

THE CHALLENGE OF EFFECTIVE INVENTORY MANAGEMENT



an economically-calibrated prioritization and segmentation approach to the management of inventory items

THE PROBLEM

In an increasingly competitive business environment, where profit margins are often razor thin and bottom lines are squeezed, managing inventory effectively continues to be one of the most challenging issues for companies seeking to stay ahead of the pack. Much time and effort is dedicated to forecasting, modeling and massaging numbers. The intent is to avoid having hundreds of thousands of dollars of tied-up capital, sitting on shelves with “nothing to do and nowhere to go” or conversely, irate customers clamoring for orders with insufficient inventory in the pipeline to fulfill them efficiently, if at all. For many who have gone through these “feast or famine” scenarios, the latter alternative is considered the worse of two evils and with the ghosts of past mistakes haunting them, they will do whatever it takes, regardless of cost, to avoid a recurrence. Still others have tried various methods, although without the means of objectively assessing whether their strategy is the as effective as it could be. Underlying the effort, the failures and the near misses is a key question: can inventory really be effectively managed? That is, can the business have adequate, but not excess, inventory on hand to meet needs, while maintaining acceptable service levels? That is the question that we explore here.

In grappling with the issue of effectively managing inventory items, a company must typically consider whether an item can be managed on the one hand and on the other hand whether it is necessary to do so. These two sub-issues translate into two principal characteristics. The first is Feasibility, a characteristic that correlates to the ease with which an inventory item could be managed. Feasibility would be determined by examining such factors as frequency and variability demand. The second characteristic, Importance, correlates to the urgency or criticality of effectively managing the item in question. Importance would be determined by considering such factors as item cost, lead time and consequences of a stock outage in the factory or field. In summary, Feasibility addresses



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the question, “How much of a challenge is it to try to manage this inventory item?”, and Importance addresses the question, “Must this item be managed closely, regardless of the effort involved?”

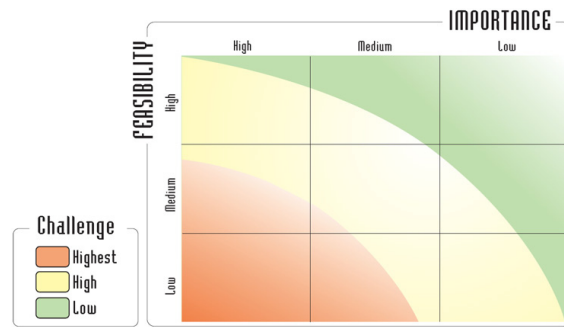


Figure 1

highest levels of importance naturally present the greatest challenge.

Evaluating Feasibility and Importance holds significant implications for companies striving to effectively meet the inventory management challenge. A closer look at the following case study shows how this framework plays out in reality.

HIGHLIGHTS

The company’s interests are better served by developing strategies to address the 43% of items. Particular attention to 5% of items falling under the red zone can pay tremendous dividends.

This company is an assembly-focused semiconductor manufacturer with some 50,000 active parts in inventory. Here, transaction frequency is used as a surrogate measurement to determine the ability to manage each part (Feasibility), underlying assumption is that it is more feasible to manage an item that has a high level of demand, than an item that’s rarely required. On the other side, a Criticality Index is developed to measure Importance. Naturally, there are many factors influencing the criticality level of a given item. For this particular case, cost, lead-time, technical and business requirements are assumed to be the main drivers and an index is mathematically calculated for every active item. Figure 2 shows the summary results of the analysis of the company’s inventory.

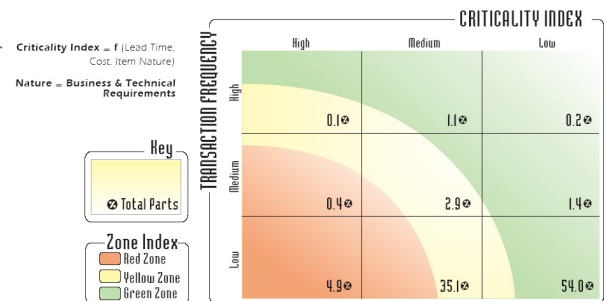




Figure 2

Over 55% of this company’s items lie in the green zone. A very small number of these items would be relatively easy to manage given their mid-to-high transaction frequency, but given the low level of criticality are probably not worth expending a significant effort to do so. A much greater number, in fact the majority – some 54% - of inventory items have very low transaction frequency and would therefore be far less feasible to maage. Given their low criticality however, this should not be as detrimental to the company as it might first appear. The company’s interests are better served by developing strategies to address the 43% of items falling in the yellow and red zones of the diagram. Particular attention would need to be paid to those in the latter area – some 5%. While these items pose the greatest challenge, the payoff of dedicating the resources and effort to manage them should also be greater.

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	<p>In the game of inventory management, the temptation is to treat all items the same and to develop the best general strategy possible and apply it to the entire universe of items. Using the Criticality Index/Transaction Frequency framework however, each item has its own set of characteristics. This allows the items to be logically divided into the three separate zones illustrated above and for a customized strategy to be developed for each. Regardless of the methodology used to develop such strategies (MRP, ROP, etc.), there is always a small number of parts requiring hands-on management. Therefore, developing operationally different strategies for managing the different segments is not only the most effective use of scarce resources, but it allows for these resources to be applied where most value will be received. (i.e. from that small but challenging segment)</p> <p>In the final analysis, this all translates into profitability and bottom-line results for those companies willing to forgo the easier but less efficient broad-brush approach, for an approach that takes more time but allows for greater effectiveness. Ultimately, it's the results that are the yardstick for assessing a strategy's success. By increasing the efficiency of inventory management efforts, the Criticality Index/Transaction Frequency framework yields an impact on results that cannot be overlooked.</p>
	<p>for more information, please contact us at info@confida.net or 914-333-0909</p>