

# Case study

*The Norwegian mail company Posten Norge recently opened a brand new, highly automated sorting centre in Oslo. Supplied by Dutch firm Dynamic Logistic Systems, the Order Release Module (ORM) fulfils one of the facility's crucial logistics processes in a particularly unique manner, as a visit to the state-of-the-art sorting centre revealed.*



With a capacity of 6,000 crates per hour, Dynamic Logistic Systems' Order Release Module buffers, sorts and deposits Posten Norge's mail items ready for despatch

## Dutch solution boosts Norwegian mail sorting centre's efficiency

# Quick and compact buffer system

Tekst and photos: Mark Dohmen

In preparation for the further liberalisation of the Norwegian postal market, Posten Norge embarked on a strategy to further increase its productivity and reduce transport costs between its various sorting offices. Operationally, this translated into a switch from a decentralised to a centralised logistics approach: whereas Posten Norge had 32 smaller sorting offices spread throughout Norway in 2004, the company now opera-

tes from only 10 hubs. Each of the hubs is larger than the old terminals. They are all much more modern too – the mail company has invested in a high degree of automation in order to achieve its productivity objectives. The showpiece of the organisation's new approach is the brand new, energy-efficient mail sorting centre in the country's capital city, Oslo, which project leader Håvard Hallås describes as one of the company's most significant steps towards a more centralised

logistics operation. Constructed on a site of some 220,000 square metres, the facility takes up an impressive 42,000 square metres (resulting in no less than 73,000 square metres of floor space including all the various levels). It handles an average of three million letters per day, which accounts for approximately 60% of Norway's entire letter-sorting activities. The Order Release Module (ORM) from Dynamic Logistic Systems plays an important role in the hub's logistics process.

### Unusual

Upon arrival, the mail items are distributed between 13 fully automated letter-sorting machines (four different types, depending on size and weight). The machines sort the letters by postcode and place them in the relevant crates. These are then scanned and weighed before being transported along one of the many conveyors to a 500m-long cross-belt sorter, supplied by the Danish firm Crisplant. "The sorter collects the crates and deposits them in Dynamic Logistic



Project leader Håvard Hallås: "We have achieved the speed – and hence the efficiency – we were aiming for, in a very compact space."



The crates of post travel via the sorter to the ORM on four different levels

Systems' ORM," says Håvard Hallås, walking through the sorting centre towards the ORM.

The cross-belt sorter, type LS-4000CB, features LSM technology which is between 60 and 75% more energy-efficient. Running at full capacity, the system can handle 10,000 crates per hour. Within the compact storage and transport system, it is easy to see how the ORM works. Running in a loop on four different levels, the cross-belt sorter passes the ORM's input side allowing the crates to enter the system at speed. "There are 62 chutes per level, amounting to 248 in total. Each chute can hold 24 crates, which is the exact equivalent of a full pallet measuring 600 by 800 millimetres," explains Hallås.

It is unusual to see the crates entering the system via a sorter since the standard version of the ORM works with a trolley but, because of the randomness of Posten Norge's orders, the traditional set-up would not offer sufficient capacity. Another notable aspect is the decision to design the cross-belt sorter to run past the ORM on four different levels – after all, this has made the sorter significantly longer. Nevertheless, Hallås is in no doubt that the benefits make the extra investment worthwhile: "We initially considered a tilt conveyor, but such a system would have resulted in a much lower capacity, not to mention

the higher maintenance costs it would have entailed. In addition, the current solution generates less noise and offers us much more flexibility than we would have had with a tilt conveyor."

### Postcode-based buffer system

The crates filled with post are deposited into the correct ORM chute according to postcode, with each chute allocated to one specific postcode area. It is also possible to adapt the sorting plan based on other parameters if required.

The ORM is friction-driven. The system's rollers, which each have an integral ring, are connected together by a belt. The entire system is mounted at a 4% gradient. This specially designed set-up ensures that even the lightest of letters roll a little bit, while the friction prevents heavier items rolling too fast. As a result, all items travel through the system at the same speed, irrespective of their weight. As soon as all the crates for a particular area have been collected, they are released on the output side. The integral dispenser unit at the end of each chute ensures that this happens quickly yet in a controlled manner. The crates then proceed along roller conveyors to the palletizing stations. Posten Norge has four automated palletizing cells, each featuring two palletizing robots, resulting in a palletizing

capacity of approximately 6,000 crates per hour. "If necessary, empty crates are included to form a final complete pallet layer of four crates, then the pallet is covered with a lid, secured and taken to the despatch area," continues Hallås.

### "Ready for the future"

The project leader is full of praise for the solution: "We considered several other options, such as a stacking robot mounted above the conveyor, but we soon realized that the ORM was the best solution for us. This system allows us to create a buffer for the palletizing process – and we need a buffer, because we always have to wait for the last post items before we can ship the orders. This solution also enables rapid sorting, buffering and palletizing of the crates, so we have achieved the speed – and hence the efficiency – we were aiming for, in a very compact space."

The high degree of automation has allowed Posten Norge to improve its productivity level for handling the same volume of goods. "We also have fewer trucks driving around on the work floor. This keeps more floor space clear, and results in a safer and quicker operation," says Hallås, summarizing the key benefits. "Thanks to this facility and this system, we're now ready for the future."



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*The ORM is friction-driven. The system's rollers, which each have an integral ring, are connected together by a belt*



*Because of the randomness of Posten Norge's orders, the standard trolley set-up would not offer sufficient capacity, so the company opted for the crates to enter the system via a cross-belt sorter instead*

## Who. what. why?

- Who?** Posten Norge is Norway's leading mail company. The firm built a brand new sorting centre in Oslo, which now handles approximately 60% of all Norway's post.
- What?** The Order Release Module from Doetinchem-based Dynamic Logistic Systems (NedconDLS) plays a key role. The system collects the post according to postcode and ensures the crates are released quickly and smoothly as required.
- Why?** Thanks to the high degree of automation, productivity has increased significantly, plus the number of transport kilometres between the various sorting offices has been considerably reduced.