

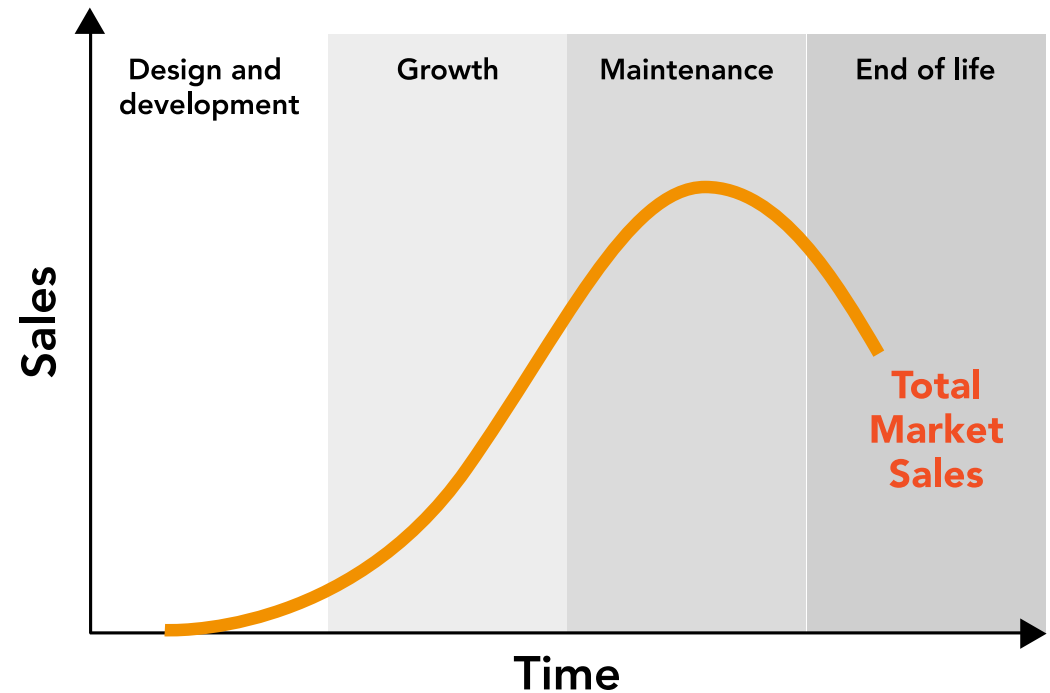
Your product lifecycle management guide.

Product Lifecycle Management (LCM) has gained focus in the last decade as a core way to ensure a product meets its potential for profitability and fulfillment of consumer and market needs, while ensuring brand loyalty from customers as product versions rise and decline.

Product LCM must consider all phases of a product lifecycle, covering it from conception through its market lifetime to the discontinuation of the product and its components. It requires a high-level view across departments from R&D to manufacturing and from sales and marketing to support.

The four stages typically identified in the product lifecycle include:

- **Product Development & Introduction.** The product lifecycle starts when a company identifies a market need or business potential. This is a period of investment. After a new product is launched into the marketplace, sales typically start to grow slowly.
- **Growth.** The growth stage is a period of rapid market acceptance and increasing profits.
- **Maintenance.** In the maturity stage, sales growth slows down because the market is saturated. Profits level off or competitiveness of the product declines because marketing outlays need to be increased to defend the product against competition.
- **End of life.** Finally, sales fall off and profits drop.



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DEVELOPMENT OVER TIME

As a product moves through its lifecycle, the development, engineering and customer support needs to change. Extending the period of product profitability and customer loyalty for as long as possible means planning for the next evolution of the product from the beginning.

Beginning of life (BOL): At the start of any new product life is the identification of a market need. After analysis of the market potential, a product concept is created to address the opportunity. The next step is design and development, in which the initial conceptualization is developed into prototypes. Within this step are actions such as identifying requirements, creating concepts, and testing or validation before manufacturing begins.

- Concept
- Development
- Testing
- Launch
- Manufacturing

Middle of life (MOL): After manufacturing, the product is launched into the market and is distributed, used and serviced. At this point, the product is in the hands of the end user. You can collect data on any failures, maintenance rates, and user experience to get information for immediate fixes and future development.

- Go to market
- Sales/Distribution
- Performance tracking and issue resolution
- Get customer feedback
- Continuous improvement
- Product evolution by features and functions enhancements
- Plan for successor product

End of life (EOL): As the product reaches maturity, plans for retiring, recycling, or disposing of the product come into play. EOL starts when users no longer have a need for the product, new technology makes it less desirable or cost of ownership rises due to various external aspects. At this stage, companies collect information about what parts and materials are still valuable and begin the reverse engineering process.

- Withdrawal from market
- Recycle or disposal

MANAGING THE PROCESS

If we look at the design, development, manufacturing and updating of the product over time, it's evident that the process needs to account for interaction between and across departments, including working with partners.

To be successful, product LCM must consider:

- **Standardized modules and sub-assemblies:** ways to unify your platforms with architecture, tools and standards
- **Product data:** ensuring information about product items, part numbers, identification, materials and documents is available to all parties
- **People and organization:** collaboration between all of the teams, departments, and organizations involved, including partners
- **Processes:** accounting for your existing (and new) procedures, rules, and practices
- **Reporting:** determining what type of reporting mechanism and scope is needed

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STEPS TO IMPLEMENT PRODUCT LCM

Each of these steps should be in place to ensure successful product lifecycle management.

Establish company requirements. What are your criteria for success?

Consolidate information. Gather all data in a central location.

Create internal collaboration. Design, manufacturing, procurement, sales, marketing and partners should work together to ensure a relevant product.

Automate information. Ensure new development work feeds back to an information repository.

Accelerate communication. Make sure any changes in product design are communicated in timely fashion from manufacturing to marketing.

Support external communication. Ensure suppliers are informed of changes, new parts requirements and customer feedback.

BEST PRACTICES FOR PRODUCT LCM

Define what success in LCM looks like for your company

Drive internal collaboration

Focus on your customer's needs

Create clear metrics for product targets

Define roadmaps to follow

Identify variables that affect product quality

Perform risk assessment and management

Create a process to manage exceptions

Establish benchmarks for product cost by lifecycle stage

Create an enterprise-wide framework for data management

Link your framework to your priorities

Ensure compliance measures are factored into each stage

Develop quality management steps for product updates/changes

Develop an end-of-life process for your products

Assign a group to own your LCM

CHECKLIST FOR EACH LCM STAGE

Ensure that important steps are completed in each stage of your product lifecycle.

Use this checklist to evaluate your development partner in the LCM process:

Product Development

Framework agreements identified

Concept and design input

Feasibility studies and data collection

Contractual compliance adherence

Project cost estimation

Development and verification

Prototypes and O-series

Introduction

Regulatory compliance support

Contract fulfillment requirements met

Business case for product supported

Product pricing support

Launch support

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Growth

- Quality compliance provided
- Product service & support
- Product improvements
- Strategic product evolution

Maintenance

- KPIs identified and met
- Support for product maintenance
- Engineering changes
- Product maintenance
- Cooperate to maintain installed base
- Next-generation product planning

End of life

- End instrument production
- Compliance/quality management
- Cooperate to maintain installed base
- Spare parts and consumables service and supply management

METRICS TO EVALUATE SUCCESS

Check the effectiveness of your PLM program by looking at key performance indicators and metrics that measure changes or successes as a result of implementation. Some areas to evaluate include:

Sales: the total sales or revenue coming from new products

Lead time: the time from order to delivery

Cycle time: the time from production start to completion (including any testing)

Production error rate: number of batches or processes needing rework

Product life: the length of time the product is usable by the customer

Product waste: the amount of waste per product produced

Product reliability: the amount of your product found to be flawed or faulty within a period

Warranty claims: the number of warranty claims per products sold

The accuracy of forecasting: the need for parts

Customer feedback: the amount of customer input given in the development process

PARTNERING FOR PRODUCT LIFECYCLE MANAGEMENT

Whatever your requirements of an OEM partner, you can turn to Tecan to provide the application knowledge and engineering expertise that turns concept into reality. With over 40 years of experience in laboratory automation and OEM instrument development, manufacturing and delivery, Tecan experts have worked across the full spectrum of life

sciences and diagnostics to take emerging technologies from research to routine testing and next generation planning.

Our Synergence Product Lifecycle Management process helps eliminate bottlenecks, improve productivity and ensure your product is a success in the market from design to end of life.

Your vision empowered

COMPREHENSIVE OEM SERVICES FOR LAB AUTOMATION

Synergence is Tecan Partnering's unique approach to the development of OEM automated solutions for diagnostics and life sciences. Starting with your exact requirements, this service guides you seamlessly through your project, from product design and development to manufacturing, launch and post-launch activities.

Excellence that comes from a truly synergistic partnership!

You'll find support along the entire product lifecycle with full regulatory compliance

- * Molecular diagnostics (genetic testing)
- * Next Generation Sequencing (NGS)
- * Real-time PCR (qPCR)
- * Immunodiagnostics
- * Mass spectrometry
- * Tissue diagnostics
- * and many more
- ...



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