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Managing the Product Value Chain for the Industrial Manufacturing Industry

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Executive Overview

Industrial product manufacturers are leveraging Oracle's Product Value Chain solutions to effectively plan and execute complex product programs, rapidly identify and solve critical quality issues, significantly improve operating cost structures, deliver products that satisfy unique customer requirements, confidently manage outsourced manufacturing in networked business models, and position themselves as providers of complete product and service solutions to their customers.

Introduction

The industrial product manufacturing industry is in constant flux, driven by relentless financial pressure, demand cyclical, and increasing customer need for ever more complex products. Success has become even more difficult to achieve, given a lack of adequate insight into returns on investment. It's time to examine the Product Value Chain – the entirety of all the processes, both inside and outside the company, that touch your products and product data from design, to supply chain, to production, to sales. Only Oracle can unlock the value of your Product Value Chain by leveraging the combined strength of our best-in-breed Product Lifecycle Management (PLM), Product Data Hub (PDH), and Product Data Quality (PDQ) solutions to systematically manage the on-time and on target release, quality and profitability of your products across your entire extended enterprise, or Product Network.

Industry Challenges

Industrial product manufacturers face severe financial pressure, cyclical demand, and customers with unique requirements for progressively more complex products. As business models shift to global operations with outsourced design and manufacturing, manufacturers need to effectively control, manage, and communicate product information with suppliers to drive product costs down, deliver at specified quality levels, and meet schedule commitments. The increasingly important role of the customer in product decisions has forced industrial product manufacturers to improve product line planning, achieve better balance between resources and features, and adjust programs based on customer orders. To stay competitive, superior customer service must be provided throughout the lifecycle of the product.

“Oracle’s Agile Product Lifecycle Management applications give us a 360-degree view, helping us make better decisions in product design and operations management, so we have fewer challenges in the field and can better serve our customers.”

— Janice Lindsay, Vice President, Strategic Sourcing, Harris Corporation

Unlocking Product Potential and Profit with Oracle’s Product Value Chain Solutions

Today’s business models are heavily dependent on outsourced engineering and manufacturing, making getting input from everyone in the Product Value Chain expensive and time consuming. Industrial manufacturers struggle to connect all contributors in a seamless fashion without risking control of the innovation process and/or putting intellectual property in jeopardy. With Oracle’s Product Value Chain solutions, your entire Product Network can collaborate as if they were part of one enterprise. You can feel confident that they are working in a secure innovation process anchored with the most up to date information regarding current product ideas, designs and insights from your supply and demand chains. Open innovation is about getting the best input from everyone in your Product Network. Oracle’s Product Value Chain solutions are open innovation made easy.

An industrial manufacturer’s definition of critical product information must go beyond the traditional definition of design data to achieve commercial success. Oracle’s Product Value Chain solutions provide the framework to monitor critical information and processes and simplify the decisions that keep your Product Network functioning effectively. Areas such as product cost and quality, regulatory compliance, customer feedback, speedy audits, secure IP, and risk mitigation are all parameters that can be examined individually to quickly understand status and required actions. Product definitions are increasingly more complex as mechanical, electrical and software components must be managed concurrently and be quickly integrated into a system that meets ever more challenging requirements. Particularly in this marketplace, the speed at which you make decisions about the health of your product portfolio is the difference between success and failure. With Oracle’s Product Value Chain solutions, you’ll not only be able to accelerate the product decision cycle, you’ll be able to immediately see, quantify, and act upon your opportunities for improvement, while ensuring optimal productivity throughout your Product Network, unlocking product potential and profit.

Improving Profitability with Oracle’s Agile Product Lifecycle Management

Oracle’s Agile Product Lifecycle Management applications, fundamental facets of Oracle’s Product Value Chain solutions, help you accelerate revenue, reduce costs, improve quality, ensure compliance, and drive innovation throughout the product lifecycle. With a broad suite of best practice, enterprise-class PLM solutions and time-to-value focused implementations, Oracle helps you get the most from your product development efforts.

Building on a proven track record of improved product profitability at nearly 2,000 global companies, Agile Product Lifecycle Management provides comprehensive support for the product lifecycle business processes, platforms, and integration requirements of complex enterprises. Uniquely built from the ground up for the networked business, it enables a single enterprise view of the product record across the extended enterprise.

Agile Product Lifecycle Management is built on a standards-based, secure, and scalable open architecture platform that ensures fast and cost-effective implementations. The platform delivers seamless interoperability with existing information technology environments, comprehensive decision support, and global capabilities to support collaborative product lifecycle processes.

By relying on Agile Product Lifecycle Management applications, you will be able to address critical business processes and stakeholder issues, including the following:

- **Bid and proposal.** Capabilities include but are not limited to the ability to capture, track, and manage customer and marketing requirements—with traceability—to downstream design, planning, procurement, production, and service activities. Lessons learned databases can be maintained to aid in proposal formulation. Cost repositories can allow for accuracy in assembling the bid.
- **Product portfolio planning, research, and development.** Establish a cross-functional team approach to planning, developing, delivering, and servicing complex industrial products focused on program performance, cost reduction, and product quality. In addition, you will be able to effectively plan and execute simultaneous projects to manage resource allocation, cost, schedule, deliverables, and key performance indicators.
- **Conceptual and Detailed Design.** Institute repeatable and measurable business processes to manage the complete product record, including mechanical, electrical, and software engineering activities, to ensure that customer expectations and commitments are met. Release and change processes can be managed from concept to implementation.
- **Supplier management.** Synchronize the design and sourcing teams with suppliers to ensure that outsourced components and subsystems meet performance, quality, schedule, and cost constraints.
- **Post-sales service and support.** Manage and track in-service product configuration changes that are coordinated among field service personnel, customer support, and engineering.

Using Agile Product Lifecycle Management Throughout the Product Lifecycle

Agile Product Lifecycle Management enables you to leverage industry best practices to improve product profitability throughout every product lifecycle phase—from concept and design to production and phase-out and disposal, as follows:

Concept

Effectively plan and manage product platforms and portfolios as well as program plans and project requirements. Ideation and project proposal processes can be managed as well.

Design and Develop

Manage large and complex product information sets consisting of mechanical, electrical, and software components.

Prototype and Pilot

Coordinate outsourcing to globally distributed design and manufacturing partners. You will be able to effectively communicate product change, release and transfer processes throughout the value chain.

Launch and Ramp

Integrate seamlessly with enterprise resource planning and other business systems to create and communicate bills of material and supply chain changes across the enterprise. Analyze historical supplier performance and cost data to identify best value partners. Rapid communication and change in this phase is easily facilitated.

Production

Coordinate cost reduction programs with suppliers and capture “as-built” product configurations for use in service.

Service and Support

Plan and execute sustaining engineering, field upgrades and retrofits, etc. in order to maintain an audit trail to track the “as-maintained” product record and supporting defect tracking and root cause analysis.

Phase-Out and Disposal

Coordinate phase-out of spare parts from the supplier network and track compliance with recycling regulations.

The Enterprise Product Record

Companies have deployed enterprise systems of record to manage select operations across their business, including:

- Customer relationship management systems for managing the customer record
- Enterprise resource planning systems for managing the financial record
- Supply chain management systems for managing the supplier record
- Human capital management systems for managing the employee record

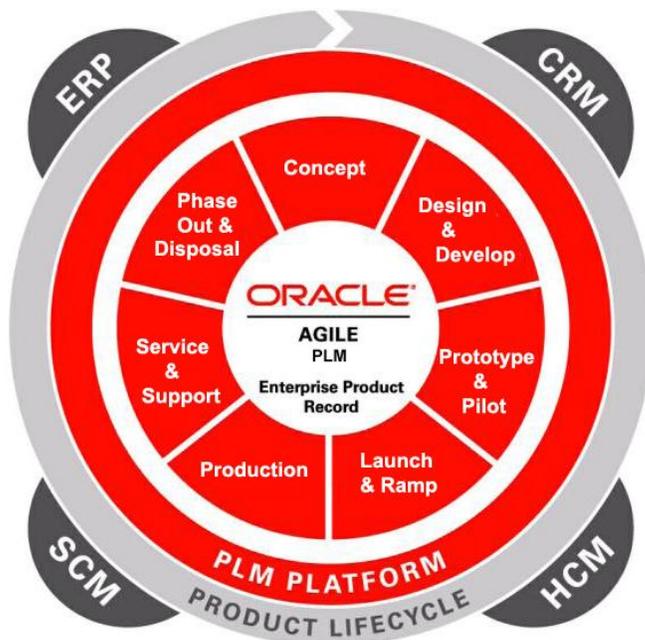


Figure 1. The Oracle Agile Product Lifecycle Management solution maintains an accurate product record for companies producing industrial products throughout the product lifecycle.

Unlike other enterprise assets—customers, suppliers, employees, and inventory—a company’s products define its competitive advantage. Agile Product Lifecycle Management manages the enterprise product record—a single system of record for the information required to maximize profitability throughout the product lifecycle.

Containing the rich information that uniquely defines all aspects of a product at each stage in its lifecycle, the product record contains all the information required by the extended enterprise, including the supply chain, to conceptualize, design, source, build, sell, service, and dispose of products.

Through a broad suite of best practice, business-ready solutions, Agile Product Lifecycle Management provides secure, timely visibility and control of product information for PLM processes and stakeholders. Oracle helps you accelerate revenue, reduce costs, improve quality, ensure compliance, and drive innovation throughout the product lifecycle.

Ensuring Accuracy with Oracle Product Data Hub and Product Data Quality

With numerous data sources feeding information throughout the enterprise, controlling data accuracy becomes a monumental task. Oracle's Product Data Hub and Product Data Quality applications (together typically known as Product Information Management solutions or "PIM") help manufacturers consolidate and maintain unique, complete and accurate product information across the enterprise. Companies can distribute product information to all operational and analytical applications just in time to improve data quality, utilize product insight for all transactions, comply with privacy and regulatory requirements, and reduce data management costs. With a central data repository, you can capture trusted product data, enabling a 360-degree view of product information to:

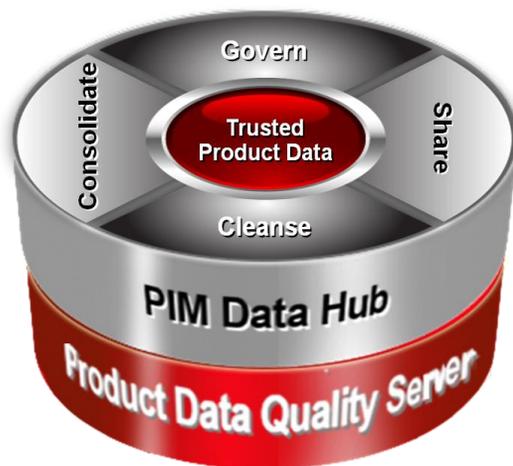


Figure 2. Product Data Hub and Product Data Quality ensure data accuracy throughout the enterprise.

- **Consolidate** product information for data extraction and import to aggregate product data from multiple sources into a single repository.
- **Cleanse** highly variable, unstructured and non-standard data into consistent, structured, and standard data to load into the repository. Product Data Quality enforces data standards on incoming data to deliver lower cost, higher quality results in a scalable and governed process.
- **Govern** access to information on a secure, role-basis by job function, product responsibility, data type, geography, and entity. By instituting a new item definition and approval process, Oracle prevents duplicated items, controls data quality and drives process improvement.
- **Share** a complete view of product information from a single user interface to optimize usability and efficiency across your extended enterprise.

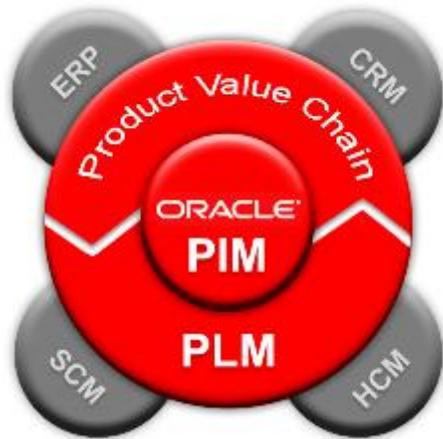


Figure 3. Bringing it all together: Only Oracle can unlock the value of your Product Value Chain by leveraging the combined strength of our best-in-breed Product Lifecycle Management (PLM) and Product Information Management (PIM) solutions to systematically manage the on-time and on target release, quality and profitability of your products across your entire extended enterprise, or Product Network.

Conclusion

Industrial product manufacturers face deepening financial pressure, evolving outsourced business models, rationalizing cyclical demand, and satisfying customers with unique requirements for progressively more complex products. By leveraging the combined power of Oracle's Product Value Chain solutions, including Agile Product Lifecycle Management, Product Data Hub and Product Data Quality applications, industrial manufacturing companies have achieved positive results, such as:

- Increased operations productivity by
 - Minimizing product costs and risks
 - Eliminating scrap and rework and increasing efficiency due to errors in misinterpreting customer and marketing requirements
 - Standardizing components and platforms to maximize reuse of intellectual property
 - Managing complex design and analysis content created by mechanical computer-aided design (MCAD) and electronic computer-aided design (ECAD) software and desktop authoring tools
 - Integrating hardware, firmware, software, packaging and other critical components in a unified product definition
 - Reducing overhead by electronically communicating product information across sales, service, engineering, procurement, production, and the supply chain
 - Ensuring data accuracy across the Product Network

- Improved leverage of global manufacturing capacity by
 - Synchronizing all design and manufacturing partners by creating a single Web-based product record that is accessible to all parties in the supply chain, regardless of location
 - Managing historical supplier cost and performance data and making sourcing decisions based on proven ability to deliver value
 - Ensuring enterprise product quality with rigorous controls at every phase of the product lifecycle
- Enhanced customer service by
 - Significantly reducing time to respond to, plan, and execute engineered-to-order and custom-engineered projects
 - Capturing requirements correctly throughout the design chain
 - Quickly responding to service inquiries

Only Oracle can unlock the value of your industrial manufacturing Product Value Chain by leveraging the combined strength of our best-in-breed applications to systematically manage the on-time and on target introduction, quality, and profitability of your products across your entire extended enterprise.



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Hardware and Software, Engineered to Work Together