

Chapter 2 – Modern Business Environment

Case Study 12 – SCM

“W” is a ‘scented decorative items’ manufacturing company. “W” has always traded profitably due to targeting the niche market for high-value, decorative items. Decorative items often use waxes other than beeswax and paraffin. Bayberry wax is derived from the fruit of the bayberry bush and has a distinctive aroma making it popular for manufacture of scented items. The market for scented decorative items is a saturated one, but the CEO has identified that “W” could begin selling online. None of “W”’s competitors have a major online presence and “W” itself only has a simple website that lists locations of its stores as well as products information.

The Managing Director is unhappy about this move. He is aware that “W” has had issues in implementing IT systems in the past. Most recently, “W” planned to implement an online inventory system, which would have allowed stores to check inventory levels in other, nearby, “W” stores. The system was discarded due to increasing costs and issues with the operating system and application software, which were developed in-house by “W”’s small IT team.

The CEO feels that the issues with the earlier IT plans were because of lack of control. “W” has never employed an IT Director and the CEO has therefore recommended that if “W” decides to expand into ‘online retailing’, this role will require to be filled.

CFO who recently joined the “W” mentioned that operating across large number of states through ‘online retailing’ involves cumbersome data-intensive exercise for this “W” needs to be integrated through cloud-based ERP program, in addition to other operational requirements. For this, there will also be need for additional budget.

Required

- i. IDENTIFY the issues that “W” may face when launching ‘online retailing’.
- ii. EXPLAIN the requirement for IT to be a strategic decision within “W”.

Solution

- i. There will be issues that “W” will face with its proposed move into ‘online retailing’. These may include:

Lack of in-house IT resources

“W” is presently short of an IT Director to manage the project. While the “W” may be able to hire someone quickly to fill this role, he/ she will lack experience of “W”’s business by the time the ‘online retailing’ is started.

“W” is having IT team. They may well lack the time or experience for this online project. This shows further investment will be needed to hire additional resources or to buy the new systems from external agencies.

It is also important to note that an ‘online retail’ system would also be required to have accurate information about inventory levels in “W”. It currently does not have an automated inventory control system as this was abandoned. This problem can be resolved with additional investment in cloud-based ERP program.

Setup and running costs

More than anything, investors want to see a return on their investment. However, the cost of setting up and running an 'online retailing' system in "W" may be high. Therefore, in the short term the setup costs may mean that shareholder returns fall.

"W" will need to analyse whether the additional profit it can make by 'acquiring' new customers online will exceed these costs.

Any further investment in human resources will also increase the IT costs.

Technophobia

Staff at "W" may be concerned about not being able to carry out the new jobs required of them or being able to carry out the new jobs required of them but unconvinced of their skills to use new IT system. Therefore, they may resist the introduction of a change that makes them feel or appear incompetent.

In addition, the MD has expressed concerns about the launch of a new IT system, given the issues "W" has faced in the past. 'Online retailing' will need top management support in order to be successful.

Lack of customer interest

It is likely that "W"'s customers will not be interested in purchasing decorative items online. They may, for instance, wish to try out or physically see it for themselves rather than buying it online. Moreover, these decorative items may require very high shipping and handling costs. This will also encourage the purchase at a physical location.

It is not clear from the scenario whether the CEO has undertaken any market research. This would be important before making the decision about beginning 'online retailing', to avoid launching a costly website that fails to catch customers.

Security issues

As "W" will be processing transactions through its website, it will require to ensure that customers are protected from credit card fraud or data errors. Their online stores are also likely to face phishing attacks, distributed denial of service attacks, man-in-the-middle attacks etc. This problem can be resolved by taking steps to offer secure connections and internal data protection.

ii. It is vital that "W" has IT systems represented at the strategic or board level for various causes:

Competitive advantage

The market in which "W" operates is described as 'saturated'. It will be hard for "W" to capture additional market share unless it identifies a way to differentiate itself.

If the 'online retailing' is a success, it will give "W" a competitive advantage over its opponents and as such it should be part of "W"'s strategic decision-making process.

Stakeholders

'Online retailing' is looking good from the long-term perspective, as online selling is in trend now. Therefore, expansion of "W" is of great interest to "W"'s shareholders. As such it is crucial that the directors monitor its progress.

In addition, customers are presently unable to check the inventories within "W". They may be very concerned in an IT system that would enable them to save needless journeys into "W"'s stores for items that are not in inventory.

Cost of IT system

Setting up an 'online retailing' will involve high levels of expenditure for "W". There is the risk of costly mistakes if it is not carefully 'controlled'. This is evidenced by the failure of its inventory control system.

Failure of such a key project could have a major impact on the "W"'s financial position.

Fast moving

Technology is a fast-moving area and even if "W" becomes a successful first mover in the market by selling online, rivals are likely to follow "W" into the 'online retailing'.

In this environment, "W"'s IT systems will need to be continually monitored and kept up-to-date to ensure it remains competitive.

Case Study 16 – SCM (Jan'21 Exam Q1)

RS Tools Ltd. is a leading force in manufacture and supply of modern agriculture equipment like Power Tillers, Kisan Krafts, Agriculture Reaper and other Lawn Care equipment. The company grew substantially over the course of decades and presently ranked 20th by size in the global arena and has become a household name in every agriculture family in the country.

As commonly happens when an enterprise goes in leaps and bounds in a way like this, RS Tools Ltd. is experiencing an increasing degree of supply chain complexities and for many years it did nothing to address the difficulties of its decentralized and fragmented network. The top management decided recently to enter into small irrigation components segment with the brand name 'SIRI', the demand for which is extremely seasonal, and majority of sales are forecasted to occur between April to July every year. The company currently is replenishing dealer's inventory every month, using direct shipment from its central warehouse which is not order driven and is not in sync with the industry average. This kind of dispatching the orders is proving too costly and too slow and not in consonance with the demand pattern. The top management of RS Tools Ltd has started getting doubts about the company's ability to supply its existing 300 plus dealer network, to meet the consistent market demand of its regular agriculture equipment along with the seasonal demand of its new branded products 'SIRI'. They recognized that this state of affairs cannot be allowed to continue in the long run and decided to adopt a long-term program of strategic optimization.

The company has launched an initiative to achieve a targeted 15% reduction in supply chain cost within next 3 years and constituted an expert group to oversee this task. Mr. Karthik, the management consultant, is unanimously appointed at the board meeting to head the expert group formed to revamp the supply chain management. The management is squarely convinced with three of his bold and frank remarks to the board that:

- (a) "Most Companies begin with the best intentions to achieve successful and sustainable supply chain cost management, but somehow lose momentum, only to see costs increase in short term due to the implementation costs of SCM".
- (b) "If you tell me your company hasn't been able to sustain any progress in supply chain cost reduction in short run, I wouldn't be surprised at all".
- (c) "No producer has the ability to give the customers what they want, when they want and at the price they want unless the value chains also have been encouraged".

When the expert team headed by Mr. Karthik began investigation, they found three areas of feasible leverage to reduce supply chain costs which are listed below –

- (i) Consolidating shipments and use of third-party logistic providers as the existing decentralized environment of sourcing and inbound logistics are being managed by teams in different places with insufficient transparency in supply chain.
- (ii) Leveraging on maintaining optimum inventory by bringing the order cycle time down to an industry average of 15 days.
- (iii) The existing supply chain has evolved rather than grown by design and hence had become unnecessarily complex and the enterprise as a whole is not taking the advantage of synergies and economies of scale.

Mr. Karthik undertook a supply chain network redesigning program –

- to reorganize the supply chain,
- to reduce cost to serve and
- to lay the groundwork for future capability in the supply chain.

He is determined to revitalize the Supplier Relationship management as well as the numbers of suppliers are very large in number and the company is burdened with quality, delivery and payment issues from the suppliers. He has decided to suggest the use of E-procurement process as a part of upstream supply chain as a remedy to this hiccup.

Required

You being an associate consultant in his office have been asked by Mr. Karthik, to help him by preparing a briefing to be given to the board based on the above facts with particular reference to the following:

- (i) LIST the critical issues being faced by RS Tools Ltd under the present setup based on the facts of the above case.
- (ii) In the light of the initial remarks made by Mr. Karthik at the time of he being designated to head the expert group, EXPLAIN the supply chain management and ANALYZE the validity of the views expressed by Mr. Karthik.
- (iii) LIST the major benefits that RS Tools Ltd would reap by energizing the Supply Chain Management.
- (iv) EVALUATE how Supplier Relationship Management is going to help RS Tools Ltd.
- (v) DESCRIBE E procurement and its process in the context of upstream supply chain management and DISCUSS its constituents.
- (vi) ADVISE whether the outsourcing as suggested by Mr. Karthik would help RS Tools Ltd in settling logistic constraints.

Solution

(i) Due to decentralised and fragmented network the supply chain in present set-up is complex and caused following critical issues being faced by RS Tools Ltd.

1. Costly and slow supply – Because currently RS Tools Limited are supplying from central warehouse.
2. Supply not in consonance with the demand pattern – Currently RS Tools Limited replenishing dealer's inventory every month, which is not order driven and is not in sync with the industry average.
3. Wide dealership and required infrastructure – Since the dealers are large in quantum and fragmented too hence there is doubt about ability to supply its 300 plus dealers.
4. Regular agriculture product has consistent market demand, while new branded products SIRI has seasonal demand.

(ii) Since supply chain encompasses all activities and information flows necessary for the transformation of goods from the origin of the raw material to when the product is finally consumed or discarded, hence supply chain management is the continued management of the flow of goods and services and includes all processes that transform raw materials into final products; It involves the active streamlining of a business's supply-side activities from sustainable perspective to maximize customer value and gain a competitive advantage in the marketplace.

The views expressed by Mr. Karthik are valid largely. Sustainable supply chain cost management is continuous effort rather one-time initiative, wherein commitment is required from top to bottom of organisation to reap the desired results.

Complex the structure is, more and more time it would require, hence in short run cost may be more than benefits (in term of low-cost reduction). Since the Supply Chain Management is purposes to maximise the customer value, hence yield better results when supported by value chain analysis.

Alternatively-

A complete chain serving the customers or consumers whether linked or interdependent is the composition of supply chain. It comprises vendors that supply raw material, producers who convert the material into products, warehouses that store, distribution centres that deliver to the retailers and retailers who sell the products to the ultimate user.

All activities associated with the flow and transformation of goods from raw material to end user is called supply chain. An important objective of SCM is to correlate the production and distribution of goods and services with the demand of the product.

Analysing the Views of Mr. Karthik

- (i) Implementation of supply chain management should be viewed as an investment rather than cost that should be minimized. Implementation of SCM may demand relatively high investments in installing quality software etc. and may also prompt certain hidden costs. Some expenses cannot be forecasted beforehand, and this may frustrate the top management if they are interested to reap in readymade results. So, this comment is valid.

- (ii) The term supply chain can be referred to as the entire network of organisation working together from design, produce, deliver, and service the products. In other words, all activities associated with the flow and transformation of goods from raw material to end user is called supply chain. It is a multifaceted exercise and cannot present any instant and onetime results. So, the comment is valid.
- (iii) The following activities which are termed as primary activities under value chain model forms part of SCM.
 - i. Inbound Logistics covering procurement and related activities.
 - ii. Operations covering conversion of raw material into finished products.
 - iii. Outbound Logistics covering movement of products from plants to end users.
 - iv. Marketing and Sales
 - v. Service

Supply Chain Management looks each of the above activities as integrated and interrelated to each other. So, the comment that unless value chains are encouraged customers' demands cannot be met is also valid.

- (iii) Supply Chain Management leads to strategic optimisation through enormous benefits such as inventory reduction, personnel reduction, productivity improvement; order management improvement, financial cycle improvement etc. Further it results in information visibility, new/improved processes, customer responsiveness, standardization - flexibility & globalization of business performance.

Energizing the Supply Chain Management expected to reap following benefits to RS Tools Limited–

1. **Optimum inventory in consonance with the demand pattern** – by cutting order cycle time from 1 month to an industry average of 15 days will bring down the inventory to optimum level and improve the working capital cycle.
 2. **Expertise of third party logistic (TPL)** – No, doubt outsourcing cause cost, but it will bring the expertise too apart from saving of time resource which management can spend upon the core and value generating activities.
 3. **Ease and transparency** – Current supply chain is evolved rather designed, hence energizing the supply chain management can remove the existing complexities and bring the ease to RS Tools Ltd. Further transparency regarding process and customer requirement will also be there due to generation, transmission and management information as part of supply chain management.
 4. **Reduced supply chain cost** – either due to reduction in inventory to optimal level or streamline the activates over supply chain from procurement (such as e- procurement) to delivery to customer (such as using TPL) will result in supply chain cost management. It is important here to note that RS Tools Limited aim for 15% cost reduction target in three years' time.
 5. **Generating capabilities and becoming future ready (sustainable supply chain)**– Currently RS Tools Ltd. is doubting their capabilities to continue the supply of regular products to existing 300+ dealers. It is extending the product range as SIRI is added and in future expected to expand the dealers' network too, hence energizing the Supply Chain Management can help in term of improve and enhanced capabilities.
- (iv) A supply chain when the flow relates to supplier it is termed as upstream flow, hence management of transaction with the supplier will be termed as upstream supply chain

management. Upstream supply chain management rely upon supplier relationship management and use of information technology.

Supplier relationship management provides the structure for how relationships with suppliers are developed and maintained. This help the organisation to gain the advantage out of supplier capabilities to innovation, ensure quality, be reliable – in term of delivery and frequency, eliminate the variation in costs/price reductions and agility to reduce risk factors.

Revitalization of Supplier relationship management expected to help RS Tools Limited in following manners-

1. Extended value chain (& consolidated supply chain) to ensure quality and innovation– Concern for quality is mentioned in case. Purpose of supply chain management is to improve the customer experience by offering more value. Value in product depends upon input used, hence supplier can play vital role in same. For this relation suppliers shall be cordial, and Supplier relationship management is capable to ensure this.
 2. Reduce in number of suppliers for better management and favourable credit & trade terms considering the payment issue– since it is mentioned in case that RS Tools Limited is burdened with the payment issue, hence may buy its supplies from limited suppliers. Because it is obvious if large volume purchase from limited suppliers or selected suppliers, they will offer relaxed credit terms and competitive prices, against this if requirement is to avoid failure in deliver, then prefer multiple suppliers. Switching to new supplier may reduce the cost in some cases.
 3. Enhanced reliability in delivery – Better relationship with supplier and sharing of information lead to enhanced reliability in delivery in term of quantity, frequency, place and time. However, an audit needs to be made of supplier performance and the opportunity, or otherwise, for RS to concentrate on suppliers able to deliver on time. Clearly there are costs associated with this.
- (v) A supply chain when the flow relates to supplier it is termed as upstream flow, hence management of transaction with the supplier will be termed as upstream supply chain management. The main activities of upstream supply chain are procurement and logistics. Upstream supply chain management rely upon supplier relationship management and use of information technology.

E-Procurement is the electronic methods beginning from identification of the organization's requirements and end on payment. It can be seen as technology solution designed to centralise and automate interactions between an organisation and its' suppliers to improve the speed and efficiency of procurement practices.

E-Sourcing, E-Purchasing and E-Payment are constituent of E-Procurement.

E-Sourcing covers electronic methods for finding new suppliers and establishing contracts. E-Sourcing is inviting the tenders and quotations online from any part of world, that too in cost and time effective manner; hence E-Sourcing is considered as the best possible way to find out the best supplier.

E-Purchasing covers product selection and ordering online, hence streamlines procurement and reduces overheads. Decentralised and need based orders are placed rather by central ordering department.

E-Payment includes tools such as electronic invoicing and electronic funds transfers. This brings benefit of real-time settlement, error proof system and automatic and real-time record maintenance through ERP.

- vi. Outsourcing is business practice used by companies to reduce costs (extra capital expenditure in technology) or improve efficiency by shifting task, operations jobs or processes to another party for span of time. Outsourcing suggested by Mr. Karthik would help RS limited in settling logistic constraints to larger extent, because-
 1. Currently it is feeling doubtful whether has ability to serve the existing network of 300+ distributors, while it is replenishing dealer's inventory every month. When it starts replenishing the inventory after every 15 days then existing logistic system may fail hence outsourcing may be a way out to settle the existing logistic constraint.
 2. Newly acquired product SIRI has seasonal demand only for 4 calendar months in a year, hence generating logistic capabilities for 4 months which remain idle for remaining months of year is not seem financially viable solution hence outsourcing in case of SIRI is seeming best way to settle the existing logistic constraint.

Note— Third party logistics provider's expertise may enhance customer experience and management may get more time to focus on strategic aspects. Hence RS Tools Ltd. need to evaluate its value chain and try to categories logistic either as value generating or non-value generating activity. If logistic is largely non-value generating activity from the customers' perspective of RS Tools limited, it shall be outsourced the logistics and focus on the core. Overall, depending upon the application of various strategic cost management techniques, decision on outsource shall be taken.

Skill Based - Q 10 – SCM

An apparel manufacturing company has a factory in Ahmedabad, making denim clothing for customers of all ages. It sells its clothing from its factory outlet store located within the city. Until 6 months back, the company had a business model wherein the products manufactured at its factory would be sent to its factory outlet store. Customers would visit the store and choose apparel suiting their tastes. Production was based on prediction of customer demand. This "made to stock" model has been placed for many years.

Few months back, the store manager noticed many customers exiting without making any purchases. Tracking this and after obtaining feedback from customers over sometime, it was found that many products were unacceptable to the customers' tastes - either the shade or design of denim was not what they wanted or that the apparel was not of the correct fit for them. The management then decided to provide customers a choice of either choosing from their standard apparel range that has already been made ("made to stock" model) or to offer them a "made to order" option.

The company now displays its range of denim material at the factory outlet. Customers can go through the samples and choose the material of their choice. Company certified tailors would then take measurements based on the customers' preferences. A detailed order customized to the customers' needs would then be drawn up. The factory has set up a separate tailoring division that would stitch the apparel specifically for these "made to order" sales. For this new machines and production line resources have been put in place.

Customized products are manufactured and be made available to the customer within 3 working days' time from the date of placing the order. The customer comes to the store and picks up the apparel ordered. For delays beyond this timeline, the customer gets to pay 5% less on the order value. This is done to attract and maintain customers, who would otherwise choose to purchase apparel offered by rival competitors. Therefore, speed of delivery of the customized product is critical for the company. This is the main selling point for the company to operate the "made to order" business model.

If further modifications are needed due to errors on part of the company (quality / finishing issues), the apparel would need to be modified / re-stitched once again. The company will bear the cost of modification or replacement of garment.

This new "made-to-order" has been in place for the past 6 months. At the stage of project proposal, the management found it a lucrative option for the company because:

- i. Customers are willing to pay a higher price to have customized clothing as compared to the standard fitting.
- ii. It would attract more customers to the store
- iii. If the model works well, the dependence on the "made to stock" model can reduce. Savings in inventory stock, obsolescence and warehousing costs will benefit the company's bottom-line.

Customers have been very enthusiastic in availing this customization facility offered by the company. Sales have increased manifold in the last few months. Therefore, the management is interested to understand the metrics related to their "made to order" business mode to assess its success and risks. Some of the non-financial metrics are:

Metric	Month					
	1	2	3	4	5	6
Orders needing modification on account of errors in order taking or manufacturing process (% of sales orders made under "made to order" model)	15%	12%	10%	8%	5%	4%
Orders delivered beyond the 3 working days timeline (% of sales orders made under "made to order" model)	5%	4%	3%	6%	7%	5%
Production downtime (hours)	44	88	22	141	132	123
Labour idle time due to unavailability of material (hours)	25	22	17	13	24	22
Ratio of "made to order" to total sales from the factory outlet (Ratio of sales value)	16%	22%	25%	32%	34%	38%
Repeat orders by customers availing this facility (% of customers giving repeat order / total customers availing "made to order" facility)	4%	21%	33%	54%	60%	63%

Required

ANALYZE the non-financial measures of quality of the division over the six-month period. Focus on the production performance, delivery cycle performance and customer satisfaction.

Solution

Analysis of the operating data of the “made to order” at the business store revealed the following:

Production Performance:

- i. **Modifications to orders:** This company has to bear the cost of modification / replacement of the garment incurred on account of error in its order taking or manufacturing process. Therefore, orders needing such modification should be kept at the minimum. Such instances were higher than 10% in the first three months. With experience, either in the order taking process or manufacturing process, these errors have reduced substantially in the later months. The managers of the order taking and manufacturing departments need to understand and constantly keep track of these errors in order to keep them at a bare minimum. Management may want to set a benchmark, financially in terms of the cost of modification and non-financially in terms of the acceptable threshold for such instances. Monthly tracking of this metric will help detection of errors earlier.
- ii. **Production downtime:** Production downtime normally occurs either due to break down of machinery or plant maintenance. It is unproductive time, reducing the machine’s capacity. It must be kept minimum. Downtime hours have been steadily increasing in the past 3 months, the overall monthly average being 91.67 hours. The production manager has to analyze and take corrective action at the earliest. Urgency of the issue can be compounded by the fact that sales orders under the “make to order” model have been increasing steadily over the last few months. In the latest month, 38% of the overall sales was from this model. Therefore, the production capacity should be utilized optimally to ensure ability to meet delivery deadlines.
- iii. **Labor Idle time:** Labor Idle time due to unavailability of material is another unproductive waste of resource. The procurement department can address unavailability of material. On an average 20.5 hours of labor time is idle due to unavailability of the appropriate material. Appropriate steps with suppliers can lead to agreements to ensure seamless supply of material when required. This will enable the company to meet delivery deadlines given to customers.

Delivery Cycle Performance:

- i. **On-time delivery:** The orders need to be delivered to the store within 3 working days of placing order. The customer picks up the order from the store. Speed of delivery is critical to the company. Any delay beyond this timeline, the customer benefits by a 5% reduced price on the order as compensation for delay. Prompt delivery is also the company’s selling point to attract customers, who would otherwise patronize its rivals. On an average 5% of the orders are not delivered within time. Therefore, average delivery success rate is only 95%. The management has to take steps that this is kept to the minimum in order not to stem loss of revenue as also to build brand loyalty with the customer base.

Customer Satisfaction:

- i. **Repeat orders by customers:** Prompt, quality delivery of the customized order would ensure that customers return in future with further orders. Statistics shows that repeat orders have steadily increased, which is a very positive signal to the management. Initially, only 4% of the customers under this model placed repeat orders. This increased substantially. Now almost 63% of the customers who purchase under this model come back with more orders!

- ii. Sales mix: Popularity among customers for customized services is further validated by the steady increase in the ratio of such sales to the overall sales of the company from the factory outlet. Now, this model generates an average of 28% of the total sales from the outlet, with a likely projection of having a higher share in the overall sales mix. Therefore, the “make to order” model can be termed a success.

Workings

Metric	Month						Monthly Average
	1	2	3	4	5	6	
Production performance							
Orders needing modification on account of errors in order taking or manufacturing process (% of sales orders made under "made to order" model)	15%	12%	10%	8%	5%	4%	9%
Production downtime (hours)	44	88	22	141	132	123	91.67
labour idle time due to unavailability of material (hours)	25	22	17	13	24	22	20.50
Delivery cycle time							
Orders delivered beyond the 3 working days timeline (% of sales orders made under "made to order" model)	5%	4%	3%	6%	7%	5%	5%
Customer satisfaction							
Repeat orders by customers availing this facility (% of customers giving repeat order / total customers availing "made to order" facility)	4%	21%	33%	54%	60%	63%	39.17%
Ratio of "made to order" to total sales from the factory outlet (Ratio of sales value)	16%	22%	25%	32%	34%	38%	28%

Skill Based – Q17 – Outsourcing

Sacred Heart Hospital (SHH), a renowned multispecialty hospital offering affordable healthcare service to one and all. Despite charging reasonable prices SHH is offering the best possible services to its clients, hence SHH is the undisputed choice among the resident for healthcare services. Since SHH is charging a reasonable fee, hence controlling and managing cost becomes critical for them, especially the cost involved in non-value activities or activities, not of principle nature. SHH has a core team of 32 specialist doctors and some among them are resident doctors. The staff comprises an administration team of 15 members, apart from around 120 nurses supported by 40-50 grade-four employees, some of these support staff are casual workers and some are the resident staff.

SHH is running an in-house subsidies canteen for Doctors and Staffs exclusively, operates on all calendar days. This canteen was established during initial days of SHH because then the nearby areas are not fully developed; only a few eateries were there and either they are un- hygienic or

excessively costly. Due to extending urban municipal limits scenario is changed now. Management at SHH is considering the two alternate first being 'downsize the operation by cut-down the choices to eat and reduction in subsidy' or 'outsource canteen to some external caterer'. Patients' food is prepared by the dietary department and there is a separate canteen for attendant and visitors of patients.

Current scenario

On daily basis around 160 coupons for meal @ of Rs 40 and 120 coupons for snacks (accompanied with either tea or cold drink) @ of Rs 20 is sold apart from the sale of Rs 2,000 for juices & biscuits etc. These supplies costs 70% of sale prices. Canteen also incurs Rs 25,000 for utilities and maintenance each month. Canteen works around the clock, with mutual rotation among the staff. The meal is served during specified hours, whereas snacks, juices and biscuit are available throughout.

Presently canteen has a staff of 7 members, including a chef, helpers, and cleaner. The monthly salary of these 7 staff members is Rs 1,40,000. SHH also contributes Rs 9,120 per month, as statutory labour benefits. Only those employees registered for such benefits, whose salary are below to threshold limit prescribed under respective labour legislation.

Downsize the operation by cut-down the choices to eat and reduction in subsidy

With the aim to reduce the subsidy by at-least 50%, the operation can be downsized by cut- down the snacks from menu. The price of Meal will also be increased by 5%. Cutdown will reduce the staff requirement, resultantly monthly salary expenditure expected to reduce by Rs 63,500; whereas SHH contributes to statutory labour benefits also reduced to Rs 5,420. The average cost of supplies is increased by 3% of the sale price. There is an increase in the sale of meal coupon by 30 coupons, largely due to the absence of alternate choice. The sale of juice and biscuit is also increased by 10%. Other aspects of operation remain the same.

Outsource canteen to some external caterer

Against the advertisement of expression of interest, 4 proposals are received, out of which only found suitable by the screening committee, which also meets all the established criteria. Such a proposal is from 'Annapurna Caterers'. They offered an annual lease value of Rs 1,68,000 and share of 2% in revenue. Only 20% of monthly utility and maintenance expenditure pertaining to canteen will be recovered from Annapurna Caterers. It is expected by Annapurna Caterers that it will be able to sale 150 meals @ Rs 50 each, 100 snacks @ Rs 30 each apart from juice and biscuits of 2,500 on daily basis.

Required

(i) ADVISE the management of SHH supported with following points-

- a) Whether downsizing operation by cut-down menu is acceptable or not?
- b) Whether SHH able to reduce the subsidy by 50%?
- c) What qualitative factors SHH need to consider?

(ii) ADVISE the management of SHH supported with following points-

- a) Does proposal from Annapurna Caterers is beneficial than downsizing or not?
- b) Highlight any two non-monetary factors which SHH need to consider prior to outsourcing (in brief).

Assuming it is a non-leap year, comprising 365 days.

Solution

- (a) Considering the statement of comparative costs and benefits mentioned below as table 1, from monetary aspects it is strongly advice to management at SHH to downsize the operation by cut-down the menu; because it will result in saving of Rs 6,27,039 (by reducing loss from Rs 9,06,840 to Rs 2,79,801)

Table 1 - Statement of comparative costs and benefits (on year basis, the amount in Rs)

Particulars	Current	After Cut-back
Annual Revenue (W.N. 1)	39,42,000	37,15,700
Less: Costs		
Material/Supplies (70/73% of revenue)	27,59,400	27,12,461
Labour/Salaries (W.N. 3)	17,89,440	9,83,040
Utility and maintenance	3,00,000	3,00,000
Loss (Subsidy by SHH)	(9,06,840)	(2,79,801)

- (b) Considering the table 1, it is observed that loss (which is in form of the subsidiary) is currently 9,06,840. If SHH downsizes the operation by cutting down the menu then such loss is also reduced to 2,79,801; hence saving in cost/subsidy is 6,27,039; which amounts to 69.15% of current subsidy.

Hence, SHH is able to reduce the subsidy by 69.15% against the target of 50%.

- (c) Management decisions has qualitative implications also apart from monetary implications. Hence management needs to consider these non-monetary factors too. In the present case SHH must consider the following factors→

Retrenchment of employees may have severe consequences – Cut-down will reduce the staff requirement, the question arises here whether such staff members are regular are casual, because based upon this fact they will be either absorbed in some other department or retrenched. If transferred to some other department then the cost impact on such department (responsibly centre) needs to be considered. If retrenched then, whether the byelaws of SHH allow for the same? Does any compensation need to be given? Even motivation of other employees may be jolted, because job-security is one of the major factors.

Even minor price increase has an impact on the pocket – Subsidies food and food coupons are usually part of employment benefits. The price of meal will also be increased by 5%. Such a change of 5% may not bother doctors and nurses, but Grade-four staff surely be impacted by such change. Staff may reach to the conclusion that management is not employee-oriented they are concerned with their profit only. This may lead to less participation and support from employees.

Resident doctors and resident Staff – Resident doctors and staff are key to any hospital. In the service industry, the employee has a direct impact on the value chain. The meal is available only during specified hours, currently beyond those specified hours snacks are available, but if snacks cut down from menu then it will be unjust for resident doctors and staff.

- (ii) a) As per the statement of cost and benefit mentioned in table 2 below, the gain out of outsourcing canteen facility is 22,900; whereas downsizing operation by cut-down menu causing loss of 2,79,801, hence by outsourcing canteen facility SHH can earn monetary gain of 3,02,701.

Yes, outsourcing offer from Annapurna Caterers is more beneficial than downsizing operation, hence management at SHH is advised to accept outsourcing proposal. Management may also give weight to qualitative and non-monetary quantitative factors.

Table 2 - Statement of cost and benefit under outsourcing (canteen facility)

Particulars	Amount in
Lease Rental	1,68,000
Share in Revenue (2% of 47,45,000)	94,900
Recovery on account of utility and maintenance (20% of 3 Lacs)	60,000
Less: Cost	
Utility and maintenance	3,00,000
Gain out of outsourcing canteen facility	22,900

Major non-monetary factor which SHH must consider prior to outsourcing the canteen facility are →

- Quality of food/eatable provided by Annapurna Caterers.
- Price-increased will be a burden for staff and doctors.
- Whether the staff, which is presently engaged in canteen facility will be retrenched or transferred to another department.
- Legal implication and aspects of out-source agreement.

Working Note 1 – Annual Revenue

Particulars	Current	After Cut-back
Meal	6,400 (160@ 40)	7,980 (190@ 42)
Snacks	2,400 (120@ 20)	-
Juices & Biscuits	2,000	2,200
Daily Total Revenue	10,800	10,180
Annual Revenue	39,42,000	37,15,700

Working Note 2 – Annual Labour Cost

Particulars	Current	After Cut-back
Monthly Salary	1,40,000	76,500
Statutory Contributions	9,120	5,420
Monthly Labour Cost	1,49,120	81,920
Annual Revenue	17,89,440	9,83,040

Working Note 3 – Annual Revenue of Annapurna Caterers

Particulars	Amount in
Meals (150 meals @ 50 each)	7,500
Snacks (100 snacks @ 30 each)	3,000
Juice and biscuits (2,500 on daily basis)	2,500
Daily Revenue	13,000
Annual Revenue	47,45,000

Concept Insight

It is important to note that non-value-added functions can be easily outsourced based upon monetary aspects only, because they are not value generating, but it does not mean they are not strategic. Here, in present case canteen facility is non-value adding activity but seems strategic in nature.

Case study Book Skill Based Q 18 – Throughput Accounting

Ajanta Digital Solutions (ADS) is a renowned name for manufacturing a wide variety of digital stationery products for office and academic use. The 'Abacus division' of ADS is engaged in the production of basic calculators, capable of academic and commercial use. Presently Abacus is manufacturing only three models, named C-100, C-125, and C-500. These calculators are sold to customers through wide-spread retailers and distributors' network across the country.

During manufacturing process, each calculator needs to pass through various steps, before it gets ready. PC-IA is the essential step and performed manually, where processing chip is being installed, activated, and tested. The production capacity of Abacus is constraint by PC- IA. The basic information pertaining to top-line and the prime cost is as follows (Amount in Rs.)

Particulars	C-100	C-125	C-500
Sale price per unit	140	200	450
Material cost per unit	72	104	200
Labour cost per unit	30	52.5	75

All the process and division at ADS are operating for a single shift of 8 hours in a day. Conversion cost per hour (including labour cost) is Rs. 5600. The standard out-put for PC-IA during a day is the processing of either 800 units of C-100 or 560 units of C-125, or 320 units of C-500. ADS is capable of sale more than, what they are presently capable to produce in all range of models. The CEO of ADS recently attended a science fair, Robo-tech 4.0; where he saw a Robot developed by Synergy Robotics Limited, capable to assembly including installation of processing chip to any sort of device.

Required

Management hired you as cost consultant, advice on following aspects→

- (i) On a random day if 480 units, 140 units and 120 units of C-100, C-125, and C-500 respectively are produced and sold, CALCULATE at what efficiency level current constraint (bottleneck) is operational. INTERPRET the same. COMPUTE profit earned during such day.
- (ii) FIND production of which model is more beneficial, considering the ranking (based upon throughput performance ratio).
- (iii) APPLY Goldratt's five steps to remove the bottleneck at Abacus.

Solution

(i) Efficiency level can be measured with help of Efficiency Ratio, which is one among the control ratios.

Efficiency ratio indicates the degree of efficiency attained in production. It is expressed in term of standard hours for actual production as a percentage of the actual hours spent in producing that work.

*Standard hours for actual production * 100*

Actual hours worked

= (9.8/8) × 100

= 122.5%

Working Note – Standard hour required for actual production.

Product	Actual output (Units) (a)	Standard Daily Output (Units) (b)	Standard Hourly Output (Units) (c) (b)/8	Standard Hour Required (a)/(c)
C-100	480	800	100	4.8
C-125	140	560	70	2
C-500	120	320	40	3
Standard Time Required (in hours)				9.8

Interpretation – 122.5% signifies that efficiency (usage) of exploiting bottle-neck activity is 22.5% better than the standard use. PC-IA is producing out-put which require 9.8 hours, in 8 hours.

Profit earned during the day

Particulars	Amount in
Revenue [(480×140) + (140×200) + (120×450)]	1,49,200
Less: Material Cost [(480×72) + (140×104) + (120×200)]	73,120
Less: Conversion Cost (including labour cost) [5,600 × 8hrs.]	44,800
Profit	31,280

(ii) Statement of ranking, based upon throughput performance ratio (using throughput contribution)

Particulars	C-100	C-125	C-500
Sale price per units ... (a)	140	200	450
Material cost per unit ... (b)	72	104	200
Throughput contribution per unit ... (c) = (a) – (b)	68	96	250
Maximum possible production ... (d)	800	560	320
Maximum possible throughput contribution ... (e) = (c) × (d)	54,400	53,760	80,000
Conversion cost (including labour cost) (5,600 × 8hrs.) ... (f)	44,800	44,800	44,800
Throughput performance ratio ... (e)/(f)	1.21	1.20	1.78
Ranking	II	III	I

Considering the throughput performance ratio (or TA ratio) and ranking above most beneficial model to produce is C-500 followed by C-100 and C-125.



$$\text{TA Ratio} = \frac{\text{Throughput contribution}}{\text{Conversion cost}}$$

Throughput accounting developed by Galloway and Waldron which use the term factory cost and completely rely upon the Goldratt's theory of constraints which use the term operating expenses, but the meaning of factory cost and operating expenses used at both places are identical.

Theory of constraints consider short-run time horizons and assume other current operating cost to be fixed costs.

Higher the throughput performance ratio (or TA ratio) is better and beneficial.

All the products/models which have throughput performance ratio (or TA ratio) more than one may be produced/continued to produce, depending upon constraint function.

(iii) Application of Goldratt's five steps to remove the bottleneck at Abacus

Goldratt's theory of constraints describes the following mentioned five steps process of identifying and taking steps to remove the bottlenecks that restrict output.

1. **Identifying the System Bottlenecks** – At Abacus division of ADS, PC-IA is bottleneck
2. **Exploit the Bottlenecks** – Bottleneck activities' capacity must be fully utilised. Although the efficiency of bottleneck activity is already 122.5% but further attention on the possibility to enhance the flow of products from bottleneck activity is needful.
3. **Non-bottleneck activities are subordinate** – Bottleneck activity should setup the pace for non-bottleneck activities. Abacus shall plan its production keeping PC-IA at the centre point, because even if the efficiency of other activities which are non- bottleneck enhanced beyond current level; the output can be maximum possible by PC-IA.
4. **Elevate the bottleneck** – Eliminate the bottleneck by enhancing the capacity and efficiency. Major change (business reengineering) or continuous minor change (kaizen) may do. In the case of Abacus, the introduction of the robot may be a way to elevate the bottleneck.

Note – There will always be one bottleneck in the system, if such bottleneck is eliminated then a new constraint emerges as a bottleneck. Hence this process continues. Ultimately improvement is a never-ending continues process.

5. **Repeat the process** – Apply step 1 to new bottleneck activity which emerges at Abacus and repeat the process.

Case study Book Skill Based Q 40 – Service Level Arrangement

Red Star Limited (RSL) is the largest manufacturer of Air-Conditioners. RSL is not good at attending the customer calls due to lack of capabilities, but it is an important activity from the aspect of the value chain. Hence, in order to improve customer experience (downstream supply chain), RSL decided to hire Krishna Infotech & BPO Services (KIBS) for attending the calls of their existing and prospective customer.

Service level agreement (SLA) was duly entered and service level (SL) of 90/20 has been prescribed to keep a check on service quality. Invoice will be generated monthly, and SL will also be observed on monthly basis. For the first month along with the invoice, KIBS provide the following details to RSL–

- Total calls offered 5,120
- Calls answered within threshold time 4,850
- Short or Abandon calls within threshold time 115

CFO while authorising the payment queues generated by the account executive in ERP, come across the KIBS payment; he immediately seeks a copy of SLA from legal but not able to understand the technical aspects hence he decided to call you (management accountant) to EXPLAIN few terms (including SL) and certain COMPUTATIONS.

Required

- i. What is the SLA threshold and what is the threshold time in this case?
- ii. Explain the significance of 90/20 SL.
- iii. Compute the SL level for the first month.
- iv. Whether KIBS attained the SL level to full the terms of SLA?
- v. For how many calls KIBS can bill to RSL?

Solution

(i) A service-level agreement (SLA) threshold is the activity response time specified in a service level agreement. In the current case, the SLA threshold is the number of seconds within which a call shall be responded to by a tele-caller at KIBS. The threshold time, in this case, is 20 seconds it is represented by a service level (SL) of 90/20.

(ii) A service-level agreement (SLA) defines the level of service you expect from a vendor, laying out the metrics by which service is measured. Service level basically measures the performance. Service level (SL) of 90/20 signifies that 90% of the calls shall be answered within 20 seconds.

Concept Insight

SLA is the document that outlines the wider service agreements between a service provider and its customer, whereas SL is the acceptable level of service performance regarding which agreement has been entered. Mind it, both the SLA and SL are not the same.

(iii) Service Level (SL) measure the performance and can be computed for voice calling BPO services using the following formula:-

$$SL = \frac{\text{Total calls answered within threshold time}}{\text{Total calls offered – Short or abandon calls within threshold time}}$$

Total calls offered – Short or abandon calls within threshold time

$$SL = 4,850 / (5,120 - 115)$$

$$SL = 4,850 / 5,005 = 96.90\%$$

(iv) Against the expected service level of 90%, KIBS attain the service level of 96.90% which means out of each 100 calls nearly 97 class are answered within 20 seconds (threshold time), whereas the requirement was minimum requirement is 90%; hence KIBS attain the SL level to full the terms of SLA.

(v) No, doubt SL used for measuring the performance which relies upon the calls answered within the threshold time, but the calls answered beyond threshold time also cause costs and resources at end of the BPO vendor (KIBS in this case) hence billing shall be for total calls responded/answered (rather only those which are answered in threshold time). Hence, in a given case, the KIBS can raise an invoice for 5,005