

Emak trims its product design cycle to bring its new products to market faster with PLM solutions.

Overview

■ **Challenge**

With speed to market the core of its “fast-follower” business model, outdoor equipment manufacturer Emak needed to shorten the time it took to get from concept to the factory floor to the marketplace.

■ **Why Become an On Demand Business?**

The inability to efficiently manage engineering changes was causing costly delays in design and production. Emak needed a more coherent and integrated way to collaborate with its strategic suppliers.

■ **Solution**

Emak engaged IBM Business Consulting Services to deploy a product life cycle management (PLM) solution that automatically tracks and manages design changes. This in turn laid the groundwork for the broader transformation of Emak’s other core processes.

■ **Key Benefits**

- 30 percent reduction in the time required to generate new designs
- 25 percent reduction in the engineering change cycle

>> **On Demand Business defined**

“An enterprise whose business processes—integrated end-to-end across the company and with key partners, suppliers and customers—can respond with speed to any customer demand, market opportunity or external threat.”



Based in Italy, Emak is among the top five European players in the outdoor power equipment sector. Emak distributes a broad range of products for gardening and forestry in more than 70 countries worldwide, meeting the daily challenges of the rapidly evolving requirements of customers across the globe. The company employs 600 and generated revenues of €180 million.

Based in Italy, Emak (www.emak.it) is one of Europe’s largest manufacturers of portable agricultural and gardening machinery. Its line of chain saws, lawn tractors and other tools is distributed through subsidiaries in Belgium, France, Germany, Italy, and the UK under the Efco, Oleo-Mac and Dynamac brand names. Emak built its market position by successfully adhering to a “fast-follower” business model. In contrast to innovation leaders, whose strategy rests on being first to market with new features or products, fast followers instead seek to incorporate other

“Our success depends on continuously improving and speeding up our processes. IBM’s technology, PLM solutions and insight provided us with a new way to manage the core of our business and helped make us a more nimble company.”

– Matteo Fiaccadori, PLM Manager, Emak S.p.A

On Demand Business Benefits

- 30 percent reduction in the time required to generate CAD models
- 25 percent reduction in the time spent managing engineering changes
- Faster time to market with new products due to more efficient coordination with suppliers
- Improved ability to respond to market opportunities through more efficient engineering processes
- Lower costs related to design errors and production delays, thus enabling more competitive pricing

companies' innovations within their product lines. To make this model work, successfully executing the "fast" aspect of the fast follower model is absolutely critical given the intensity of competition among players in this space. Put simply, companies less agile at responding to the latest innovations risk being displaced by other fast followers and are thus more vulnerable to market share loss.

Hitting a moving target

For Emak, the key to success lay in the critical series of processes that stretched from the designer's drawing board to the manufacturing floor. From a design standpoint, the key challenge was in managing the customization of its product lines to meet the requirements of its various brands, as in a different size engine for a given model of chain saw. Here's a broad-brush overview of how it happens. Once a customized design is made by Emak's engineers, it is sent as a drawing to one of a series of strategic suppliers, whose job is to manufacture specific components or subassemblies based on these design specifications. Once built, these parts are then received from the suppliers and assembled by Emak before moving on to distribution channels. In everyday practice, however, the reality is more complex and dynamic. Product designs are generally a moving target, subject to numerous changes—some big, some small. Each time the design for, say, a hedge trimmer is changed, that change ripples through some or all of the components that make up that hedge trimmer. If this process loses its integrity—that is, suppliers are working with outdated or inaccurate design assumptions—the integrity of its downstream production process is similarly crippled because the parts quite simply fail to line up. This was exactly the problem Emak was facing.

While Emak's engineers used a CAD system to develop and render designs, the system did not have the integrated capacity to track and manage the product data associated with these designs. By relying instead on a standalone document management system to communicate engineering changes, Emak had no way to truly synchronize with suppliers on design changes and the results were apparent. All too often, suppliers were found to be working from obsolete designs, resulting in wasted design time and costly production delays. Emak recognized that this process flaw undermined speed to market—the foundation of its business model. The urgency of the situation was further heightened by Emak's imminent entry into the fast-growing but competitive Chinese market and the need to work with local suppliers there. With the industry's product cycle accelerating and the importance

“We view any process that slows our time to market as a threat to our competitiveness. That's what drove us to transform our product engineering process.”

– Matteo Fiaccadori

of time-to-market growing, Emak needed to redesign the core elements of its end-to-end product development process to make it faster, better integrated and more efficient. The key improvement needed was in the way Emak's engineers collaborated with the company's suppliers in sharing design information as it evolved. More generally, Emak needed to move from a series of disconnected design processes—which discouraged the sharing and leveraging of design-related knowledge—to a more coherent process framework that would keep all of Emak's design and manufacturing resources on the same page.

Applying the lessons of aerospace design

As they framed the company's options, Emak's senior staff looked to the aerospace industry as a guide for how it could better manage a distributed and complex design process. The source of this inspiration was Emak's director of IT and quality control, who had previously worked in an aerospace manufacturing environment and saw the chance to apply some of its design practices in the power tool domain. He knew that enabling the kind of process transformation Emak had in mind required a robust, flexible and collaborative design management infrastructure as a foundation. And he knew that IBM was the leader in that space. After performing an extended review of Emak's business problem, IBM Business Consulting Services was engaged to transform its entire product design and development function. The core of the new solution is IBM CATIA V5, the CAD solution within IBM's suite of product lifecycle management (PLM) products. In addition to modeling and rendering designs, Emak engineers use CATIA's workflow capabilities to release drawings to suppliers and to release product data for downstream applications such as ERP.

Another important enabler of process transformation was the deployment of IBM SMARTEAM, the product data management (PDM) element of IBM's PLM product suite. The result counts for much more than just the sum of its parts. Recall that under the old system, the lack of an integrated way to manage product data changes was highly problematic. SMARTEAM, by comparison, takes the engineering design changes made in CATIA and translates them—automatically and seamlessly—into a new list of specifications for suppliers known as an engineering bill of materials (BOM). By “closing the loop” with suppliers and ensuring that they are working with only up-to-date engineering information, the new solution guarantees that a supplier will create a component or subassembly that will fit within the final product. This seamless sharing of design information drastically reduces the costs and production delays resulting from incompatible designs.

The solution also enhanced the design process by giving Emak's engineers more flexibility to maintain multiple design configurations, as well as an improved ability to leverage existing designs and product information for new designs. In sum, it provided Emak with a cohesive, integrated platform upon which it could optimize all aspects of its engineering and design processes. In addition to its

Key Components

Software

- IBM CATIA V5
- IBM SMARTEAM

Hardware

- IBM eServer™ xSeries® server
- IBM Intellistation® M-PRO workstations

Services

- IBM Business Consulting Services

Timeframe

- 6 months
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“With the help of IBM, we have been able to reduce product design timetables, lower design and product costs and improve our supply chain relationships.”

– Matteo Fiaccadori

process transformation work, IBM Business Consulting Services designed and implemented the technical solution, which runs on an IBM eServer xSeries 235 server and IBM IntelliStation M-PRO workstations.



Retooling for speed and responsiveness

For a fast-follower like Emak, speed to market is everything. Its survival and success depends in large part on its ability to respond deftly to new product opportunities. By retooling its engineering process, Emak has taken a large step toward improving this capability. With CATIA and SMARTEAM in place, the company has experienced a 30 percent reduction in the time required to generate CAD models and a 25 percent reduction in the time spent managing engineering changes. With this streamlined design flow, Emak can now get its products into production faster to meet the shifting needs of the outdoor power tool marketplace. To further strengthen this capability, the company has begun to integrate its PLM solution with its ERP system to improve production planning, yielding even more cohesion in its process flow. Ultimately, Emak expects to deepen the integration of PLM and ERP so that it can optimize more “downstream” functions such as sales management, after-sales service and spare parts management.

In the near term, however, Emak faces the challenges and opportunities of the fast-growing Chinese market, where cost control and speed is as important as anywhere in the world. With its PLM solution, Emak now has a highly efficient way for its local engineers to collaborate with its newly established supplier network right out of the gate. Matteo Fiaccadori, Emak’s PLM Manager, sees the process improvements enabled by the new solution as strengthening the company’s ability to execute its core business model. “Our success depends on continuously improving and speeding up our processes,” explains Fiaccadori. “IBM’s technology, PLM solutions and insight provided us with a new way to manage the core of our business and helped make us a more nimble company.”

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