TECHNOLOGY & SOFTWARE CONSIDERATIONS WHEN CHOOSING YOUR PLM SOFTWARE

Whitepaper
TECHNOLOGY & SOFTWARE
CONSIDERATIONS WHEN CHOOSING YOUR
PLM SOFTWARE

Product lifecycle management (PLM) is the software that leading manufacturers use to manage and connect sales, product, production and business process data. It helps provide all employees with a single version of the truth related to a product from concept, design and manufacture all the way through to warranty, product service, and end-of-life disposal.

As a manufacturer, you can use PLM software to integrate people, processes, business systems, and data across your entire enterprise. This integration makes it possible for you to accomplish more in less time as well as reduce development and long-term manufacturing costs — all while ensuring customer safety and satisfaction.

PLM software serves as your common source for detailed and in-depth information about the products you produce. This single version of the truth enhances visibility into the intent, history, and current status of your engineering, production and business processes. It also facilitates your ability to comply with regulations, track products, and eliminate redundant data-entry tasks.

With PLM software in place, you’re poised to optimize your manufacturing and administrative processes, enhance product safety and quality, and speed time to market. By minimizing misunderstandings and mistakes, you experience the benefits of efficient and effective collaboration.

When customers, suppliers and employees have questions about how you planned, designed, launched and produced a part, PLM enables all of the key stakeholders to have clarity to make informed decisions. This valuable peace of mind frees everyone involved to put their focus on next steps, including continuous improvement and innovation.

THE EVOLUTION OF PLM SOFTWARE

Although PLM software has evolved over time, the goals of product lifecycle management have always mirrored those of manufacturers: shorten the timeframe from product concept to sales, reduce development and manufacturing costs, ramp up production volumes to meet customer demand, and optimize product quality.

Before PLM software as we know it today was created in the early 2000s to help achieve these goals, manufacturers used fragmented, paper-based systems that were time-consuming and cumbersome to manage.

Once computers became common starting in the early 1980s, automation replaced paper-based systems to manage product lifecycles. Also fragmented, these automated systems, to name three, included product data management (PDM), focused on product-specific information; collaborative supply chain management (SCM), which extended product-specific information to suppliers; and computer-aided design (CAD) tools to centrally store product-related drawings and documents.

Integrating the processes related to product lifecycle management served to facilitate, speed up, and reduce the associated costs of product development and manufacturing processes. Adding customer relationship management (CRM) and enterprise resource planning (ERP) functionality further expanded the scope of key information to enable optimized production processes, efficiencies, and savings for manufacturers. Even so, these islands of information maintained multiple versions of requirements, plans and performance, which could result in misunderstandings and mistakes that wasted resources.
PLM SOFTWARE TODAY
Today, best-of-breed PLM solutions encompass a fully integrated set of the software tools you require to successfully design, produce, validate, maintain and ultimately retire the products you manufacture. Serving as a single system of record, PLM software can support all of the activities related to managing products across your entire enterprise, including the following functions.

Product data management (PDM)
Tracks and controls product and manufacturing technical data, such as specifications and the bill of materials (BOM). Serving as a central knowledge repository for product design and process history, PDM allows users to carry out engineering change management with automated workflows and controlled releases of product components to manufacturing databases.

Program and project management
Captures schedules and budgets as internal benchmarks and also tracks issues, resources used, and the costs associated with product creation and launch. This keeps team members and leadership informed of program status, risks, and projected profitability.

Formulation management
Helps manufacturers, particularly in the food and beverage industry, better understand the relationship between formula composition and sensory attributes.

Packaging artwork management (PAM)
Supports complex artwork development processes by automating workflow, annotating artwork markups, managing colors and digital assets, certifying copy, and generating artwork.

Computer-aided design (CAD)
Helps create, modify, analyze and optimize three-dimensional (3D) models and/or two-dimensional (2D) designs in a productive manner. CAD software also makes it possible to improve design-quality, development-related documentation. CAD users benefit from lower product development costs and shorter design cycles.

Computer-aided engineering (CAE)
Helps manufacturers conduct a range of engineering analyses, including simulation, validation and optimization of products, processes, and manufacturing tools. CAE software can be used to analyze stresses using finite element analysis (FEA), thermal and fluid-flow analysis with computational fluid dynamics (CFD), multibody dynamics (MBD), and even electrical circuit analysis to predict product performance in manufacturing and use in the field.

The newest CAE software provides 3D simulation and analysis of production machinery performance individually and integrated into cells and lines. These insights empower manufacturers to predict the actual performance and costs and then adjust their designs, tooling and processes before production starts, resulting in the production of robust, high quality parts.

Computer-aided manufacturing (CAM)
Supports and controls a full range of manufacturing machine tools. CAM software helps speed the transfer and translation of CAD product data needed for the set-up of production processes; optimize manufacturing operations for speed and quality; establish actual tooling dimensions; and minimize raw material consumption and energy usage.

From concept, design and manufacture all the way through to warranty, product service, and end of life, you can use PLM software to manage business-critical information throughout a product’s entire life. It helps you maintain visibility into your supply chain to ensure traceability, safety and compliance, and it lets you integrate data into one version of the truth throughout your enterprise. With PLM software in place, you can streamline processes, work in a more time- and cost-efficient manner, and free your team to focus on innovation.
FACTORS TO CONSIDER WHEN CHOOSING PLM SOFTWARE

Currently, there are many PLM solutions available in the marketplace. So how do you choose the right solution for your business needs? There are many factors to consider.

To start, form a PLM software selection committee that includes a combination of executives, IT employees, and end users. Then take into account the current size of your organization, along with its projected growth. If you foresee significant growth, you don’t necessarily need to invest in a large, complex and full-featured PLM software solution right away. Instead, choose one that’s flexible, so you can scale it to meet your needs today and in the future.

Next, find out if there are PLM solutions designed specifically for your industry’s business processes, such as recipe and formulation management systems built for food and beverage manufacturers.

Additionally, determine your business objectives in detail, and keep them in mind when evaluating PLM solutions. The PLM software you choose should offer features and functionality that align with your overall business processes. Some examples of issues and needs a particular manufacturer may have to weigh are customer specifications, product design models, bill of materials (material formers versus complex assembly builders), exposure to government regulation, global operating footprint, customer base, and the supply chains involved.

Then, consider not only what you need from your PLM software, but also factors related to technology and integration. What, if any, technology will you require to operate your PLM software solution? How much will it cost, and is this added cost within your budget? Will the PLM solution seamlessly integrate with the software and hardware you already have in place, such as ERP, program management, or CAD? If not, how much money, time and resources will you need to invest to undergo a successful integration?

Finally, as a selection committee, evaluate prospective PLM software vendors and the solutions they have to offer you in depth. Find out and compare the features and benefits of each prospective vendor’s PLM solution. See which vendors have experience serving organizations of your size. Request proposals from — and meetings with — your top four or five vendors, and visit at least one or two reference customers for each system. If the vendor you choose doesn’t also provide system integration services, follow a similar process to evaluate and select a systems integration provider as well.

PLM SOFTWARE HELPS YOU DO MORE WITH LESS

Once you have your PLM software solution up and running, it will help you produce more in less time, work more efficiently with fewer employees, and keep your equipment running smoothly with minimal downtime. Your PLM software will also make it possible for you to optimize your manufacturing processes, compliance, product quality, profitability, and speed to market so you can better compete — and thrive — in today’s competitive marketplace.

For more information, please visit www.iqms.com or call 1.866.367.3772