

hawkeye planner



QUICK AND DIRTY ASSESSMENT OF INVENTORY POOLING DESIGN

Consider two piles of inventory that serve two sets of customers. If those two piles of inventory are consolidated into one pile, then that pile can be smaller to serve the total of those customers. The reasonable logic is that a larger sample of demand will have less noise (variability), so less stock is needed to buffer against variation.

The theory sounds good, but Hawkeye Planner wants to apply theory to effective practices. If a company truly wants to weigh the costs and benefits of consolidating warehouses, they need analysis, not theory. Here, then, is the quick and dirty method to assess inventory savings due to pooling.

Assume the two warehouses are of equal size. If the demand for each warehouse is perfectly correlated (simply put, if the demand for the warehouses follows the same pattern for all items) then approximately 30% of the inventory can be reduced by pooling. Of course, the demand on the two warehouses could be totally independent. In that case, there is no inventory reduction from the consolidation. So the range for inventory reduction will be from 0-30%, depending on the demand patterns. For us simple minds, that means a 15% estimate on average.

Of course, sometimes the two warehouses will not be equal size. If one warehouse is bigger than the other, the estimate gets a bit trickier. The quick and dirty method is to cut off part of the bigger warehouse to make two equal warehouses. Then the first quick and dirty method applies. You can add back the part that was cut off, minus a few percent points for the pooling effect on it. On average the end result is in the 10% range.

The rest of the assessment is left for you. Inventory holding cost should be converted to real dollars, including factors like shrinkage and obsolescence. The comparison data of transportation and storage cost changes must be analyzed. Hopefully, the assumption is that customer service is not changed—improved customer service is difficult to quantify. In the end, Hawkeye believes that good decisions come clear after some disciplined thought and realistic analysis. Enjoy!