The Realco Bread Master and Supply-Chain Challenges in Post-Earthquake Japan

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The Realco Bread Master

The firm's efficient functioning mainly depends on factors that directly impact the company's performance and the final results. Due to the complexity of the business environment brought on by globalization, investors face difficult obstacles in trying to stay competitive by gradually upgrading their management and equipment. To ensure the proper approach is chosen, the suggested procedure also presupposes the employment of the most efficient management strategies and technologies. The supply chain is receiving more attention because it is a crucial factor determining whether a company succeeds or fails. To manage the delivery of goods and services in this industry, the supply chain department must coordinate with all parties involved in the supply, including customers, suppliers, and manufacturers. Supply chain specialists must have strong organizational and decision-making skills and a thorough understanding of supply, including procurement, ordering, transportation, stock control, and service management, to promote effective and efficient production. Professionals working in the supply chain should identify problems and create solutions.

With this in mind, this article examines two different use cases: the production of bread by Realco and the difficulties in post-earthquake Japan. This book's twelve chapters expose us to supply chain management and other company operations, according to Robert Hanfield and Cecil Bozarth. The founder, Mr. Johnny Chang, is a rising businessman in the bread machine sector. The company has seen significant success since it was introduced two years ago, thanks to the bread machine's structures and the company's economic valuation. Despite his happiness with the company's performance, Mr. Chang worries about his legal obligations because of the company's seeming significant excess of inventory and shoddy production schedule activities. Answering the following questions is required:

Setting up essential production procedures for scheduling for project managers may be challenging. Production capacity, customer demand, supplier capabilities, finished designs, and cash flow are crucial factors in process planning because they work together to produce an effective production process subject to changes based on external circumstances. To help achieve the required output levels and enhance an effective production process, Realco Bread Master may consider developing a master production schedule plan and sales operational strategy (Serrano-Ruize et al., 2021). The main goal of this plan is to boost the organization's productivity and profitability by accommodating

customer requests and making required adjustments to production schedules. The master production schedule provides a general overview of what will be established, in what quantities, and when. The Realco corporation will use the master production plan (MPS) to specify the details of planning activities, including the planning of raw material requirements. Without calculating the starting stock and the projected sales for a particular end item, Realco would not be able to meet the demands of its clients efficiently. The company will use MPS to calculate the opening inventory and sales. Because capacity restrictions and inaccurate projections can increase the variability of the planning process, dealing with multiple products makes this calculation more challenging (Song et al., 2020). Based on the company's present situation and the data provided, MPS suggests the Bread Master product line.

REALCO BREADMASTER PRODUCTION SCHEDULE								
Inventory at hand	7,000							
Realco Beadmaker								
Week	1	2	3	4	5	6	7	8
Forecasted Demand for every week	20000	20000	20000	20000	20000	20000	20000	20000
Booked Orders	23500	23000	21500	15050	13600	11500	5400	1800
Ending Inventory	3500	3000	1500	-1500	-1500	-1500	-1500	-1500
Master Production Schedule	20000		20000	20000	20000	20000	20000	20000
Available to Promise	0.5		3.45		14.9		32.8	

The figures unequivocally show that there is too much inventory in comparison to customer demand. This plan would be quite beneficial, and the data it provides might be highly accurate in addressing the growing need. Additionally, it may be argued that Realco didn't make any unwarranted promises.

The quantity of production has been adjusted in line with and unbelievably accurately throughout the whole manufacturing process since calculations of the master production schedule reveal that the inventory generated surpasses the demand.

Jack's Approach

Jack's method of fulfilling orders for Realco's customers may have a surplus portfolio and a danger of undesirable assets, but it has helped to enhance operational procedures. Insufficient properties force customers to wait until production meets current obligations, while excess inventory is to blame for the rise in corporate stock holding prices. If Realco cannot transfer the products by the deadline, these comparable clients may cancel their orders and conduct business elsewhere. Jack should be commended for his confidence that he can develop a product that would satisfy market wants. He has shown a lot of faith in the numbers and data that his master production schedule anticipates. Concerns still exist over the product's effectiveness and the manufacturing procedure. The following are Jack's strategy's advantages and disadvantages.

Advantages

Jack's strategy would support efficient demand planning, just as production management MPS would support predicting upcoming consumer demand. Effective product development, optimization, and demand monitoring would be the responsibility of the manufacturers. It would be possible to gain a deeper grasp of the present and forthcoming production runs using manufacturing ERP. The plan would also aid in the optimization of material capacity (Song et al., 2020). The company will be able to maintain perfect stock levels since MPS will assist in identifying the components and materials required to make goods, simply preventing stock-outs. By using MPS to provide a thorough picture of your production demands, you can evaluate and maximize your materials' capacity to produce the required amounts of inventory. Because manufacturers must create a specified number of units within a specific time frame, MPS aids in resource capacity planning. With an influential planned MPS, resources must be carefully chosen and deployed. The human resources department can predict the number of workers needed on the assembly line and shop floor well before production. The plan would also aid in doing preventative maintenance (Parente et al., 2020). With a robust procurement system, manufacturers need to know how much production is being done and how much will be required in the future. You can perform predictive maintenance effectively if you have access to this information beforehand. It is essential to efficient production and cannot be avoided.

Disadvantage

However, Jack's strategy has significant drawbacks in addition to its advantages. The method is complicated, which hurts smaller firms. It takes some time to delve into the operation's specifics

because many aspects influence production scheduling and production scheduling software. When scheduling involves a lot of effort for the person in charge of production scheduling, keeping track of your production workers is essential (Parente et al., 2020). Numerous aspects must be attended to when utilizing the software. Additionally, a substantial inventory would be left on the warehouse's shelves if the suppliers did not place the quantity indicated in the forecast due to unfavourable or other unforeseen circumstances. The things would stay there for a long time without being purchased, which would cause the company to incur a significant financial loss.

How would formal master scheduling improve this process

The company will employ master production scheduling to enhance the manufacturing process, and data analysis will aid in improving production accuracy by projecting an accurate production number through tracking. Customers' actual orders would be contrasted with the manufactured inventory sold. In this case, a planned reception in the master production schedule, or MPS, would be helpful. These receipts are planned receipts from earlier calculations and periods that are scheduled. As a result, it is currently a production order with particular content that has been given the status of "sure." Furthermore, effective master scheduling would guarantee that the product is supplied per the planned timeline.

Organizational changes

To enhance an effective production process through the implementation of MPS, there is a need to conduct organizational change. The firm should advance its processes and technologies through the use of MPS, and the firm can track its demand flow, which would aid in determining the techniques that would be used to improve the technology and process used for production. The firm should focus on automating its production processes (Goksoy, 2015). There has been no training for staff; hence, Jack should consider introducing a training program for his staff to optimize the production process and minimize resource wastage. When new equipment is installed, training sessions should be scheduled for the team so they may gain access to new skills, and the organization should be on the lookout for any retraining or refresher course requirements. The position of the production manager should also change, including responsibilities like inventory control and production scheduling. Instead of using the standard method of determining the inventory forecast to be generated within the allowed time limits, a change in the role can be achieved by utilizing the Kanban system following formal MPS (Goksoy, 2015). Additional structural responsibilities that would come with the Kanban system could only be met with careful preparation. The production manager would then assign the other duties so they could use the new system to investigate and conduct a more thorough analysis of the data.

The impact of refusing a customer's order because of lack of supply of the product versus accepting the order and failing to deliver

In the corporate business world, status and word of mouth can help build or destroy customer relationships, adversely affecting the company's reputation. Every firm desires to establish a good relationship with its customers by meeting their needs efficiently and effectively. A firm meets customers' needs by meeting their orders at a given time. When a customer makes an order, she expects it to be delivered within the specified time. No producer dreams of failing to meet customers' orders. Accepting an order and then not completing it as promised casts a negative light on the company and imperils any trust and reputation that have already been built. Such acts would result in customers losing trust in the firm, hence shifting to the other firms where their orders would be met without fail. Accepting an order and failing to fulfil it is a breach of contract that could subject the firm to legal action and require it to compensate the customers (Ojha et al., 2019). Such scenarios are a detrimental imprint on the downstream production of buyers.

On the other side, failing to fill client orders because of a supply shortage is also a bad sign because it would lead to Realco customers switching to other businesses. If you refuse to fill orders from clients because of inventory, the worst that may happen is that the buyer will discover the products from a rival, and you might lose your current clientele. However, in my opinion, it is far worse to give a customer a false guarantee that the product will be delivered than not to give them the appropriate inventory in the event of low stock. The company's philosophy is based on promptly giving clients the necessary goods (Ojha et al., 2019). Hence, a real MPS gives your company access to the production, planning, purchasing, and top management data you require for the planning and control of your manufacturing operations. Nothing in life can be attained, though.

Describe the impact on average inventory levels and production if Realco produces 20,000 breadmakers every week rather than 40,000 every other week.

The manager has been completing customer requests since he is getting ready for an event in three weeks, and Realco's success depends on the inventory. Realco cannot accept new orders because of the supply on hand or in the event that an Emergence cannot meet the current demand. He is currently converting to a bimonthly 40,000 units, which reduces the shortage and allows him to fulfil all pending orders, but there will be a lot of excess inventory.

Chapter 13: supply-chain challenges in post-earthquake Japan

Merits and demerits of the supply chain used in the Japanese auto industry before the March 11, 2011 earthquake and Tsunami

The effective provision and supply chain of auto parts and the production of vehicles like Toyota have made the Japanese auto industry well-known worldwide (Smith, 2019). Just in time (JIT) supply chain technology, which involves moving items just before they are needed in the production process, was being used by the company before the earthquake. By arranging for suppliers to deliver raw materials when needed, JIT enables companies to lower costs (Canis, 2011). One advantage of this strategy was that it assisted the Japanese auto industry in decreasing waste by aiming to get rid of surplus inventory and overstocking. A company can considerably lower the risk of goods remaining unsold or underused by maintaining low stock levels.

The JIT technique also contributes to increasing and improving efficiency by reducing the time and resources required for production, as seen in the Japanese auto industry. This guarantees quicker manufacturing runs and faster output. JIT inventory management eliminates product failures and automates procedures, which helps to eliminate bottlenecks and delays throughout the manufacturing cycle (Monden, 2011). On-time delivery is made possible by shorter production cycles, which boosts customer satisfaction. Your production runs will start and end in time for delivery thanks to JIT production scheduling, which guarantees that jobs are planned just when required, as seen in Japanese automakers.

However, the JIT inventory management method had drawbacks, such as the potential for inventory shortages. One does not need to carry a lot of stock while using the JIT manufacturing process because stock is based on demand projections (Monden, 2011). If those are wrong, your consumers won’t have access to the proper amount of product. One of the most common issues with products that employ methods like JIT and lean is this. Since JIT relies heavily on its suppliers, manufacturing and the delivery of your clients’ orders may be delayed. Failure to satisfy customers negatively impacts the business, such as losing clients to rivals.

Evaluate whether Toyota’s plan for a “foolproof” supply chain is consistent with the Lean production

philosophy

The goal of lean production is to reduce waste that does not provide customers with additional value. Due to the devastation caused by the earthquake in Japan, the Japanese automaker Toyota was forced to reduce the loss of output by implementing a safety net like a foolproof plan (Arto et al., 2015). Such strategies strongly emphasize quality manufacturing while utilizing a lean production mindset. There aren't many instances of quality faults in the lean supply chain, which makes the goal of zero defects more important for Lean (Jasti & Kodali, 2015). The Toyota industry used lean production to raise the caliber of its goods and recognized the importance of demanding excellence at all levels of a business's organizational structure, whether it pertains to procedures, informed and skilled workers, or sophisticated equipment.

The Toyota industry has identified faulty processes through the lean concept and the requirement for corrective actions to solve the manpower crisis in Japan due to the earthquake and tsunami disasters. The primary goal of the lean philosophy is inventory waste management, which may be quite difficult given the difficulties that the Japanese faced in recovering some of their automotive stability by guaranteeing an inventory excess within their infrastructure (Ohno & Bodek, 2019). Quality is frequently thought of as the cornerstone of a devoted customer base. Because of the industry's true significance to its customers, they made sure that the lean concepts were applied throughout their operations after the tragedy and took action to address any departures from the criteria set by the customers (Gao & Low, 2014). The heart of lean concepts, the monitoring of waste in the inventory process, runs counter to what the Japanese were doing to restore the reliability of their automotive goods.

Recommendation and plan for the supply chain strategy for Toyota

Toyota could use some innovation in some areas, despite possessing one of the largest supply chains in the global car industry. The strategy Toyota could use to make the most of its supply network is suggested in this section.

1. Toyota should aim at allocating network strategies that are vital to supply chain effectiveness and success. The networking strategies may help maintain a smooth flow of information between the firm and the suppliers. The plan will help place and track orders to prevent scenarios where clients' orders may be delayed.
2. Toyota innovators should promote and reward creativity for raising their products' caliber. Promoting employee competition by promoting ingenuity is one approach to achieving this goal.
3. The business should reduce the time it takes to move products by using "milk routes," which can help. The business can also profit from efficient factory-wide coordination. The company may reduce the required time by developing appropriate communication channels that improve

process synchronization.

4. The business should prioritize cost reduction, particularly in the purchasing process. Toyota must ensure it adopts single sourcing, enabling companies to have solid relationships with distributors. Operations are thus made simpler to manage, and expenses are reduced. Additionally, using cutting-edge technologies would help to reduce production costs.

Impact of Toyota's supply chain plan on relationship management

Without first establishing strong internal relationships, Toyota cannot develop positive external relationships. Manufacturing and distribution involve more than just communication; they also involve marching in unison. The activities of sales and marketing must be integrated with those of distribution and manufacturing. Senior management must advise subordinate officers on what they can do to support strategies and involve the supply chain organization in the strategic information loop. The organization must collaborate across all divisions on planning and problem-solving for this to be successful.

Additionally, many times, the supply chain fails to consider the service providers, such as consultants. The Toyota supply plan aims at establishing a good relationship with the service providers to enhance a smooth and effective supply chain process. A successful partnership is required for the efficient usage of LSPs. Effective communication is essential, beginning with the selection and evaluation procedures. For procedures to function and to effectively address issues that inevitably arise, multilevel working ties between both businesses are crucial.

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