General Mills India

Presents

SC Innovate – Case Study Competition

Round - 1
Case Study

Mr. A who was leading the Supply chain Hub of X Food Company having his final Gasp of Black coffee at lounge in the Head Quarters before presenting his Team Achievements in the Financial year to Mr. B who has been newly appointed as the VP – Supply chain Operational excellence. It was Monday June 5th, 2023, and the two were meeting in the conference hall at the company's head office to review the annual performance on how the things went in the past year, the number of capabilities developed, how the team grown and the places where the attention needed to address.

Mr. A: It looks like we have been improved from the 100 capabilities to 120+ in 2023, having HMM savings of 1 billion dollar and we are growing at a rapid rate of 25% y-o-y for at least next 5 years. To support this level of growth, we will need to examine our Logistics Planning Strategy for Raw materials which has been Achilles heel in our growth strategy.

Mr. B: Excellent!! X Food company have done a good job improving our working capital Utilization. But still there is a need to revamp and automate the processes in our Supply chain to make the process more efficient and effective. So currently, we are facing service level issues along the organization due to delays and unpredicted demands. The trend has been much higher since the covid, so there is a need to bring this service levels to an extent where we are at pre covid levels. I would like you to start reviewing the Logistics Performance of how we are doing and where we are sitting back and improve upon that.

Mr. A: The Logistics team is doing great, in terms of the delivery and fulfilment. but the concern is regarding the availability and delays in the supply of raw materials to plant locations and visibility of the safety days of a PO to be Delivered, which is affecting the logistics planning and handling the unexpected Uncertainties.

Mr. B: Yes, I agree on that. The problem is persisted in the organization for a couple of years. I think it's the time we build up a capability where we have the visibility of raw materials and a tool to calculate the safety Days needed to encounter the uncertainties faced by the Logistics Team.

About X Food Company:

The X food Company has been pioneering in the Food industry for last 30 years. They started with the flour and expanded their portfolio to cereals, snacks, morning foods, baking solutions, ice creams etc. Since its beginnings 30 years ago, X food Company has always been ahead of the curve when it comes to serving with purpose and known for quality and Innovation.

Supply Chain:

Supply Chain is the backbone of the X food Company and company performance is directly or indirectly impacted with the SC performance. To keep the Standards high in Supply Chain, X food Company buy ingredients to make products, design capabilities and equipment, create and package food and distribute the products with the help of large global Supplier Base.

Sourcing: Sourcing is the "buying organization." X food Company source all the raw materials, and many of the services that they use daily. this function has deep expertise in things like contract negotiation, risk management, cost reduction and supplier relationship management. The goal of our function is to more strategically source ingredients and services around the world to drive down cost, uphold the quality of the products and improve service rates to the customers.

Currently, X food manufacturing have 10+ Manufacturing facilities all over the world and has a extensive supplier network who provides the Ingredients and Materials to ensure the smooth run of operations across the 6 continents. Total POs filed annually are around couple of lakhs and values around billion Dollars.

Material requirements Planning (MRP): It is a production planning and Inventory Controlled System, which is concerned with both production scheduling and Inventory Control, that attempts to keep adequate inventory levels to assure that required materials, components, and products for planned production are available when needed and to maintain the lowest possible level of inventory.

Material Planning refers to the ordering and management of materials to ensure the execution of production Schedule.

Master Production Schedule Accuracy: Accurate Schedules and rates enable planning for the right amount of ingredients to arrive at the right time.

Accurate MRP parameters: Accurate lead times, lot sizes, Safety stock and other Item specific attributes.

Critical Material Planning:

Company Owned ERP generates planned orders and transmits purchase orders to Suppliers. The material type will allow raw materials to be considered during scenario modelling. this material type will eventually support the new inventory Target Setting capability.

Purchase Requisition: Recommendation on order timing and Quantity; generated by the planning system to maintain supply of a material to support production, adhering to all parameters input into the system can be manually adjusted, if needed.

Purchase Order (PO): Once a PR is finalized, it is converted to a Purchase order, which is the official order timing and quantity that is sent to the Supplier as a request for goods.

The process of submitting a request for goods or services including reviews, approvals, and purchasing documentation sent to the supplier through authorized purchasing channels. This is

important because it enables transactional execution of a category strategy increasing the organization's ability to realize savings from negotiated contracts.

VMI (Vendor Managed Inventory) - Inventory management process where the traditional ordering model is eliminated, and the vendor has the right and responsibility to make stock replenishment decisions based on agreed targets and regular automatic inventory and/or sales data from buyer.

Third Party manufacturer Plant is an External Supply Chain site that manufactures a finished or semi-finished product for X food Manufacturer and purchase that product via Production Orders (also known as Co-Packer, Co-Manufacturer, Supplier).

Safety Days: is the buffer days maintained at any location for a material to protect against production/demand fluctuations on key materials.
This component of inventory is over and above the cycle stock which is needed to meet production requirements.

Warehouse Space Estimate: This is an analysis that is used whenever a X food manufacturing plant is constrained for raw material space and needs an external warehouse to store the raw materials.

The weekly capacity space utilization report helps us understand if there will be a space constraint at a plant soon.

Based on this report, we then do an analysis that provides:
1) How many pallets of additional space is needed
2) Which are the materials that need to move to the new NPW.

The **Raw Material Network** is made up of the raw materials (RMs) purchased by X food manufacturing for use in the production of SEMI, BULK and FINI products, and includes the locations where RMs are stored.

The **Raw Material Warehouse Network** consists of warehouse locations where company stores purchased RMs. This includes raw material warehouses, near plant warehouses (NPW), temporary overflow locations and Supplier's purchased managed warehouse (PMW)/Bill & Hold locations.

Current Structure:

The past few days had been a whirlwind with lot of reviews and presentations at HQ to Mr. A, and finally he reached India and having a word with his Logistics Manager Mr. C on developing the capability for safety days calculation and, making it interactive, Infographic and easy to use.

Mr. C: Safety time is a field in SAP that is used by the plants to absorb the delays from the supplier. Safety time is essential in transportation and logistics planning to consider potential delays in shipping, customs clearance, or other transportation-related issues. By factoring in safety time, logistics teams can ensure timely arrival of raw materials before the production.
However, more safety time value mean, if the orders are delivered on time, the inventory will be sitting in the warehouse occupying space.

Overall, incorporating safety time in SAP processes improves operational efficiency, reduces the risk of disruptions, enhances customer satisfaction, and allows businesses to better handle uncertainties

in their supply chains and operations. However, it's essential to strike a balance while setting safety times, as excessive safety time may lead to underutilization of resources and increased inventory costs. Regular monitoring and adjustment of safety times based on historical data and performance metrics are necessary for optimal results.

Problem Statement:

Supply chains are vulnerable to a variety of dangers, and it may not be clear where to retain safety stocks to mitigate those risks while maintaining a high level of customer service.

The topic of safety stock is traditionally mentioned more frequently under independent demand than dependent demand in MRP. The safety stock in MRP becomes significant as SCM develops.

Mr. C and his team is trying to Capture and optimize the Safety Times and Inventory Levels of raw materials to reduce the working capital requirements without affecting the service level to its distributors.

Material requirements planning (MRP) uses the relationship between the demand for the final product and the materials used in the production to create production schedule that leads to inventory reduction. Currently the team is trying to optimize the process that will minimize the cost of purchasing orders when there is material stock and looking for optimizing inventory levels of raw materials at manufacturing locations without affecting production requirements and impacting service level issues. They are contemplating on various measures like:

Review the current Raw material Inventory Levels.

Ignoring service level for Tail end.

Deliverables:

Simulate or Recommend the Safety days calculations to improve the operational efficiency and reduce time consumed.

How the Safety time is affected for Different categories considering the volume and Shelf life of each Ingredient based on various modes of Transport, origin of shipment and how it can be regulated.

What is the Optimal Safety time X Food Manufacturing Company having to be maintained with respect to Cost and space.

Devise in which cases safety time are preferred over safety stock.

Should there be different safety times to be maintained based on the Seasonality (winter vs non winter Months) basing on the Supplier location and manufacturer location.

Categories Key Aspects to Address

Current State	Overall assessment of Current Supply Structure
Identification of Addressable Issues	Identify key issues from all the challenges and possible impact on the Business Functions.
Solution Creation	Identify and design the solution incorporating various standpoints to have a detailed and comprehensive solution which solves the current problem (Hint)
Final recommendations and Implementation Strategy	Recommended solution(s) with associated benefits, risks/challenges, and potential mitigations steps for risks • Propose a to-be state solution that meets requirement of as many stakeholders as possible

Ensure to abide below Guidelines for your Submission:

The case study consists of a total of questions. Applicants will have to make a case for themselves by attempting the deliverables and share their responses.

1. In the form of a presentation (keynote, PowerPoint, word doc, or any format that suits them). We are open to creativity and new ideas.

2. You are encouraged to use Graphs, Charts, Tables to Strengthen your solution.

Kindly keep the following in mind while approaching the case study:

• Each solution must be backed by logical analysis and thorough research.

• Kindly mention the assumptions, considered if you make any, and include all Quantitative/Qualitative analysis you have performed to arrive at your recommendations.

• If you use any theories, kindly mention the names of the same.

• In case you make any references to any research papers, or studies, make sure you mention the source of the same.

• Irrespective of the format, please make sure that the solution is visually appealing as well as easy to understand.

• We highly encourage innovation, creativity and out-of-the-box thinking.

Submission Format:

Teams are required to prepare a XXXX for their Final solution. The files along with other Supporting Documentation can be submitted in the form of a .zip format file (50 mb). Files that exceeded this size will be disregarded.

Please name your submission file as “TeamName_College”