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Grolsch, The Netherlands A Case Study



New bottling and distribution centre for Dutch brewing company

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*Martin Commandeur,
Physical Distribution Manager*

The Customer and his Requirements

Grolsch was established as a brewery in 1615 in the Dutch town of Groenlo – which was then known as Grolle, from where the name Grolsch was derived. The original proprietor – brewing Guild Master, Peter Cuyper – introduced natural brewing using only the finest ingredients and his methods are still in use at Grolsch today, almost four centuries later. In 1998, the company decided to centralise its operations, replacing its sites at Groenlo and Enschede with a brand new facility that would have a production capacity of 3.2 million Hectolitres per annum, with the ability to expand to up to 6.0 million Hectolitres. The new brewery and distribution centre – which was built on a 25-hectare site in Boekelo, near Enschede, at a cost of 277 million Euros – became operational in 2004. Its key design criteria were 'quality without compromise' and an optimal balance of overall efficiency with inherent flexibility.



The Solution

The majority of Grolsch's beers are bottled and the local markets return a high proportion of the bottles, pre-sorted in plastic crates. The distribution centre (DC) at Boekelo is therefore in two parts: empty returned bottles & kegs and filled bottles, kegs & non-returnable cans. Some 2000 pallets of returned empties are unloaded each day, some by fully automatic conveyor-based devices that unload special semi-trailers in a matter of minutes. Other lorries are unloaded conventionally by fork-lift truck. All pallets of returns are automatically conveyed through one of two stations equipped with video camera recognition technology. Here the exact type of bottle or keg is recognised, logged in electronic memory and assigned a storage location. The condition of the pallet and its weight are also checked at this point, with an automatic path to a reject lane if a problem is detected.

Of the returnable goods, 3 product lines are responsible for 60% of the material flows and

these are stored in the automatic crane store; the remaining SKUs – over 440 lines – are stored in the block storage area. The DC is joined to the filling halls by an overhead monorail system that both automatically delivers empty bottles or kegs to any filling line and moves filled product from any filling line to any area of the DC. Filled product is transported on bar-coded, shrink-wrapped pallets. These are handled and block-stacked, two at a time, by fork-lifts fitted with on-board cameras that feed the barcode information to the central control system via radio link. On-board terminals inform the truck driver where to place his load within the warehouse. As required, these trucks also load delivery vehicles with two pallets at a time or feed the automatic vehicle loading devices.

Swisslog supplied the conveyors, automatic loading/unloading systems, video recognition stations, automatic store, monorail system, local transport control systems and the adaptation of the SAP LES WMS software.

Logistics Data



Overall facility

Order lines picked per annum	85,000
Number of SKUs	450
Pallets dispatched per day	3,000
Finished goods area, m ²	20,000
Empties area, m ²	10,000

Automatic returns warehouse

No. of pallet cranes	3
No. of pallet locations	2,500
Returns system input, pallets/day	2,000
Automatic video recognition stations	2
No. of shuttle cars	1

Transport systems

Length of monorail system, m	765
No. of P&D stations on monorail	32
Cars on monorail system	26
Length of pallet conveyor, m	865
Total no. of lift trucks	50
Automatic truck unloading systems	2
Automatic truck loading systems	2

Hardware/software platforms

Warehouse management system	SAP LES
Product recognition system	Video scanning
RF system	LXE



Interview



Martin Commandeur
Physical Distribution
Manager

How do you start to design a new distribution facility such as this one at Boekelo?

"We formed purchasing teams and began by inviting tenders based only on the functionality that we required. Facts such as maximum pallets per day input and output, customer service levels and required reliability were all that we wanted our possible suppliers to concentrate on. We gave them no indication of what type of equipment or handling system we might want to use. Our business is seasonal – with great variations in demand – and we therefore needed a system with flexibility but we also wanted as much of the distribution process as possible to be automated. We therefore asked suppliers to focus on achieving an optimal balance of handling system efficiency and flexibility."

How did you select a handling system from what must have been a wide variety of responses?

"First, we asked our would-be suppliers for technical clarification so that we could understand and evaluate the tenders. Then we asked for further financial clarification so that we could look beyond the initial price. We needed to know the full cost of ownership – including staffing, operational costs and maintenance – over the expected system life. The tender price is like the tip of an iceberg, and the real costs are like the rest of an iceberg – massive and out of sight! These costs had to be considered with due regard to the required balance of efficiency and flexibility in the proposed handling system."

What motivated you to choose Swisslog for this project?

"Well, Swisslog understood our thinking concerning both the initial cost and real total cost scenarios. Their system proposals also had our required balance of flexibility and efficiency, but it was our discounted cash flow calculations with their figures

that really put them ahead. We also noted that they had wide experience – both software and hardware – in the soft drinks and brewery trade. We were able to visit some of their key customer sites, all of which gave us the necessary comfort to place our business with them."

Can you give an example of the flexibility that Swisslog was able to incorporate into the system?

"Only a limited number of our product lines use returnable bottles or kegs, but the flows of these products are very high. Swisslog was able to automate this process fully with the use of video recognition technology and automatic vehicle unloaders. The automatic warehouse was made economic by being designed to take only the optimum number of pallets. In times of peak inward pallet flows, Swisslog designed a conveyor divert to a block-stacking area so that the automatic warehouse did not have to accommodate all the pallets generated in our peak periods. Another feature of the automatic returns warehouse is that – due to the low weight of the empties – the stacker cranes were built to handle 4 pallets at a time. This is highly efficient when delivering pallets of empties to our high-speed filling lines."

How were you able to achieve flexibility and efficiency in the fork-lift operations?

"Our finished product block stacks well and this suits our relatively short-term storage, being very flexible in terms of the warehouse floor space. For efficiency we always carry and load two pallets at a time, with a simple local pallet racking solution when a customer only wants one pallet of a particular product. The fork-lift trucks used for finished products are all equipped with video camera label recognition systems. This means that our drivers do not have to use RF scanning guns for pallet identification, saving time and enhancing efficiency."



Beverage



Customer Data



Grolsch, The Netherlands
www.grolsch.com

Location

Despite being internationally famous for producing premium beers, Grolsch remains an independent company. The firm is located in the Dutch town of Boekelo, close to the German border. Grolsch exports to more than 50 countries and, although Boekelo is far from the sea, 90% of all Grolsch's exports are transported to the port of Rotterdam by barge.

Brands

Grolsch is a market leader in premium grade beers, with a wide range of products supplied in bottles, kegs and cans. The distinctive Grolsch swing-top – manufactured in house – on the brown

and green bottles has become an icon in the drinks industry, with extremely high brand recognition.

People

Grolsch International BV employs some 800 people at Boekelo. Every employee enters the new complex through the same front door and works but a short walk from any element of the production and distribution process. This has led to high levels of communication and self-worth among employees.

Sales

In 2004 Grolsch produced 3.40 million hectolitres of beer and achieved sales of over 300 million Euros.

The Benefits

- High product availability for fast-movers, close to dispatch point
- Ultimate warehouse flexibility through block-stacking of product
- Accurate, paperless order picking for double or single pallets
- Barcode-enabled, video product recognition and control
- Modern hardware and software platforms
- Optimal balance between system flexibility and efficiency
- High levels of quality control

Swisslog's Scope of Supply

- Design and implementation of a new distribution facility
- WMS software system configuration and specification
- Software and hardware installation, testing and training
- Video/RF equipment and on-board monitors

