

Benetton get business sorted in the hub

# A flexible partnership

The setting up of the perfect material handling solution can prove to be a lengthy, yet rewarding process for all concerned. Read how several years of co-operation on various projects turned into a true partnership between customer and contractor, and resulted in the maximisation of automation, productivity and ergonomic needs.

In 1992 Benetton awarded the contract for a sorting system to CML Handling Technology, now known as Fives Cinetic. The system was based on a technological innovation at that time: the Plussort sorting machine, which was able to sort the flat garments into outlets made of drawers placed on different superposed levels.

## Defining the new solution

The Plussort system was first installed in a warehouse at Benetton's headquarters in Villorba. The plant ran at a mechanical capacity of 7,500 sorting cells/h with about 600 destinations. In 1995, the Plussort system (PL1) was moved to Castrette, a few kilometres away from Villorba, and it was extended to 800 destinations.

In 1998 a second system was installed. The PL2 (Plussort 2) had a similar configuration and performance capacities as the PL1. The PL2 was based on the same technology, but ergonomic aspects, item handling and outlet density were further improved.

FIVES CINETIC TECHNOLOGY KEEPS THINGS MOVING IN THE BENETTON HUB.



INSIDE THE MAIN HALL OF THE BENETTON HUB.

In 2006 Benetton launched a new project to install an additional sorter to the handling system in a section of the building that had previously been used as a warehouse; the new sorter, while physically separated from the PL1 and PL2, had to be connected to them by means of a carton collecting line and a conveying system leading towards the automated warehouse, where the parcels are stored before shipment.

According to Benetton's requirements, the three sorters had to be integrated and controlled by a single software.

Before awarding the contract, the following approach was agreed:

- To join customer and contractor experiences
- To create an inter-functional work team (mechanical, electrical, software and maintenance) including project engineers from both customer and contractor, working together in a formalized way, through direct contacts and plenary meetings.
- To work out a common risk analysis, and to share solutions in order to prevent potential problems with tests and prototypes

These criteria were formalized during the proposal phase, before the choice of the contractor had been made. The application of these guidelines provided more effectiveness during the following phases resulting in an efficient and shared work method.

Benetton needed to increase its productivity

in sorting (Packaging centre) implementing an automated equipment system able both to ensure the quality standards (error minimization) and to extend the processable item range - from extremely light items such as a single scarf to bigger items packaged in rigid containers, such as boot boxes.

Today, almost all of Benetton's products are processed at the distribution centre in Castrette, including all new products as well as returns and items to be re-processed, both coming from Italy and from abroad.

## A compact creation

Installing a new sorter at the same site would enable increased flexibility with respect to the configuration of the two existing PL1 and PL2 sorters, and would allow for better management during production peaks. In particular, it would increase the ease in the processing of "velox" orders for the restocking of the retail sales outlets. These orders must be processed extremely rapidly.

The system had to have a capacity of around 9,600 sorting cells/h. The technology chosen was one that Benetton had already tested, the well known Fives Cinetic Cross Belt sorter.

The last important requirement was to balance productivity and packaging optimisation. With the purpose of fulfilling this expectation, the new system had to enable the operations manager to optimise the overall control, stressing either one or the other variable, in a more flexible way.

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Starting from the previous installations, a possible system configuration was defined, in terms of number of destinations (outlets) and the number of workers to be present on site (at the loading station, at the feeding station, and at the outlets). This “rough” configuration arose from Benetton’s experience and had also been discussed with other contractors present on the market.

A simulation was executed with the aim of improving and better defining the most appropriate configuration for the various packaging types, thus enabling the process to reach the required performance degree.

Then this configuration was approved. The information was given to the main contractors on the market asking for a feasibility study of possible solutions and a detailed system design. The layout design was guided by three main principles:

- **Space optimisation.** The solution; having two outlets-fronts, one above the other, is a

standard a feature of the application for flat garments, and enables the maximum density for each occupied unit in machine longitude; this solution, together with the use of a few high performance induction lines served by more workers, reduces the space occupied by the sorter.

- **Integration with the downstream lines** An “L”-shaped configuration with a central aisle enables for the integration and optimization of the box handling systems downstream from the sorter, minimising the workload. To ensure safety, provide emergency escape routes and give mobility to the workers, a solution with overpasses was adopted.

- **Modularity.** The modular design concept achieved to optimise the installation steps and the ‘time to market’ of the system. The modularity enables a possible upgrade in the future.

The full system was delivered on schedule

in October 2007, only 9 months after the contract had been awarded. The system begun immediately working and with a ramp-up of approximately one month, reached a sustained throughput of 9,000 items/h (with peaks of 12,000 items/h).

Considering the fully functional system launch, a real testing phase was not necessary. Furthermore, the system had an accuracy rate of 99.98%, a level that even surpassed the initial requirements (99.95%). Due to Benetton’s products’ seasonal nature, during the high production months, the system is used through four working shifts, 24 hours per days and 6 days per week.

Understanding real-world applications, integrating customer expectations, defining common working methods and maintaining continuous contact with the customer has resulted in a truly successful project for all parties involved.

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