

An over view of the jitd program



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Diagnose the underlying causes of the difficulties that JITD program was created to solve. What are the benefits of this program?

The main reason behind the proposal of JITD program is to correct the demand fluctuations from Barilla's immediate distributors. The variation in demand is due to the " Bullwhip effect" where the variability in the demand increases as we move upstream in the supply chain. The primary reason for this effect is the absence of a central entity to match the capacity of the production and distribution chain with the customer demand. In the current mode of operation each vendor tries to minimize his variance which increases as we move up the supply chain leading to huge fluctuations at the production unit. The JITG program would be introduced to predict actual demand so that Barilla could attempt to produce the exact amount of products to meet customer's demands.

The demand variation is very high as we can see from Figure 5-3. Barilla is forced to frequently change its production so as to satisfy the demand fluctuation, because of the huge setup times involved in changing the production patterns. Hence either they left with high inventory at central distribution centers (CDCs) or low customer fill rate, both being unfavorable. High inventory increased the inventory holding cost while low customers fill rate lead to stock-out at the retails. Thus, we might have a situation where there was inventory of the product which was not in demand, while stock-out of those which were high in demand. Thus causing Barilla loses from both the ends. There are a number of factors that contribute to the large demand fluctuations as highlighted below.

Demand forecasting

An attractive policy used in practice by stage of the supply chain is the periodic review where the inventory is characterized by a single parameter, the base-stock level. The base-stock level is typically set equal to the average demand during lead time and review period. The latter quantity is referred to as safety stock. Since safety stock, as well as the base-stock level, strongly depends on these estimates, the user is forced to change order quantities, thus increasing variability.

Distributors place orders to Barilla based on retailer's orders and space available in their warehouses to stock inventory. Consequently, distributors might experience stockout or might overstock their inventory due to lack of anticipation of real demand. Also, Barilla and its distributors suffer a high cost in distribution channels caused also by the lack of forecasting and poor inventory management. The unawareness of the real demand causes distributors to overstock their inventory and that raises the cost of distribution. Nearly all of the distributors had computer-supported ordering systems, but few had forecasting systems or sophisticated analytical tools for determining ordering quantity. While forecasting is not accurate, it would, at least, show when certain pasta is extremely popular due to a holiday or highlight if demand varies or generally remains steady.

Lead time

With longer lead times; a small change in the estimate of demand variability implies a significant change in safety stock and base-stock level, leading to a significant change in order quantities. This, of course, leads to an increase in variability. The long lead times that it takes for Barilla to fulfill an order from <https://assignbuster.com/an-over-view-of-the-jtd-program/>

the distributor, which was usually between 8 and 14 days from when the order is received. Due to the nature of the tunnel kiln in the pasta-making process, it is impossible for Barilla to change the order of the pasta production to quickly fill an order of sold out pasta.

Batch ordering

If the retailer uses batch ordering, as happens when using a (Q, R) inventory policy or a min-max policy, then the wholesaler will observe a large order, followed by several periods of no orders, followed by another large order and so on. Thus, the wholesaler sees a distorted and highly variable pattern of orders. Barilla divided each year into 10 to 12 “ canvass” periods, typically four to five weeks in length, each corresponding to a promotional program. During any canvass period, a Barilla distributor could buy as many products as desired to meet current and future needs. Barilla also offered volume discounts. For example, Barilla paid for transportation, thus providing incentives of 2 to 3 percent for orders in full truckload quantities.

Price fluctuation

Frequent use of promotions may lead to an increase in demand at lower prices, which is accompanied by a larger increase in production and labor costs.

Other factors

The sheer amount of stockkeeping units (SKU) lead to a much more complex system than just trying to gauge how much one type of pasta is sold. Being able to anticipate the demand for all of Barilla’s 800 different “ dry” good SKU’s is absolutely impossible without a robust forecasting system.

Besides that, the compensation system in place at Barilla for Sales representatives, made them to push more products into the pipeline during promotional periods and not able to sell sufficient quantities during non promotional periods created wide variation in demand patterns.

The JITD program is designed to help Barilla be more efficient in executing its operations and better serve its customers. JITD would be an efficient forecasting tool to predict the real demand of the end-consumer. Barilla will require its distributors to provide daily sales data so Barilla could utilize the data to anticipate future demand and arrange production schedule accordingly. JITD will also minimize the lead-time as manufacturing would be only one step behind the end-customer's demand and Barilla would be able to steadily make the pasta necessary to fulfill orders, "no more, no less." In addition, JITD will help reduce the costs associated with distribution channels such as distribution costs, inventory costs and manufacturing costs.

Distributors would not stock their inventory with Barilla products that exceed the real demand. Thus, the JITD program would help Barilla's partners reduce distribution costs and allow them to be more efficient. The project also might help improve Barilla's relationship with its partners, as Barilla won't exert pressure on distributors to hold more finished products than necessary. The implementation of the program will eventually improve the planning procedures for Barilla and enable the coordination of manufacturing and distribution systems and strategies.

On the other hand, the JITD program will not be implemented without costs to Barilla. Although it is expected to highly benefit Barilla, JITD program would be costly to implement. Barilla would be responsible to provide its

distributors with the technology needed to report daily sales. Moreover, it might not be possible for some retailers to report daily sales because their stores are not equipped with point-of-sale technology that captures sales data. Also, distributors might need to hire new employees in order to be able to prepare sales reports. In addition, implementing JITD means that Barilla would do the work for its distributors. This might cause a conflict with some partners as some distributors would not accept others to intervene with their internal processes.

What conflicts or barriers internal to Barilla does the JITD program create? What causes these conflicts?

In order to implement JITD, Barilla will need to gain acceptance from the different internal bodies that make up its distribution framework. There are several internal departments that are affected by switching to JITD.

Firstly, Barilla's sales and marketing department would be greatly affected by the move. Barilla's sales representatives spend an estimated 90 percent of their time working with distributors and helping them place weekly orders and incorporating promotions and discounts into their selling strategies as well as settling problems such as returns and deletions associated with the last delivery. Therefore, the sales representatives argue that if JITD system is implemented, this would eliminate most of their responsibilities. Also, the sales representatives are most likely receiving much of their compensation through commission on their sales since incentives were based on achieving the sales target set. The JITD system would put a great strain on commission because the sales representatives will be unable to push Barilla's products to the distributors. Not only does the sales staff have to worry about diminished

responsibility and compensation, but a JITD system may threaten their job security.

The marketing of promotions is also part of Barilla that would be affected by this new process. Much of Barilla's sales come as a result of trade promotions and discounts given to distributors as an incentive to purchase larger amounts of Barilla's products. If the JITD system is implemented, distributors will no longer be able to take advantage of volume discounts and other promotions because Barilla will decide the amount of product purchased by the distributors.

Another concern within Barilla was that a JITD system would leave empty space at distributors' warehouses that could be filled with products from Barilla's competitors, that is, when inventories of Barilla's product decrease, there's a risk of giving their competitors more distributor's shelf space. There are also worries that if a distributor is overstocked with a competitor's product, then the distributor will push the competition's product to markets and supermarkets in order to lighten its inventory. There is also an increase in risk of having customers stock out of Barilla's product if there is any disruption such as strike or machine failure, in the supply process because there is no extra inventory carried.

The steep number of SKU's that Barilla deals with is also a contributing factor. It will be a very complicated adjustment to change the distribution protocol of 800-dry product SKU's. Nevertheless, it can also be argued that Barilla is the only company that could correctly and accountably be able to

create a robust forecasting system that would include it's wide variety of SKU's and pasta.

One of the managers of Barilla's largest distributor stated in retaliation to the JITD system that Barilla could get their orders out to the distributors faster – within 36 hours. Currently it takes 8-14 days for Barilla to complete an order. The internal distribution process is extremely time consuming as it is and adding the JITD system might only prolong the process with little to show to the distributors.

As one of Barilla's customers, what would your response to JITD be? Why?

From retailer's perspective, the JITD proposal offers both advantages and disadvantages. First off, the primary challenge being faced by most retailers is the over and/or under stocking of Barilla products during any given period. With a JITD program in place, more frequent deliveries from the distributor are possible, resulting in an overall store inventory reduction. Therefore, instead of keeping a two-week supply of pasta products retailers could reduce their inventory overhead quite significantly; thus, reducing their own costs.

Another advantage that JITD provides is the management of product promotions. Under the current system, retailers are forced to carry more inventories of promotional products as different product categories are offered during different canvass periods. Preferably, with JITD in place, Barilla would determine how much promotional products the retailers would carry, thus alleviating the stress of being overstocked.

Finally, retailers will also benefit from the inventory tracking put in place through JITD. Most retailers do not use any tracking such as Radio Frequency Identification Device (RFID) or barcode and rely on manual counting of inventory and shelf space. Using JITD will help these retailers understand their selling patterns as it eradicate some of the demand estimation up the supply chain, which will eliminate the need for tedious forecasting.

As a customer of Barilla, one of the biggest concerns would be allowing Barilla to control all forecasting and supplying of its products. All of Barilla's customers would need to ignore all previous forecasting measures and blindly trust Barilla's ability to keep the stores stocked at a proper level. This may obviously lead to certain problems, including being over-stocked or under-stocked at times. While being overstocked is merely a question of the cost of unnecessary storage, a retailer being under-stocked can lead to losing customers to its competitor.

Overall, the advantages outweigh the disadvantages for a retailer, because more frequent deliveries from their distributor outweigh the risk of being under-stocked.

For Barilla's JITD system to be implemented, retailers must make the decision to trust Barilla and Barilla's new distribution structure. If retailers can get over the fact that this new system will inherently mitigate their responsibilities, then JITD could be advantageous for both Barilla and its retailer's customers.