Standardizing Safety Stock Management across Large Organizations.

Introducing a Decision Support Tool for IKEA Industry

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Standardization is a double-edged sword which makes coordination and development easier, but risks missing specific circumstances. So, how can an organization coordinate the work of planners in 40 different locations?

Imagine asking a room full of people to suggest how much pasta to buy when grocery shopping. One person does not like pasta, and thus tells you to skip it and buy rice instead. The next person loves pasta and tells you to buy ten packages. Then there is the third person who always seems to run out and gives you the advice to buy one more than what you first intended, just to have a spare.

When dealing with so many people, each person has different experiences, knowledge and attitude toward risk. Therefore, it is a challenge to coordinate their efforts into working in a single way. Especially if one wants to avoid being constantly harassed with questions if they are doing it right.

IKEA Industry is facing this challenge in various ways in their factories. Supply planners have a responsibility for a group of items for which they plan for a dependent supply. One of their decisions include setting a safety stock.

For this purpose we suggest a decision support tool that use the available data to calculate a suggested safety stock and safety time for each direct material item, at each facility. The tool is based on statistical methods that uses delay and production deviations to estimate the required safety stock to avoid stockouts with a certain probability.

However, is it wise to neglect all the knowledge and experience of planners which have been working with these items for several years? No, the value of existing knowledge should not be underestimated. That is why this is a decision support tool, meant to aid the planners in their work process and not bypass their input. The tool is limited in the number of aspects it considers and the planner can make changes to handle specific circumstances.

The advantages of using a standardized decision support tool across all sites is a coordinated development and management tool. It enables easy identification of areas of improvements and allows for discussion regarding the current safety stock. Finally, it reduces the knowledge loss when one planner is replaced by another, as the new planner will have a tool for how to set the safety stocks.

When considering the more theoretical aspects of the safety stock management there are areas that differ between finished goods and direct material. Safety stocks for finished goods should cover variations in customer demand and issues in the production. For direct material, the demand is for production, which makes it easier to have accurate forecasts. The production deviations are replaced by potential delivery delays from the supplier.

The suggested solution handles delays by implementing a safety time based on the delay variations. The safety stock is then meant to mainly cover any demand variations and forecast errors.

By implementing this decision support tool, the goal is to reduce the need for manual estimation and let the planners focus on the analysis. In the end, the tool will hopefully challenge the planners and lead to appropriate safety stock levels at each location.

Safety Stock - Stock held to cover unexpected events, e.g. delivery delay or demand increase.
Safety Time - Orders are planned to arrive a period of time before they are needed.