Industry 4.0 provides the key for Esaote's rapid transformation

With its Industry 4.0 solution, Capgemini in Italy enables Esaote to achieve improved efficiency as well as reduced time-to-market and costs

Overview

- Client:

  Esaote

- Sector:

  Medical Devices, Diagnostic Imaging

- Need/Challenge:

  Undertaking a Digital Manufacturing path with an Industry 4.0 approach, implementing a solution that offers greater harmonization, efficacy, and efficiency in the production process.

- Solution:

  SAP Manufacturing Execution (ME) on HANA, SAP Manufacturing Integration and Intelligence (MII), and SAP ERP.

- Benefits:
  - Harmonization and simplification of the IT architecture through the reorganization of tools supporting processes
  - Solution scalability
  - Total integration of production processes within the comprehensive supply chain: suppliers, customers, and post-sales services
  - Real-time, touchless integration of tools and equipment in the production line and the system itself
  - Real-time reporting through capillary information distribution supporting KPIs and analytics
  - Decreased production lead time and efficiency growth (10-15%)
  - Quality defects and quality costs reduction (10%)
  - Scrap and rework costs reduction (10%)
  - Device History Record Digitalization, in compliance with FDA requirements
  - Reduction of unplanned halts to factory production
  - Better user experience through a new, ergonomic interface and visual mounting instructions availability.

"Esaote aimed at creating efficiency by adopting a unique and integrated way to manage its business processes: One Company with One Way-Of-Working.

With this in mind, Esaote chose the SAP ME solution, which, given the positive results achieved in the first year of introduction, has been well developed. We are now able to plan and monitor the production of our probes in a timely manner while reducing the work-in-progress and scrap costs.

This system is fully integrated with other business processes in order to enable a constant evaluation of the operating performances."

Karl-Heinz Lumpi,

Chief Executive Officer at Esaote

The client

Esaote is one of the world's leading manufacturers of medical diagnostic systems and is recognized internationally as a world leader in extremity MRI. The Esaote Group is also one of the main providers for healthcare informatics.

Since 1980, Esaote has focused its efforts on diagnostic imaging to explore all the perspectives in a defined field of action. This has enabled the organization to gain credibility in the scientific environment and convey results in a highly competitive market.

Ranked among the top ten groups engaged worldwide in the field of diagnostic imaging, today Esaote is expanding its areas of expertise from diagnosis and prevention to treatment and follow-up, a move that is strengthening its position in the interventional sector. As the first company to have developed innovative techniques such as dedicated MRI and fusion imaging, Esaote is devoted to maintaining the technological lead necessary to be competitive in an increasingly challenging environment.

Needs

As a company that has always been at the forefront of biomedical systems innovation, Esaote mandated Capgemini in Italy to undertake a digital transformation journey to enable the company to gain all the benefits of a Smart Factory model and then transfer them to its stakeholders.

Esaote needed production processes harmonization in its manufacturing plants and optimized production efficiency and efficacy to reduce its costs through leaner cycles and decrease production defects, resulting in a reduction of scrap and rework costs. Interventions were also required to correct plant maintenance strategies and to improve overall component traceability.

These issues affected the business in the form of lower margins for internally produced goods and high reworking rates. In addition, Esaote suffered from inconsistencies in the production time of the same product in different plants, the skill mapping and training time of its users, and delays caused by the lack of maintenance activities planning and difficulties in finding after-sales assistance information.

The solution

In 2015, Esaote chose Capgemini in Italy as its partner to undertake an organizational reconstruction through SAP solutions based on the "Lifescience Path" vertical approach. The opportunity to benefit from consolidated processes, designed in accordance with the sector's best practices, has enabled the full implementation of the SAP ERP solution in less than 10 months.

Since the initial project launch, Capgemini in Italy has gained Esaote's trust as the partner in charge of its transformation, including investing in Digital Manufacturing innovation and optimization of sales and after-sales services. This was accomplished with the integration of new solutions in logistics and operations while also developing a global template and rollout methodology for the distribution of a more efficient solution across Europe and around the world.

Esaote has acknowledged Capgemini's consolidated experience as a global partner, its deep knowledge of the medical device industry, and ability to manage long-term digitalization processes meant to implement new business paradigms in a Digital Manufacturing framework.

Gerardo Ciccone, Head of Manufacturing & Life Science at Capgemini in Italy, has declared,

"This project demonstrates our ability to address our client's goals by transforming enabling technologies into new architectural solutions that balance themselves with existing systems in an efficient way. Indeed, the company–as an innovation leader in biomedical systems–needs to keep up with changing times and has to be a technological leader.

Thanks to our deep healthcare industry knowledge, we have enabled Esaote to make their production processes more efficient by reducing time-to-market and optimizing the value chain. With our consultancy capability, we support the company both by providing it with access to benefits coming from an Industry 4.0 approach and by transferring those benefits to its stakeholders."

The methodology involved the early direct involvement of Esaote's plant managers, who attended a "teach us how to fish" training project at Capgemini in Italy. The key of this methodology is to maximize the

synergy between the tools' potential and the digital use cases developed by Capgemini. In addition, the project created a deep understanding of customer processes. This was an extremely collaborative approach that has enabled both organizations to identify the system's best process solutions.

The success of the initiatives created the basis for the vertical and horizontal scalability of the solution; Capgemini will work hand in hand with Esaote over the next few years in order to support the S&OP planning redesign, as well as the CRM and SAP upgrade to the S/4HANA solution.

Industry 4.0 and the future of manufacturing

Thanks to the solution implemented by Capgemini in Italy, Esaote has started an overall organizational rearrangement that has enabled the company to undertake a journey towards Industry 4.0 within a Digital Manufacturing framework.

SAP ME and MII solutions enable greater visibility of processed data, thanks to KPIs and analytics that monitor performance in real time, and the digital management of the Device History Record, which supports both internal and external visibility. This was made possible by integrating the new Microsoft Field Service for after-sales services management, which covers assembled components, operations, and production.

The solution empowered Esaote to manage and monitor the performance of the Overall Equipment Effectiveness Index (OEE), which in turn controls the plants' maintenance status.

"Thanks to the SAP ME solution, defined and put into operation in collaboration with Capgemini and integrated with Esaote's other systems–such as PLM and ERP–we achieved a constantly controlled, performing, and abundant IT architecture in order to ensure service continuity to all users,"

said Mauro Roncari, Group Chief Information Officer at Esaote.

"Furthermore, thanks to the SAP solution's reliability in its new HANA version, we are now able to manage the system and provide enterprise functions with a constant level of software updates and timely support for new business needs. This important step in our IT architecture's modernization process–a pillar for our company–provides a sturdy and reliable basis to manage our business globally."

It is a system of real-time interconnection between the tools and equipment in the production line and the system itself, in which monitoring and management is done digitally, removing the compulsory physical interaction between man and machine. Thanks to this interconnection, the operator is able to collect and analyze data, store measurements, and be supported by the automatic management of non-compliance issues. In addition, this interconnection makes it possible to maintain the integration of both normal and maintenance operation progress.

Enhancing production with digital manufacturing

Data availability will allow the development of predictive algorithms that, with the support of machine learning, enhance maintenance of plants integrated with SAP. This ensures that Esaote will obtain better MRP planning and can schedule maintenance of the supply chain before machinery breakdowns can affect clients.

Thanks to real-time integration with machines and the speed of data processing, the quality control framework of the new Esaote system enables the organization to capture diagnostic images and compare them with target scans, which can verify the correct set up of the probes. The system is able to maintain full and integrated 360-degree traceability, archiving operations, a composition list, and quality results for each probe, a process that is performed both internally and by component suppliers. All of this data, once archived within the so-called "electronics device history record," remains available for after-sale services maintenance.

The new Esaote infrastructure is characterized by a fully integrated reporting system that works in real-time and is able to collect information coming from both systems and ERP in order to deliver economic value in line with process KPIs.

The solution is also highly scalable, as it defines processes that enable the production management necessary for mapping machines, workstations, skills, operations lines, and sequences that need to be performed.

Enabling these processes on the production line provides reinforcement; skills are defined within the processes and then mapped by the operators. The processes are therefore verified–in terms of skills–by the operators and they are all reinforced.

About Capgemini

A global leader in consulting, technology services and digital transformation, Capgemini is at the forefront of innovation to address the entire breadth of clients' opportunities in the evolving world of cloud, digital and platforms. Building on its strong 50-year heritage and deep industry-specific expertise, Capgemini enables organizations to realize their business ambitions through an array of services from strategy to operations. Capgemini is driven by the conviction that the business value of technology comes from and through people. It is a multicultural company of 200,000 team members in over 40 countries. The Group reported 2016 global revenues of EUR 12.5 billion.

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