



SNS COLLEGE OF TECHNOLOGY

(An Autonomous Institution)

Approved by AICTE, New Delhi, Affiliated to Anna University, Chennai

Accredited by NAAC-UGC with 'A++' Grade (Cycle III) &

Accredited by NBA (B.E - CSE, EEE, ECE, Mech & B.Tech.IT)

COIMBATORE-641 035, TAMIL NADU



19MEE404 - Product Life Cycle Management (PLM)

UNIT 2: CONSTRUCTING PLCM & DRIVING ENVIRONMENT

4. External Drivers

4.1 Scale

- **Definition:** The scale of operations influences the need for PLM, especially in large organizations with complex product lines and global markets.
- **Example:** A multinational electronics company adopts PLM to manage its extensive product portfolio, ensuring that all products are developed and managed efficiently across different regions.

4.2 Complexity

- **Definition:** The complexity of products and processes drives the adoption of PLM to manage intricate design and production workflows.
- **Example:** Aerospace companies face high complexity in managing the design and assembly of aircraft, making PLM essential for coordinating thousands of components and suppliers.

4.3 Cycle Times

- **Definition:** The need to reduce product development cycle times is a major driver for PLM adoption, as companies seek to bring products to market faster.
- **Example:** Fast fashion brands use PLM to shorten design and production cycles, enabling them to respond quickly to changing fashion trends.

4.4 Globalization

- **Definition:** Globalization requires companies to manage product development across multiple geographies, necessitating a unified PLM system.
- **Example:** An automotive manufacturer with design teams in the US, Europe, and Asia uses PLM to coordinate and standardize the development of a new vehicle model across all regions.



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4.5 Regulation

- **Definition:** Regulatory requirements, especially in highly regulated industries like pharmaceuticals, drive the need for PLM to ensure compliance throughout the product lifecycle.
- **Example:** A medical device company uses PLM to manage compliance with FDA regulations, from initial design to post-market surveillance, ensuring that all regulatory requirements are met.

Summary Table: Constructing PLCM & Driving Environment

PLM Thread	Description	Example
EDM	Management of engineering data	Aerospace industry managing complex design data
PDM	Management of product data across the lifecycle	Automotive industry tracking vehicle component lifecycle
Weaving Threads into PLM	Integrating EDM and PDM into a unified system	Consumer electronics integrating design and production teams
PLM vs. ERP	PLM focuses on product lifecycle, ERP on business resources	Automotive PLM vs. Retail ERP
Singularity	Unified source of product information	Global manufacturing with a single source of design data
Cohesion	Interconnection of all lifecycle elements	Fashion industry linking design, sourcing, production, marketing
Traceability	Ability to track every aspect of the product lifecycle	Pharmaceutical traceability from research to distribution
Information Mirroring	Digital representation mirrors physical product	Automotive digital twin for virtual testing



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PLM Thread	Description	Example
External Driver: Scale	Managing extensive product portfolios across regions	Multinational electronics managing global product lines
External Driver: Complexity	Managing intricate design and production workflows	Aerospace coordinating complex aircraft design
External Driver: Cycle Times	Reducing time to market through efficient processes	Fast fashion shortening design to production cycle
External Driver: Globalization	Coordinating product development globally	Automotive standardizing vehicle design across regions
External Driver: Regulation	Ensuring compliance with industry standards	Medical device company managing FDA compliance