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Up, Down, Turn Around

Fostering flexibility and responsiveness during unpredictable times

The current global economy brings to mind the importance of solid planning in order to achieve greater levels of flexibility and responsiveness. Forecasting always is a challenge, and irregular economic cycles make it even trickier. It's not a matter of simply projecting past trends forward; people have to guess at how much current performance will change—and in which direction—as business cycles shift up and down.

When the economy is in a down cycle, business professionals basically know what to do: Reduce production, thin out inventories, cut back on expenses, and so on. If they are slow to react to the downward trend, it will take longer to consume existing inventories, and costs will be higher than people would like until employees can get them back in balance with sales.

Returning production and inventory to an up cycle often is the more difficult process. Once caught with extra inventories and expenses on the way down, people naturally are reluctant to ramp up costs during recovery. The impacts of this slow reaction time are shortages and lengthening lead times, which can lead to lost business. As existing customers become frustrated and seek better service elsewhere, more agile competitors can end up increasing market share.

The purpose of forecasting is to provide a view of demand against which team members can build an operating plan during the sales and operations planning process. If the demand projection is wrong (in either direction), the operating plan will not provide the right products in the right quantities at the right times. The business will be unable to deliver adequate customer service.

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The forecast always is wrong—but how wrong? The *APICS Dictionary* defines flexibility, in part, as a supply chain's ability to “mitigate, or neutralize, the risks of demand forecast variability ... during periods of increasing or diminishing volume.” In essence, it's a matter of balancing the risk of too much inventory and higher costs against the risk of losing sales and customers due to shortages and delays.

The traditional shield against forecast error is safety stock. The intelligent way to set safety stock levels is to measure or estimate the forecast error. Then, a straightforward formula can calculate the proper amount of safety stock based on desired service levels and lead time (a factor of forecast accuracy).

That's the simple answer, but life seldom is simple. Plus, having extra finished-goods inventory is not always effective. Lead time is a critical element of flexibility. If an organization can make products on demand in a very short time, then the inventory buffer should be at the major assembly, module, or critical-component level. If the market is oriented toward something other than immediate shipment—let's say five days from receipt of order—then the proper buffer inventory is for those components and materials that fall more than five days back from product completion. Anything employees can do to shorten lead times also will influence flexibility and responsiveness.

In addition, because we are talking about a supply chain, it's necessary to consider partners. The flexibility and responsiveness of supply chain and distribution network partners will have a direct bearing on a company's ability to respond to changing demand and forecast inaccuracies.

Finally, it is critically important to understand the risks associated with responding to an expected change in the business level and to manage those risks appropriately. Keep a close eye on inventory, but don't ignore the impact of lead time on your ability to be flexible and responsive.

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