The ERP for the factory of the future

Technologies enhance management systems and enable smart factories

Partecipanti

1 Gabriele Mazzi
CFO, CIO and Head of IT Department of Banfi

2 Patrick Malservisi
Supply IS/IT Director of Toyota Material Handling Europe

3 Paolo Michielin
IT Director of Calligaris

4 Dario Ferrari
IT Manager of Mutti

5 Gianfranco Delfini
Marketing Director of Clai

6 Sebastian Bittman
Senior Project Manager of Tönnies

7 Gianmarco Antonelli
CIO of Olitalia

8 Andrea Bondioli
CFO of Italpizza

9 Marco Pellegrino
CEO of Indian-Gelato d'Italia

Improving user experience to assist new hires with clearer interfaces. Making work leaner and improving process sustainability thanks to the predictive potential of Business Intelligence. Digitizing office activities and cutting down times. Taking up the Blockchain challenge to win over young consumers. Nine Sinfo One client companies illustrate how the technological upgrade designed by the software vendor is changing their work.

by Giorgia Pacino

From management software to IT backbone of the company. The Enterprise Resource Planning (ERP) market is constantly growing. Planning a company's resources makes it possible to control and integrate all the information and operation processes in an organization, like a nervous system designed to reach every sector. According to the latest estimates, the volume of business generated by management software in 2018 was 1.7 billion Euro, in 2022 it will pass the 2 billion mark. This is mostly due to technological upgrading of ERPs, which can be increasingly integrated with factory processes and supply chains.

User-friendly interface, increasingly advanced flexibility, automation and robotization, Internet of Things (IoT), Business Intelligence (BI), Machine learning, Blockchain. Putting intelligence into ERPs means enhancing them and making them able to occupy areas that in the past were reserved to other solutions. This is what Sinfo One, the Parma-based software house, is doing with over 150 ERP projects already developed in Italy and abroad. Nine companies have explained how the new technologies implemented for their ERPs are helping their business. Regardless of sector, company size or market. From wine to furniture, from food to material handling.

BANFI BETS ON BI TO GIVE GLOBAL VALUE TO THE DATA COLLECTED

Castello Banfi has its roots deeply planted in the land south of Montalcino, bordering with the Orcia valley. For 40 years, its wine production has combined age-old cellar traditions with innovative mechanisms and work processes. **Gabriele Mazzi is CFO, CIO and Head of the IT department for Banfi**, who back in 2007 started using Oracle's JD Edwards ERP implemented by Sinfo One. "We understood what it meant to work on an integrated platform, what needs to be evolved in the organization and what can be learnt from new staff as a strength for the future".

In a sector such as agriculture, which is strictly dependent upon external factors, the ability to forecast and analyze is crucial. "We have always kept up to date with new releases and we realized how graphic interface and man-machine integration was changing", Mazzi explains. "Technology has enabled a different approach and provided a multi-disciplinary working tool. Along with the ERP, new instruments are being introduced; these will later be included in the BI system, to enhance the user's ability to understand instead of just entering data. This is a big advantage for us, because very often the information needed in a sale, purchase or accounting process is not just the data entered by the user".

In Banfi, one of the first processes touched by automation was stock handling, with the introduction of semi-robotic methods in the flow of information. The company is now thinking of developing more projects, including some with partner suppliers of agricultural machines or machinery used in the bottling chain. "The machines are often equipped with sensors, GPS detection systems and other information capabilities that can be linked to our systems. The aim is not so much to automate the data flow, but rather to enrich it with qualitative information on the product", continues the CIO. The idea is to connect all these data inside an ERP to unify the whole wine-world in a single container. "Today there are many more opportunities to collect data and enable machines to respond with detailed information. The point is to give global and not just technical or sectoral significance to those data".

In fact, the next frontier will be predictability. This, Mazzi assures, will be one of the key issues in Banfi's activities over the coming years. Evolution is in the direction of tearing down company boundaries and acquiring high-level information to enable companies to identify a benchmark in the domestic and international reference market. "Predictive Machine Learning appears to be an area reserved to large organizations, and not quite ripe for a business like ours with a turnover of approximately 70 million. Our efforts must be aimed at moving Business Intelligence towards forecasting: this is quite a challenge for our performance". A challenge which must be taken up especially by the new generation, the so-called Millennials.

‘SMART’ INTRODUCTION OF NEW RESOURCES

PAOLA POMI
CEO
Sinfo One

The introduction of new resources in the company is a very hot topic: it is not easy to find the right people to hire and neither is it easy to find the right way to induct them into learning the company’s processes and in the use of our systems. Simplicity and a self-explaining UX are indispensable.
This is an era where everything is smart: smartphone, smart tv, smart watch, etc. Today a system without “suggestions and highlights” is not “smart”, the tips, the alerts and a simple navigation path on corporate IT solutions are considered essential to get straight to the point, to save time, but most importantly to better induct new resources; the UX on the ERP also allows us to be more effective and efficient in introducing the new talents we hire to their work.

TOYOTA MATERIAL HANDLING MANUFACTURING ITALY: ERP AS PROCESS ENABLER

According to recent studies, by 2020 more than 50% of the workforce will be from the Millennial generation. This means that technology will need to be adapted to the expectations of new users, starting with the introduction of innovative user experiences in ERP systems too, to make the experience of using these tools more similar to the one already experimented in the B2C world.

“While the older workforce was accustomed to look for information, the Millennials interact with systems where this information comes in and does not need to be searched. They are used to push and not pull, to apps and social networks which are flooded with information that reaches them. If the user experience is excellent, people will work better and when they interact with our customers they will be able to convey an improved experiential dimension”. **Patrick Malservisi is Toyota Material Handling Europe Supply IS/IT Director.** This Toyota manufacturing company, specialized in the production of forklift trucks, aims to offer its customers not just an excellent product but also good service and good user experience. And the same care is used for those working with management software. “The new generations are happy with the decision to change the system because they find it closer to their way of being. People use less time to perform their work and this makes it possible to optimize the use of resources, because more time can be devoted to activities with greater added value”.

At Toyota Material Handling Manufacturing Italy, several processes have already been involved in the digitization process, with resulting benefits in terms of reduced errors, shorter process management time and simplified controls and assessments. “A digitized process is easier to keep monitored through KPIs. We are able to manage a larger number of activities without increasing the workforce and without this creating additional stress for the people working in the company”. Determined not to chase after technology but to understand what benefits the new trends can offer to their company, Toyota people are working on the IoT front to bring the factory line closer to the management system, the shopfloor and all its machinery closer to the information systems. “We are trying to set up IoT solutions to simplify service outside the company. We want to improve the user experience and predictive servicing of machinery”, Malservisi explains.

Increasingly perceived as enablers of change, the members of the company's IT department identify the best technologies and the areas where experimenting will be carried out. As in the case of management systems. In Malservisi's view, today the ERP is “an enabler of additional processes. It is becoming a sort of “zero level” on which many other things can be built, almost a prerequisite. Doing without it will be increasingly difficult and unreasonable”.

CALLIGARIS CHOOSES IMPROVED USER EXPERIENCE TO SPEED UP WORK

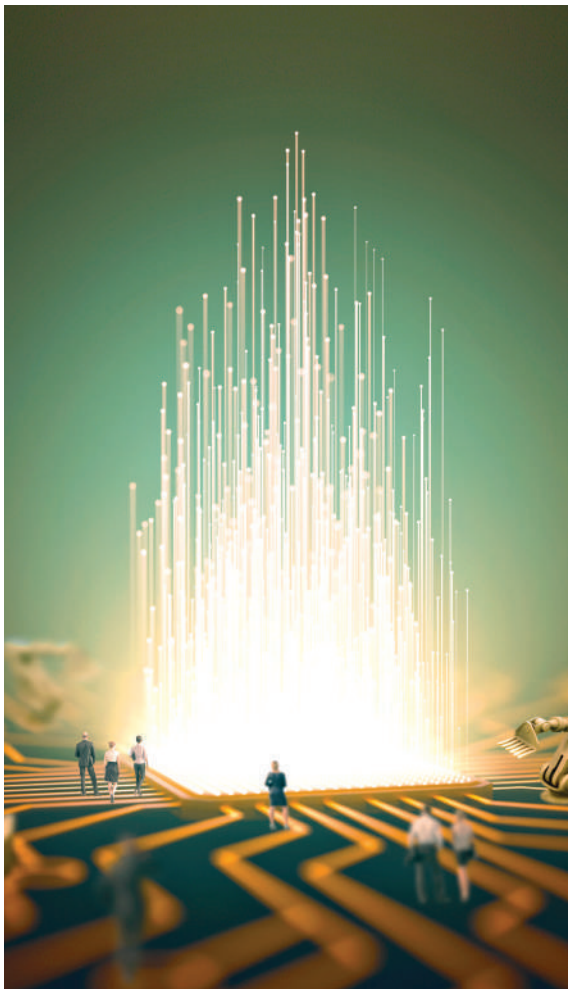
Implementing an ERP system is a wide-range project. It covers every company area where processes need to be streamlined with a view to greater efficiency. Calligaris, a long-established furniture manufacturer based in Friuli famous for its chairs, is today going through a period of great changes. After a period of no less than 95 years in the hands of the first owners, in 2018 the Manzano (Udine) company passed under the control of a European fund. On a path to greater expansion, technological development has become a key factor. Starting with internal management.

“Today we have a definitely younger management team and we feel the drive of people with a stronger technological background. More and more, efforts will be directed at the possibility of using devices in mobility, digital devices and applications available not just in a fixed place”, explains **Paolo Michielin, IT director at Calligaris**. A large part of the staff is

not made up of digital natives. Above all, users are asking for efficient work stations, systems that do not crash, clear windows and extended functionalities to facilitate information search and speed up activities. A set of applications has been geared to chain work operators, who use rugged portable terminals, designed for use in dusty environments or extreme temperatures. Featuring simplified functionalities and windows for digital use, they are utilized for reading barcodes and all production progress activities.

"When we invested in upgrading the company's systems, we tried to understand with each new release what was being provided in terms of improvement of interface and graphic functionalities, to optimize and speed up people's work. In the last ERP system update, which we completed at the end of 2016, we devoted a lot of attention to user experience functionalities, with communication and special training provided to our employees. Even as little as 10% optimization in interface use means less stress and increased work speed", continues Michielin.

Later interventions enabled automation of a whole series of internal process that were once handled manually, thanks to integrations with ERP and cloud platforms. For years, orders were managed by the company's offices, now customers have a dedicated platform where they can enter their order. The cloud platform, the portals and the services geared to customers have allowed Calligaris to reorganize their internal workforce, relieving them of a set of routine activities and available for customer service or internal inspection duties.



MUTTI, PROCESS ROBOTIZATION AND IOT IN FAVOUR OF SUSTAINABILITY

The number of ERP processes that can be automated is constantly increasing. Today, procedures linked to routine activities performed on system data can be handled by Robotic Process Automation solutions thus extending to office work the transformations that have already revolutionized production.

To get an idea of what this means, simply take a walk around the factories of Mutti, the long-standing Parma company where tomato plays the key role: robots that select tubes and insert them in the partitions, anthropomorphic palletizers, self-driving shuttles, optical sorters, X-ray detectors, RFID tracking technology. "The same effect that robotization produced on blue collar workers in the recent past, is now perceived as a need for clerical staff too", admits **Dario Ferrari, IT Manager at Mutti**. "Obviously, we do not expect to find a robot sitting in our colleague's place, but rather to deal with a set of software automations that are already gaining a foothold. With a view to producing more added value, an increasing need is felt for more efficiency in white collar processes with a resulting change in the paradigms that have governed office work so far. Electronic tracking scheduling, automatic consistency checks, document digitization, cognitive chatbot: these are all small changes that are now part of our daily life and which more and more drive us towards process robotization".

2019 was an important year for Italy from this point of view, with the shift to electronic invoicing, previously limited to public administrations only. A revolution which we try to turn from a much-feared obstacle into a competitive advantage. "Nowadays, talking about lean processes is no longer a mere desiderata for companies, but it has become an obligation and a necessity. Failing to strive for improved flexibility would mean to be doomed to gradual loss of business competitiveness" continues Ferrari. This is all the more true for a company like Mutti, which in 15 years has increased its revenues fivefold. To support such substantial growth, the organization has aimed for lean processes and flexibility to adapt, with the goal of reducing waste and optimizing work. It has also invested in innovation: cutting-edge industrial plants, IoT at the service of sustainability, environmental sensors, probes to optimize irrigation and reduce emissions, and BI to summarize and analyze the data gathered.

"We use Business Intelligence integrated with our ERP. This tool can help us make decisions and it is increasingly cutting across the different company departments, aware of the importance of having rapidly available data. By nature, BI was conceived as an analysis of the past in post-event terms: efforts are now being directed at updating data and speeding up processing to get a strategic picture of the present and keep one step ahead of the rest", explains the IT manager.

Big data and more complex computational analysis will therefore be the challenges of tomorrow, but user-friendly tools such as PLM, analytic dashboards and KPIs, can already offer interesting insights to govern

THE ERP OF THE FUTURE: INTEGRATION OF PEOPLE AND MACHINES

PAOLA POMI
CEO
Sinfo One

The new paradigm of extended ERP systems rests on the correct integration of people and machines.
Integration of people consists in supporting application users, for example with the three As concept: alert, analyze, act. When performing their tasks, users are prompted by alerts calculated by the system (based on preset business rules) and, possibly even in the same screen, can analyze the problems detected with the associated priority and then carry out corrective actions for each of the faults identified.
Integration of machines consists in connecting single information points of machines and sensors to speed up and automate processes using the three Ds concept: detect, decide, do.
When the system receives information from the field (via streaming or a traditional method) and business rules have been entered, it will carry out the actions instead of the user.

the present and accelerate decision making. All of this without losing sight of the right track. "Our company's mission has always been based on a strong connection with the land and with people. What has guided its history for 120 years is a will to remain true to its roots and to the resources that have allowed Mutti to become what it is today. Investing in new technologies is fundamental, but so is establishing relationships based on transparency and mutual trust with those who work with us every day for the success of our business. We welcome artificial intelligence but without ever giving up reliability and human intelligence".

CLAI BETS ON BLOCKCHAIN TO MOVE ITS SUPPLY CHAIN INTO THE FUTURE

Clai was established as an agri-food cooperative in 1962. It brings together 280 members, of which 140 are farmers, and has always been attentive to the traceability of its products. This is an added value that the Imola-based cooperative wants to retain in the future, thanks to Blockchain. The technology that makes it possible to communicate the value chain to consumers requires each player to do its part: producers, suppliers and distributors are involved in the creation of a sort of widespread ERP, which goes beyond the boundary of the company.

"The social structure, the history and the scope that we want our business to have in the future, have led us to place a lot of importance on the concept of supply chain. We would like to make it operational also in terms of Blockchain, the experiment that best fulfils the requirements of traceability, data certification and ease of access by consumers", explains **Gianfranco Delfini, Marketing Director at Clai**. Recent market studies have produced interesting data in this regard: if customers over 40 simply need reassurance about the fact that the meat they are buying is Italian, for the new generations this is not enough. Young people want to know more: they ask for more detailed information, they want to know which farm the meat comes from and to be able to track the different processing stages. "These needs come from a market segment that is already large today and which will keep increasing, because the generations to come will be even more demanding about traceability and involved in the use of new technology that enables them to follow the path of goods. As a producer of deli meats as well as meat, Clai is already working in a diverse supply chain and can track each individual lot: what we now need is to create a reliable system that can be accessed externally by consumers".

Having a universal certification such as the one guaranteed by the Blockchain mechanism would also be an important advantage in our relationship with the retail sector. This is why Clai decided to meet with Sinfo One to set up a comprehensive project that would enhance the work of the supply chain, from pastures to the supermarket. End consumers would simply need a QR code to find out the origin of the meat used for the charcuterie they are buying. Other information could be added such as quantity of salt, curing period and date of production. Every step would be certified in order to satisfy the consumers' curiosity and guarantee the safety of what they are eating.

"Making this situation concrete is somewhat like taking consumers to the farm. Showing them what actually happens. While waiting for the day when they will be able to see things even more directly through a webcam located inside the facilities".

TÖNNIES AT WORK TO AUTOMATE THE SHOP FLOOR AND INTEGRATE ITS VARIOUS COMPANIES

The process from slaughter of pigs and beef cattle to the creation of finished products in tray involves a great deal of complexity. Managing this on a single ERP platform that enables the integration of every processing step is the objective Tönnies wants to achieve with the support of Sinfo One.

The German group, leading in Europe and fourth worldwide in the meat processing industry, has been relying on the services of the Parma-based system integrator. Great expertise in process manufacturing and on the specific needs of fast-moving consumer packaged goods was required to assist this major German company in the implementation of its new ERP both in Germany as well as in the companies later acquired in Denmark and Poland. The strategy adopted for Tönnies was vertical

by type of business: process support functionalities were designed for the various businesses (beef cattle slaughter, pig slaughter, packaged products processing, etc.) with teams dedicated to the definition of the functionalities and teams dedicated to their roll out. "The peculiarity of the solution is the fact that every shop floor operation is managed directly by the ERP, without resorting to a MES, and staff carry out line operations with devices such as scanners, touchscreens, automatic scales and automatic gates directly connected to the ERP. On the field too, the solutions adopted are in line with the ERP, with special focus on the speed required to complete operations such as weighing and labelling" explains Sebastian Bittmann, Senior Project Manager at Tönnies.

Shop floor activities have involved a particularly high degree of automation. The best technology has been adopted for each activity in order to make the process fast, accurate and highly automated. For example, in one type of production a sonar is used to check the various anatomical parts of the animal and to convey to the ERP all the biometric parameters which, based on a specific formula entered in the ERP procedures, make it possible to assign a value to each animal so that the amount paid to the farmer is strictly linked to its actual quality. Each animal is scanned and over 300 parameters are obtained. The combination of this information determines the quality and in turn also the price paid to the farmer according to the market value of the meat. "This enables us to be fair to farmers who have contributed to the quality of the product through correct feeding and respect for the welfare of the animal, and this way such farmers will receive a financial reward".

Tönnies is also investing in a project that makes it possible to optimize the yeld of the boning list andidentify the animals whose anatomical characteristics best match the orders placed by customers. In terms of IoT, there are already numerous point-by-point integrations between sensors and ERP, for example for requested quality parameters. Tönnies is also investigating the use of Artificial Intelligence to automate production processes.In addition to the design and roll out of vertical solutions on single areas, the team in charge of model development is also working on the integration of the various companies. "We are developing a central procurement system" explains the Tönnies manager. "The companies in the Tönnies group do not all use the same technology: we have counted around a dozen different ERP solutions, resulting from our group's continuous acquisitions". This gave rise to the idea of immediately integrating into Tönnies's ERP some of the critical processes of each company, in order to rationalize the system and achieve significant savings. "We have set a savings objective of several million Euro per year, through the implementation of a central procurement system. The complexity of the project does not lie in the technology but in change management: with the help of Sinfo One we are targeting a high level of automation to serve our customers with the best quality in the market, first in Germany and later in the various countries where we operate".

OLITALIA CHOOSES ERP AS ACCELERATOR OF CORE FUNCTIONS

Integration between systems affords a great advantage. It proved necessary in the case of Olitalia, a Forlì-based company that sells extra-virgin oil, olive oil, seed oil and flavoured oil in over 120 countries around the world. The Group has been cooperating with Sinfo One since 2004, using ERP for accounting activities, warehouse and stock logistics. Acetaia Giuseppe Cremonini is also part of the same group: the ERPs of the two companies have been combined in a single "container" in order to manage the group's data, improve internal processes and create more automatism between the companies. "Integration between different systems is quite important", explains **Gianmarco Antonelli, CIO of Olitalia**, according to whom ERP has proved fundamental especially for the management of robust data", i.e. of everything not connected with automation. "The solution designed by Sinfo One is an accelerator of core functions, such as sales, logistics and production planning". It has enabled the company to organize stock handling, producing advantages that also lead to greater commercial efficiency with customers. The result is a substantial improvement in terms of management of the 'stock-productivity-customer service level' triangle.
Olitalia is continuously investing in innovative machinery (4% of the turnover goes to Research and Development) and in 2015 they created a new in-house laboratory where accurate product analyses are carried out by company personnel. The same attention devoted to the quality of oil is used for the quality of data: the tanks are connected to temperature and level sensors that convey accurate information through a network. This information can be viewed on special monitors by the staff, who can act immediately to solve any problems.

Over the years, other Sinfo One modules have been added to increase the exchange of information between the purchasing and production departments. "The future challenge" concludes Antonelli "is to integrate the ERP with more specific information on production and on machine performance, with accurate real-time data".

ITALPIZZA, BI AND PRODUCTION SOFTWARE TO EXCHANGE DATA IN REAL TIME

Italpizza opted for separate management of the systems of the Group's companies, which do share the same release of the SiFides ERP. From the tiny business started on the hills around Bologna, the Castello di Serravalle company is today Italy's leader in the production and marketing of frozen pizzas. In 2004 they turned to Sinfo One to manage two company segments: Business Intelligence and production software with a real-time data exchange interface. "Today, the whole process from flour to production to packaging is controlled by Sinfo One's ERP", explains **Andrea Bondioli CFO of Italpizza.** The company has created a special work team dedicated to innovation, with four people in charge of governing the process of the SiFides solution.

The software house follows all of the Group's subsidiaries and affiliates. There are five companies managed with dedicated ERP installations, three are in Italy and two in the United States (with different language environments). The partnership envisages assistance both with the software part and with business organization and flow aspects in the areas of management and intake of raw materials and packaging, as well as procurement and management of production and quality control. In terms of flow management, Sinfo One has taken care of the whole cost control and authorization part (ODS and payment authorization flows). This is also thanks to the July 2018 release, which made it possible to keep the company up to date in terms of ERP, and to the new customized solutions developed for cost control, authorization and management.

Over the years, improvements have been made in all the interfaces for planning, production and on-line data through department software and the implementation of a SiFides MRP module. A new tracing and tracking data extractor has also been activated, for faster and more effective extrapolation of information. "The common objective for the future is the creation and assistance of new Italpizza subsidiaries and affiliates, each with its own ERP developed by Sinfo One", concludes Bondioli.

THE NEW PARADIGM OF EXTENDED ERP SYSTEMS IS BASED ON THE CORRECT INTEGRATION OF PEOPLE AND MACHINES

FOR INDIAN-GELATO D'ITALIA THE ADDED VALUE IS MANAGING THE PRODUCT'S LIFE CYCLE

In some cases, the decision in favour of the new management systems was discussed at great length. Until 2016, Indian-Gelato d'Italia, a long-standing company based in Cavriago (Reggio Emilia) did not consider the introduction of ERP a priority. "We already had a solution for managing financial aspects and considering the size of the organization, an upgrade did not seem necessary. The situation changed when revenues doubled over three years, bringing with it an increase in the level of complexity". **Marco Pellegrino is the CEO of Indian-Gelato d'Italia**. Having managed to access a fast-growing market segment, the company invested in Research and Development. Today they have a turnover of 50 million Euro and 19 flexible production lines. In recent years, the company has focused on the 'health food' segment, thanks to its highly-evolved production facility, on the 'premium' segment, with products made from organic ingredients and innovative packaging, and on the 'fruit based' segment, which links them to the origins of the company, which started with the production of icy poles (still sold with the Indian brand).

"As the company grew, there were critical areas that the old system could not handle and we felt the need to support the fast-evolving organizational processes. We decided to adopt the SiFides ERP, implemented by Sinfo One", continues Pellegrino. The project included the migration of the basic receivables and payables functionalities from the old to the new system, which was completed in May 2019. We then added physical management of warehouses: pallets are labelled by warehouse staff, who transport the goods and link the products to their location by barcode reading.

In the ice-cream market, sales forecasting is complex. "As regards BI, we are fine tuning a tool to analyze key parameters with the aim of making better decisions. In the meantime, we are able to automatically produce the reports for shareholders. At the moment, rather than providing a support to forecasting, BI enables us to carry out analyses on costs, suppliers and performance". The ERP allows us to manage production planning, using Master Production System (MPS) and Material Requirements Planning (MRP). This added value is made possible by the ERP, together with Product Lifecycle Management (PLM), essential for companies that have made innovation the key strength of their business. "Every year, we make about 200 new products, which require feedback from customers, product and packaging development, industrialization and labelling. PLM supports the process and makes it possible to historicize experience and to see the elements clearly right from the development stage. Once the recipe has been approved, with a simple click you generate everything you need to make that product", explains Pellegrino.

"The introduction of the ERP system and its implications have 'forced' us in a positive way to deal with change" confirms the CEO. "Thanks to digitization, information has become a centralized resource available to everyone".