



## Complexity cost reduction and production scalability

### Challenge

The case company has experienced a substantial growth during the last 5-10 years and created a new premium segment in the market. The increasing popularity of their products has resulted in a large expansion of the offered product portfolio tapping into an increasing customer focus on furniture offering premium ergonomics.

The growing business has resulted in a number of production investments to ensure sufficient capacity to fulfill the growing market need. Besides the capacity increase, the requirements for improved delivery time and responsiveness in terms of meeting late order changes have increased. The increase in service level requirements is one aspect that has not come as a surprise. However, in combination with the huge increase in product variety, the production has been seriously challenged in keeping up with demand, all the while experiencing that the production productivity is decreasing concurrently with the increase in product complexity.

### Approach

The 5-step CPC approach for complexity reduction by quantification of complexity costs allowed the project team to reveal the true cost of the increasing complexity. The approach identified the most critical complexity cost factors in terms of production constraints that were blocking the material flow. Furthermore, the approach identified how the sub-assemblies and intermediate stock of low-running product variants were consuming an unproportionally large share of production resources and causing 'constipation' in the production flow.

The approach enabled the project team to quantify where and how the product complexity interrupted the production flow and set a clear price on complexity. The approach served to establish clear evidence of the impact of product complexity on production - something that had not previously been proven.

### Results

A clear link between the production constraints and the cost of complexity was established allowing the project team to identify the root cause of the problems experienced in production. The result became a list of short-term and long-term initiatives tailored to free up production capacity and significantly lower the cost of complexity. The initiatives enable the company to postpone considerable production investments making the project payback significant.

Whereas the short-term initiatives solved the immediate productivity problems, the long-term initiatives included more profound changes to the product architecture and production architecture to enable the continuation of profitable growth.

### The case company

The case company is global market leader within a premium segment of home furniture supplying products and accessories for customers worldwide. Manufacturing is carried out in the US and Denmark. The main product lines are based on a unique technology enabling the company to offer a wide variety of products tailored for the varying needs of home owners worldwide.