Collaboration Tools to Accelerate Design

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Increasing demand for product specialization from customers, and market pressures to speed new product introductions, are two big challenges facing manufacturers today. Manufacturers with engineer-to-order and made-to-order products need new tools to be able to successfully share the collective brainpower of manufacturing and engineering in real-time. Collaboration tools help you share CAD designs, analyze costs, monitor reliability of components and discuss complex specifications with a global supply chain of vendors and subcontractors.

Driving Influences

Today’s consumer expects choices and engineering departments face heightened pressure to adapt designs to customer requests. Engineers also face pressure to speed product releases as manufacturers turn to innovation as one of the key ways to create a competitive edge. With the ability and business requirement to introduce more products in a year, design speed is even more important. Decisions are being made quickly, and engineers are operating in a fast-paced environment where convenient access to data is key. There is no time for delays caused by waiting for reports to be built, but data needs to be easily accessible and needs to be easily shared in real time across the internal and external organization. Self-service analytics and easy-to-use reporting are critical to meeting accelerated deadlines.

As global competition increases, offering a distinctive product is one of the few ways to stand out from the crowd. Product specialization—allowing the customer to request configurations, styles or as-completed specifications is key to maintain a competitive edge.

Benefits of Collaboration

Manufacturers need every tool available to boost productivity of the engineering department and help product designers manage their complex processes with greater ease. Not only must the engineering department speed the development cycle, they must do so with a watchful eye on cost efficiencies. It is of no use to develop a new product quickly if that product is going to be inefficient to produce with low margins and use difficult to obtain components. Visibility into costs, supply chain issues and overall production capabilities are essential. When access to this data is available, an engineer can work with the customer and suppliers and have confidence in the costs associated with the new concept. Collaboration tools help to bring the various influencing factors into context and bring stakeholders into relevant dialogue.

As manufacturers struggle with shortages of highly-skilled personnel, but still want to grow the business, the value of shared dialogue and effective collaboration is

greater than ever. Personnel, including engineers, may need to share tasks, mentor recruits or expand their role in the company, assuming more responsibility for cost analysis, compliance monitoring and feasibility studies. In these cases, communication within the workforce increases in importance.

Selecting the Right Tools

Unfortunately, many consumer-oriented social platforms lack the depth and power suitable for today's complex, fast-moving manufacturing environment. The qualities that lead to success in manufacturing revolve around rapid mastery of highly-sophisticated processes combining human judgment, precision engineering and financial accuracy—all united in a highly-synchronized framework focused on business goals. The most important functions include engineering and design collaboration, business-process integration, real-time financial reporting, analytics and fully-connected manufacturing execution capabilities. A competitive manufacturing company needs to be constantly optimized for peak performance under volatile business conditions in order to support long-term success.

There's no substitute for having the right collaborative and product lifecycle management (PLM) tools to match manufacturing requirements. The issues and decision-points requiring collaboration contribute to the overall process and framework of the production cycle. The collaboration process needs to be integral to the overall workflow—not an after-thought.

Product development demands an unusually sophisticated level of collaboration, incorporating far greater complexity than shared social conversations. A PLM system supports the intricate and collaborative processes organizations need to successfully manage and plan an entire range of product lifecycle management tasks, including complex engineering information, CAD documents, product structures, change orders and more. As PLM systems function as an integral part of the manufacturing collaboration network, organizations can gain both foresight and insight about how they are able to manufacture current products more economically, create new products more rapidly and be sure that an entire product line is succeeding in the marketplace.

All manufacturers need a richer collaboration architecture incorporating deeper business functions. When evaluating systems, be sure to look for integration and collaboration technologies which will provide a path to the next level of teamwork, a level which combines human ingenuity, analysis and the power to execute strategy rapidly so the organization can succeed in a rapidly changing business environment.

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