

Innovating New Product Development with Product Lifecycle Management

Optimizing Product Information across the Extended Enterprise—from Inception to Retirement

Historically, businesses have focused on improving and integrating mainstream functional processes like procurement, manufacturing, logistics, and more recently, sales and marketing by investments in ERP, CRM and SCM information systems. However, benefits from such projects have been limited by a lack of alignment to, and integration with, product and product-related information.

Products and services are the lifeblood for businesses. Most companies rely on numerous processes to preserve and enhance their relative value proposition to customers. Examples involve documenting product specifications, collaborative product design, sourcing unique parts and systems, manufacturing the product and furnishing product-related information to support it in service.

In every case, effective and efficient management of disparate activities is critical, calling for an appropriate level of visibility with integration of existing systems.

Many companies have initiated tactical improvements within product development. However, to optimize value creation, companies need to control and extend use of product information across the internal, as well as the external value chain.

Product Lifecycle Management (PLM) enables companies to better leverage

their product information and investment in existing information systems. It facilitates improved benefits realization for cost reduction and revenue enhancement.

Product Lifecycle Management

Vast amounts of product and related data exist at various points along and beyond the supply chain. The ability to seamlessly monitor, share, analyze and manage this data is critical for operations that are managed optimally.

PLM combines strategy, organization, process and technology to manage and leverage product data from disparate systems. It fosters collaboration across many internal and external customer and supplier functions, including R&D, Engineering, Sourcing, Manufacturing, Sales, Marketing and Service.

PLM supports management of product information from inception through to retirement. Leaders leverage PLM to manage an expanding range of product related information including parts, assemblies, hardware, software, specifications, packaging, tooling, fixtures, maintenance, repair instructions and installed product configuration.

The goal is to maximize value throughout the product lifecycle.

PLM originated in discrete manufacturing industries such as Automotive, Electronics and

Aerospace & Defense where managing complex product definition is critical.

It is increasingly being applied beyond these industries in others such as Consumer Packaged Goods, Life Sciences, Financial Services, Insurance, Energy, Utilities, Chemicals as well as Public Sector. These organizations are leveraging PLM to manage their product and related asset information to maximize unique value propositions.

PLM in CPG

Consumer Packaged Goods manufacturers are under pressure to grow revenues and improve operating efficiencies.

Market dynamics are reducing consumer purchasing power, markets are becoming more fragmented and SKU proliferation and greater competition is further dividing market share.

Consumer demographics and tastes witness rapid shifts and channels are proliferating. Implications are constrained revenue growth and reduced operating efficiency at a cost to serve increases. The cost of innovation swells through increased failure rates to reach an ever changing marketplace.

Value creation is fuelled by innovation in CPG. Time to market is a key lever for lifecycle cost and increased revenue. Many PLM related processes can critically improve the lifetime value of consumer products. Examples include:

Product Data and Pack Management for packaging information to harmonize declared specifications for improved quality, reduced cost and better service.

Lifecycle Program Management for effective project/program management within the cycle of product innovation, growth, maturity and decline for improved resource management.

Portfolio Management to control product portfolios and maximize return of marketing cost.

Product Requirements Management to manage consumer aspirations ('must do', 'should do') around products for design and lifecycle for improved customer satisfaction.

Collaborative Product Design and Visualization to share product related electronic design data for increased innovation success.

Functional Design Integration to integrate the design team with all other business functions within the supply chain, both internally and externally, to optimize the product delivery.

PLM Improvement Indicators

Companies employ and undertake PLM initiatives to address a variety of issues. Common indicators that may point to where PLM may provide an opportunity to improve operations include:

- The portfolio of products is not balanced, profitable or aligned with company strategy.
- Time-to-market is growing or longer than competitors and product launches are frequently plagued with delays.
- Product costs are often above target costs and direct material procurement is time consuming and inefficient.
- Management of product changes and retirements is slow, inefficient, and often involves large write-offs of materials or equipment.
- Information about products is stored in multiple places and formats with multiple versions, thus challenging an opportunity to share product information with customers and suppliers.
- Operation of other enterprise information systems is impaired by inaccurate product information from the Bill of Materials.
- Large amount of costly engineering-led change requests.
- Lack of integration between product and asset information resulting in excess expenditures associated with Safety, Health and Environment.

PLM Benefits

Investments in PLM can drive growth or revenue targets, coupled with profitability or productivity benefits. It is well known that 70-80 per cent of lifecycle costs of a product is determined during product development. Improvements in

related infrastructure and operations can yield significant benefits like:

- Faster time to market
- Longer, more profitable product life
- Reduced product development and production cost
- Increased product lifecycle margins
- Improved product quality
- Increased development capacity
- Improved customer service and satisfaction
- Rapid quoting/responses to RFP
- Increased component reuse
- Increased enterprise use of PLM data in Marketing and Sales
- Better supply chain business relationships

Approaches to PLM

Approaches to PLM must recognize that companies are at different stages of maturity in their adoption of PLM. Approaches have to span the continuum, from businesses intending to broadly transform PLM-related strategy, organization, processes and technology, to those requiring close attention in a specific area.

“Big Bang” PLM is not an option for most businesses. Instead, an incremental approach addressing one or two PLM processes at a time is recommended. This should be addressed within a framework of an overall Product Lifecycle Management strategy where a complete vision for transformation is retained and reviewed.

What are the ingredients of successful Product Lifecycle Management? And what lessons can be drawn from the best examples of PLM in industry? The challenge is to identify tactics and strategies that will be most effective

for the future. And implement them as part of a rigorous and consistent approach to PLM.

Proactive planning to sustain value

Planning is undoubtedly a competency that can enhance management of a business.

This competency needs to be demonstrated in all stages of the product lifecycle from the way projects are managed through the innovation funnel to the management of phasing out of products.

Speed products on their way

Innovation acceleration can be a vital ingredient in product lifecycle management. Every day that can be shaved off time-to-market can be directly measured in incremental sales.

Having established good quality plans via a proactive approach to planning, the application of two techniques provide consistent tools for planners. These are to establish good project management practice through rigor and formality, and to identify opportunities for parallel or concurrent activities.

Ruthlessly reduce complexity

Corporations have two major opportunities to manage their portfolio—they can regulate the flow of new products/projects through the innovation funnel or they can cull products already in the marketplace.

In either situation, there needs to be some ruthless decision making to ensure proliferation does not overwhelm business resources. Decisions on Product and Project Portfolios are some of the most difficult and challenging choices that managers will have to face.



Portfolio Management is seen as increasingly important because it provides an ability to select and prioritize winners from losers. Furthermore, Portfolio Management will allow business strategy to be manifested and resources to be allocated for optimal value to the business rather than squandering them on inappropriate projects/products.

Build a consortium environment

Collaborative design is an approach that requires simultaneous deployment of new technology and new ways of working. However, the fundamental challenge is to achieve a solution where many of the process participants are external to the organization.

Collaboration has been tried by most, with many ‘sticky ends’. The fresh component within a PLM approach is the capability to provide real-time information visibility along with formal processes, supported by effective change management. It is imperative to try such an approach.

The cost of failure will only increase through time. The first business to achieve success through effective PLM will lead its market.

Capgemini Accelerators for PLM

Strategic partnership ensures success. Leveraging partnerships to drive results (like with UGS, SAP, IBM, Microsoft, HP, Formation Systems, PTC and MatrixOne), Capgemini's Collaborative Business Experience nurtures an environment for innovation to shine.

Capgemini's PLM Assessment toolset enables businesses to rapidly identify best opportunities for benefits whilst setting the context for an appropriate PLM strategy. Not all businesses need to be "best in class" for PLM—the assessment is a mechanism to determine the degree of need.

The Accelerated Solutions Environment (ASE) brings stakeholders together to establish a common goal. It is a market-tested, proven approach to address complex PLM issues, helping to build rapid consensus across multiple stakeholders. PLM collaborative workshops, conducted in specially designed ASEs, are customized for each specific customer to support each primary transformation phase. ASEs facilitate rapid integration of solutions, connecting businesses with standard technology.

A deep understanding of what consumers really want allows Capgemini to offer thought leadership in Global Data Synchronization and Product Data Exchange. The knowledge helps businesses better understand how to influence, and leverage, demand from customers.

Conclusion

Businesses in the Consumer Products sector are seeking ways to improve their top and bottom lines. PLM, which can impact both, is constrained in many businesses through older ways of working. A command and control culture with lack of trust and silo mentality inhibits cooperative partnership styles.

Technology that is slow, offline, not shared and uncommunicative has to be replaced with new and integrated solutions. Informal and fragmented processes can be formalized and yet retain flexibility. Capgemini's thought leaders estimate that organizations introducing PLM modules can easily attain a 20 per cent improvement in speed to market whilst substantially reducing costs.

PLM evolves, as do businesses. Organizations that have already embarked on a PLM road are beginning to look at Product Lifecycle Value Management. Capgemini has sponsored a PhD study in this field and, in conjunction with SAP, developed a prototype to illustrate the concept.

Capgemini can implement governance, processes and tools from

a top management perspective to manage the product portfolio from a value creation context.

With experience from 300+ engagements globally, Capgemini brings it to bear fruit. Leveraging its "Rightshore"™ model, Capgemini distributes service delivery by tapping PLM expertise worldwide. This includes over 230 consultants in Europe, about 100 in North America, and 20 in Asia-Pacific. In addition, Capgemini's Advanced Development Center in Mumbai can add the skilled know-how of over 235 professionals (including 200+ on Java, 20 on UGS and 15 on MatrixOne) to help develop technical solutions.

So, for organizations looking to realize the dream for PLM—it's time for Product Lifecycle Management.



About Capgemini and the Collaborative Business Experience

Capgemini, one of the world's foremost providers of Consulting, Technology and Outsourcing services, has a unique way of working with its clients, called the Collaborative Business Experience.

Backed by over three decades of industry and service experience, the Collaborative Business Experience is designed to help our clients achieve better, faster, more sustainable results through seamless access to our network of world-leading technology partners and

collaboration-focused methods and tools. Through commitment to mutual success and the achievement of tangible value, we help businesses implement growth strategies, leverage technology, and thrive through the power of collaboration.

Capgemini employs approximately 60,000 people worldwide and reported 2004 global revenues of 6.3 billion euros.

More information about our services, offices and research is available at www.capgemini.com

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