



# The Italian Pasta tradition innovates with automation

*Grandi Pastai Italiani is one of the most important international pasta companies that have united tradition with innovation by completely automating their production lines. With Movicon supervising three factory sites they now produce 50 million Kg of pasta annually.*

The Grandi Pastai Italiani roots go back far into history. Their first tortellino went into production half a century ago in 1961 in artisan laboratories with immediate success. At the same time they managed to extend their presence on the market to embrace the whole of Italy with a wide range of new products, such as gnocchi.

As a result of their great capacity to produce quality customized pasta and provide efficient services along with their marketing competence, Grandi Pastai Italiani is now partners with the most important chain of international distributors and one of the industrial leaders in the food sector as Food Service professionals, equipped with the know how to come up with the best solutions for every need.

Their ability to realize a production line in 2010 to manufacture 8 million kilograms of pasta a year is

proof of their determination to consolidate their position on the market. With great optimism they are ready to confront the future with a mission: pasta served on all the dining tables of the world.

On their Correggio and San Martino in Rio (Reggio Emilia) 20,000 square meter factories, 11,500 of which is covered in, work tasks are dedicated to manufacturing traditional gnocchi (potato-pasta dumplings), chicche (pearl shaped pasta), filled gnocchi and frozen gnocchi. On the Sesto end Uniti (Cremona) 30,000 square meter factory sites, 10,000 of which is covered, fresh, dry and filled pasta are produced. The 15 different production lines operate 24 hours for 6 days a week to produce and package over 150 types of gnocchi and 50 types of filled pasta for a total of 500 brand names for a grand production total of 150,000 kg a day. Advance technology has

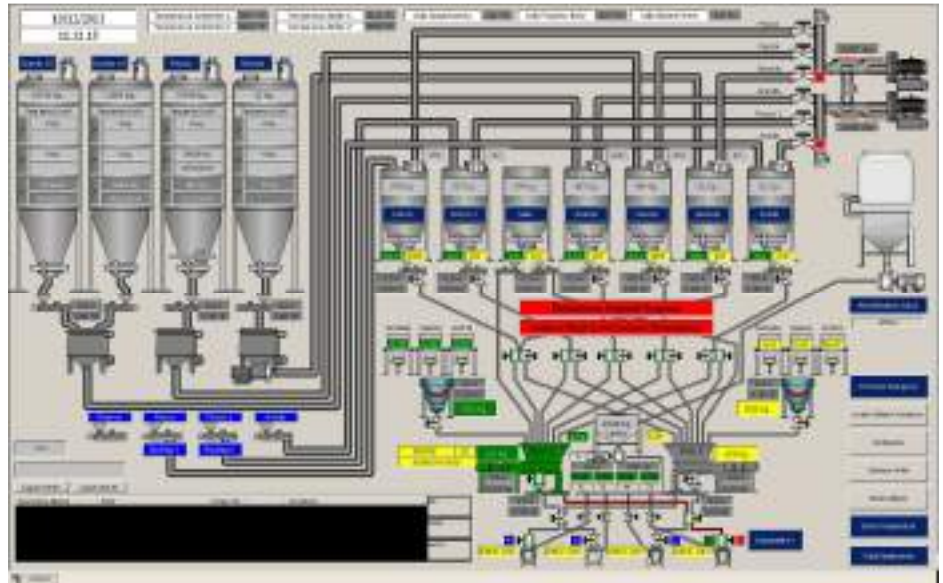
replaced the methods used by the best artisan traditions for processing and storing pasta.

### The main production line

The company has greatly invested in technological innovation to modernize their main production line which was recently put into action using the most modern automation technology to ensure maximum efficiency and quality without neglecting tradition.

Their set goal was to automate the entire process by integrating the automated production line system with an order management system. This was done by creating a bidirectional communication flow between factory and business management levels. Furthermore and considering that the plant operated on a 24 hour six days a week basis it was also incorporated with an efficient maintenance management system.

However in order to achieve this they assigned reliable and expert design engineers with a project to find an open and flexible supervision system that could perform the main role of managing process data. The project was assigned to a software house called Advice & Technology



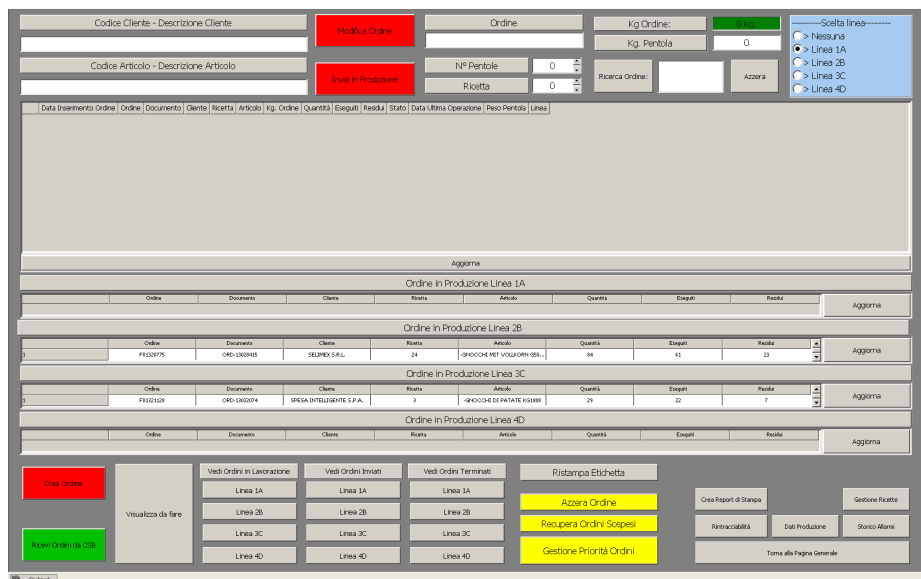
*The factory has adopted cutting edge automation system supervised by Movicon to guarantee maximum security and quality*

Srl from Emilia in Italy who is well known for their expertise in supervision integration. The supervision platform on which the entire project was based is called Movicon which was chosen because it suited the architectural demands for a solid technological base that was capable of providing:

- Supervision of the entire organization
- Production DB traceability
- Data Analysis
- Integration with existing order management system
- Web Client connectivity
- Wi-Fi connectivity for maintenance worker mobile devices

The project was completed on schedule and the production line is currently running to its full capacity to the great satisfaction of the client.

The supervision system is connected in ethernet to the production line automation control system PLCs and the weighing and the dosage system to manage the mixing, baking and cooling, packing and storing systems. The entire production cycle is supervised by Movicon.



*The Movicon supervisor is integrated with the business managerial system and processes production orders automatically*

### From receiving orders to production

One of the main requirements of Grandi Pastai Italiani was to automate production by means of connecting to the order management system.

The supervisor therefore manages the connection to the companies CSB managerial system, retrieves production order lists and automatically sets recipes and batches to be produced by the system accordingly leaving the production field manager to modify settings or change order of priority using the purpose-designed screen pages on the production management supervisor workstation. The implementation this automated managerial system has enabled the client to increase production by 40%.

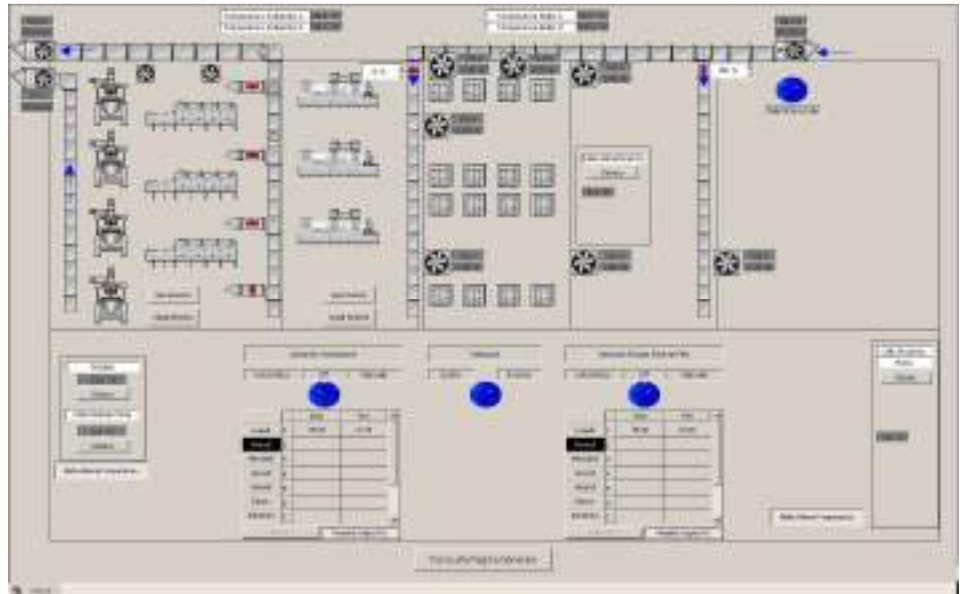
From the automation stand point, the system manages the mixing of the raw materials and ingredient dosages needed by the production type received by the order management system. Therefore based on these orders the system's job is to prepare the recipes and control dosage accuracy of each ingredient with a gram tolerance for orders containing micro

components and a hectogram tolerance for macro components.

By using a purposely designed and effective user interface screen operators can easily manage and supervise the production process based on the assigned production priorities.

An effective and transparent alarm management also permits immediate detection of any anomaly to ensure quick intervention and reset by the operators. All production runs are traceable through the Movicon datalogger system which uses relational databases (in this case the SQL Server). The tracking of all production and process information is fundamental to the food industry regulations. There are norms and standards that every food manufacturing company must comply with and which are provided for in the Movicon system by recording all production data for each batch plus. In addition the managerial system also has the advantage to trace actual quantities produced in relation to order and production type ran.

The supervisor offers predisposed screens to run field checks on current production runs and those completed. By using Movicon's integrated Report Designer operators can view all the reports they need with integrated queries to analyze and print production reports, trace each single pot produced as well as the dosage quantities used, batches produced with the precise time and date when prepared and processed.



*In addition to the production lines the supervision system also integrates a ventilation system and warehouse cooling system*

### **Production Increase**

Grandi Pastai Italiani's initial request was to completely automate the pasta production process in order to increase production volumes to decrease errors caused manually without altering product quality. By automating the whole process it was also possible to reduce and even remove any contamination and produce more quickly with greater precision. According to Paolo Pioli from the Research & Develop department, "The aim was to dose a 250kg pot every 10-12 minutes to reach a minimum of 6 pots an hour in order to increase the production rate. However current data certifies confirms that Grandi Pastai Italiani has been able to increase their pasta production rate by more than

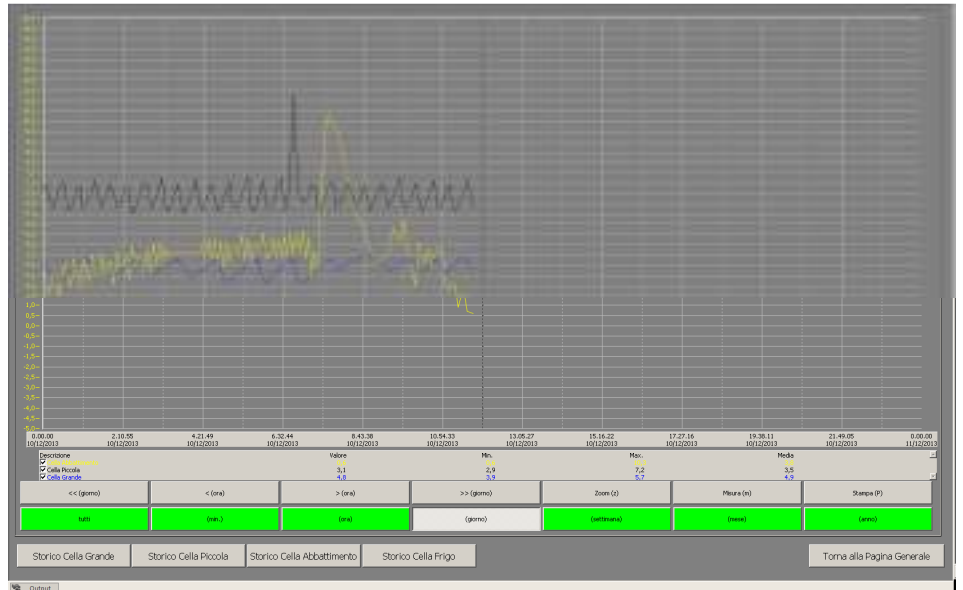
40% by dosing up to 10 pots an hour instead of 6. This achievement exceeds their initial goal. The most important thing besides increasing production was to get the system to maintain constant dosage precision that would consequently produce greater end product conformity and significant reduction of rejects". The system supervisor is connected to other sections of the factory associated to local production ventilator systems and warehouse cooling systems that contribute towards keeping the whole production cycle under control and increasing company efficiency and quality.

### “Mobile” maintenance

Thanks to Movicon’s functionality and its flexibility mobile devices have been implemented to use according to the “industrial tablet” typology based on Windows CE that can connect with Wi-fi to the supervision system. In this way maintenance workers can immediately detect eventual system anomaly by using their mobile devices. This allows them to intervene quicker and directly from wherever they happen to be at that moment which is no small feat for a 30,000 square meter factory. In addition the system provides Web Client connection so that operators can connect to the system not only within the factory premises but outside with remote control using local, public and geographic networks. The Movicon Web Client technology makes it possible to connect to the supervision system using a normal browser or by using the APPs for smartphones and tablets (Apple or Android). This allows users to login and access all the system’s information in complete top security.

### Achieved goals

The end client has tried and tested the system declaring it more than satisfactory to what they originally expected. The design engineers are also very satisfied. Stephano Artioli in charge of Advice & Technology Srl says: “We have opted to use Movicon as our preferential Scada/HMI platform because based on experience and compared with other Scada it provides us with better possibilities to develop supervision applications quicker with the advantage to



*The factory system data are recorded on SQL Server databases to allow production and process parameter analysis, statistical reports and traceability*

customize systems according to the different sectors. We have been working with Movicon for quite a while and we are particularly pleased with its technology for its quality-price ratio and the excellent help services provided by Progea”. Advice & Technology Srl was therefore able to study the client’s requests, analyze the technologies to be implemented in the design engineering phase in order to ensure great effectiveness of the finished software application project immediately after installation with excellent results. An accomplishment regularly appreciated by their clients as demonstrated by their project for Grandi Pastai Italiani.

Sig. Artioli Stefano  
Advice & Technology Srl