

BEYOND LIMIT

If shrinking volumes and opening markets are threatening the margins of national service providers, the answer on how to regain the losses is to improve efficiency

Even if margin loss in the mail business tends to be neglected, it must have become obvious to everyone by now. Email, online banking and the internet are increasingly replacing standard mail, as they are much faster, in general more reliable and a lot less expensive. Physically handled mail volumes are therefore shrinking and the price per sorted item is rising.

Unfortunately there's another trend that supports this one, at least as far as the national service providers (NSP) are concerned. Markets are opening up throughout Europe – although in certain countries change takes time – so handled mail volumes are shrinking even more due to the new competition.

What can the NSPs do? The market trend can't be changed, raising prices is not a popular solution – might even benefit the competition and staff reductions are difficult. One option could be to develop new products or services (e.g. hybrid mail, secure email) or challenge the NSP of a neighbouring country. But there is a risk that these new markets will not continue to grow, that the new products might be replaced by better products or that the challenged NSP might counter by offering services in the first country.

Improving the efficiency of services is definitely a more reliable way to react. Improving technological efficiency is much easier to handle than the human variety – as long as better technological solutions exist on the market. And in mail sorting they do.

CROSSFIRE NPI and its engineering team developed a completely revolutionary approach to mail sorting. They developed the CROSSFIRE, a machine that at 100,000 mailpieces per hour more than doubles the performance of all other machines and



almost halves the footprint of all other solutions on the market.

How is this possible? How can they double a performance that up to now has been thought of as being a physical limit in mail sorting? And why did no other supplier of mail sorters achieve at least 70 percent or 80 percent of that performance?

The answer lies in the name of the machine. Two feeders 'fire' mailpieces from two sides into the same pockets – a similar process to existing parcel sorters with multiple feeders. But from a technical point of view this is much more demanding than parcel sorting, as both feeders work at over 50,000 mailpieces per hour. All mailpieces from the two feeders are transported to pockets on four levels and two sides, thus making it the most compact sorter in the world.

This arrangement is also the secret as to how the sorters work. Mathematically the probability of one mailpiece being sorted to one specific level on one side is 1/8 (12.5 percent). So the belt on that specific level is filled only by 12.5 percent as well, making the belt quite inefficient compared with the belt after the feeder head (100 percent). This inefficiency can be reduced by adding mailpieces from another feeder to that level on that side. The probability of a collision – when two mailpieces from the two feeders are sorted to the same level on the same

side is only 1/64 (1.56 percent). But the NPI technicians found a solution even to that problem.

A servo engine at the entry of each level on each side can stop a mailpiece within a very short time (a few milliseconds), and thereby delay that mailpiece and allow the imminently colliding mailpiece from the other feeder to pass in front. This technique reduces the probability of a collision much further. The solution for these rare collisions is quite obvious. All mailpieces that would still collide are diverted into special collision pockets and can be fed back in at the beginning of the system.

The advantages are reductions in cost per item sorted, operating labour cost, space and facility requirements, power consumption, etc. ProListic says CROSSFIRE provides the most productive, cost-effective sorting system on the market today.

HOMERUN Sequence sorting is not all that new as a concept, so one might guess that there is nothing new to another sequence sorter. A big step in the past was the invention of new sorting algorithms. Older algorithms sorted in several steps from city to postal code to street and finally down to house number. That was quite inefficient as not all pockets were used during sorting and several sort runs were needed. Newer algorithms are more dynamic and sort into

the exact sequence of the defined targets, using all pockets in all sort runs.

But it's not only the sort algorithm that is important for the perfect sequence sorter. If just one single operator could run that machine with a homogeneous work-allocation over time and an ergonomic work-environment, it would be the next level in sequence sorting. It would be a machine that runs permanently during all sequence sort runs without any stops.

That's exactly what HOMERUN does. HOMERUN has two pocket levels on one side of the machine that are designed to meet all ergonomic requirements. As the core of HOMERUN is the Maxim sorter, the same that is used for CROSSFIRE, a performance of 47,000 mailpieces per hour on the C6 DIN long format is possible.

Most suppliers of sequence sorters have the input feeder on the left, with the pockets on the right. HOMERUN feeds from the right, with the pockets on the same. This small detail is actually very important in sequence sorting as only in

that way does the letter sequence remains the same.

Why is this so? When feeding from the left with pockets on the right, every mailpiece is turned round while passing through the machine, so the front of the first mailpiece no longer faces to the front. The whole stack in each pocket has fed again the other way around to reverse the order back to the original. With HOMERUN, the first letter that enters the feeder will also be the first that is used in the second run as the mailpiece does not get turned round.

The advantage is that when feeding from the right, mailpieces for the second run can be put on the feeder while the first run is still ongoing. The machine can therefore be in continuous use no matter how many sequencing runs are needed.

But feeding from the right has also advantages in the event of jams, as jammed mail can easily be re-fed (the sequence remains the same). The error potential for operators is also reduced, as the mail in

each pocket doesn't need to be turned around for re-feeding.

One more detail. The HOMERUN pockets are right on the feeder. That way the operator empties a pocket at the same time as re-feeding the next run by taking the mail out of the pocket and putting it right below the pocket on the feeder.

In practice, a HOMERUN with only 20 pockets can sequence sort 15,000 letters into nearly 8,000 individual targets in one hour using only one operator. Separation cards then divide the whole lot into perfectly matched staples for each postman.

If one looks at such innovations, it almost seems that improving technological efficiency has never been easier before.

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