

A Review: Product Lifecycle

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Abstract: Product Lifecycle is the full life cycle of a product starting from generating an idea, concept description, business analysis, product design and technical implementation, to the successful entry in the market, service, maintenance and product improvement day by day. In today's life, all consumers, shareholders and public bodies want that product must be simple and sustainable. If any company actually wants to improve, it will face many difficulties to deal with different guidelines, tools and methods. The purpose of this paper is to review literature on PLM from an operational point of view with the objective to help companies to answer to the main market needs.

Keywords: Product lifecycle management, product design, sustainable.

I. INTRODUCTION

In today's life every people wants a product which can satisfy him in all respects, it should be cheap, it should be easily available, should meet at time, good looking, good functioning. Since these variables frequently change during the product lifecycle, the innovation process must be able to account for change and easily accommodate its demands on a systematic and repeatable basis. Product Lifecycle Management (PLM) enables the kind of convergence that Enterprise Resource Planning (ERP) and Customer Relationship Management (CRM) prompted in the past. In the early 90s, ERP unified finance, HR, manufacturing and warehouse systems. A decade later, CRM brought call centre and sales force automation together. Now, Computer-Aided Design (CAD), Computer-Aided Manufacturing (CAM), Product Data Management (PDM) and manufacturing process are converging through PLM. Yet PLM is unique from other enterprise software solutions because it focuses on driving top-line revenue from repeatable processes. Through PLM, the products are a path to innovation.

II. PURPOSE OF THE PRODUCT LIFE CYCLE

Understanding the life cycle of a product is important to a business for a number of reasons. One important

reason is that understanding the PLC will help a business to manage its cash flow. In the development stage money will be spent on developing the product with no sales to cover the cost of that development. Sales revenue in the introductory stage is unlikely to cover costs. As the product moves into its growth phase, the cost of promoting the product should decrease as cash flow from product sales increase and the business can see a profit. Profits should continue through maturity until sales fall as the product begins to decline.

III. GOALS

The goals of Product Life Cycle management (PLM) are to reduce time to market, improve product quality, reduce prototyping costs, identify potential sales opportunities and revenue contributions, and reduce environmental impacts at end-of-life. To create successful new products the company must understand its customers, markets and competitors. Product Lifecycle Management (PLM) integrates people, data, processes and business systems. It provides product information for companies and their extended supply chain enterprise. PLM solutions help organizations overcome the increased complexity and engineering challenges of developing new products for the global competitive markets.

IV. PRODUCT LIFE CYCLE STAGES

1. Introduction stage
2. Growth stage
3. Maturity stage
4. Decline stage

Product Life Cycle Examples

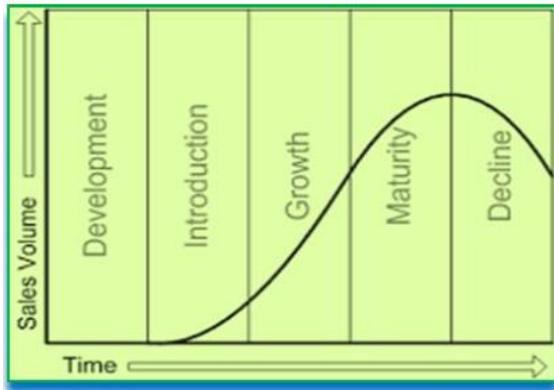
It's possible to provide examples of various products to illustrate the different stages of the product life cycle more clearly. Here is the example of watching recorded television and the various stages of each method:

Introduction – LED

Growth – LCD

Maturity – Colored TVs

Decline – B/W TVs



- Improved product quality and reliability
- Savings through the complete integration of engineering workflows
- Ability to provide contract manufacturers with access to a centralized product record
- Seasonal fluctuation management
- Reduced time to market
- Reduced prototyping costs.
- Reduced waste.
- Increase full price sale.

V. CHARACTERISTICS OF PLC STAGES

Stage	Characteristics
1. Market introduction stage	Little or no competition Demand has to be created Makes little money at this stage Costs are very high Customers have to be prompted to try the product
2. Growth stage	Sales volume increases significantly Profitability begins to rise Increased competition leads to price decreases Costs reduced due to economies of scale Public awareness increases
3. Maturity stage	Sales volume peaks and market saturation is reached Increase in competitors entering the market Industrial profits go down Costs are decreased as a result of production volumes increasing.
4. Saturation and decline stage	Sales volume decline Prices, profitability diminish Profit becomes more a challenge. Costs become counter-optimal

VI. BENEFITS

- More accurate and timely request for quote generation
- Ability to quickly identify potential sales opportunities and revenue contributions
- Savings through the re-use of original data
- Improved forecasting to reduce material costs
- Maximize supply chain collaboration

VII. LIMITATIONS

It is important for marketing managers to understand the limitations of the PLC model. It is difficult for marketing management to gauge accurately where a product is on its life cycle. Differing products possess different PLC "shapes". A fad product develops as a steep sloped growth stage, a short maturity stage, and a steep sloped decline stage. Products such as Coca-Cola and Pepsi experience growth, but also a constant level of sales over a number of decades. A given product may hold a unique PLC shape such that use of typical PLC models are only useful as a rough guide for marketing management.

For specific products, the duration of each PLC stage is unpredictable and it's difficult to detect when maturity or decline has begun. Because of these limitations, strict adherence to PLC can lead a company to misleading objectives and strategy prescriptions.

Product life cycle is criticized that it has no empirical support and it is not fruitful in special cases. Different products have different properties so their life cycle also vary. It shows that product life cycle is not best tool to predict the sales. Sometimes managerial decisions affect the life of products in this case Product Life Cycle is not playing any role. Product life cycle is very fruitful for larger firms and corporations but it is not hundred percent accurate tool to predict the life cycle and sales of products in all the situations.

VIII. APPLICATIONS OF PLM

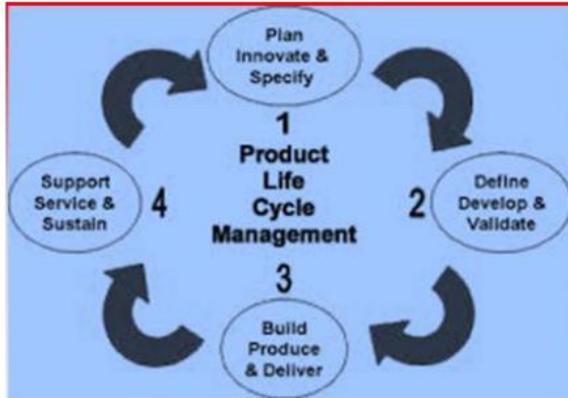
8.1. Medium to large enterprises

In the today's life, addressing global business challenges is the top priority of most medium and large enterprises. Whether they want to expand their customer base in new markets, conducting their business globally is a necessity. To sustain an advantage, they have to overcome the challenges of a dispersed organization, while still empowering individual team members to excel.

PLM concept offers comprehensive solutions to help enterprises address their challenges and create

competitive advantage. Five areas where medium and large enterprise should have achieved success include:

Managing new product introduction, to create a winning product portfolio. Creating platforms for reuse, to reduce cost and speed product customization. Supporting products currently in-service, to ensure they are available for use at minimum cost. Managing product and manufacturing complexity.



8.2. Small to medium enterprises

Small and medium enterprises have special needs and limited resources. PLM concept brings a complete solutions designed specifically for them; solutions that help them respond better to their customer's needs.

Small businesses need a product lifecycle management solution designed from the ground-up –one that is pre-configured with the industry's best practices, and offers fast and affordable deployment. Fully integrated PLM solutions are designed to provide what small and medium enterprises need to maximize their innovation strategy, and easily scale to meet their needs tomorrow.

Companies using PLM software benefit from:

Securing their corporate design data while facilitating access by authorized personnel Increasing their design reuse, facilitated by a powerful and flexible search capability Error reduction through more effective collaboration between their departments. Low total cost of ownership.



IX. CONCLUSION

PLM has proven itself to be useful for all management levels within the company . By making relevant historical information structured and available PLM is used both for those who are doing execution and decision makers within the organization answering to the rapid changes in the business environment. Firstly, this business approach is based on a method for analysing informal collaborative practices and modelling detailed design processes. Secondly, these processes are implemented by using PLM technologies. Multi-level workflows are implemented to control progress of design schedule from project management level to document lifecycle management level.

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