The Italian potato experts has chosen Progea's Movicon solution

Production line monitoring and control and production plant parameter modification tracing systems are centralized with Movicon 11 supervision

I.T. Technologies is an Italian company that design engineers and installs software solutions and electric panels in the industrial automation sector. They went into operation in 2000 and soon gained success in contributing towards design engineering and installing systems in various industrial automation sectors.

The company's strong points lies in their capability to create complete automation systems according to customer specifications by first design engineering the project in their technical design studio. They then install the necessary electric panels and circuit breakers in machines and develop and test run the management programs in the final startup stages. As a Movicon Solution Provider their collaboration with Progea began when the Mother company recognized their expertise in delivering automation solutions using Movicon in projects created according to customer needs. This recognition earnt them Movicon Solution Provider certification.

Other important partnerships with industrial component manufacturers have also contributed to making I.T. Technologies a technology forerunner in the automation sector.

Pizzoli Spa was established in 1926 in Budrio, in the province of Bologna, when Mario Pizzoli decided to startup a small activity in buying and selling locally grown potatoes by selling them to the highest bidder. In the first post-war decade Mario Pizzoli passed the reins of the company to his son Ennio, who then started investing in machinery and workers to sort out and package the potatoes. The Pizzoli bags of

potatoes were then seen for the first time on emerging supermarket shelves. Ennio and his brother, Irnerio then elaborated on this venture to create a frozen fried potato production. Following investments in technology and research the company grew into a more important reality in the potato sector. In addition to the classical fried chips, their portfolio also started including other varieties such as potato wedges, cubes, croquettes and gnocchi.

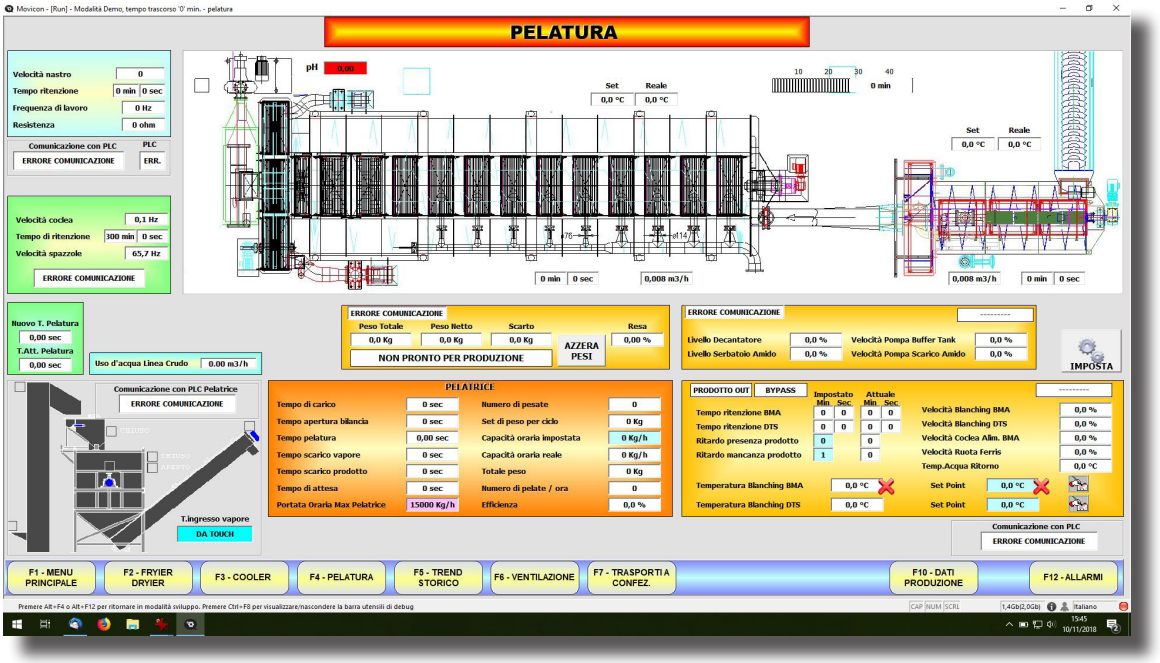
Restaurants started serving Pizzoli chips and they were sold in all the supermarkets. As a result to these investments, their range of products also grew. This enabled the company to compete alongside oversea markets by offering 'Made in Italy' products; their gnocchi specialty were introduced to the Asian market and in particular Japan for the first time.

In 2017 they started up a new logistic platform using sophisticated and low environmental impact automation systems in San Pietro in Casale, in the Province of Bologna, Italy. Fruit of cutting-edge engineering technology, the logistic platform is their first step in establishing a new production hub which is now the most important in southern Europe.

"As Movicon solution Providers, we never had any doubts about the suitability of Progea's platform software this project. Movicon's strength lies in its flexibility of use and ability to connect devices of all different makes using different protocols.

For instance, by using script we were able to create communication protocols for certain devices that weren't equipped with standard protocols."

Ivan Tedeschini CEO of I.T. Technologies



The automation solution

The application connects the company's various plant automation systems and stand-alone PLC systems of different brand names to one unique control platform. These different systems connect to the control system which generates a production process data control dashboard to allow operators to modify the many parameters directly from the control room.

In fact, throughout the years since then, systems of various makes that connect using different communication drivers, such as PLC Siemens, Allen Bradley, Modbus equipment, both RTU and Ethernet have been integrated. The factory's process data has also been integrated and stored on a relational database with the use of historical trends to view the most important process variables.

The production plants are connected to the system to generate a control dashboard that shows process and production data and which is used to change parameters directly from the control room. The Web Client option is an equally important feature. It has resulted very effective for the various productivity process managers because they can now keep situations under control directly from their office without having to interfere with the shift manager's work on the factory floor.

Web Client access is consented to Key company personnel who need to have a constant updated vision of the production process. This personnel include the Production Director, Maintenance Manager, Quality Control and Process Manager as well as the Warehouse Manager who receives deliveries and coordinates the storage and supply of raw materials.

The system architecture

The architecture comprises a virtual Movicon server to which a local client and five Web Clients are connected. The production manager has exclusive use of the local client, otherwise known as thin client, while Web Clients can use any browser to access the server from various types of devices, such as smartphone, tablet or PC, with personalized password protection. The server application communicates with around 15 PLCs of various brand names.

Although Movicon was initially required to centralize all the various systems, which are used in the factory to control the production process and detect any anomaly, Movicon is also used for tracing modifications made to the various system parameters. Once data are collected, they are then analyzed to ascertain whether any auto-resets need to be made according to the product being processed.

"We knew back then in 2011, when starting the project, that we would have to develop and integrate other functions further on in the future. Movicon's modularity has allowed us to build and expand the project over time without creating any major expenses in addition to the initial costs."

Ivan Tedeschini
CEO of I.T. Technologies Srl

Movicon 11
optimum reliability

Considering the size of the plant and the various production lines that have to be managed, an enormous amount of data is to be processed and stored. This rather complicated procedure has been simplified by using Movicon's integrated functions.

Production data and the overall state of ongoing production line processes can be viewed in detail and controlled from the home screen page. With a quick glance operators can see whether everything is running smoothly or whether any malfunctioning or machine downtime have occurred.

Each production process, from the peeling to the packaging stage, has been designated with screen pages that can be consulted by the operator to verify how each process is functioning in detail and to change parameters to improve production efficiency if needed.

Reducing energy conpsumption

The entire production process goes through a number of different phases that include machines for washing the potatoes, ovens and fryers which all consume excessive load of electricity and water. These is has caused great concern and therefore it has become essential to control these consumptions in order to contain and reduce such costs. Movicon provides tools that store and aggregate data deriving from the field intelligently to then transform them into graphical charts and reports that can be customized as needed to perform quick and transparent analysis.

Real-time trend pages have also been created to facilitate consumption control. The ability to collect energy values has helped develop strategies to improve productivity. This has resulted indispensable especially when,

for example, changing production. The upstream machines can be held on hold for new instructions while other sections of the production line can be switched off entirely or put on standby.

The end resul

Before installing Movicon, the production lines and machines were completely isolated and operators had to physically go to each individual machine and regulate each production parameter manually. Data relating to each of the plant systems were also collected manually several times a day and entered on an Excel spreadsheet for analyzing. Energy and Water consumptions were not monitored and controlled at all.

This Movicon project has automated everything. Data are now stored on SQL database and then used for creating comparison reports and Excel work spreadsheets automatically.

Consumptions are controlled by means of using real-time trends and reports which enable operators to understand where and which interventions need to be made to obtain greater efficiency. The production machines and parameters can be set through the client and can be changed or modified whenever required by managers.

The company plans to increase simultaneous access by Web Clients from five to ten in the immediate future and integrate new tools to measure energy consumption for further efficiency. They are also contemplating ways to manage new plant systems in order to make them an integral part of the supervision system.

"Pizzoli is building a new factory" concluded Ivan Tedeschini, "and this will give us the opportunity to use Movicon.NExT to automate it all right at the beginning as we believe it to be ideal for decentralizing and managing modern and efficient factories".

Ivan Tedeschini
CEO of I.T. Technologies Srl