required to attain perfect product information.

An effective strategy positions a firm to benefit from collaborative initiatives and will feature policies for:

- organizational development
- technology adoption and
- standards adherence

The organizational impact of perfect product information is significant because it goes beyond the sales channel. Companies can also leverage this product information capability to:

- Provide better customer service
- Reduce the high costs of data management across multiple systems
- Improve creation/syndication of product catalogs,
- Manage pricing & promotions campaigns more effectively

According to Forrester, a typical ERP application holds less than 20 product attributes at the item master level, while even a basic exchange of data with retailers requires compliance with at least the 151 core UCCnet standard attributes.

Fragmented internal product data and business processes plague CPG firms, and multiple ERP instances are often a part of the problem. For example, according to Forrester, a typical ERP application holds less than 20 product attributes at the item master level, while even a basic exchange of data with retailers requires compliance with at least the 151 core UCCnet standard attributes. Forrester writes that it actually takes upward of 400 attributes to define an item as simple as lettuce and a staggering 4,000 to define complex consumer durables like televisions.

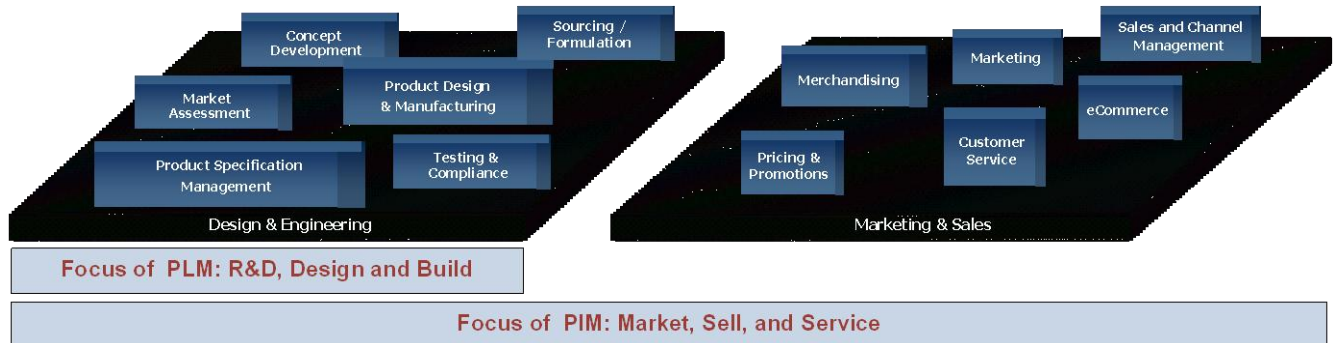
Other operational systems and data stores contain product data that is maintained by many departments. Research and development (R&D) teams maintain “as designed” and “as manufactured” data. Accounting maintains cost data. Marketing and other systems maintain data about brand attributes, production, packaging, quality assurance, sales and logistics. But often, no single function has responsibility for and authority over policy for data ownership.

How PIM and PLM should be used in the organization

PLM helps develop and deploy common global engineering change and design release processes. But PLM implementations still focus mostly on item-related information such as bills of material (BOM), recipes, specifications and technical product changes. Managing technical specifications is a critical and complex challenge for manufacturers, and PLM tackles these problems very well. PLM has proven value in addressing key requirements in the early product lifecycle and

when engineering changes are introduced, often referred to as the “innovation cycle.”

PLM also has capability to then communicate this information to manufacturing. This includes the communication of item changes and information sharing with outsourced manufacturing, which were two of the key drivers that led to the current PLM solutions. PLM has also stretched into strategic sourcing, where the need for detailed specifications and communication with suppliers is increasing as product lead-times decrease, and more companies are adopting concurrent design approaches.



The typical focus of PIM is to help optimize sales channels, support marketing and trade promotion programs, as well as to aid customer support. It can automate the processes needed to deliver product information to distribution channel partners, customers, and servicers more effectively because it is specifically intended to help companies with the following:

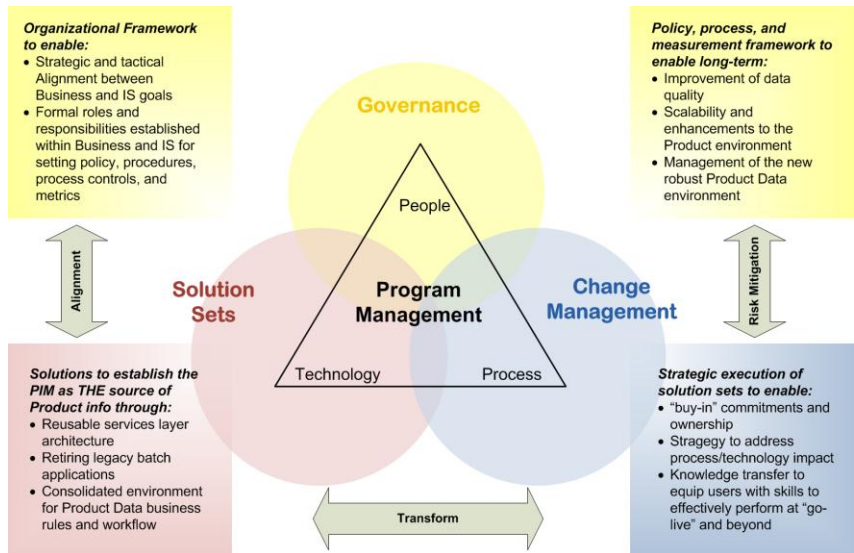
- Manage multi-channel initiatives using common, reliable source of product information
- Improve quality and timeliness of information on B2B and B2C web sites
- Leverage portals that can improve business partnerships and communication
- Create published materials from more reliable, up-to-date product information

PIM Solutions can serve as a cost reduction, but in the long term can provide revenue enhancement initiatives potential. It can reduce costs by reducing product information errors that result in ineffective selling. However, up-to-date, accurate product information can improve eCommerce initiatives, and accelerate speed to market for new products

It should be emphasize that a complete PLM or PIM solutions stand isolated from one another. A comprehensive solution requires that PIM solution integrate feedback back to the PLM as well as other business applications.

Designing and Implementing Product Management Solutions

Thinking of these programs as “technical solutions” is a mistake. While technology plays a part, it’s the alignment of business processes and people, supported by technology, that will ensure long-term success.



The Coordination of PLM / PIM with SOA Initiatives

One conclusion that can be derived through PLM and PIM initiatives is that the interdependencies between systems require high data quality to enable corporate and enterprise level decisions. Additionally, as industry events accelerate market cycle times and competitive pressures increase, the need to real-time and near real-time information is required. But to do this, business units will require efficient and effective data acquisition and integration, while reducing the time and complexity of implementing this capability.

Services Oriented Architecture (SOA) becomes an important element in implementing Product Information solutions. SOA concepts enable organizations to think about Product Information regardless of the underlying source of the data. An SOA approach provides for an abstraction layer and data services layer that can allow for new sources of data to plug-n-play quickly and less expensively.

What we see is that corporate initiatives are merging the strategies for data management and SOA, and the need for Data and SOA Governance. But the strategies for Enterprise Data Management (EDM), such as Product Data Management, and Service Oriented Architecture (SOA) are often pursued as separate initiatives within an organization. It is important to recognize that there are important overlapping and interdependent components, processes, and quality checkpoints in each of these strategies that should be coordinated to ensure success of either strategy. The Hitachi Consulting White Paper "Optimizing the Benefits of EDM & SOA by Coordinating Strategies (part 1)" elaborates the EDM framework components and SOA Best Practice considerations and is available from our website: www.hitachiconsulting.com.

The Hitachi Consulting White Paper "[Optimizing the Benefits of EDM & SOA by Coordinating Strategies](http://www.hitachiconsulting.com)" elaborates on the EDM framework components and SOA Best Practice considerations. Click on the link or search for it on our website: www.hitachiconsulting.com

Recommendations

Product information extends well beyond the boundaries implemented in traditional PLM systems. The next wave of PLM must incorporate the commercialization view of product information that is typically captured in a Product Information Management system.

Coordination of product information activities should be strategically coordinated by a Data Governance organization that aligns the business processes with IT services and infrastructure.

Companies with an ineffective PIM strategy will fall behind and the gap will widen around perfect product information, product data synchronization and other collaborative initiatives.

We recommend that you develop your PLM/PIM strategy around these four goals:

- **Synchronize** — Comply with retailer mandates and global standards (such as UCCNET) by synchronizing product information across internal IT systems and externally with trading partners
- **Adjust** — Respond to product information events by establishing a single, global repository for product information where changes and additions are automatically updated and synchronized across multiple internal IT systems and the trading community.
- **Automate** — Centrally manage, automate and streamline the process of aggregating, creating and managing product information across multiple functions, people and tasks. Develop continuous monitoring, notification, filtering, cleansing and automatic processing of product information events.
- **Optimize** — Establish data governance and stewardship to provide the oversight that will consistently deliver product information that is accurate, complete and on-time. Continuously improve product information through the accumulation of compounded knowledge and intellectual property that continually adapts and optimizes the process.

Hitachi Consulting helps companies define their PLM needs, select PLM technology, develop roadmaps for PLM improvements and implement solutions to achieve measurable results.

To learn more, ask for an introductory call where we can review how we've helped other companies maximize their effectiveness in PLM.

Call us at 877-664-0010

Email us at info@hitachiconsulting.com or

Visit our website at www.hitachiconsulting.com

We look forward to talking with you further about your challenges and opportunities.

About Hitachi Consulting Corporation

As Hitachi, Ltd.'s (NYSE: HIT) global consulting company, with operations in the United States, Europe and Asia, Hitachi Consulting is a recognized leader in delivering proven business and IT strategies and solutions to Global 2000 companies across many industries. With a balanced view of strategy, people, process and technology, we work with companies to understand their unique business needs, and to develop and implement practical business strategies and technology solutions. From business strategy development through application deployment, our consultants are committed to helping clients quickly realize measurable business value and achieve sustainable ROI.

Hitachi Consulting's client base includes 25 percent of the Global 100 as well as many leading mid-market companies. We offer a client-focused, collaborative approach and transfer knowledge throughout each engagement.

For more information, call 1.877.664.0010 or visit www.hitachiconsulting.com.

About Hitachi

Hitachi, Ltd., (NYSE: HIT / TSE: 6501), headquartered in Tokyo, Japan, is a leading global electronics company with approximately 390,000 employees worldwide. Fiscal 2007 (ended March 31, 2008) consolidated revenues totaled 11,226 billion yen (\$112.2 billion). The company offers a wide range of systems, products and services in market sectors including information systems, electronic devices, power and industrial systems, consumer products, materials, logistics and financial services. For more information on Hitachi, please visit the company's website at <http://www.hitachi.com>.

© 2009 Hitachi Consulting Corporation. All rights reserved. "Inspiring your next success!", "Knowledge-Driven Consulting", "Dove Consulting" are all registered service marks of Hitachi Consulting Corporation. "Building the Market Responsive Company," "Business Intelligence at the Edge of the Enterprise" and "Performance Management at the Edge of the Enterprise" are all service marks of Hitachi Consulting Corporation.