

MODULE 2

ROLE OF INVENTORY LOGISTICS

- Lesson 05 Supply, Demand and Operation Planning
- Lesson 06 Inventory Logistics
- Lesson 07 Inventory Management Techniques
- Lesson 08 Forecasting and Demand Planning

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SUPPLY, DEMAND AND OPERATION PLANNING

Have you ever observed people having a coke or other beverages of cola company instead of plain drinking water with their meals or tiffin? Yes, the majority of the population enjoy the 'Real Magic' any time during, after, and between any two major meals in a day. Do you know the whereabouts of this product?

Cocco coldrink began its journey from being a manufacturer to distributor to retailer and finally providing the product to the end consumer. The concentric syrup is manufactured in its Atlanta manufacturing unit which is the company's headquarters, in North America. From here the syrup is sold to its bottling partners' like Cocco coldrink Enterprises and others who in turn sell them in North America and Canada. Usually, the bottler partners' send this syrup to manufacturing units where other ingredients like water and sweetener are then added, bottled, labelled, and then released into the markets. The Cocco coldrink Export Corporation (TCCEC) partners with the local distributors to meet the demand of the consumers. Thus, Cocco coldrink has been able to reach the largest markets in a very short span of time, and it is believed that the product reaches the consumer within 48 hours of its manufacture in any local region. The huge success of this company is attributed to its integrated logistics and inventory management techniques.



LEARNING OUTCOMES

After completing this lesson the Learner

- defines the meaning of sales and operations planning;
- states the objectives and features of S&OP;
- appraises the process of S& OP;
- evaluates the benefits of S& OP.

**Notes****5.1 MEANING OF SALES AND OPERATION PLANNING**

The business organization are engaged in save ralactivities from manufacturing products to serving the needs of the consumers. These activities are divided into small units known as departments which are entrusted with the performance of a fixed task. These departments perform these tasks in coordination with other unit departments to achieve the business objectives. For example, to satisfy the needs of the consumers, the business organization has meet the demand of the products through its supply. For this, organizations have to acquire /manufacture products, arrange financing and lastly sell the finished products to the consumers, for which manpower is recruited. Thus, the production department is entrusted with the job of producing products, the purchases department is entrusted with purchasing materials, the finance department arranges for payments and receipt of cash, the sales department is entrusted with the job of meeting the demand for the products by making available the right quantity of products, at the right price, at right time, to right people, at the right place (5 R's). The human resource department is entrusted to hire personnel to perform these activities.

5.2 INTEGRATION OF DEPARTMENTAL TASKS

Now, we understand that the overall activity of the organization is divided into specific jobs which are entrusted to departments. Even though the tasks of every department is different and specific, ultimately their outcomes contribute to the achievement of the organization's goal, that is rendering goods to the satisfaction of consumers. That means it is crucial to link the activities of departments for the efficient achievement of organizational goals. This linking is ensured by encouraging departments to perform their activities in collaboration with other departments. Marketing, sales, warehouse, inventory, and product design are significant supply drivers known as supply chain drivers. The management focuses on supply chain drivers to integrate supply to demand by developing Sales and Operation planning (S&OP).

Sales and Operation planning (S&OP) is a part of Integrated Business Planning, sales department collaborates with operational department and creates a single long-term production plan. Data relating to the actual performance of the departments are collected and compared for business financial performances and strategies.

Sales and Operation planning refers to developing a general plan within the broad frame of a business plan to control inventory flows, its costs and improve its service levels. Sales and Operation planning is a process of coordinating different departments to meet the needs of consumers with adequate quantities of supply.



INTEXT QUESTIONS 5.1

Match the department to the activities they are concerned about.

A (Department)	B (Activity)	
1. Business	(a) Hire Personnel	[]
2. Management	(b) Arrange finance	[]
3. Sales	(c) Serve the needs of consumers	[]
4. Human Resource	(d) Sell products - 5 R's	[]
5. Finance	(e) Integrate Supply to Demand	[]



Notes

5.3 COMPREHENSIVE APPROACH TO SALES AND OPERATIONS PLANNING

Sales and Operations planning is the process of developing monthly plans. Its goal is to facilitate the executive manager with the required information for making better decisions by dynamically connecting plans and strategies across the organization. S&OP helps in effective supply chain management by making optimum utilization of the organizational resources to better serve the needs of the consumers profitably.

In this globalized, digital era, the development of a dynamic, well connected, and backed by cloud-based technology approach to the S&OP process is essential.

Let us now explore a comprehensive approach to the Sales and Operations planning process.

To develop an effective S&OP process, six key phases are identified.



Fig. 5.1: Approach to S&OP Planning

**Notes**

Phase 1: Product Review

Phase 2: Demand Review

Phase 3: Supply Review

Phase 4: Finance Review

Phase 5: Pre S&OP

Phase 6: Executive S&OP

Phase 1: Product Review

This is the first phase where need-based products are developed. The Research and Development department analyzes the acceptance of the product in the market, its potential to compete with the already existing products as well as those which are in the pipeline for being launched in the market. The impact of introducing a new product on the already existing products in the market which is known as cannibalization or supersession is also discussed. After reviewing the reports of R&D department, the management decides on the date of introduction of new products, project prioritization, and resource allocations. This requires inputs from departments to evolve an appropriate S&OP to keep abreast of the fast-moving markets.

Phase 2: Demand Review

Demand for products is forecasted in this phase. Marketing strategies for the new products which are introduced in the market are reviewed. Consumer tastes and preferences, their incomes, along with product hierarchy, and product positioning are some of the factors that are kept in mind while reviewing the demand in the market for a product. The purpose of demand review is to arrive at a consensus demand plan which incorporates both dependent and independent demands. Consensus demand is evolved by combining sales, marketing, and product plans. Demand review leads to the next phase which is supply review.

Phase 3: Supply Review

A supply plan is developed in synchronization with the consensus demand plan developed in Phase 2. Supply is planned in such a manner as to bring about a balance between maximizing customer satisfaction and minimizing inventory and operational costs. During the supply review, organizational capacity concerning finance, operations, and materials is evaluated by concerned leaders. Constraints of people, machinery, and suppliers are resolved in the supply plan.

Phase 4: Finance Review

Financial commitments of various functional categories viz., product, location, customer, and channels of distribution are reviewed. Actual costs are compared with budgets and the accuracy of forecasting. Financial results of the previous month are consolidated and it is used as a baseline for analyzing the current month’s S&OP cycle. The interpretations and conceptions of financial review provide key inputs for pre-S&OP and executive S&OP.



Notes

Phase 5: Pre-S&OP

Series of meetings are organized with different levels of managers to educate them on the connectivity of plans across the products, demand, supply, and finance. The purpose is to identify gaps and disconnects and develop strategies to handle challenges that may emerge during implementation. To gain an understanding of the financial and operational implications of decisions, revenue, profits, and inventory are analyzed against those at the corporate level as well as product line level. Accordingly, real-time adjustments to product, demand and supply plans are made.

Phase 6: Executive S&OP

Any key issues not addressed in the Five Phases are addressed in this phase. Reasons for escalations are examined and decision deadlines are set. Finally, the objective of S&OP to evolve an aggregate plan is made in this phase. This aggregate plan is sent to various functional heads and in turn, distributed down the hierarchy to all concerned departments. Finally, after making necessary adjustments the consensus plan is approved.



INTEXT QUESTIONS 5.2

- 1. Write about S&OP.

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- 2. Judge whether the following statements are true or false.

- (a) S&OP refers to the adjustment of supply to market demand for a product. []

MODULE – 2

Role of Inventory Logistics



Notes

Supply, Demand and Operation Planning

- (b) S&OP reviews the performances of products, departments, and managers to better serve the customers. []
- (c) These days well connected cloud-based technology is essential for instating effective S&OP in the business. []
- (d) Sales and Operations planning is the process of developing yearly plans. []

5.4 OBJECTIVES OF S&OP

The objectives of the Sales and Operation planning processes are to

1. Forecast sales, marketing, finance, and operation.
2. Prepare an integrated plan.
3. Promote inter-department collaboration also known as cross-collaboration.
4. Facilitate management with market information and cross-functional information across the organization.
5. Facilitate comparison of results from one planning cycle with the next cycle
6. Match the supply of materials to the demand for products in a profitable manner.
7. Identify and resolve the gaps that creep into department/functional unit-level planning.

5.5 NEED FOR S&OP

Modern business organizations' functions are multifaceted and internally widespread. Each unit functions autonomously to achieve its targets efficiently. Here autonomously means, the unit as groups plans for resources, sets their timelines, determines their methods of job under the leadership of the department in charge popularly called the manager. Thus, there arises a need to coordinate these units, to meet the needs of the customer effectively. Coordination is ensured by developing a consensus business plan. Consensus between the planned activities of each specialized department is arrived at through scientifically developed processes. These processes are industry-specific and tailored to meet the individual business operations.

Yet another reason is that for ages planning is based on facts and forecasting. Application of statistical methods to the management function of planning evolved excellent outcomes. The current overwhelming growth in business operations

made the scope of statistical methods narrow. Because statistical forecasts largely depend on the algorithm and previous quantifiable data. They do not focus on the integration of departmental plans. Revenue projections, profits, and marketing events do not fall under the purview of traditional forecasting techniques. Collaboration of these key constituents is necessary for a business to have a competitive edge in the global market.

To fill this gap, the S&OP process is intelligently developed to help managers in a scientific, logical, and tech-friendly manner. S&OP aligns all departments involved in achieving a common goal by providing them with the same data as a base for developing their plan of action. It has built-in checks and balances to put an end to all excuses for non-compliance and drives accountability into every level of activity.



Notes

5.6 BENEFITS OF S&OP

CARTERS CASE STUDY

An inspiring example of how an S&OP platform solved supply chain issues is presented by Carters, a leading retailer of young children’s apparel in the United States and Canada. Using S&OP, Carters removed four to six days of inventory from its supply chain.

They initially began with supply planning but branched out into demand and capacity planning, eventually capitalizing upon the entire S&OP process. “We have seen an improvement in our ability to forecast capacity,” said Wade Latham, the Senior Director of Operations. In his words

“That should help lead to improved service levels, as well as the reduction of expediting expenses. To me, being able to look at demand and supply and the different components of supply and the status that they’re in - whether they’re in inventory, is it in process in the factory, is it in transit?

“Having that visibility into all of our products at one time in one view is very critical. That’s where you can start developing operational KPIs to evaluate inventory turn and look for opportunities to improve service levels. And we now have that ability that we did not have in an easy way prior.”

Source: <https://insights.profitand.com/blog/sales-and-operations-planning-examples-organisations-should-take-inspiration-from>

The benefits of S&OP can be well appraised by understanding its process. Sales and Operation planning is designed by senior management personnel. It is mostly executed monthly. Here results of one planning period (month) are compared to another period with the motto of providing the management with trend information.



Notes

Each participant (department/unit led by a leader) evaluates time-phased projections for supply and demand. Thus, all functionaries (for example finance, inventory planning, demand planning, and supply planning) in the business ensure appropriate mapping of their tactical plans and support the company's vision.

The benefits of S&OP are

1. **Improves customer service levels:** The entire S&OP process aims at providing maximum satisfaction to customers. Functions across the business right from sales, marketing, inventory, and distribution are streamlined to provide customers maximum satisfaction.
2. **Enhances profitability:** Integration of plans of different functions like sales, marketing, inventory, and distribution to form a unified plan helps in reducing gaps, controlling expenses, and maximizing sales. The S&OP process enhances the profitability of the business.
3. **Increases revenue from products:** Continuous review of demand helps the organization's inefficient product design to better match the needs of the customers and effective planning to position the product in the market paves the way to increase revenue.
4. **Promotes better inventory control:** The process of S&OP lies in forecasts and demand planning while predicting sales. Thus, the key question of how much inventory is needed at any given point in time is assessed with reasonable accuracy. Overstocking and stock-outs of inventory both impact the efficiency of the organization and project inefficient inventory management. With the adoption of S&OP, the management can address inventory planning issues by exercising appropriate inventory control.
5. **Reduces losses arising from obsolescence:** S&OP process thrust is on continuous review of demand and matching supply in tune to the estimated demand. This leads to discouraging the stocking of large quantities of materials at any given point in time. Consequently, losses arising from obsolescence are considerably reduced.
6. **Top-Down management control:** S&OP process gives a two-way advantage to management. With the incorporation of S&OP in the overall strategic planning, the perceived long-term goals create a framework for S&OP. The management gains greater insights into the working of various organizational functions. The management is empowered to design effective and relevant control mechanisms.

7. **Shareholders can predict the operating performance of the business:** S&OP strategies are developed based on estimates projected from factual data. A consensus demand plan is developed by integrating individual plans of various functionaries. Thus, the prediction of the operating performance of the business is facilitated by this process.
8. **Reduces Transportation cost:** S&OP process commits resources to meet demand by embracing transport management. Efficient and cost-effective transportation channels are chosen to deliver products.
9. **Improves Customer Experiences:** Streamlining the functions of sales, inventory, marketing, finance, production, and others, the S&OP process helps to plan distribution to the optimum satisfaction of the customers.
10. **Promotes Accountability, Transparency & Better Communication:** S&OP is a collaborative managerial process, wherein the top-level personnel of various organizational functionaries come up with evolving common organizational goals considering each departments' capabilities. This makes the participants accountable for their performances, ensures transparency, and promotes better communication.



Notes



INTEXT QUESTIONS 5.3

Multiple Choice Questions

1. Sales and Operation Planning []
 - (a) is a process
 - (b) connects organization plans and strategies
 - (c) Both (a) & (b)
 - (d) none
2. Product Review helps in developing []
 - (a) need-based products (b) products
 - (c) personnel (d) none
3. S&OP does not []
 - (a) forecast sales
 - (b) promote inter-department collaboration
 - (c) facilitates management decision-making.
 - (d) sell goods



Notes

4. S&OP is designed by senior managers and executed []
 - (a) daily
 - (b) monthly
 - (c) yearly
 - (d) half-yearly
5. Senior Managers []
 - (a) run analytics
 - (b) review performances
 - (c) only (a)
 - (d) both (a) and (b)

5.7 S&OP PROCESS

There is no unique process to develop an appropriate S&OP for business. The process differs from organization to organization. The common steps followed by senior managers broadly include



Fig. 5.2: S&OP Process

1. **Data collection:** S & OP process begins with gathering information about revenues generated through sales for a considerable number of years. With these figures, trend analysis is made and the accuracy of forecasts is assessed. Data maintenance is ensured continuously. Sales and marketing divisions provide key information. Additional data inputs are drawn from logistics, operations, or supply and finance. The aim of the senior manager at this stage are:
 - (a) Manage new items or change existing items or discontinue items.
 - (b) Run analytics provided by the supply chain planning solution provider.
 - (c) Review the effectiveness of performance measures taking inputs from sales and operations and determine the most appropriate performance measure useful for planning.
 - (d) Adjust Item Level Supply attributes like setting appropriate supply policies, stock requirements, lead times, and monthly reviews.

2. **Demand planning:** Demand planning includes forecasts validation, sources of demand identified, and revision of customer service policies. It also includes promotional plans, one-time events, and new product and customer launches. The key additional functions under demand planning are:
 - (a) Creation of S&OP review report using supply chain planning software with built-in reporting function.
 - (b) Distribute reports to sales, and other departments to build consensus.
 - (c) Incorporate changes in demand plans according to the inputs received.
 - (d) Review and finalize consensus demand plan.
3. **Supply planning:** This planning refers to the translation of the demand plan into an appropriate supply plan. Specific tasks involved in this respect are determining inventory targets, safety stock levels, and production methods for level loading (i.e., supply is leveled between the beginning and ending inventory target) and demand chase (that is supply increases and decreases with demand). The supply head assesses the ability to meet demand. He reviews the available capacities, inventory, and operation schedules before formulating a supply plan. Inputs from manufacturing, logistics, and finance departments are sought.
4. **Reconciliation of Plans:** This is also referred to as a Pre-S&OP meeting. It entitles consideration of issues relating to supply to check if the sales plan can be accommodated and the availability of sufficient inventory to implement the sales plan. Supply performances are reviewed at this stage
5. **Approve and release:** This is also known as an executive S&OP meeting. Supply and demand plans are reconciled and finalized. The results are presented during the monthly executive S&OP meeting to the executive team. Finally, the demand and supply plans are approved which are efficiently executed by operations.



Notes

5.8 INTEGRATION OF TECHNOLOGY IN THE PROCESS OF S&OP

The incorporation of the Sales and Operating planning process into the functions of the management is to a great extent attributed to the emergence of technology. Management decisions are well aligned to meet the fast-changing demand, backed by sufficient real-time data and scientific methods of reviewing performances and outcomes. Manually, this is a herculin task for management. The intervention of technology eases this task.



Notes

CASE STUDY STEEL X

STEEL X is very geographically diversified steel suppliers in the world. Producing about ten million tonnes of steel per year is a difficult task. It's even more complex when they used hundreds of spreadsheets to plan their supply chain.

They began to work with an S&OP platform to gain more accurate pricing, procurement, and delivery forecasts, with the eventual goal of connecting downstream businesses and offering an integrated service portfolio to their customers. They're currently benefiting from the single platform software in multiple ways.

S&OP software

- An S&OP software aligns diverse functions of the organization to balance supply and demand. It gives a comprehensive overview of the business. It monitors the planning processes to better understand where the business stands and helps in designing a world-class supply chain.
- The company's overall strategies are continuously mapped to the day-to-day operational tactics of all departments.
- Sales forecasts are prepared in specialized analytics or demand planning software.
- Production planning is often made in a dedicated module of ERP or material requirement planning (MRP) software.
- S&OP software is offered as an optional module of an ERP suite. ERP vendors like Infor, Oracle, and SAP offer S&OP in Integrated Business Planning (IBP) or supply chain management (SCM) products.
- To emerge as the best and most successful business Organisation in the industry, the firm must be able to implement accurate S&OP Software.

S&OP Software features

1. **Dashboard:** Here data relating to equipment, labor, amenities, material, and finance are provided. This helps in shared view.
2. **Cost and capacity modeling:** This is a quantitative tool to prepare a model for anticipating supply and demand activities.
3. **Problem detection:** The software identifies material shortages that may arise in any plan and recommends a solution for them.
4. **Data synchronization:** Data source and inventory loads are connected. Delivery schedules are prepared and revenue/expense projections are made.
5. **Sales planning:** This feature helps in building a sales organization, production network, and product structure as early as possible in the product life cycle.

6. **Demand management:** This feature of the software is about balancing demand and is directed towards minimizing risk in the event of sudden changes in orders from customers, production disruptions, or availability of supplies.
7. **Event alerts:** The software sends signals to decision-makers to determine the cause and analyze any exceptional events and communicate it to the right people to improve planning.
8. **Classification of data:** The software supports data classification. Classification of data helps in better demand analysis and improves over the past. Data separation is facilitated based on the demographics of customers, characteristics of the product, market information, and a range of other bases.
9. **Historical analysis:** Analysis is made by comparing actual demand for the product with that of micro or macroeconomic trends. The executives can forecast the supply chain with more accuracy.
10. **Communication:** Capacity planning to renegotiate and replenish scheduling, and minimize financial inefficiencies and oversupply is an essential feature of S&OP software.

Technology intervention in the S&OP process simplifies the task of collaboration among sales, marketing, finance, and operation. Several software play a key role in the automation of the complex process and ensures collaboration. The software provides access to data and analytics. They also provide stimulation effects of decisions. The software enhances the ability of the senior managers to assess the possible outcomes of alternative performances and develop a course of action to overcome the constraints.



WHAT HAVE YOU LEARNT

- Departments collaborate with operational departments and create a single long-term production plan. Sales and Operation planning refers to developing a general plan within the broad frame of a business plan to control inventory flows, its costs and improve its service levels. Its goal is to facilitate the executive manager with the required information for making better decisions by dynamically connecting plans and strategies across the organization. S&OP helps in effective supply chain management by making optimum utilization of the organizational resources to better serve the needs of the consumers profitably. Here results of one planning period (month) are compared to another period with the motto of providing the management with trend information.



Notes

**Notes****TERMINAL EXERCISE**

1. S&OP means?
2. Name the six phases of the S&OP process.
3. Write about:
 - (a) Demand Review
 - (b) Finance Review
4. S&OP software.
5. Demand Planning.
6. What do you know about S&OP?
7. Write about the objectives of S&OP.
8. What is the need for S&OP in a business organization?
9. What are the benefits of Sales and Planning?
10. Discuss Sales and Operation Planning.
11. Explain the key phases of Sales and Operation Planning.
12. Explain the objectives of sales and planning?
13. What are the features S&OP software offers to the business?
14. What does Sales and Operations Planning software facilitate?

**ANSWER TO INTEXT QUESTIONS****5.1**

1. (c) 2. (e) 3. (d) 4. (a) 5. (b)

5.2

2. (a) True (b) True (c) True (d) false

5.3

1. (c) 2. (a) 3. (d) 4. (b) 5. (d)

GLOSSARY

- **Sales plan:** Set sales goals and describes tactics to achieve them.
- **Sales operations plan:** This refers to the entire sales operations department's plan or the entire concept of sales and operations planning (S&OP).
- Aggregate planning refers to production planning after the necessary resources and their costs. Sometimes used as sales and operations planning.
- **Integrated business planning:** This involves planning throughout the supply chain and is an extension of S&OP.
- **Operational plan:** A plan that specifies how a team or department will contribute to the company's goals.
- **AOP:** Annual operations plan is that States the company star kids for sales and supply.
- **ERP:** Enterprise resource planning (ERP) is the process by which a company integrates its various departments. The software incorporates key information from the departments or teams.



Notes