

## MAKE A CUSTOMER, NOT A SALE

A study within Marel to better serve the customer.

The main activity of Marel is the design and production of food processing lines. It creates additional value to its products by offering valuable services to customers. One of these services is the critical parts package. This package contains all the service parts that may fail suddenly and that are critical for the customers. Marel wants to offer its customers the best package in terms of achieved service levels and investment costs. Roel Bongers conducted a master thesis project that focused on improving the concepts used to determine optimal spare part inventory levels and to create the critical parts package.



### MINIMIZING TOTAL COST OF OWNERSHIP

Since the poultry processing lines that Marel sells, are used in the main processes of the customers, it is a crucial task to keep the systems up in the field. Marel strives to serve the customer as good as it can, and it continuously improves the maintenance concepts used. In that manner, it minimizes the total cost of ownership for its customers. It might also be perfectly possible that Marel will be responsible for spare part management and service levels at the customer side in the future. The downtime costs and spare part inventory costs are then incurred by Marel.

### CRITICAL PARTS PACKAGE

Maintenance can roughly be divided into two categories. Some parts are replaced preventively, before they fail, while others can only be replaced correctively, upon failure. This results in both planned and unplanned demands for spare parts. For unplanned demand resulting from corrective maintenance, the customer is advised to hold inventory in order to anticipate quickly on failures. This project only focused on the concepts regarding corrective maintenance. Whenever customers buy a machine, Marel recommends them to buy a critical parts package along with the equipment. These



packages are made by product experts that know the characteristics of the machine. With the increasing product portfolio, it gets harder to know the characteristics of all equipment that is being sold. It is then also impossible to generate a critical parts package where all relevant aspects (e.g. failure rate, criticality, price, replenishment lead time, etc.) are taken into account by one product specialist. Marel wants to have an objective way of recommending critical parts packages, based on part characteristics that give customers the opportunity to make the trade-off between service levels and investment costs for spares. The process of deciding on the stock levels needs to be transparent, explainable and reproducible.

### CREATING EXTRA VALUE FOR OUR CUSTOMERS

A basic multi-item single location spare part model has been applied to several cases within Marel. The

basic models from the literature have been extended to better fit the current Marel situation. It was found that a critical parts package can be generated (automatically, based on part input parameters) that meets the requirements of the product specialist that currently creates these packages manually. It even turned out that the automatically generated packages found were theoretically better than the manually created packages. The differences in the packages were discussed within teams of experts, and everyone agreed that the automatically created packages were better.

### IMPLEMENTATION

It has been decided that the multi-item model will be globally implemented in the Marel organization. The necessary input parameters are being stored in the product lifecycle management system. In that manner, master data in peoples' mind can be secured for the future. Based on these parameters, Marel is able to offer optimal critical parts packages based on customer needs or budget, in a consistent and uniform way. There is no specialist knowledge needed when creating the package any more. The customer will have a better first time fix, the pressure on the 24/7 customer support center will decrease and fewer emergency shipments will be needed. Marel's customers will profit from the better service that is provided, and the total cost of ownership will decrease. Moreover, Marel is ready for the future whenever it becomes responsible for maintenance and/or spare parts stock at the customer side.



#### FACTS

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