

From lean to green

Understanding the relationship
between capacity and sales

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Introduction

In today's business environment, nearly everyone is looking for a leg up on the competition. Increasingly, "lean" is becoming the method of choice to try to achieve this goal. Far too often it seems that cost reduction is the immediate objective of lean initiatives. Occasionally, a CEO or president of a company emerges who has a greater vision than simply cutting the day-to-day expenses involved in the operation of his business. These executives understand that the real opportunity in any improvement initiative, whether it is lean or Theory of Constraints (TOC) or Total Quality Management (TQM), is the ability to grow a business.

Managing excess capacity

Most American manufacturing companies have excess capacity. If you ask managers if they think they have excess capacity, however, they will rarely answer in the positive. More often, they will reply that everyone is busy, and they have an abundance of work in process (WIP) that never seems to disappear.

What makes this argument interesting is that it actually proves that excess capacity must exist. After all, who has carried out all the work that has been performed on the WIP to bring it to its current stage of completion? The answer to that question, along with the assumption that the company must be shipping something to its customers or it would not be in business, reveals that more capacity is available than would be needed simply to perform the work required to fill the customers needs. If new work is constantly being introduced, the company must have the capacity for a continuing flow of new WIP (i.e., excess capacity) or it would halt the inflow to complete the current work in progress.

An underlying assumption for handling WIP in many manufacturing environments dictates that the sooner that work is sent out to production, the sooner it will be finished. This seemingly common-sense belief, however, is at the core of the problem of long lead times, poor delivery performance, cash flow difficulties, and constant expediting.

Hold-back strategy

A simple but completely counterintuitive idea can resolve virtually all of these problems. Producers should hold back the release of work until only enough time remains to complete the work (while providing some safety margin to account for things that may go wrong along the way). By doing this, the manufacturer drastically reduces the WIP inventory volume. When WIP declines, the need for expediting drops as well, since less work is available for any one resource to choose from. The manufacturer reduces production lead time because resources are essentially waiting for work to arrive and are available to work it and move it on almost immediately. On-time delivery typically nears or meets 100%, and the manufacturer uncovers vast amounts of excess capacity, since it is no longer releasing work early or just to keep people busy.

This hold-back strategy ultimately can generate cost reductions, improved cash flow and even more revenue for the company. Certainly the manufacturer enjoys cost savings by this point, since unplanned overtime no longer exists, for the most part. Cash on hand also improves, since it is no longer tied up in all the WIP that was on the floor.

Some managers, realizing these savings and capacity gains, may react by laying off some of their excess capacity? While that move may save some money in the short term, it's only a one-time gain with no longterm benefit. In fact, the remaining employees will likely see this action as a threat, and the company will likely lose any gains that had been realized.

Leveraging excess capacity to increase sales

What if the manufacturer could somehow leverage this excess capacity to generate more sales, however? The available capacity presents an enormous potential to make a lot of money, but rarely do companies take advantage of this opportunity.

The approach seems simple enough: free up capacity by holding work back and then turn that capacity into income. Who wouldn't sign up for that deal? The answer is that far too many presidents and CEOs fail to do so, because such a shift in business strategy requires them to look at their business and their products in a different manner.

Somewhere along the way, standard costing—basing the cost of products on the expected costs of the resources used—became the accepted method for pricing products and determining the potential profitability of a particular part or job. That was not the original intent of standard costing methods, however. The system was established to report after the fact whether and to what extent the company as a whole was profitable. In that role, the concepts of standard costing are quite applicable.

Why, then, should they not be applied to decision-making for sales and production? Because standard costing does not take into account the company's capacity to perform the work. From a production-planning perspective, companies certainly would understand the importance of existing capacity when looking at what is required to support a future product change. A determination is made whether current capacity will support the demand or whether an increase in capacity is necessary. If an increase is necessary, then there will be an associated expense to go along with that increase. This is simple to understand. However, if no increase in capacity is required, then no increased expense is incurred; and costs therefore are lower. The concept of standard costing, therefore, often gets in the way of doing what is right for the business from a pricing standpoint.

When quoting or establishing pricing for new opportunities, it is imperative that consideration be given to their impact on capacity. If the company is already running at break even or better and little or no increased labor expense will be incurred if the quote is approved, then why should labor cost be used in the determination of the price of the product? The cost of the labor already has been absorbed by the other products the company produces and sells.

So, how should the product be priced? Managers simply should price it at what they think the market will bear. This is no major revelation, since this is often where they end up pricing their products after the exhaustive process of quoting anyway. More often than not, the quoting exercise becomes a means to support what someone believes to be the price the market will bear. The problem, however, is that the process does not take into account the capacity necessary to do the work if the job is won. Companies that are able to make this connection and build the product pricing around the capacity of a few key resources have been able to achieve enormous gains in productivity and profit.

Conclusion

The key is recognizing current capacity and getting the most out of it by first implementing the concepts of lean production and then elevating them to the next level by leveraging the newly found excess capacity to unlock the huge untapped potential that is waiting to be exploited. By understanding the relationship between capacity and sales and marketing, the direction of a company can be modified to fit those products that provide the greatest impact to the bottom line.

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