

Industrial machinery and heavy equipment

Loccioni Group

Using Solid Edge and Teamcenter, an Italian manufacturer creates an ecosystem for innovation

Products

Solid Edge, Teamcenter

Business challenges

Develop one-of-a-kind solutions with high levels of customization

Capture and organize knowledge of the company and supply chain

Keys to success

Solid Edge as CAD system

Teamcenter as product information management solution

Siemens PLM Software as partner

Results

Shorter cycle times and fewer errors through the elimination of manual tasks

Structured system enabled the capture and re-use of expertise

Automatic generation of RFPs directly from the Teamcenter BOM streamlined the outsourcing process

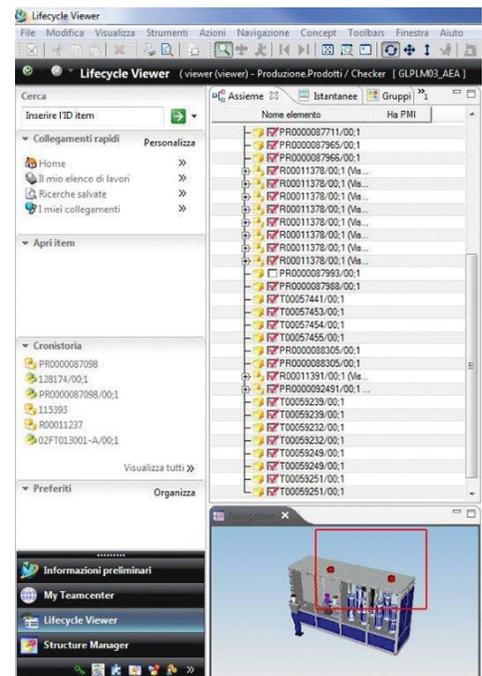
Gradual extension of Teamcenter and CAD data access to non-engineering roles extends the value of PLM implementation

Automating various product development stages reduces time and errors; ability to re-use knowledge assets brings huge added value

In the service of industry

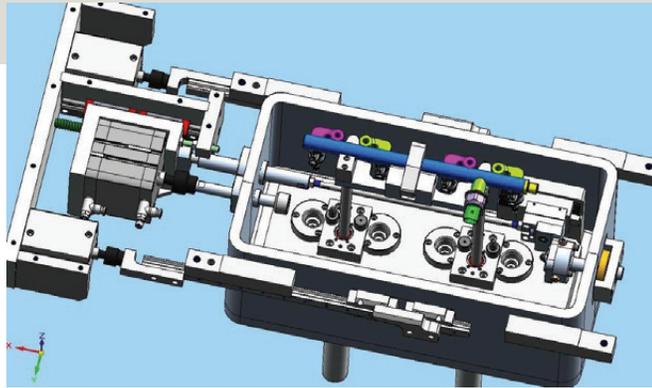
Enrico Loccioni has always been fond of problem-solving. That's the origin of Loccioni Group, a "company in the service of industry" since 1968. Loccioni's core business is measurement, or more precisely, adding value to measured dimensions, as Sonia Cucchi, public relations manager at Loccioni, explains. "We solve problems for big industrial groups, improving both their product and process quality, and the sustainability of their buildings," she says. "Our typical customer is a leader in its industry – normally in the top positions of the global ranking – a driver of evolution and innovation in the reference market."

Enrico Loccioni's adventure started when he created a system to carry water to his father's stables, to avoid moving the cattle to a water source every day. The first real customer was Merloni, the kitchen maker who had seven factories and thousands of employees at the time. Loccioni began close collaboration with Merloni, first for electrical installations and then for quality control of household appliances, developing an expertise that was transferred to the automotive industry in the 1980s. In the following decades, Loccioni's enterprise expanded its reach to the environmental,



energy and medical industries, creating highly innovative solutions like "Apoteca Chemo," the world's first system that can prepare chemotherapy "cocktails" automatically, ensuring full traceability from hospital ward, to hospital pharmacy, to patient.

Today Loccioni has five business lines (energy, environmental, people care, mobility and general industry), each with its own R&D department with a three- to five-year vision for developing solutions conceived internally or in response to customer requests.



“The greatest added value of using Teamcenter is the classification of our knowledge assets and the adoption of a new mental attitude.”

Danilo Ruffini
Mechanical Design Manager
Loccioni Group

“The market acknowledges that we offer high technology standards combined with great flexibility,” Cucchi says. “In the pursuit of straightforward and clean processes, many companies become stiff and follow rules for their own sake. But when you deal with projects spanning months or years, requirements and situations may change. By partnering with Loccioni, a customer can change his mind and still get to the most suitable solution. Enrico Loccioni has taught us that companies are made of people, and the commitment to solving a problem is a value that remains with the person who benefits from that solution, coming back maybe several years later in the form a new relationship or business opportunity.”

The benefits of sharing

Loccioni’s philosophy revolves around the concept of “sharing” to bring benefits to all stakeholders: employees, customers, suppliers, local community, schools and universities as well as the geographic region. Examples range from improving the energy efficiency of all Loccioni buildings with the direct involvement of the local kindergarten, to the construction of a guesthouse with advanced building automation systems, up to the adoption of a two-kilometer section of the Esino river, brought back into its original bed, protected with new embankments and finished with new vegetation and a pedestrian-cycling lane.

“We want to be a young enterprise, international and deeply rooted in the territory,” Cucchi adds. “We have always developed projects that can generate widespread opportunities. Even the

decision to open foreign branches in Germany, the US and China and to work in more than 40 countries worldwide aims at bringing wealth and benefits to our customers and to the local territory.

“That’s why we only employ young people from the local high schools and universities,” she continues. “We love to call our business a ‘play factory,’ as suggested by Isao Hosoe, but we don’t neglect the expertise of people with a long career. With the Silver Zone project, for instance, we hire people who have closed their official career but can still share experience and skills with younger people. I can mention one specific case in the mobility business line where we entrusted the project for an instrument to measure the sprayed flow of vehicle injectors, called Mexus, to a 28-year-old fresh graduate and an 80-year-old former director of Alfa Romeo. The added value of their collaboration resulted in a new patent that was registered with their own names.”

Leader turns to leader

The workflow at Loccioni usually begins with a specific need that a customer must identify clearly. That is followed by the joint development of project specifications. “The big job initially is done by our offer engineer, a technical-sales expert who formulates a general concept of the solution,” explains Danilo Ruffini, mechanical design manager at Loccioni.

“Once the order is acquired, the project is assigned to a project manager who coordinates a team of mechanical, electrical and IT engineers. Then comes design, followed by material procurement that can include off-the-shelf parts and custom parts made by subcontractors based on specific drawings. Next comes final assembly, and then the internal testing phase, attended by the customer, who must accept the project before delivery and installation.”

Lead time may vary significantly according to the type and complexity of the solution. Mechanical design is a significant portion

of the development cycle in all areas, especially in the mobility and industry business lines, where Loccioni provides solutions for automated lines and laboratories.

“Mechanical design has grown significantly since 2000,” Ruffini says. “After the adoption of a 2D CAD (computer-aided design) software and related PDM (product data management) in the mid-2000s, we strongly focused on 3D with the implementation of Solid Edge software from product lifecycle management (PLM) specialist Siemens PLM Software, followed by Teamcenter software also from Siemens PLM Software shortly after.”

Loccioni’s decision was initially driven by the Siemens brand, in line with Enrico Loccioni’s strategy of selecting customers and suppliers among market leaders. “In this case, Siemens PLM Software is both a customer and a supplier,” Ruffini says. “Of course, we evaluated other products, testing different solutions on a real project. Initially, we were looking for a simple database, but the Siemens PLM Software solution offered a long-term vision and perspective.

“We appreciated that the Siemens PLM Software’s approach was to be not just a license provider, but a partner,” Ruffini observes. “In recent years, we have done much brainstorming together with Siemens PLM Software. Our needs are constantly changing, and each time we turn to

Siemens PLM Software for support, they respond by assigning highly qualified resources to our projects.”

Heritage to safeguard

The use of Teamcenter® software made a valuable contribution in streamlining and optimizing processes in the Loccioni organization, where each employee has always worked with great independence. Previously, with no advanced data management tools, each person developed new projects without leveraging the huge volume of knowledge acquired by the enterprise over several decades.

“When you move from a file-and-folder system to a structured workflow, you have to take into account an initial impact on speed and flexibility, which is quickly neutralized when users understand the most effective and efficient approach to a sophisticated tool like Teamcenter,” Ruffini says. “At Loccioni, we don’t develop standard products, but we never start from a blank sheet of paper. Therefore, it is essential to classify and re-use the experience we have acquired over the years, so that it is not dispersed or locked into the minds of specific individuals. The greatest added value of using Teamcenter is the classification of our knowledge assets and the adoption of a new mental attitude.”

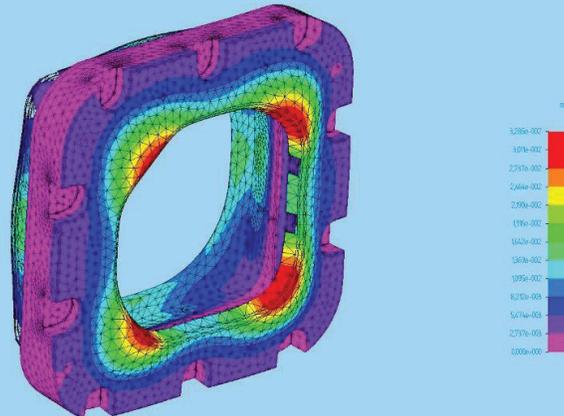
Loccioni has integrated Teamcenter with other information technology (IT) tools upstream and downstream to automate

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“Using Teamcenter, we have automated several product development cycle stages, cutting times and errors through the elimination of several manual tasks.”

Danilo Ruffini
Mechanical Design Manager
Loccioni Group

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Teamcenter has enabled Loccioni to classify and re-use the experience acquired over the years, so that it is not dispersed or locked into the minds of specific individuals.

some process stages. “To keep the supply chain short, every collaborator must be able to carry out different tasks,” Ruffini explains. “A designer, for instance, is also involved in production operations. This approach helps us be more flexible and leaner, and has also encouraged us to automate procedures that otherwise would have to be assigned to dedicated resources.”

“Using Teamcenter, we have automated several product development cycle stages, cutting times and errors through the elimination of several manual tasks,” he adds.

Ruffini mentions a few examples, starting from the automation of the bill of materials (BOM). The tools developed with Teamcenter have streamlined some activities, such as the transition from engineering BOM to manufacturing BOM.

“Today, purchase requirements are generated automatically and quickly from the BOM,” Ruffini says. “For outsourced mechanical operations, we have created a system connected to Teamcenter. When a machining task is assigned to a supplier, an automatic workflow is triggered: the selected supplier is notified to download the drawings, online negotiations are carried out, the supplier uploads an offer and, once the price has been agreed upon, the drawings are transferred to the supplier with no manual action. Using Teamcenter, the manual management of many processes and transitions has been minimized, with a significant reduction of time and errors.”

In the final stage, when a project is complete, it must be delivered together with a massive amount of documentation. For this purpose, Loccioni is setting up a portal connected to Teamcenter for suppliers and customers, providing search capabilities for different kinds of materials and documents.

Not just for engineers

At present, Teamcenter is accessible only to designers, who transfer data to laboratories, project managers and customers via e-mail. Project sharing is one of the new frontiers begun by Loccioni, as a way of creating a common access point for everyone, eliminating paper in the laboratories and interacting directly with 3D data.

“We already have a few visualization licenses for laboratories and project managers,” Ruffini says, “and we are working to extend Teamcenter and the CAD sphere to other departments. Specifically, we are considering using the JT data format to get out of the engineering department and involve service.”

The supply chain is another area to explore in the pursuit of process integration and optimization. “Consistent with our philosophy to promote the local region and community, we have many local partners including consultants, engineering offices, freelance collaborators, suppliers and companies, each using different systems and methods,” Ruffini explains.

Solutions/Services

Teamcenter

www.siemens.com/teamcenter

Solid Edge

www.siemens.com/solidedge

Customer's primary business

Loccioni Group is an international group, founded in 1968 by Enrico Loccioni, offering services to the manufacturing industry for the measurement and improvement of product and process quality.
www.loccioni.com

Customer location

Angeli di Rosora, Ancona
Italy

"Now, all of the work by these entities is collected and classified with Teamcenter to be re-used, as it happened last year with a project for an assembly line for fuel injection pumps," he continues. "This order required up to 40 external mechanical designers for a few months. By giving the necessary instructions for file preparation, we finalize the project within the scheduled deadline, collecting all materials

using Teamcenter through a lean import procedure. In a few months, we gathered all the work of internal and external designers via Teamcenter, handling a volume of work that was inconceivable for our organization. Now, for similar orders, we can re-use that knowledge thanks to Teamcenter. For us, our heritage is of priceless value."

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