

Rossmann Drugstore Chain:

Perfect picking for every type of packing

In a complete logistic makeover, the drugstore chain Rossmann is converting its former regional warehouse at Landsberg into a central warehouse with the full range of goods. With over 100,000 picks per day, which is more than a million picked sales units, accommodating everything inside one central warehouse required not only thorough and comprehensive planning, but also the selection and integration of a suitable materials handling system and the implementation of a high performance warehouse management system.

The company

ROSSMANN GmbH has currently 670 drugstores in Germany and is expanding all the time with a further 223 in Poland, Hungary and the Czech Republic. The development of the market-leading former East German drugstore chain is due partly to a marked increase in turnover, up 15.1 % 1,239 mrd. Euros in 2002, and partly to the continual expansion of the network of stores. When the project began in 2001, there were 620 stores in Germany, 50 less than there are now. The considerable growth and simultaneous expansion of the product range make high demands on the logistics.

Situation analysis and proposal of a solution

Before its logistic restructuring, ROSSMANN supplied all its stores from three regional warehouses in Burgwedel, Landsberg and Potsdam. Each of these warehouses stored a different part of the total range. In order to be able to offer all stores the same goods, the regional warehouses exchanged picked goods using a daily shuttle service. After an extensive order consolidation process, the regional warehouses transported the goods to each store. Continual expansion led to bottlenecks in the regional warehouses, both in terms of capacity and delivery. An analysis undertaken for Rossmann by consultants viaLog Logistik Beratung, Harsewinkel, concluded, "The selective range means that costs in the regional warehouses and in transport were too high. Our analysis shows that centralising the logistic processes would be much more economic," said Henning

Dörrie, Manager of viaLog and of the Rossmann Project. "A strategic study formed the basis for a detailed proposition regarding the distribution of the product range, distribution areas and warehouse design. The central warehouses at Burgwedel and Landsberg are to be upgraded to central warehouses offering the complete range. The future growth of the company is secured step-by-step logistically by a modular expansion programme". The new complete concept corresponded to the company's aims for the drugstore chain. In October 2001, Rossmann placed logistic consultants viaLog in charge of the project.

Landsberg: The transformation from a regional to a central warehouse.

Rossmann invested 27m Euro in the transformation of the regional warehouse to a central warehouse. With a total area of 25,140 m² and 22,000 pallet bin locations, the warehouse today stocks the complete range of ca. 13,000 standard items including promotional items. Up to 1,600 Europallets enter receiving daily and nearly 2,200 roller boxes leave the warehouse every day. The vast quantities of goods are stored on pallets in high bay warehouses with 14,000 storage bins, single bin locations and flow-through racks and a further 8,000 block storage spaces. The Landsberg warehouse has a standard line to the central AS/400 server in the Burgwedel warehouse. In selecting a warehouse management system, Rossmann and viaLog opted for one of the leading international systems: The LFS 400 Warehouse Management System developed by Ehrhardt + Partner



Rossmann headquarters



LFS 400 coordinates the three picking areas: vehicle picking, Pick-to-Belt and Pick-to-Light

in Boppard, Germany. The software had already proven itself in some of the other drugstore locations. The company was also impressed by the possibilities the system offered for connecting the planned technology and by the potential to represent the processes required.

Picking by volume

In the central warehouse in Landsberg, the drugstores' goods are picked using a range of technologies by the type of packaging or by the volume throughput of a product. The LFS 400 Warehouse Management System controls three pick areas: a Pick-to-Belt system, a far-reach system and a manual vehicle picking area all connected to materials handling systems. The Pick-to-Belt unit covers a total of 12 aisles at three levels. Fast-moving goods, i.e. sales units in original cartons which are suited to this kind of storage are kept here. When picking, the system consolidates the orders from 25 stores to form so-called batches and releases them for processing. The picker is led to the pick location by RF and takes the total quantities required of an item, labels them and places the packages on a conveyor. The labelled packages are then transported by conveyor to a high performance tilt-tray sorter. This sorts the packages into their orders and sends them to the assigned retrieval stations. This enables up to 10,000 units to be sorted and ready in goods dispatch every hour. The system solution which consists of a Pick-to-Belt unit, a 3,300m conveyor system and a high performance tilt-tray sorter was developed by Beumer



At the central Landsberg warehouse, ROSSMANN picks the goods by packing type or volume throughput of a product using a range of techniques.

Maschinenfabrik, Beckum. With the far-reach system, the Pick-To-Light system picks small parts, slow-moving goods and partial loads from outer packages without papers. This system was developed by the Austrian providers Knapp Systemintegration. The non-complex user prompt system has enabled the container handling system to increase pick speed and reduce the number of errors. With the connection to a Pick-to-Light system, the host warehouse management system passes the orders to the system's material flow computer for processing. The computer marries the order with a container. The materials handling system conveys the containers to the workstations. Lights lead the pickers to the removal bins and the order quantities are displayed. After taking the goods, the pickers confirm the order positions. This action is relayed online to LFS 400 and processed immediately. If a picking bin runs out of a certain item, the LFS 400 Warehouse Management System automatically orders the putaway of replenishment goods. Bulky goods with large external volumes and products with high order volume, e.g. promotional goods which are needed in extremely large numbers are all handled by vehicles. Also, any goods which are not suited to processing by the



ROSSMANN performs up to 100,000 picks daily at the central warehouse in Landsberg. The LFS 400 Warehouse Management System controls all warehouse processes, from goods handling and deployment of personnel to the use of a range of pick techniques, to loading and replenishment control.

system due to external characteristics are handled here. These include tinned goods or basically any goods with outer packaging which might not withstand processing by the Pick-To-Belt unit followed by the high performance sorter. With vehicle picking, the goods are placed in ground-level pallet bins and are picked by staff with roller boxes. LFS 400 optimizes picking paths for all vehicles beforehand. This saves time and resources. All AGVs linked by RF to LFS 400 can collect three roller boxes at a time. Rossmann currently operates 50 such vehicles.

Picking products by volume is, according to Arno Neis, warehouse manager at Rossmann's central warehouse in Landsberg, "the perfect solution for us, as it allows us to be extremely flexible in terms of logistics, should demand patterns or product ranges change. Every product can be moved according to demand immediately to another warehouse area. All warehouse areas have the necessary reserves. This is another very important aspect in terms of the future development of our company."

Replenishment control

If stock falls to the minimum level defined for the pick bins, LFS 400 automatically sees that the goods are replenished. This takes place in the Pick-to-Belt and vehicle picking areas and partly also in the Pick-to-Light area using a manned narrow aisle stacker at the rear side of the rack. The warehouse management system and fork lift truck driver communicate by RF: To refill the empty pick bin, the fork lift driver takes the required items from the supply warehouse. A reserve is located in immediate proximity to the pick bins permitting fast replenishment times. This avoids interruption of the picking procedure due to missing goods. Larger reserves are also kept ready in bins located further away. According to Henning Dörrie of viaLog, "the synchronisation of the individual processes is essential for the smooth running of a warehouse."

Requirements of LFS 400

At Rossmann in Landsberg, up to 100,000 picks are performed daily, corresponding to a goods quantity of 1,600 pallets or a million sales units. These make extremely high demands on a warehouse management system" said Hermann Ehrhardt, Managing Partner of the Ehrhardt + Partner Group. "Our LFS 400 Warehouse Management System controls all the processes in the warehouse, from goods handling and the deployment of personnel, through to loading with various different technologies". The multilingual, multi-client system does more than just allocate the pick orders to the different pick areas. LFS 400 coordinates all

three picking technologies, Pick-to-Belt, Pick-to-Light and RF by communicating with the control systems. LFS 400 also supports a special type of replenishment in which goods are repacked to enable faster processing in other pick areas.

Project results

The logistic restructuring and extension of the regional warehouse at Landsberg to a central warehouse has facilitated the following improvements at Rossmann:

Warehouse capacity, now five times greater, has enabled the complete range of goods to be stored at Landsberg. The expensive shuttling between the three warehouses has practically stopped.

In the Landsberg warehouse, the drugstore chain has increased pick performance to 100,000 positions per day. Planned future pick volumes will pose no problem for LFS 400.

In terms of product volume throughput, picking has become much faster and more economic since the three picking technologies were introduced

By forming batches and by integrating the conveyer system, ROSSMANN has increased staff pick performance in the Pick-to-Belt area

The LFS 400 Warehouse Management System coordinates the use of different technologies and manages the complete material flow in the central warehouse

The quality of picking has improved particularly in small part picking.

The new warehouse facilities mean that when there is a change in demand, stock can be moved flexibly to another picking area in which it can be processed more economically.

As the entire warehouse concept is modularly expandable, Rossmann offers considerable development potential.



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