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The European e-Business Market Watch

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CASE STUDY: WI-FI IMPLEMENTATION AT PASTIFICIO RISCOSSA

Abstract

The Pastificio Riscossa is located in southern Italy. Its historical roots date back to the beginning of the 20th century. The factory produces a wide range of pasta recipes and formats, both for the Italian and international market, and commercialize other products such as rice and tomato sauce.

Product traceability and the picking[1] process were recently improved by the adoption of a Wi-Fi order management system, which was integrated with the product labelling and tracking processes. The system led to a substantial reduction of picking times, and enables a quicker traceability of product batches (as required by EU legislation).

Case study fact sheet

Full name of the company:	*Pastificio Riscossa, Fratelli MastroMauro Spa*
Location (HQ / main branches):	*Corato (BA) – Italy*
Sector (main business activity):	*Production of various pasta types (Durum wheat flour dry pasta, semolina and egg pasta, organic pasta, biscuits, flours, rice, sauces)*
Year of foundation:	*1902*
Number of employees:	*100*
Turnover in last financial year:	*18 million euros*
Primary customers:	*Retail chains, organised distribution, grocery shops*
Most significant market area:	*Central and Southern Italy, Europe, US*
Main e-business applications studied:	*Adoption of Wi-Fi terminals in the traceability/picking process*
Key words:	*Wi-FI, order management, logistics*

Background and objectives

Pastificio Riscossa was founded in 1902 by the same family that manages it today. The factory is located in Corato, Italy, in the Bari province and covers over 18,000 square meters of space. Pastificio Riscossa is known for both their high quality products and for the high standards of technology used in their manufacturing, stocking, and logistic processes. To ensure a constant and clear quality of its products, Pastificio Riscossa

[1] "Picking" is the operation of selecting and gathering items in a warehouse.

purchased a huge milling system in the Italian city of Venosa – in southern Italy – in 1998 that allowed a vertical integration of the productive process.

The production is centred on pasta products: durum wheat flour dry pasta, semolina and egg pasta and organic pasta, in a wide variety of recipes and formats covering both traditional pasta shapes and new, fancy formats. The production includes flours and biscuits, while the company commercialises other pasta-related products such as canned tomatoes and bottled tomato sauce, and rice.

Italy produces around 40% of world pasta production (7 million tonnes per year). Pasta is produced by almost 200 industrial pasta factories and no less than 5000 small pasta producers, for an overall turnover of over 3 billion euros. These include companies of all sizes, from multinationals present in dozens of countries to small workshops, often specialising in the production of filled pasta (ravioli and tortellini), found throughout Italy. The development of competition is generally tied to acquisitions and the pasta market shows a slow but steady concentration process, through acquisitions made by large companies. New entrants, if any, are concentrated in the small workshop sector, catering only to local market (fresh pasta shops).

With a daily production of 250 tons of dry pasta, Pastificio Riscossa is in the "middle" section of the market. In this segment many medium-sized enterprises strive to keep their position, battling a strong price war driven by the retail chains. Part of the production is stock, while part is on order, just-in-time

Before the Wi-Fi system introduction, each employee who had to prepare an order for shipping received a paper document with the shipping list. The product picking from the warehouse and the setup of the shipping pallet were executed manually, and each product was manually checked out from the paper list.

As many small orders were processed every day for the domestic market, it was impossible to keep track of the single batch numbers of the products belonging to each order. The checked paper list was then forwarded to another employee, who manually input all data again into the company's ERP system, specifying product batches for each order. Besides being time-consuming, this procedure caused a rather high percentage of errors, both in the batch reading and in batch number transcription. Moreover, the transport documents could be printed only after all data had been reinserted in the system.

The new European legislation on food and ingredients traceability (CE regulation 178/2002, enforced in January 2005) had a strong impact on the Italian pasta producers, as most of the wheat used is imported. According to this regulation, production batches must be indicated on all transport documentation.

Moreover, the wide variety of shapes (120 different shapes) and recipes complicates the picking and shipping process, as often many different types of pasta have to be shipped in small qualities to the same retailer. An optimisation of the picking process was also necessary to reduce associated costs and errors due to the manual processing of documentation.

To comply with EU regulations, Pastificio Riscossa – after the integration of its production software in the Unix-based internal company management system – decided to optimize the order preparation, picking and shipping process with the implementation of a wireless system of terminals. The computerisation of picking processes was forced by the obligation to track each and every delivered product batch, enforced by the legislation: a task virtually impossible with manual procedures.

The project started at the end of 2004, and the system was up and running by the introduction of EU food traceability regulation, in January 2005.

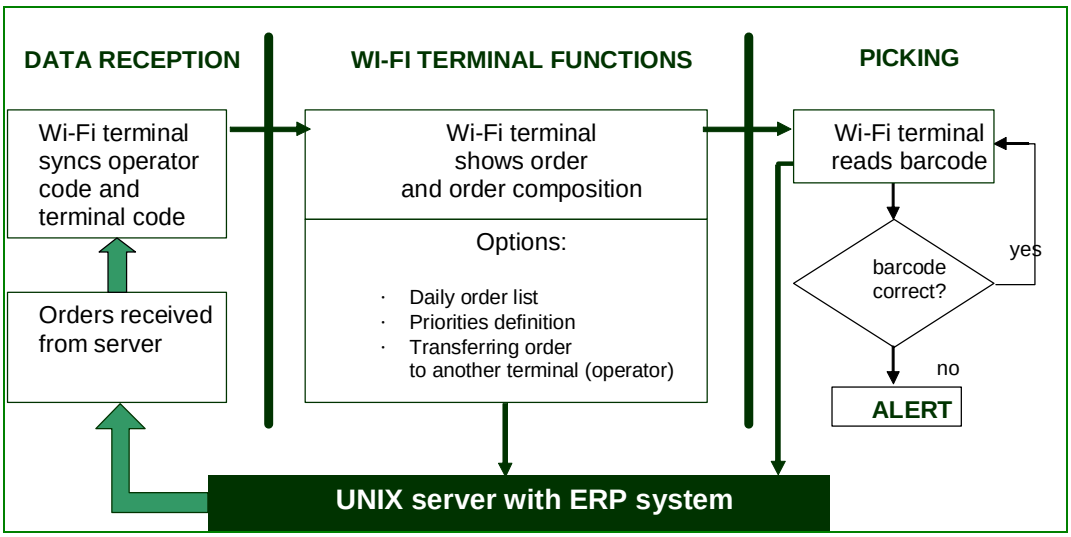
The cost of the project was approximately 100,000 euro, including the contribution of the internal IT staff .

The company was equipped with a legacy, Sco-Unix-based, ERP system. The Wi-Fi terminals used (provided by PSC (the ICT supplier) were compatible with the legacy system. The relevant software was developed internally, with the help of a local software house (Tecnocomputer) and a provider of automated data identification solutions (MPH). The system had to be open, to be integrated in the legacy internal management system. The positioning of the Wi-Fi antennas in the warehouse required a careful planning, in order to avoid interferences caused by the metallic scaffolding and from the tomato cans: huge metallic structures could cause "shadow zones" where the radio signal could be weak or dead. The warehouse has 30 aisles, each about 50 meters long that are now perfectly covered by the radio signal.

The project saw the involvement of various company departments: production (concerned with ingredients and batch numbers tracking and labelling), sales and delivery, as well as HR for employee training. The IT department coordinated the process and actively contributed to the programming and implementation phase.

The team responsible for picking was equipped with three portable Wi-Fi terminals (working on two shifts), connected to the ERP system (see following exhibit).

Exhibit: Order management at Pastificio Riscossa



The terminal receives order data from the central server and shows to the operator the order and its composition (with the option of showing all daily orders, with shipping priorities, and to move orders to another terminal/operator). The operator then chooses the order to prepare The terminal shows the first product to pick and the operator picks the required boxes, reading individual barcodes with the portable Wi-Fi scanner. If the picked product is wrong, the terminal displays an alert and emits a warning sound.

When the order is complete and all the products have been placed on the shipping base, the terminal signals the completion of the process and sends the relevant data to the server. The shipping documents are printed, with shipping information and the list of products and batch numbers. For each order, all the data regarding product batch and clients are readily available. Batch numbers are included in the invoice.

Impact

The implementation of the new tracking and picking procedure was perceived as a competitive advantage, and had many positive impacts on the company:

- Complete and detailed tracking of product batches and ingredients – a feature that was not available before - and therefore compliance with European regulations.
- Inventory management and logistics were improved, with better management of small and complex orders.
- Acceleration of the picking process, with better organisation and rise in productivity.
- Improvement of the company image through stronger perceived food safety and more efficient product recall procedures; better relationships with retail (more information supplied).
- Employees training related to this activity was well perceived by the workforce and sets a base for future projects.

Lessons learned

After a few months of activity, the system was put to a test due to a food safety emergency: a whole shipload of wheat imported from Canada was found contaminated with ocratoxin, a carcinogenic substance produced by several fungi. About 58,000 tonnes of durum wheat were confiscated at the port of Bari. The new tracking system allowed Pastificio Riscossa to quickly identify the product batches that could contain contaminated wheat, and a successful targeted product recall operation was then launched.

"All the tracking and recall process took about 2 hours with the new system", said Mr Francesco Cassarà, IT director of Pastificio Riscossa, and continued: *"With manual systems we actually don't know how long the process would have lasted. Furthermore, there could have been suspicions and imprecision. The operation was a success and greatly improved our image as a modern and reliable company".*

The company is now planning a further improvement of the delivery procedures, including warehouse automation and further supply chain management processes (expected in 2006-2007). An extension of wireless systems to the production process is also planned.

References

This case study was conducted by Databank on behalf of the e-Business W@tch.

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