



MANUFACTURERS: WIDEN THE GAP BETWEEN PRICE AND COST

WHITEPAPER



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Most B2B manufacturing companies face a massively complex environment typified by hundreds of products and customers, increasing competition, raw material cost volatility, constantly fluctuating futures, logistical complexity and pragmatic capacity constraints. Combined with other macroeconomic factors, manufacturers are in a constant struggle to maintain and improve profits.

Capacity-allocation decisions and pricing decisions – two primary profitability drivers — are often handled discretely, by different teams, using spreadsheet-based models, intuition and experience. By only focusing on minimizing costs when it comes to capacity decisions, manufacturers are missing out on the opportunity to bring price into the equation to optimize overall profitability and leapfrog their competitors' capabilities.

In this whitepaper, we will explore why spreadsheet-based models and other do-it-yourself approaches aren't up to the task and how, by making capacity decisions price-aware, manufacturers can widen the gap between price and cost to optimize profits and strategically drive their business.

WHY PROFIT OPTIMIZATION ISN'T DO-IT-YOURSELF

Companies often choose the path of least resistance when trying to take a more analytical approach to operational and pricing decisions. A common approach usually begins with data cleansing and analytics — report-centric, hindsight analytics, to be more specific. While there may be some value in knowing where you've been, backward looking analytics provide little to no value when it comes to making better decisions in the future. The other common path is to build or purchase more sophisticated Excel-based models in an attempt to make more optimal decisions.

With both approaches, we find that manufacturers still struggle to manage the complexities of their business. Take, for example, capacity decisions. Excel-based models fail for three primary reasons:

- limitations to the amount of data they can process simultaneously;
- no way to visualize the data, therefore making it difficult to interpret;
- and the inability to include complex constraints, such as constraints representing complex manufacturing processes, maintaining a cap on the count of products manufactured simultaneously, and logistical realities.

As a result, employees have to apply subjective judgment and experience to make the output of the models practical.

In the case of pricing, Excel-based models can't possibly account for the complexity in most businesses or provide sales reps with deal-specific price guidance for each and every transaction or contract. These models typically use overly general segmentation, making most prices irrelevant

to nearly every deal and setting you up to drive away some deals you would like to keep and leave money on the table for others. Additionally, the model won't even know which outcome occurred, so the issues will continue to propagate. These models also lack the ability to dynamically update and predict how customers will respond to price changes, before you execute pricing strategies in the market. Spreadsheet approaches simply aren't up to managing the complexity inherent in most manufacturers' businesses.

Perhaps of more strategic significance is that they can't connect pricing and capacity decisions to generate even higher profits. Only predictive price and profit optimization models can bridge this gap, while tackling the complexities.

Other approaches to pricing and capacity include an inventory-based mechanism where a drop or a rise in inventory can shape pricing and capacity-allocation decisions. The companies using this approach are often challenged by inventory states that fail to translate into pricing or capacity actions. Inventory states, or sold positions as they are sometimes called, are often susceptible to bad data either through an erroneous forecast or assumptions made during the calculation of a sold position. This could take place when a company is entering a high-demand season from a low-demand season. During such a time, sold positions are generally weak and hence it might lower the price of a product in high demand. This would harm the company's profitability and potentially hurt the market, in essence, devaluing the product in high demand.

Rather, pricing signals should be derived from the market through the use of transaction data. Sold positions can be potentially added as a strategy-driven input, but not as a priority over other signals from the market.

STOP THINKING OF PRICE AND CAPACITY AS DISCRETE DECISIONS

When manufacturers receive an order, the typical question is: What is the least-cost way to make this? While that is a valid question, it's only half of the question they should be asking, which is: What is the cheapest way to make this and what is the maximum price we can get?

A focus on price and cost at the same time is how companies can maximize profitability. To widen the gap between price and cost, capacity decisions need to be price-aware. Let's take a look at how profit optimization works.

Assuming you have a reasonably accurate demand forecast, a predictive price optimization model can determine the price a certain demand will generate from the market. The profit optimization model then enables you to prioritize the assignment of a manufacturing facility to the demand with the highest probability of being realized, ensuring that the supply network operates at their highest profitability.



This profit optimization model also enables manufacturers to optimize several strategic and tactical decisions, not previously possible, including:

- Which is the most cost effective manufacturing facility(s) for satisfying large customers?
- Which manufacturing facility(s) needs additional capacity?
- How does the increase in freight cost (due to volatile oil prices) affect the profitability?
- Which manufacturing facility(s) needs to satisfy a certain seasonal demand?
- Which manufacturing facilities have met maximum/minimum optimal capacity this quarter?
- What are the preferred transportation modes in a certain region or for a certain customer?
- What is the cascading result of the network when making a strategic move for a facility?

The model also highlights critical information to help managers plan for important decisions in the future.

- First, the model's ability to demonstrate the cost savings by adding a certain capability in a manufacturing facility allows for strategic facility design decisions to be made three to four quarters in the future.
- Second, the model can determine which manufacturing facility is best to act as back-up to another facility, as it is sometimes cost effective to manufacture at one site and deliver it to the customer from another site.
- The third advantage of the model is the ability to determine alternate facilities in the event of a natural disaster or unforeseen downtime.
- Lastly, it highlights the cost-to-serve elements if a certain customer requires its product to be made in a facility.

An important aspect of this approach is ensuring you have a data-informed solution rather than a data-driven solution. Data-driven solutions often fail to identify outliers without human intervention. This leads to improper signals and hence poor pricing and capacity-allocation decisions.

Data-informed solutions, on the other hand, are powered by the availability of data and when proper human strategy and outlier control are applied, they lead to a more stable solution which eventually drives profitability. Likened to the human brain, data-informed solutions use both the left and right brain to make an informed decision, while a data-driven solution is equivalent to a solution using only the left brain.

In the best case, your approach should include “experts and equations,” or man and machine, working together with the available data to produce a data-informed decision that drives profitability.

By thinking holistically about maximizing profits, manufacturers have a tremendous opportunity to not only enable better day-to-day decisions, but transform how strategic decisions are made as well. The cost savings and profit potential are huge. In fact, one Zilliant customer estimates an additional \$2.7 million in profits each month as a result of this approach.

To speak with an expert, visit www.zilliant.com