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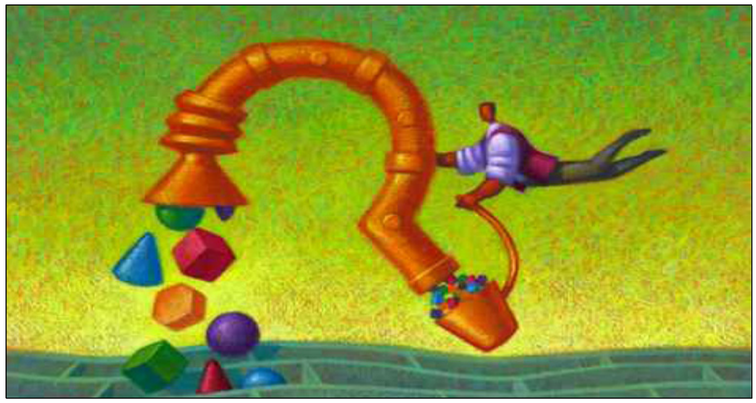
THE TRADE-OFF BETWEEN SERVICE & INVENTORY LEVELS - DOES IT REALLY EXIST ?



a one-size fits all strategy sub-optimizes the inventory tradeoff predicament

THE ISSUE

The drive for efficiencies in operations is a never-ending challenge for the typical manufacturing organization looking to wring waste out of its processes and find ways to impact the bottom line. Losing focus on staying lean and mean can result in a rude awakening, whether from competitors better able to do so or from stockholders who get jittery at declining results. The stories of companies who once occupied leading positions in their industries and found themselves left behind after failing to wield the “efficiency knife” sharply, provide fodder for many a business school case study.

Nowhere is that challenge of efficiency more critical for manufacturing organizations than in the arena of inventory management. On the one hand, widgets sitting on shelves can represent hundreds of thousands of wasted dollars in company capital. On the other hand, slashing inventory can bring its own set of challenges. Companies that cut inventory to the minimum possible must also contend with the issue of maintaining adequate customer service requirements. These two commitments pull inventory levels in opposite directions; an appropriate balance must be found between the two and therein lies the dilemma. Those who sit hunched over computers, plugging in numbers, trying to predict customer demand and come up with magic reordering points are certain to have tales of the times their predictions failed miserably and the costly scenarios that ensued. Under ideal

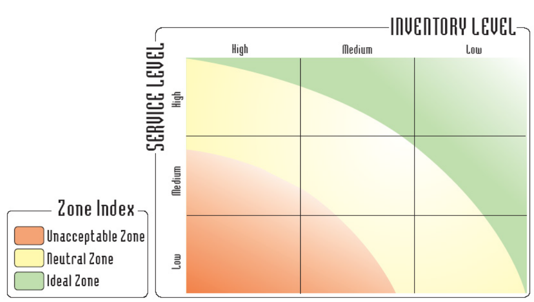


Figure 1.1

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circumstances,a trade-off balance is established at a point where inventory levels are maintained at relatively low levels and yet service levels are maintained at relatively high levels. The Tradeoff Grid illustrated in Figure 1.1 shows the ideal, neutral and unacceptable areas for a company given the trade-off between the two levels.

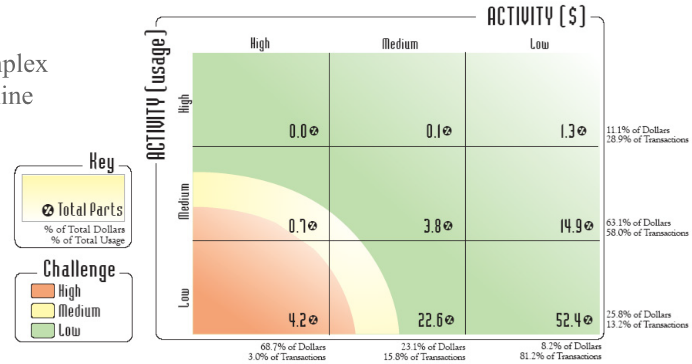

Figure 1.2

As a company's operations become more and more complex however, the need to determine how historically established internal inventory management practices and business assumptions actually play out in individual circumstances becomes more pressing. A close look at the real picture for one company provides an interesting new perspective on the long held assumption of the trade-off between inventory levels and customer service levels.

In this case, the company is an $8.4 billion global diversified manufacturer of highly engineered products. Its operations include a $500 million semiconductor manufacturing business that utilizes some 50,000 active parts for assembly and parts supply. The analysis of the inventory looked at the usage level and the dollar volume activity for all items in a two-year period. The matrix illustrated in Figure 1.2 shows the two dimensions and quantifies the percentage of items falling in each segment along with aggregate statistics.

HIGHLIGHTS

90+% of transaction volume is handled with less than 10% of financial exposure. Setting higher inventory buffers, through higher target service levels will have insignificant adverse consequences.

In looking at the grid, a significant majority of items presents a low challenge to the company. These items shoulder an overwhelming portion of transaction volume (>90%) with only a small carrying cost exposure (<10%). It would therefore be feasible to set higher inventory buffers through establishing higher service level requirements without too much of an adverse consequence. The higher level of inventory (and service) can in fact be maintained without a devastating hit to the company's carrying costs; there is actually a very limited trade-off effect in this universe of inventory items.

On the other hand, significant effort must be dedicated to managing a limited set of parts (5%). These items with their mid-to-low transaction volume (3%) signify a very sizeable financial burden (70%). Time and effort spent successfully managing the items in this area will tend to have a significant payoff versus utilizing a more broad-brush approach as might have been previously assumed.

It could appear that not intensely managing the inventory of a significant proportion of inventory parts could present another challenge for a company, i.e. where to store the build-up of inventory that might result. A closer look at the characteristics of such parts in the case example suggests that this would not always be the case. In this particular instance, nearly 70% of the items have a very low dollar activity. Assuming that low cost items will generally be very small, the trade off of space for inventory build up may not be as severe as might first appear.

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CONCLUSIONS / IMPLICATIONS

It is essential for companies to determine if their inventory management practices are an appropriate match for the characteristics of their inventory. A "one size fits all" strategy, or an unyielding assumption about the tradeoff effect between inventory and customer service levels lessen the potential for striking the best balance between the two and maximizing value for the company. The tradeoff clearly exists to some degree, but by no means does it occur equally across the inventory landscape. A deeper level of analysis that segments inventory items according to relevant characteristics allows for the implementation of a multifaceted inventory management strategy. Scarce time and resources must be focused on those areas warranting such attention. Ultimately, it is customer satisfaction and bottom-line results that are at stake in an increasingly competitive environment. These are issues very few companies can afford to ignore.