Operations and supply chain management

Barilla SpA (Barilla) recognises that inefficiencies in its supply chain are “ placing a growing burden” on manufacturing and distribution. “ Just-in-Time-Distribution” (JITD), the solution proposed by the prior and current logistics managers, is an attempt to stabilise the demand fluctuations at the root of the supply chain problem but is being strenuously resisted by customers and by the company’s own sales force. The challenges facing Barilla are much broader than the obvious “ demand” distortions in the supply chain. The proposed solution fails to address core misalignments from manufacturing plants to distribution centres to retail shelves. The company needs to radically revise its approach to improving its logistics, but the JITD proposal fails to provide the required strategy alignment and the needed implementation excellence.

I. Background

Barilla has supply chain problems in all core areas: the product and SKU’s are over -diversified, creating manufacturing complexity. The company’s promotions and the way it incentivizes its sales force distort demand and sales figures. Distributor order batching, poor forecasting, and gaming contribute to demand fluctuations. The transportation system is complex and expensive. And finally, there is little to no use of technology and data to understand customer behavior and to manage the supply chain.~

For the purpose of this discussion we are focusing on the dry pasta business, the main source of sales and profits.

II. Problems and Potential Solutions

1. Product and SKU over-diversity

There are 200 pasta shapes and sizes, sold in over 470 different packaged SKU’s. Popular pasta products are offered in a variety of packaging options with different motifs for different regions. Barilla sees packaging variety and customisation as part of its value differentiation.

Since different pastas require different manufacturing techniques, the large number of products complicates the manufacturing process. Pasta is a functional product and Barilla is producing and distributing it as if it were an innovative one.

Barilla could rationalise its product set whilst retaining its value proposition since most of its retailers carry only one or two packaging options. Defining the optimal product mix for Barilla is not the purpose of this report but this complexity is a root cause of downstream issues.

2. Promotions and gaming by distributors

Barilla’s price promotions (canvass periods and volume discounts) encourage over- and under-ordering and gaming. Demand distortions feed back to manufacturing, creating supply issues. The supply chain participants are not aligned or cooperating; they have different objectives and incentives.

Barilla should align its sales strategy with JITD. Discounts should be used as a tool to reward transparency, predictability and accuracy and to discourage gaming. They should strive for smaller, more frequent batches and more regular resupply

3. Sales force incentive structure

Barilla pushes its sales representatives to meet sales targets during the canvas periods. The sales representatives are also allowed to offer volume discounts.

Sales force incentives contribute to sales volatility and misalignment with end demand.

Instead, Barilla should align its sales force incentives with the company's key objectives under JITD. For instance they should tie sales bonuses to stock-out rates and inventory levels, not just to units sold.

4. Distributor order batching and bad forecasting

The company has no sense of end retail demand. Barilla sees it as unpredictable distributor demand (actual consumer demand being masked by several intermediaries in the supply chain). There are obvious " bullwhip" effects. While end demand is relatively stable, order variability is quite large; variation in average weekly orders in some region reach over 600% with stockouts of 5-9% and inventory ranges from 0 to more than 5 days (Exhibit 12 and 13). Most distributors use a periodic-review inventory system, placing orders when levels fall below a certain trigger, and time the system by using the discount windows to order large batches.

The company must enlist the supply chain partners' acceptance and advocacy by explaining the positive impact of the proposed changes on revenues, margins, customer service and satisfaction. It should use quantitative metrics to measure the improvements enjoyed by distributors and retailers from, for example, the reduced costs.

5. Distribution system complexity

Barilla's supply chain does not suit the product and needs to be made more efficient. Retail customers are not getting the product they want despite a total of nearly eight weeks of inventory across the system: one month at the Barilla CDCs, two weeks at the distributors, and 10-12 days at the supermarkets. The excess inventory in the system does not buffer demand changes and is a symptom of inefficiencies.

Barilla has scale and should be operating a much more tightly controlled system. The company should eliminate distributors and CDCs and should supply directly to the supermarkets. Barilla will then better control supplies and data, and enjoy cost savings and higher margins due to decreased inventory levels. In the diagram in Exhibit 8, the Barilla-run depots could either be eliminated or integrated within the Barilla CDC.

6. Manufacturing complexity

Barilla needs to rationalise its manufacturing process. The company must collect data on end customer demand and winnow down its product set first before assuming that distributor demand reflects customer demand.

7. Sub-optimal use of technology

Barilla's distributors have computer-based order management systems, but none of them have state of the art forecasting technologies or POS systems.

As part of its JITD implementation plan, Barilla should pilot the JITD in part of its system to stress test new technology, and to ensure pristine execution and successful future deployment across the full system.

8. Poor use of data

Barilla is not able to accurately model and forecast end demand. The structure and the low technology of its distribution channel limit Barilla's access to data.

Barilla should track macroeconomic variables associated with fluctuating pasta demand and co-ordinate them with actual data on consumer usage. They should share data with their distribution partners, customers and manufacturing plants. Barilla should then devise strategies that lead to smaller batches and more frequent resupply. As a result everyone will carry fewer inventories, uncertainty will be reduced and cash flows and margins will improve.

9. Transportation complexity and cost

Although two thirds of dry product is destined for supermarkets, the pasta travels from the Barilla plant to CDCs, then to two types of distributors, to Barilla-run depots and then to three retail customers. (Exhibit 8) For a simple product with a simple end customer – mostly dry pasta, mainly large supermarkets – the distribution architecture is overly complex. .

Once the demand and supply are managed smoothly, data becomes available, and the right technology is deployed, the company has an opportunity to adapt its transportation and truck usage to JITD, optimizing asset utilization and reducing overall costs.

III. Conclusion

The proposed solution JITD, while a step in the right direction (a standard fix for " bullwhip" effects), will not remedy all Barilla's problems and risks being

improperly prepared and poorly executed. While focusing the solution on dry products shipped to distributors bound for large supermarkets, (the majority of sales), makes sense, the manufacturing issues, the inefficient distribution architecture and the lack of data on end customer demand are not addressed.

Barilla needs to rethink their strategy and re-align their organisation around the new strategy. Barilla’s supply chain challenges are more far-reaching than simple demand distortions. Therefore JITD, Barilla’s cure for its self-diagnosed problem is incomplete. The company needs a more sweeping strategic reassessment of its business.