Case Study

Reduce the number of parcels held for re-packing

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Project background

A warehousing and distribution centre of a large home shopping organisation packed 8 million parcels per year, but over 650,000 parcels were held for repacking for various reasons.
The cost to the business was over $900K per year.

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Problem

Management were concerned that nearly 9% of parcels were held for repacking, over 30% of which incurred 24 hour delays in deliveries, complaints to call centres and cancellations.

A Six Sigma team were set up. They confirmed that both packers and operations managers wanted the correct items at the correct chute at the correct time. However, the team found that items were missing at the chute, as there were delays in distribution of rejected items. There was a higher rejection rate on the evening shift partly caused by an imbalance of injectors to packers.

Mapping the process highlighted the significant rework involved. They also discovered that the sorter no read and out of batch streams had been disabled in error.
Management reports were inaccurate because “items not found” and “items missing”, which referred to individual items and to complete packages missing an item had been mixed.

They also found that injecting large items early in batches produced more rejects.

Solutions

The sorter was reconfigured to allow injection from one end. A matrix was introduced to provide packers with an accurate injector requirement.

Training was provided on newly written system configuration standard operating procedures. This eliminated a 30 minute phase culture so that the packers’ focus was changed to the inputs to the packing process.

Manning of the reject chute was increased so rejects were redistributed prior to phase completion thus reducing the incidence of repacking.
A process was also introduced for immediate distribution of miss-sorted items.

A training matrix was developed for injection operatives. Hypothesis tests were conducted before and after training to ensure there were no significant differences in the standard of work between operatives after they had been properly trained.

Business benefits

The number of parcels held for repacking reduced by 32% in the first million parcels shipped after improvements were put in place.
Visual performance measures were introduced so that managers and packers were all aware of repack trends and were focused on continuous improvement in packing. The new processes were shared with other distribution centres in the group.