

SVZ Schweizer Versandzentrum AG



*Complex technical
plant with high
throughput*

The 70 million euro Schweizer Versandzentrum in Entlebuch has been equipped with some impressive technology: over 7 km of bin conveyor systems, more than 219,000 storage positions, an hourly retrieval capacity of 2,400 bins and conveyor speeds that can exceed 2 metres per second.

Construction work was begun in 1994 and by January 1997, the centre was able to dispatch an average of 15,000 parcels to customers every day.

The product range of its main clients, Ackermann Versandhaus AG and Veillon SA, covers all kinds of textiles, household appliances, fitness machines, furniture, TV sets, hi-fi systems and much more. The range comprises around 40,000 different active articles.

Besides Ackermann und Veillon, other companies including the Swiss Broadcasting Corporation, Swiss Federal Railways and Puma (Switzerland) AG use the services of Schweizer Versandzentrum.

Further information is available at: www.versandzentrum.ch.

The dispatch centre not only serves mail order customers but also supplies merchandise to the Ackermann and Veillon shops in various Swiss towns.

Refurbishment of the dispatch centre involved extensive automation of warehouse operations and the flow of goods which has resulted in a reduction in the logistics costs and an improvement in delivery quality. Telephone orders received by 7:30 pm are already ready for dispatch the next day (daily production).

Tasks and implementation

The warehouse employs special technologies to ensure the high performance can be achieved.

The three shelf operating devices in the bin warehouse can place a bin in storage and retrieve one from storage every dual cycle and on each of the 45 warehouse levels. An average of 15 bays are served within a dual cycle. The shelf operating devices can move between the 33 warehouse aisles by way of aisle transfer links.

Each bin is only retrieved from storage for picking once a day. The operators at the 20 workstations then remove the articles needed for the whole day. Two sorters subsequently sort the removed merchandise into the separate customer orders, which are then checked and packed ready for dispatch at 40 workstations in the shipping department.

Empty bins and all merchandise retrieved in advance overnight are kept in a separate bin buffer that provides space for approximately 9,000 bins. This advance retrieval further increases the goods flow for picking.

The complexity of the warehouse equipment and required high performance placed particularly great demands on the new warehouse management system in terms of the performance of the applications and algorithms that needed to be implemented:

- Optimisation of the number of bays needing to be serviced (stops) during dual cycle operation while at the same time taking into account the cycle times of the shelf operating devices and vertical conveyor systems
- Maximisation of the number of bins per retrieval cycle
- Optimisation of the bin sequence during retrieval operations as well as optimisation of sorter utilisation so as to minimise order lead times
- Replacement of returned merchandise into storage and consolidation of partial bins

The warehouse system was developed in 18 months and put into operation in 6 months by the Fraunhofer Institute for Material Flow and Logistics (Dortmund, Germany) in cooperation with Planar

GmbH (Dortmund). Planar GmbH – now part of PSI Logistics GmbH – took over the tasks of system maintenance and servicing right from the very beginning and has been fully responsible for further development of the system since 2001.

Configuration

The original computer platform was a Sequent high-availability system with six Pentium 60 CPUs and an Oracle database. The system was replaced in 1999 by a SUN cluster with two E-3500 nodes running under SUN Solaris.

105 alphanumeric data acquisition units from IBIS (Dortmund) are in use at the workstations and are connected via six data concentration units (PCs running Linux) to the warehouse management system.

A graphical display of the warehouse status supports the personnel in their work in the service department.

The sorters, conveyor systems and shelf operating devices are all connected to TCP/IP telegram interfaces. The host system uses file transfer to send the data relating to articles, orders and invoices overnight. During the day, the warehouse management system processes the invoice data to generate delivery notes and invoices in German, French and Italian.

*Numerous
interfaces and
terminals*

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