**AKP302 Midterm test [15%]**

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| Marks: |  |

**Objective CO2 PO1:** Apply variety of techniques and strategies in operations management to improve efficiency, effectiveness, and productivity.

**Question:**

Imagine you are the operations manager of a manufacturing company that has been significantly impacted by the ongoing COVID-19 pandemic. The demand for your products has been fluctuating, and there is uncertainty about the future market conditions. In this challenging environment, you are tasked with selecting an appropriate forecasting technique to help guide the company's production planning and inventory management.

**Outline the specific factors you would consider in choosing between a short-term forecasting technique and a long-term forecasting technique** in the context of the COVID-19 case. Provide a detailed analysis of the advantages and limitations of each type of forecasting method and justify your final recommendation for the company.

1. Choose whether to employ short-term or long-term forecasting technique and provide your reasons. [5 Marks]

Now, consider a scenario where the manufacturing company has decided to diversify its product line due to the impact of COVID-19 on its traditional offerings. The company is entering a new market segment and wants to establish a robust forecasting strategy for the launch of these new products. As the operations manager, **outline the factors or considerations for choosing between qualitative and quantitative forecasting techniques** for this product diversification in the context of the ongoing pandemic. Provide a detailed analysis of the strengths and weaknesses of each approach and justify your recommended forecasting method.

1. Choose whether to employ qualitative or quantitative forecasting techniques based on factors below and provide reasons why: [10 Marks]
   1. Nature of the Product
   2. Market Research and Expert Opinions
   3. Customer Preferences and Behavioral Factors
   4. Data Availability and Reliability
   5. Time Sensitivity

Answers:

1. Forecasting Time Horizon is generally separated into 3 separate type.

* *Short-range forecasting*

Typically ranging from a few days to a few weeks up until 1 year. This type of forecasting is generally used by organizations to make informed decisions about their day-to-day operations such as purchasing things, job scheduling, production planning, resource allocations, etc.

* *Medium-range forecasting*

Typically ranging from a few months to a few years up until 3 years. This type of forecasting is generally used by organizations to make strategic decisions, sales planning, budgeting, plan for mid-term challenges, and align their operations with anticipated changes in demand, supply, and other relevant factors.

* *Long-range forecasting*

Typically ranging to several more years longer than medium-range forecasting. This type of forecasting is generally used by organizations to do strategic planning and decision-making, helping organizations prepare for significant changes in the business environment, new product planning, capital expenditures and research and development.

In the case of choosing which forecasting type is suitable in the midst of the Covid-19 crisis, I would choose the long-range forecast. The reason being ,long range forecasting are able to deal with more comprehensive issues and crucial decisions for several years. Several reasons why the company should use long-range forecasting are.

* *Strategic Planning*

The company should develop plans for recovery and potential growth beyond the crisis for years to come.

* *Risk Mitigation*

The company should be able to identify and mitigate potential risks associated with the pandemic and its aftermath that may impact the business in the coming months and years.

* *Resource planning and allocation*

The company should prioritize planning to allocate resources effectively during the pandemic, which may include workforce planning, optimizing the supply chain, and capital expenditure decisions.

1. Forecasting approaches are separated into two (2) different methods that has different functionalities, but both have their own strengths and weaknesses.

* *Qualitative methods*

This method is generally used when the situation is vague and little data or information exist due to a sudden phenomenon.

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| **Strengths** | **Weaknesses** |
| Subjective Insights from expert opinions, market research and focus groups. | The method is prone to subjectivity, bias, and interpretation errors since different people has different opinion. |
| This method allows for flexibility and adaptable to changing circumstances. | Lacks the precision since not enough reliable data has been collected thus decreasing accuracy. |
| Introducing new products will be made easier since it provides a room for innovation. | It can be time consuming since survey and research may take some time. |

* *Quantitative methods*

The method is generally used when the situation is stable or constant and historical data or information exist due to a past phenomenon.

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| **Strengths** | **Weaknesses** |
| This method uses historical data to provide more objective and data-driven forecasts that can enhance accuracy. | It assumes that historical patterns will continue into the future and may prove to be wrong. |
| The method creates realistic and precise forecasts, especially when dealing with numerical variables. | This method may be limited by the absence of relevant historical data. This can lead to inaccuracies in forecasting for new products on the markets. |

Based on my analysis, the use of qualitative methods may seem suitable for the current Covid-19 pandemic, since this phenomenon hasn’t happened before thus, we lack relevant data pertaining to the current situation, and thus by implementing qualitative methods it has a chance to maximize revenue.

1. **Nature of the product**

By employing qualitative methods, each company can delve into market research and experts’ opinion and do research and development on what kind of product or service that are suitable for the current market.

1. **Market Research and Expert opinions**

By employing qualitative methods, market research and expert opinions is no doubt necessary since it became the only source of data despite its low precision and accuracy.

1. **Customer Preferences and Behavioral Factors**

By employing qualitative methods, we can be flexible towards the customer preferences and behaviours since the method allows for flexibility in a changing environments.

1. **Data Availability and Reliability**

By employing qualitative methods, data availability and reliability are nowhere near precise compared to quantitative methods since no past records can be used, however the data will be available if given enough time to be collected during the pandemic.

1. **Time sensitivity**

By employing qualitative methods, it needs more time to gather information and usable data for it to be processed, since the data are from many sources of subjective insights, it will take a longer time to obtain compared to quantitative methods.