1. “Elixir Pharma” took to home delivery of medicines as a response to Covid situation. But the model remained as a feature after Covid situation changed. With business growth new challenges showed up like delay in delivery, wrong items getting delivered, returns and re-deliveries, out of stock of some items, while some other items are over stocked, moving goods between pharmacies to get inventory in balance. Transportation and warehousing costs are on the rise which leads to thinning of margins. How can they leverage various supply chain drivers to meet their objective of “better service at optimum cost”? **(10 Marks)**

Answer:

To leverage various supply chain drivers and achieve the objective of "better service at optimum cost", "Elixir Pharma" can consider the following strategies:

1. Inventory Management: Elixir Pharma can use ABC analysis to classify their products into different categories based on their value and importance. This will help them to focus on managing high-value and critical products while adopting a more relaxed approach for low-value products. They can also use safety stock management to ensure that they always have sufficient inventory levels to meet customer demand. Finally, they can implement JIT inventory to minimize inventory levels and reduce storage costs.
2. Transportation Optimization: Elixir Pharma can consolidate shipments to reduce transportation costs and improve delivery times. They can also optimize routes to minimize transportation time and cost. By using the most cost-effective mode of transportation, they can reduce transportation costs while still meeting delivery timelines.
3. Vendor Management: Elixir Pharma can work closely with their suppliers to improve supplier performance, reduce lead times, and manage costs. By establishing a collaborative relationship with their suppliers, they can work together to improve the overall supply chain performance. They can also use techniques like vendor scorecards to track supplier performance and identify areas for improvement.

4. Customer Service: Elixir Pharma can use real-time tracking and communication to keep their customers informed about the status of their orders. They can also provide order visibility to customers, allowing them to track their orders from start to finish. By responding promptly to customer queries and complaints, they can improve customer satisfaction and reduce the costs associated with returns and re-deliveries.
5. Technology Implementation: Elixir Pharma can use supply chain management systems to automate their supply chain processes and improve visibility and control. They can also use inventory management software to optimize their inventory levels and reduce stockouts and overstocks. Finally, they can use logistics optimization tools to optimize their transportation network and reduce transportation costs.Elixir Pharma will be able to optimize their supply chain and meet the goal of "better service at optimum cost" by putting these techniques into practice. This will enable them to keep a competitive advantage in the market, lower costs, and enhance customer service.

By implementing these strategies, Elixir Pharma can leverage various supply chain drivers to optimize their supply chain and achieve the objective of "better service at optimum cost". This will help them to improve their customer service, reduce costs, and maintain a competitive edge in the market.

Q2. “Fresh” is a fresh fruit shopping chain. Their specialty is organically grown and seasonal fruits. They now operate about 10 outlets in Pune. Fruits are obtained from farmers within and near-by states with whom they have sourcing arrangements. Responding to newer business models, they have deployed “Freshonline.com” with regular sets of clients that promises home delivery within 2 hours within city limits. Customer base in expanding at their outlets and with online model. Business increase is also bringing with it mixed bag of challenges due to issues with increasing costs, freshness related problems, quality issues, delays in delivery, non-availability of right stocks etc. Their aim is to reach lean and agile value chain over next 2 years. Prepare a road map to enable them transition levels of supply chain improvement to be lean and agile value chain? **(10 Marks)**

Answer:

There could be several planning parameter Fresh Fruit shopping can work upon. Some the factor they should consider are as below.

Supplier Relationship Management: By establishing clear expectations and goals, giving frequent feedback, and cooperating on joint improvement projects, Fresh can work with their suppliers to enhance supplier performance. Additionally, they can negotiate agreements that provide incentives for suppliers to up their game and achieve key performance targets (KPIs). Fresh can collaborate with their suppliers to enhance the performance of the entire supply chain by developing a cooperative connection with them.

Inventory Optimization: Just-in-time (JIT) inventory management is an important method for reducing inventory levels and storage expenses. Fresh can use JIT to acquire goods just when it is needed, reducing inventory holding costs and avoiding stockouts. They can also build an inventory tracking system that allows them to see inventory levels and utilization in real time, allowing them to quickly modify inventory levels to suit changing demand.

Transportation Optimization: By consolidating shipments, Fresh can minimize transportation expenses and enhance delivery times. They can also optimize routes to reduce travel time and costs. They can cut transportation costs while still fulfilling delivery deadlines by selecting the most cost-effective mode of transportation. Finally, real-time shipment tracking, and monitoring systems can be used to ensure on-time delivery and limit the chance of delays.

Implementation of Technology: Fresh can use supply chain management systems to automate their supply chain procedures and improve visibility and control. These technologies can assist them in better tracking inventory levels, monitoring supplier performance, and managing logistics. Inventory management software can also be used to optimize inventory levels and reduce stockouts and overstocks. Finally, they can employ logistics optimization tools to improve their transportation network and cut costs.

Quality Assurance: Fresh can use tight quality control procedures to ensure that the fruits they sell are fresh, of good quality, and fulfill client expectations. They can collaborate with their suppliers to ensure that the fruits are grown in an organic and sustainable manner. They can also utilize advanced technology like RFID and barcode scanning to track the freshness and quality of the fruits along the supply chain. Fresh can develop a solid reputation for quality and attract more customers to their stores and online platform by ensuring that their fruits are of good quality.

By following this roadmap, Fresh can transition to a lean and agile value chain over the next 2 years. This will help them to improve their customer service, reduce costs, and maintain a competitive edge in the market.

Q3."Second Childhood" is a senior citizen township which provides all types of amenities from housing, boarding, medical facilities, fitness needs, diet needs, entertainment etc. It houses about 1000 families in a vast campus of about 100 acres. They need to forecast various needs from catering needs, medicines, facility capacity, human resources need etc.

a. Describe steps in demand forecasting in this case situation? **(5Marks)**

Answer:

Demand forecasting is the process of calculating how much of a product or service customers are expected to buy in a certain time period. It assists firms in planning their operations, manufacturing, and inventory management. In the instance of Second Childhood, demand forecasting for numerous items and services required by the township's senior inhabitants is possible.

In this example, the following steps are involved in demand forecasting:

1. Identify the product or service: The first stage is to determine which items or services require forecasting. In the case of Second Childhood, for example, catering services, medicines, fitness equipment, and so on could be identified as items or services that require demand forecasting.

2. Collect historical data: The next stage is to collect history data on the items or services that have been identified. Past sales data, consumer comments, and any other relevant information that can aid in projecting future demand can be included in this data. This information can be used to investigate trends, seasonal fluctuations, and other factors that may influence demand.

3. Analyze the data: Once the historical data has been collected, it must be analyzed to detect any trends or patterns. To estimate future demand, statistical approaches such as regression analysis or time series analysis can be used. For example, if prior data reveals a larger demand for catering services during the winter months, it is reasonable to expect a similar pattern in the future.

4. Consider the following external factors: Changes in demographics, economic situations, or government regulations can all have an impact on demand. When forecasting demand, these elements must be taken into account. For example, changes in government healthcare policies may have an impact on the demand for certain medicines.
5. Select a forecasting approach: The most appropriate forecasting method can be selected based on the analysis. This could be a qualitative method, such as expert opinion, in which industry experts' opinions are used to forecast demand. A quantitative method, such as statistical forecasting, can also be used to estimate demand based on past data and discovered patterns.
6. Monitor and adjust: Once the forecast is completed, it is critical to monitor actual demand and adjust the forecast as needed. This will aid in the accuracy of future forecasts. For example, if the anticipated demand for catering services exceeds the actual demand, inventory can be modified accordingly.

In summary, demand forecasting for Second Childhood includes defining the items or services, acquiring historical data, interpreting the data, taking into account external influences, selecting a forecasting method, monitoring and adjusting the forecast. This procedure can assist the township in better planning its operations and managing its inventories and resources.

b. Describe methods of demand forecasting? **(5Marks)**

Answer

There are various methods of demand forecasting that can be used by "Second Childhood" to forecast their various needs such as catering needs, medicines, facility capacity, human resources need, etc. Here are some methods of demand forecasting:

Time-series forecasting: Time-series analysis is a technique for spotting patterns and trends in demand over time by examining historical data. In scenarios where it is

anticipated that historical demand patterns would persist into the future, time-series analysis is frequently employed to forecast demand. Using historical demand data as a foundation, a statistical model is built, and it is then used to predict future demand.

Example: For instance, Second Childhood can examine historical demand information for each pharmaceutical, such as the amount of prescriptions filled each month, and use that information to build a time-series model that predicts future demand based on historical trends. When there is a large amount of historical data available and it is likely that current trends will persist in the future, this approach can be helpful.

Regression analysis: Regression analysis is a technique used to forecast future demand by examining the relationship between various variables. When there is a distinct link between two or more variables and that relationship may be used to forecast future demand, regression analysis is applied. Regression analysis, for instance, can be used by Second Childhood to project the need for medical facilities based on the township's population.

Finding the important factors that influence demand, such as the population size, the demographics of the inhabitants' ages, and their medical backgrounds, is the task of regression analysis. The process then entails developing a statistical model that, using those data, forecasts demand. When there is a distinct relationship between demand and one or more factors, this strategy can be helpful.

Survey technique: This technique entails gathering information from locals via surveys or interviews in order to comprehend their requirements and preferences. When a company wishes to comprehend the precise requirements and preferences of its consumers or customers, the survey approach might be helpful. For instance, Second Childhood can carry out a study to determine the inhabitants' dietary preferences and use the results to project catering requirements.

Designing a survey that includes questions regarding particular requirements and preferences, such as dietary limitations or preferred forms of entertainment, is the survey approach. After then, the survey data is examined to identify patterns and

trends in the responses. This approach is helpful when an organization wishes to compile detailed information on client preferences or demands.

Expert opinion: This strategy entails obtaining expert opinions from persons with relevant knowledge. When an organization seeks to obtain ideas from people with specific experience or knowledge, expert opinion is valuable. Second Childhood, for example, can confer with medical professionals to foresee the demand for medical facilities.

Identification of individuals with specific experience in the area being projected, such as medical professionals or catering experts, is required for expert opinion. Based on their expertise and knowledge, these experts are asked to submit their predictions for future demand. This strategy is effective when specific experience or information is required to estimate future demand.

Delphi technique: This method includes anonymously and iteratively obtaining opinions from a group of experts until a consensus is established. When an organization needs to acquire opinions from a group of specialists without biassing the outcomes, the Delphi approach is effective. Second Childhood, for example, can use the Delphi technique to forecast the requirement for human resources by polling a group of experts in the field.

The Delphi approach is selecting a group of experts and asking them to submit anonymous judgements on future demand. The data is subsequently analyzed, and a summary report is generated. The experts are then requested to anonymously analyze the report and provide additional feedback. This procedure is repeated until a decision is obtained. This strategy is effective when gathering unbiased comments from a group of professionals.