The value of information in inventory replenishment

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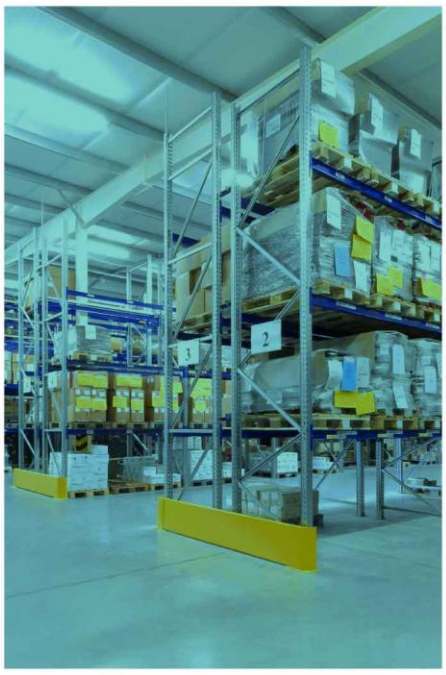
The Technological advances and changes in supply chain management practices have combined to draw attention to the value of information sharing in inventory replenishment.

Increasing interest in the value of information (VOI) has paralleled the rise of e-commerce and the development of new information technologies which promise more timely and accurate information sharing. Three distinct uses of information, including (1) replenishment, (2) capacity allocation and stock rebalancing, and (3) coordination.

The value of lead-time information is small for low-volume items but can be significant for high-volume items. The results also show that the value



of lead-time information decreases with respect to higherdemand variabilityand lower lead-time variability.The portion of inventory held to buffer against supply uncertainty is smaller with high demand variability and high penalty cost, so the benefit of reducing it is also smaller. As for lead-time variability, when the variability is low, the inventory buffer would be low.

The dynamic use of down-stream information by upstream facilities, but not the converse. Given increased attention to collaborative planning practices

in supply chain management, downstream facilities need to know how shared information can be used to improve their processes and what benefits can be expected to accrue for them. With information sharing, order-generating processes will change within the supply chain.

Although technology has made the sharing of information easier, managers should not assume that more information automatically implies better performance. The type and level of uncertainty in the existing environment, coupled with the specific use of information, will determine if information sharing really provides value.