

CASE STUDY METAL

F.A.R.

Founded in 1962, **Fonderie Acciaierie Royale S.p.A (F.A.R.)** is a leading company in the production of wear-resistant steel used as spare parts for crushing machines. Customer satisfaction is the company mission, attentive to the market trends and demands, continuously updating and renewing materials and products.

This policy, the professional management combined with superior structures and a team of dedicated people, has transformed F.A.R. into one of the main producers in the world in the steel fusion field and a guarantee for those who operate in the shredding sector.

ANALYSIS

F.A.R. expressed the need to implement an **MES** system for the monitoring of their production and the management of the collected data. There was a strong need for an accurate and automated time control, which until then had been carried out manually. The primary focus of the project was, in a first moment, to guide the customer through the **digital transformation**, providing a support tool to monitor in real time the production progress, timing and the containers used in the first phase of the process.

The products, once removed from the containers, proceed in the production flow with different paths, which must be monitored and properly managed to ensure the final quality of the product, the optimization of the same paths as well as the fulfilment of the promises to the customer.

The project, started in 2012 and still ongoing, has been developed in 3 sequential phases:

- » 2013 – Go live of the **MES** project
- » 2017 – Introduction of an **APS** system for the production departments planning
- » 2019 – Interfacing of some machines in the department, under **Industry 4.0** standards

SOLUTION

The project involved the implementation of the following sedApta application modules:

- » Resource&Supply Planning
- » Shop Floor Monitor.

The main objectives were:

- » **Container management and tracking:** ruling the convergence of multiple items from different production orders across hundreds of containers moving through the factory each day, all of which follow different paths after the heat treatment
- » **Definition of the production plan:** since the first production phases rule the takt time of the whole plant, it is fundamental to manage the priorities taking into account all the constraints
- » **Industry 4.0:** bringing technological innovation into the company, to refine and automate the data collected by the MES.

During the analysis of the MES processes, a particularity emerged: for the first segments of the production cycle, the single products move forward to different types of containers. It was therefore essential to track the progress of the containers.

After the first productive phases, the single products take different paths in the downstream process, in order to arrive to the warehouse for the shipment. The management of these material flows, in the different modalities just described, has been handled with the implementation of an appropriate model on the new MES system. This system has allowed, also in the following years, several other project implementation aimed at detecting and improving different KPIs tied to the manufacturing world.

After re-engineering the MES process, a preliminary production planning activity was required to implement it, with particular attention to the preliminary phases and their constraints to generate a production plan capable of



COMPANY
F.A.R.



SECTOR
SPARE PARTS
FOR AGGREGATE
SHREDDING



DIMENSIONS
1 HEADQUARTER
270 EMPLOYEES



TURNOVER
50 MLN € (2019)



SEDAPTA MODULES
RESOURCE&SUPPLY PLANNING
SHOP FLOOR MONITOR



maximizing production efficiency. Furthermore, through Quin's APS verticalization for the Metal industry, it was possible to pinpoint potential criticalities, allowing the planning supervisor to take actions and strategies to solve them.

The customer foresight led to the decision to further automate the declaration process in the department. The bidirectional communication between the MES system and the machine management system allowed the automatic sending of the part-program at the moment of the declaration of the set-up, and then receive the signals related to the downtime and the parts produced automatically during the machining of the casting, in order to obtain more and more accurate and reliable KPIs, through the new paradigms of Industry 4.0.

BENEFITS

- » **Decrease of order delays:** the incidence of delay, meant as kg shipped late over total weight shipped, after the introduction of the MES has decreased by 30% compared to the previous situation
- » **15,000 containers handled every month:** the traceability of containers and products is guaranteed at all stages
- » **450 surveys per month on the repairs done:** detected data ensure endless improvement and quality
- » **More than 2,000 stirrups planned weekly:** the planning, highlighting critical situations in advance, allows to rule the whole upstream process
- » **Demand fulfilment of 100% of the sales orders:** the delivery dates of every single line of the sales orders is monitored and updated daily, in order to give the salesmen all the information needed to manage customers

- » **Better adaptability:** the capillarity of the control achieved allows a flexible management of long and complex production processes, permitting a rapid and constant adaptation to the variables and unpredictable situations that we are facing in recent times.

"With Quin and sedApta we started a journey, still in progress, which allowed us to improve the efficiency and control of strategic business processes, identifying the KPIs to be monitored to measure the achieved results, planning future activities and finally introducing Industry 4.0 logics in the company."

F.A.R. - Giulia Londero, Head of Organization, Planning and Control



**Fonderie
Acciaierie
Roiale** Spa