Electronics and semiconductor

Matica Technologies Group

Technology hardware firm uses Teamcenter and Solid Edge to streamline operations and shorten decision lead time

Products

Solid Edge, Teamcenter

Business challenges

Migrate from department-centric standalone design to enterprise-wide collaborative engineering

Extend data management across the product lifecycle

Provide access to corporate assets and knowledge to all stakeholders around the world

Keys to success

Use Solid Edge to efficiently manipulate models typically comprised of about 1000 parts

Use Teamcenter to support the design of increasingly complex products and processes

Results

Streamlined operations and shortened decision lead time

Eliminated duplication by using one integrated environment

Increased re-use of existing modules to identify new concepts very quickly

Matica Technologies eliminates duplication by using integrated environment powered by Siemens PLM Software solutions

Leveraging a key acquisition

In the last 10 years, Matica Technologies Group (Matica Technologies) has gone from producing metal-plate embossing machines to credit cards. In 2006, Matica Technologies, which is based in Turate (Como) near Milan in the north of Italy, extended its operations from metal plates to the familiar plastic cards that are now used in countless sectors, including financial services, retail, identification (ID) documents and access control. As a result, the company expanded its knowledge and expertise to plastic cards processes, including thermographic printing, laser engraving and the encoding of chips and magnetic stripes.

Initially, these tasks were outsourced to external suppliers, but then Matica Technologies decided to bring all key technologies inside the firm through acquisitions. Among those acquisitions was a German company, Digital Identification Solution, with an established global organization that enabled the firm to get into the business of governmental cards (national ID cards, driving licenses and healthcare cards).

From plastic to end customer

Traditionally, Matica Technologies constructed machines for the personalization and issuance of plastic cards for the financial market.
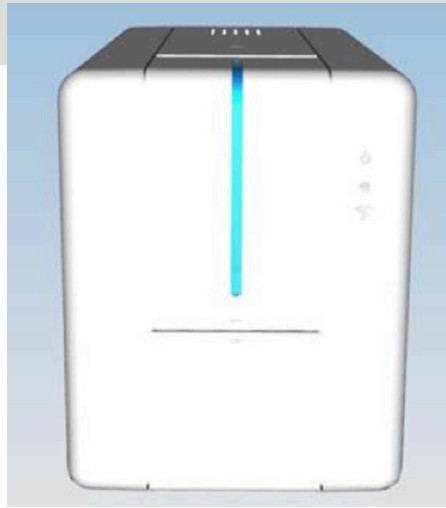
"Our raw material is a white plastic card cut to size, provided with a magnetic stripe and possibly a chip," says Fabrizio Fontana, head of research and development (R&D), who joined Matica Technologies in 2012 to manage the transition of the engineering department to the new organization.

"Blank PVC cards are fed into our line consisting of different modules that execute the complete workflow, including the

thermographic transfer of texts and pictures, the embossing of the holder's name and expiration date for credit cards, the printing of CVV security codes and the gold or silver coating of embossed characters. At the end of the line, a mailing module can be installed to apply the card to a preprinted letter and wrap everything up into an envelope to ship it to the customer."

The production of governmental cards is more sophisticated due to higher security and anti-counterfeiting requirements. Leveraging the experience acquired in 2012, Matica has developed all the necessary skills for this business, from ultra-high-definition printing, laser engraving and film or paint laminations, to embedded security holograms.

"With that acquisition, we brought an established global organization onboard with a sales and service network that covers all customers and products worldwide," says Fontana.

New approach to product development
Matica Technologies combined its expanding portfolio and technological expertise with rebranding and a new approach to R&D. Until 2012, all products were designed by the engineering department in the Milan offices, where each designer worked separately on a personal computer (PC) using Solid Edge® software from product lifecycle management (PLM) specialist Siemens PLM Software.

"My task as the new R&D manager was to migrate from department-centric stand-alone design to enterprise-wide collaborative engineering, spanning the entire product lifecycle," says Fontana.

Fontana's first step was to conduct a comparative analysis of computer-aided design (CAD) systems with the specific needs of the company in mind.

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"Our analysis of CAD software available on the market showed that Solid Edge was perfectly suitable for our requirements," Fontana says. "Both the licenses and the skills for Siemens PLM Software's CAD were already available in the organization, so we could ensure continuity and compatibility during the transition. As an additional benefit, Solid Edge is very easy to use and is efficient for the manipulation of our models, which are typically made up of about a thousand parts."

After reaffirming the adoption of the CAD software, Fontana's team focused its attention on data and development process management. Supported by Siemens PLM Software partner Team3D – authorized resellers of the entire Siemens PLM Software portfolio since 2006 – Matica Technologies engineers defined a new complete workflow, from multidisciplinary design, specifications management, modules, bills of materials (BOMs) and change management to technical documentation production after the release of the final product.

Insisting on using Teamcenter
The ideal tool to manage the new process was immediately identified as Teamcenter® software, Siemens PLM Software's PLM suite. As Fontana explains, "We considered Teamcenter the only solution offering all

the features and functionality we needed within one CAD-integrated unified environment. As R&D manager, I insisted on Teamcenter because other PLM systems did not give the same warranty in terms of seamless CAD integration."

Documentation management and visualization were two more key factors for Teamcenter selection.

"Based on discussions with Team3D, we had originally adopted Teamcenter as an advanced tool for the production and management of technical manuals," Fontana remembers. "Of course, it soon proved to be very useful in project management, mostly when you have a collection of approved modules that you can retrieve and use immediately to prepare new offers and proposals in a very short time."

Using Solid Edge and Teamcenter is helping Matica Technologies increase re-use significantly, enabling them to develop new concepts very quickly and even prepare a presentation of a new project in just one afternoon.

"Starting from scratch, in less than three years we have already stored all our designs so we have a rich library of modules now," Fontana says. "Our expectations in terms of process simplification have been fully met

by Teamcenter and we have dramatically shortened our decision lead time. Another reason why we chose Siemens PLM Software was the fact that they offered a platform that can grow with us and support the design of products of increasing complexity."

Today, Matica Technologies is running Teamcenter on a four-layer platform that synchronizes two servers in the Santhià and Milan areas. The network infrastructure in the Santhià area – where the R&D department is located – does not offer suitable speed rates to share designs and files in real time between Santhià and Milan, but as Fontana explains, "We decided to stay here because this territory is a good source of qualified engineers with the skills we need."

Cross-discipline global solution
The ultimate reason why Matica Technologies adopted Teamcenter was to support the full traceability of a new product that would be sold all over the world and had to be monitored for after-sales service. In this respect, Teamcenter could be progressively extended to all subsidiaries, providing the entire organization with a product configurator for quick evaluation of new concepts.

"With Teamcenter, all our employees around the world will be able to connect to the central database to view different configurations and prepare new offers quickly and easily," Fontana says.

Although Matica Technologies initially purchased the visualization capabilities of Teamcenter to produce technical documentation and service manuals, soon they learned that that this functionality could be extremely useful for internal reporting and project accounting.

"To retrieve any information from Solid Edge, you had to ask a designer or have your own CAD license," says Fontana. "Now, with one Teamcenter visualization floating license, anyone can get the same information independently."

Manuals are also made using the illustration capabilities of Teamcenter in conjunction with Visio® software, which has technical illustrations that can be inserted in manuals through associative links that are automatically updated in case of modifications. The same solution has been recently extended to assembly manuals that mainly contain drawings for the production department.

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Solutions/Services

Solid Edge
www.siemens.com/solidedge

Teamcenter
www.siemens.com/teamcenter

Customer's primary business

Matica Technologies develops, manufactures, and distributes solutions to issue passports, financial cards, ID cards, nano SIM and micro SIM cards. The company offers a vast range of products from centralized systems and mailers to ID printers and laser desktop machines. The Group is represented worldwide, with offices in Italy, Germany, France, Singapore, Hong Kong, China, the US, the UAE and India.
www.maticatech.com

Customer location

Turate
Italy

A real example

Espresso, a synonym for Italy and speed, is the name of the new desktop card printer developed by Matica Technologies. A bit larger than a coffee machine, Espresso is an entry-level color ID card printer suitable for a wide variety of applications, with full features including high-quality text, photo and image printing, magnetic stripe encoding and chip encoding (contact and contactless). Espresso is the first product entirely developed by Matica Technologies on the new Siemens PLM Software platform and implemented by Team3D.

"The project was developed with Solid Edge and Teamcenter starting from a blank sheet," Fontana says. "We could check the efficiency of the new process flow implemented with Team3D's support, and our expectations were met."

For the Espresso project, Matica Technologies also used Teamcenter for firmware management, tracing the software versions installed in each machine, and to manage the electronic designs from dedicated CAD software.

Fontana emphasizes, "The key is collaborative design in which each team member gives his contribution and stores his work on the big notice board of Teamcenter, where it is accessible to everyone. You can find many repository solutions around, but Siemens PLM Software offers more than just a sophisticated database; it's a unified working environment that eliminates duplications, which is the weak point of any R&D environment."

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