

Case Study

A FLEXIBLE APPROACH TO OCR IMPLEMENTATION WON THE CONTRACT AT POST DANMARK

There is no doubt that for Post Danmark parcel OCR is an evolving process. Of course when the organisation upgraded its first generation system last year at its Brøndby Centre outside Copenhagen its aims were black and white. Better read rates and higher automated throughput were the obvious priorities. So too was the need to implement the system in a short time frame before peak production at Christmas. Getting there however required navigation across several grey areas.

Theory has to be translated into reality and as Process Consultant, Svend-Erik Rørdal is happy to admit "We weren't specialists in OCR and we're still not and that's why a flexible approach to project management is so important." This prerequisite had a direct bearing on the supplier Post Danmark ultimately chose to implement its new OCR system at Brøndby and one of the main reasons why short-listed Prime Vision rose from being underdog to top dog.

Advanced Technology

A need to rationalise its growing business led Post Danmark to establish CEP – Courier Express Parcels – in 2000, an independent unit to handle parcels and groupage with sorting centres in Taulov and Brøndby and four hubs feeding 320 regional distribution centres. The two-centre structure requires customers to pre-sort parcels by destination to East or West Denmark.

In line with lean production principles a high degree of automation is employed at the centres enabling each of them to sort between 12,000 – 15,000 parcels per hour. OCR is naturally part of the advanced technology mix. Brøndby was the first of the two centres to adopt the process. Installation in 1997 – when the centre still handled flats – provided one-sided OCR reading on ten container tables leading up to 20 infeed lines. In 2004 the technology was brought into Taulov with top-front scanning, a system that was then seen as being the benchmark for future upgrades.

A new record of 44 million parcels handled in 2006 prompted the decision to bring Brøndby OCR in line with that of Taulov. At the time Brøndby OCR was resolving up to 2,500 parcels an hour and video-coding a further 1,500. The level of anticipated investment made the upgrade subject to EU tender so rather than simply duplicate the Taulov system, CEP was

duty-bound to cast its net wider. Tenders were therefore submitted not only by known suppliers but also by those of whom CEP had no experience. Prime Vision was one of them.

Hand-written rejects

"Prevailing OCR read rates were at Brøndby 25% with a high need for VCS," explains Svend Erik Rørdal. "Only around a third of our parcels come with EDI so the need for us to improve our ability to read hand-written labels automatically was self-evident." Initially it was Prime Vision's proven capability in this field that captured CEP's interest. He continues, "We knew our rejects were most often on hand-written address labels so a supplier whose background was in banking OCR would be worth investigating. After all banks don't invest in technology that lose them money!"



Prime Vision's involvement in license plate recognition was also significant. "The company clearly had the ability to capture information that was skewed or slightly obscured," Svend Erik adds.

As a result of the EU tender procedures the time scale of the installation was an area that prompted the concern of all parties. Christmas meant that the automation system had to be fully functional in just thirteen weeks requiring tight delivery guarantees, but most of all, considerable implementation flexibility. CEP required a project management structure that

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involved Post Danmark, sorter manufacturer FKI and the chosen OCR supplier. Fall back procedures needed to be in place in case of system failure and sufficient manpower provided that included 24-hour cover during the implementation period.



The requirements were tough but Prime Vision's openness and will to co-operate put them at the top of the shortlist. "The situation didn't allow for rigid command lines and inflexible working," Svend Erik continues. "We accepted that the route to our goals may need to be changed along the way and we therefore wanted to work with a flexible organisation whose approach mirrored our own."

Project management skills

Prime Vision listened to what we needed and was prepared to evolve the plan with us." These credentials coupled with Prime Vision's proven ability in hand-written OCR won through and a visit to an established Prime Vision site at TNT Arnhem gave Svend Erik the confidence that the company had the necessary project management skills to do the job.

One of Svend Erik's 'grey areas' was how the system would perform in reality against the static test performed at the negotiation stage. "A test deck is not the real world, the parcel mix varies every day. We had guaranteed rates from all the bidding firms and Prime Vision system in fact performed better in the static test than the installation at Taulov," he explains. "In all fairness however we have since been achieving better rates there too with the addition of a new bar code to locate the address within the label. What I'm saying, it's not black and white, OCR needs to be continuously developed." With this in mind the resultant contract with Prime Vision includes service upgrades that allow the exploration and implementation of new ideas to boost the read rate.

Labour savings

With the new system parcels resolved in OCR are currently between 55% - 80% with 60% presenting a good average. Video-coding has fallen from a massive 75% to around 40% VC is done in a specially created room that was

initially designed to accommodate 10 video-coders but in reality there is rarely a need for more than four operators. Obviously the new system is far less labour intensive and has also allowed CEP to rotate job functions to improve worker satisfaction and enhance the stability of its workforce.

Whilst the previously-acknowledged flagship system at Taulov is a two-side scanning system the resultant Prime Vision OCR at Brøndby is five-sided, indeed the first of its type in the world. So why did CEP opt for it? "Why not!" Svend Erik retorts. "The cost of our 1997 system at Brøndby was in fact 75% more than that of the 2006 Prime Vision system and as it could potentially give me better performance than the two-side scanning there was a sound business case to go for it."

Minor adjustments

The 5-sided OCR saves the facers time. All they need to do is ensure the address label isn't face-down as the camera system will capture data on all of the remaining five sides. It simply makes the job easier and this is something that is a continuous aim at Brøndby. For example, tests were recently undertaken to determine if the angle of the parcel improved read rates and it did by 1 - 2%. And as Svend Erik adds, "This is for free!" As a result white squares on the infeed lines now indicate the optimum orientation.



Since its installation a new interface has also been introduced on the video-coding system to provide greater intelligence of parcel status. A red, yellow, green or black bar at the foot of the screen indicates how many parcels are left awaiting video-coding, grading the urgency to change to different a sorting mode to alleviate the backlog. "There are a lot of small examples like this," explains Svend Erik.

The future

Aside from these minor system tweaks what else does CEP have in mind for its OCR? The development of the archive facility is certainly one area. At present it simply provides a means of interrogation for

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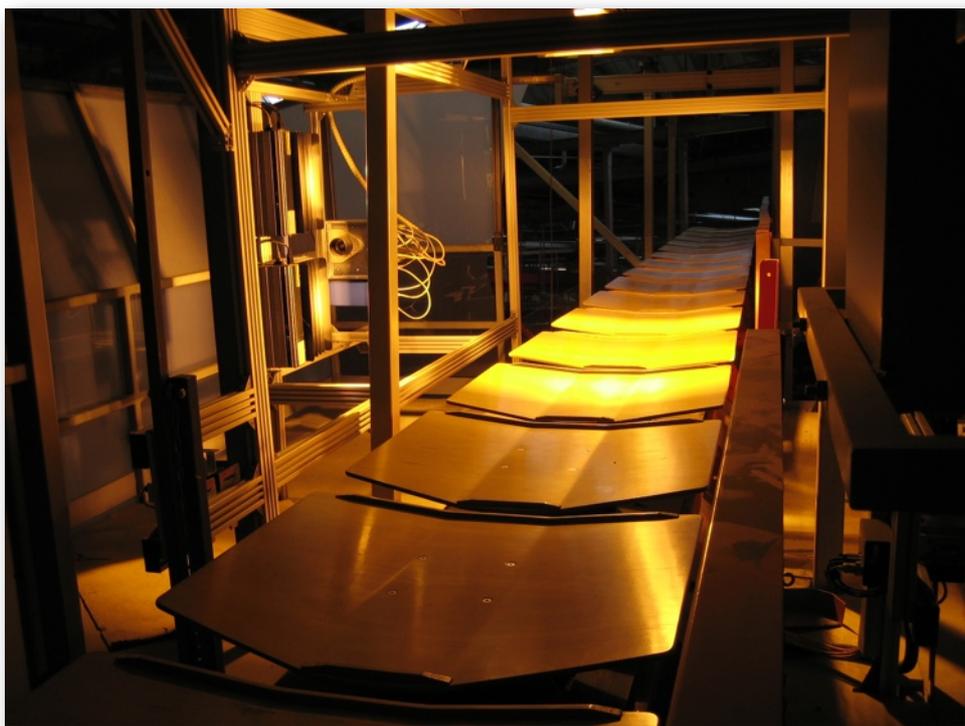
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production purposes but in the future it may be rolled out to the customer service department to resolve delivery issues. Recently the system found a parcel that was expected to be delivered on a Saturday didn't carry the relevant bar code. This case provides a good example of its potential. Svend Erik Rørdal feels there is an excellent business case for such an upgrade with anticipated payback of less than two years. Using dimensioning information in line with a new tag system for its roller cages is another possibility. Analysis could provide, for example, information on how many roller cages are required on average for a specific post code.

**A further possibility is to piggy-back a Prime Vision system on the back of its counterpart in Taulov and vice versa to assess the potential improvement in read rates. "Both have their merits. Prime Vision for example has proven its value on handwritten labels," Svend Erik explains. "By using one system as an after-burner to the other we may be able to squeeze

even more performance out of OCR. It's all a question of economics however. If at the end of the day the small margin only allows me to reduce labour by say one person, the salary saving wouldn't buy me much OCR technology."

It's clear that Svend Erik Rørdal sees OCR as a subject of continuous development in line with the ever changing needs of the parcel handling sector. The volumes are increasing rapidly. Indeed he expects the growth of the last two years to be replicated in the next. The challenge for Post Danmark therefore is to retain and even enhance the quality of its product in line with this demand. "This is why the co-operation of companies like Prime Vision is so important," Svend Erik concludes. "We need the flexible expertise they provide to take us, forward."



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