

Inventory Efficiency in the Supply Chain

by R. Michael Donovan

Lowering inventories is one of the quickest ways to decrease working capital needs. Performance measurements, such as the old standby ROA (return on assets) and the newer EVA (economic value added), as well as other measures that gauge how efficiently capital is used, have become more common organizational drivers. In fact, many an executive's bonus depends, at least in part, on how efficiently capital is used.

Couple the drive for efficient capital use with the need to respond more quickly to changes in customer demand, with shorter and shorter order-to-delivery cycle times, and you have a problem that is challenging many manufacturers. In the past, manufacturers would stockpile large quantities of raw materials, load up the shop floor with work in process and pack warehouses with finished goods. Not only do those old ways increase working capital needs, they contribute in a big way to erratic and longer lead times and increasing overall costs.

The pressures to reduce inventories, and therefore working capital requirements, are increasing even in times of relatively low interest rates. Management's quandary is that there are many opportunities to use sources of capital—not just more efficiently, but in ways that yield high rates of return elsewhere. For example, reducing inventories could provide the capital to finance new product development, expanded marketing and sales, modernization, business process redesign, expansion, acquisitions and debt reduction.

Constant analysis, manipulation

Even though inventories are under constant analysis and manipulation, permanent inventory reduction opportunities go largely unused. Well-intended efforts to reduce inventory often get only temporary results. Yet, it is relatively easy for most companies

to reduce inventories permanently by at least 20 percent in six months and, in some cases, as little as three months, without major process changes or lots of expensive software. (See my October '98 *Midrange ERP* column, "Inventory Reduction: Getting Results...and Fast). One major benefit of this approach is that cash is made available to further improve your supply chain management and put you in a positive cash flow position when you start.

In some cases, inventory is so bloated that much of it becomes obsolete before it is sold. Too much inventory is a certain indicator that serious and costly business process problems exist. Some of these problems are ineffective sales and operations planning, poor forecasting, inadequate product specifications, over planning, ineffective production scheduling, low quality, bottlenecks, long cycle times, product and process problems, high costs, poor vendors and wrong performance metrics.

Assess order-to-delivery process

One way you can get a good handle on the inventory, service and cycle time dilemma is to assess your order-to-delivery process. Many companies limp along with well-intentioned, but ineffective, approaches to their order-to-delivery process. As a result, management is often frustrated by the seeming inability to solve the inventory, lead-time and service dilemma once and for all. Why do companies repeatedly fail to achieve consistently high levels of customer service and permanent inventory and cycle time reductions? The 25 self-assessment questions that follow will help you assess your situation. Of course, 25 questions do not probe every area you should assess, but the intent here is to provide your organization with a perspective of what you need to do to launch an improvement effort. One

way to use these questions is to have your entire management team answer each question, meet and discuss each question that received one or more No answers, and outline your corrective action needs. As you proceed through the diagnostic questions, make appropriate notes about particular areas of concern. The notes could be very helpful during subsequent discussions and corrective action planning.

Foundation disciplines

1. Every product has a well-defined manufacturing and inventory deployment strategy.

Yes No

2. We have clearly defined organizational accountability for the performance of each inventory segment.

Yes No

3. Our inventory record information is real time and 99 percent-plus accurate.

Yes No

4. Our bills-of-material are 100 percent accurate.

Yes No

5. We create little to no inventory obsolescence as a result of engineering changes.

Yes No

6. Our forecasting process has the demand variability integrated with a service-oriented inventory deployment strategy.

Yes No

7. We have a comprehensive and effective sales and operations planning process that is management's handle on sales, production, lead time and inventory plans.

Yes No

8. We start the assembly process without any material shortages.

Yes No

9. We use distribution requirements planning (DRP) to plan inventory for distribution centers.

Yes No

10. We have a comprehensive, dynamic inventory performance monitoring system that pinpoints inventory investment problems before they occur.

Yes No

Advanced strategies

11. The impact on inventory from cycle time reduction has been properly analyzed and quantified.

Yes No

12. We have mapped all supply chain processes and clearly identified value-added and non-value-added activities, bottlenecks, queues, cycle times, etc.

Yes No

13. We have specifically defined the barriers that prevent us from achieving increases in service and reductions in inventory, and are actively removing the barriers.

Yes No

14. We have organized and trained multifunctional teams that are working aggressively on improving information and material flow to achieve a high-velocity supply chain.

Yes No

15. We have decreased our manufacturing and vendor lead times by at least 50 percent over the past three years.

Yes No

16. Our lot sizes and set-up times have been reduced by at least 50 percent over the past three years.

Yes No

17. We have reduced queues and work-in-process inventories by 50 percent or more over the past three years.

Yes No

18. Our processes perform to a level where no inventory buffers are required to protect against quality problems.

Yes No

19. We have agreements with key vendors for short cycle deliveries and mutually agreed-upon goals for continuous improvement.

Yes No

20. Our approach to supply base management has each critical vendor's

processes certified to a no-inspection-required status.

Yes No

21. We use an e-supply chain approach for communications and transactions with our suppliers.

Yes No

22. We know our precise lead time for customer deliveries or to replenish inventories.

Yes No

23. We have an active, on-going program for vendor-delivered, point-of-use inventories.

Yes No

24. Our production supervisors spend little to no time expediting materials or firefighting due to parts or material shortages.

Yes No

25. Our primary performance measurements and reward system are heavily weighted towards short cycle times and quick response with minimal inventories.

Yes No

How is your score?

If you answered No to many of the first 10 questions, answering with a meaningful Yes to any of the remaining 15 is very difficult. Worse, answering No to any of the first ten questions, except DRP if it's not required, means your business is at risk.

If you were able to answer Yes to all (or nearly all) of the questions, your company is more advanced than most. In fact, all Yes answers would likely mean that your company is in a very elite class of top-performing manufacturing companies. On the other hand, many No answers are solid indicators that your entire supply chain is costing you money and very likely is now (or will be) putting you at a competitive disadvantage.

Many executives agree that top-heavy inventories are a giant cash vacuum that needs to be turned off in order to free up cash for investment in revenue and profit growth activities. How can this be accomplished? First, most manufacturers have enough cash tied up in inventory to easily pay for a new supply chain management system. Better yet, you can more than

likely get that cash out of inventory beforehand. The notion that significant inventory reductions are only possible by radically changing business processes is misleading. The fact is, minor process changes and better use of processes and systems already in place will let many companies achieve a 20 percent-plus inventory reduction really fast. This is possible with the proper combination of analytical techniques, enhanced planning mechanisms, essential-to-know information feedback and effective decision support.

Once inventories have been lowered, the cash made available for investment in the big job of radically redesigning the supply chain can begin. By streamlining the entire supply chain, a company can free up more cash by reducing inventory even further, improving service, compressing cycle times, decreasing costs and improving profitability. World-class manufacturers have allocated the necessary resources to speed up the order-to-delivery cycle and improve the entire supply chain, and the result is clearly visible in service performance and reduction of all forms of inventory. Customers and suppliers are linking by e-supply chains to improve communications, shorten cycle times and lower costs.

Providing topnotch customer service and enhancing profits are critical objectives to the success of any manufacturer. To minimize inventory excesses and improve customer responsiveness, more and more manufacturers are building flexibility into their operations—flexibility in how they operate in order to respond quickly to changing customer demand. Today, the value that a manufacturer offers its customers is more important than having just the lowest overall price. ♦



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