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| **Topic: PROCUREMENT AND SUPPLY CHAIN MANAGEMENT** |
| **Assignment: FINAL EXAM QUESTION** |
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| **Registration Number: Aipms/227/2019** |

**Answer all questions**

1. **Outline the phases and processes of operation research study. What is its limitation.**

**Operations research** is an analytical method of problem-solving and decision-making that is useful in the management of organizations. Problems are broken down into basic components and then solved in defined steps by mathematical analysis.

**Processes of operation research**

**Recognize the problem:** Decision making begins with a situation in which a problem is recognized. The problem may be actual or abstract, it may involve current operations or proposed expansions or contractions due to expected market shifts, it may become apparent through consumer complaints or through employee suggestions, it may be a conscious effort to improve efficiency or a response to an unexpected crisis.

**Formulate the problem:** At the formulation stage, statements of objectives, constraints on solutions, appropriate assumptions, descriptions of processes, data requirements, alternatives for action and metrics for measuring progress are introduced.

**Construct a model:** A model is always an abstraction that is, by necessity, simpler than the reality. Elements that are irrelevant or unimportant to the problem are to be ignored, hopefully leaving enough detail so that the solution obtained with the model has value about the original problem. The statements of the abstractions introduced in the construction of the model are called the assumptions.

**Find a solution:** Here tools available to the analyst are used to obtain a solution to the mathematical model. Some methods can prescribe optimal solutions while other only evaluate candidates, thus requiring a trial and error approach to finding an acceptable course of action. To carry out this task the analyst must have a broad knowledge of available solution methodologies. It may be necessary to develop new techniques specifically tailored to the problem at hand. A model that is impossible to solve may have been formulated incorrectly or burdened with too much detail. Such a case signals the return to the previous step for simplification or perhaps the postponement of the study if no acceptable, tractable model can be found.

**Establish the procedure:** Once a solution is accepted a procedure must be designed to retain control of the implementation effort. Problems are usually ongoing rather than unique. Solutions are implemented as procedures to be used repeatedly in an almost automatic fashion under perhaps changing conditions. Control may be achieved with a set of operating rules, a job description, laws or regulations promulgated by a government body, or computer programs that accept current data and prescribe actions.

**Implement the solution:** A solution to a problem usually implies changes for some individuals in the organization. Because resistance to change is common, the implementation of solutions is perhaps the most difficult part of a problem-solving exercise. Some say it is the most important part. Although not strictly the responsibility of the analyst, the solution process itself can be designed to smooth the way for implementation. The persons who are likely to be affected by the changes brought about by a solution should take part, or at least be consulted, during the various stages involving problem formulation, solution testing, and the establishment of the procedure. (Paul A. Jensen, 2004 Operations Research Models and Methods)

**Limitations of operations research**

**Costly:** Operations research is very costly. This is because it makes mathematical models for taking decisions and solving problems. The company must make various models for solving different problems. All this increments the cost.

**Not Realistic:** Operations research experts make very complex models for solving problems. These models may not be realistic. Hence, they may not be useful for real-life situations.

**Complex:** It is a very complex concept. It is very difficult for an average manager to understand it. Therefore, most managers do not use its techniques.

**Implementation:** Implementation of decisions is a delicate task. It must consider the complexities of human relations and behavior. These are applicable to only specific categories of decision-making problems.

1. **Explain ways in which purchasing, and supply performance measurement may enhance productivity of an organization.**

When business people talk about supplier management, they refer to the systems, technology, and procedures that connect a supplier to a customer. An efficient and performing supply chain helps a business save money, thanks to faster client deliveries, shorter factory processing times, and better inventory management. (Micah Pratt, 2013 www.business.org)

**Cost Saving:** If the purchasing department procures an item at a lower price than they did previously, then it is a cost-saving. This can occur when a new supplier is found, a less costly substitute item is used, a new contract has been signed with the vendor, a cheaper transportation method has been found, or the purchasing department has negotiated a lower price with the existing supplier.

**Increased Quality:** When an item has improved quality either by using a different supplier or by negotiating with the existing supplier, the improvement will be reflected in a reduction of waste or production resources.

**Purchasing Improvements:** Efficiencies in the methods used in the purchasing department will increase effectiveness. These can include the introduction of EDI, e-procurement systems, vendor-managed inventory and pay on receipt processes.

**Transportation Improvements:** When a purchasing department negotiates with a carrier or number of carriers to reduce the cost of transporting items from the vendor to the production facilities, the unit cost of the item will be reduced. This cost-saving can be used as a measurement of effectiveness.

1. **Purchasing and supply management differ from each other in their focus and scope. Explain pointing out the difference between the two.**

**Supply chain** is the network of manufacturers, suppliers, logistics providers and other people involved in getting your product in the hands of a customer. Supply chain incorporates not only raw material gatherers, transportation companies and wholesale warehouses, but also tasks and functions that contribute to moving the following product. These tasks represent quality control, marketing, procurement and sourcing.

**Purchasing** is the set of functions associated with acquiring the goods and services that an organization requires. Purchasing is a small subset of the broader procurement function. This process includes activities like ordering, expediting, receiving, and fulfilling payment.

Monczka, Handfield, Giunipero, & Patterson (2011) wrote that purchasing includes; **“supplier identification and selection, buying, negotiation and contracting, supply market research, supplier measurement and improvement, and purchasing systems development.”**

As pointed out by Monczka, et al (2011), **“the Institute of Supply Management defines supply chain as the identification, acquisition, access, positioning, and management of resources and related capabilities an organization needs potentially in the attainment of its strategic objectives.”**

1. **Discuss the four principles that might guide a supply chain manager.**

**Segment customers** based on the ser­vice needs of distinct groups and adapt the supply chain to serve these segments profitably. Customize the logistics network to the service requirements and profitability of customer segments.

**Listen to market signals** and align demand planning accordingly across the supply chain, ensuring consistent forecasts and optimal resource allocation. Differentiate product closer to the customer and speed conversion across the supply chain

**Manage sources of supply** strategically to reduce the total cost of owning materials and services. Develop a supply chain-wide technology strategy that supports multiple levels of decision making and gives a clear view of the flow of products, services, and information

**Adopt channel-spanning performance measures** to gauge collective success in reaching the end-user effectively and efficiently

1. **Explain the circumstances under which the supplier bargaining power may be higher than the buyers.**

A strong supplier may be able to effect profitability, quality of products and force companies to raise prices. The following factors may raise the bargaining power of suppliers:

If the suppliers have a larger base of customers, then they will be able to exert more control over the buyer. When the bulk of sales in not made up of one company’s business, the supplier can afford to drop a buyer who resists its efforts to exert control.

If there are only a few suppliers in the market, then they will manage to have more control. Fast Food chains can simply pick other suppliers in industries where suppliers are manifold. In this case the supplier will have to meet the buyer’s demands or sell a highly differentiated product.

Suppliers with strong brand names of their own will be able to exert more control. Generic products on the other hand will have significantly less bargaining room. For example, condiment makers who supply to chain stores may be able to leverage consumer preferences for their product over a generic one of the same types. Also, beverage choices such as a preference for Coca Cola over Pepsi may drive people from one chain to the other ([www.cleverism.com](http://www.cleverism.com) article published by Martin. 2014)

1. **Highlight five strategic issues in purchasing and supply that may be put in place to ensure value of money without sacrificing the environment.**

**Supplier Optimization:** The company chooses an optimum mix of vendors who can provide the best prices and terms. This process usually means that the less able suppliers who cannot provide a quality service at the terms and prices required are discarded. This is by far the most common of the various purchasing strategies.

**TQM:** Total Quality Methods, requires the vendors to provide an ever-increasing quality service with zero errors. The supplier ensures purchasing best practices using several tools such as six-sigma.

**Risk Management:** As more companies obtain their supplies from countries such as China and India, they are more concerned with the risk management of this supply chain. Whilst these countries can supply products at very advantageous prices, these advantages can be soon negated by a natural or human disaster.

**Global Sourcing:** Large multinational companies see the world as one large market and source from many vendors, regardless of their country of origin.

**Vendor Development:** Companies should spend some time in developing processes that assist these vendors. There may also be the situation where a company is dependent upon just one supplier for their products. If this supplier is unable to perform to the required standards, the purchaser may assist the vendor in improving their service or implement processes to improve their procurement cycle.

**Green Purchasing:** This is one of the more common purchasing strategies for governments and local governments. This strategy champions the need for recycling and purchasing products that have a negative impact on the environment. Company will choose purchasing strategies that promote their procurement best practices of minimizing costs, maximizing quality and ensuring that quality products are delivered on time. (2017 Purchasing & Procurement Center).

1. **What is the difference between a purchase order and purchase requisition? Prepare a standard purchase requisition form with all the entries filled.**

The key difference between these two documents is that a purchase requisition is about permission and purchase orders are about purchasing.

The purchase requisition process starts with a purchase requisition or purchase request form, a document that is created by the purchaser and submitted to the department that controls finances. This is part of the purchasing process where you get the thumbs up to purchase the goods and services you want. You are not actually ordering anything, you are getting the approval to do so. This serves as the first step in an efficient audit trail for purchasing. Purchase requisitions are often required for goods over a certain dollar threshold. For example, our procurement department requires that purchasers submit a purchase request for goods and services over $3,500.

The purchase order is where the buying happens. Once the purchasing or procurement department has approved the purchase requisition and given you the figurative thumbs up to purchase your desired goods and services, it issues a purchase order to the vendor. Purchase orders are typically created using electronic purchasing systems like we are currently using FASTrax and Jamis for Purchase order controls, which enable businesses to track POs and submit them electronically to finance for payment processing.

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| **PURCHASE REQUISITION** |

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Vendors Name & Address

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PR REF: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Order Date: \_\_\_\_\_\_\_\_\_\_\_\_

This document constitutes an agreement between the vendor and the buyer. See terms and conditions of this purchase listed on the reverse side

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Supplier Acceptance/Stamp

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Sign: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date\_\_\_\_\_\_\_\_\_\_\_\_ Financial Review: \_\_\_\_\_\_\_\_\_

Procurement Manager

**Approval**

Sign: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date\_\_\_\_\_\_\_\_\_\_\_\_ Country Director: \_\_\_\_\_\_\_\_\_

Program Manager (**Approval for Capital Items**)

1. **Identify and briefly explain some important documents that Purchasing departments should have a record of.**

Procurement documents are the documents prepared by the buyer or seller to complete the procurement management process.

**Procurement statement of work (SOW):** Buyer usually prepares the SOW towards the seller. SOW contains the actual work the seller needs to do as part of the procurement.

**Request for information (RFI):** Buyer asks all the selected suppliers to provide information related to them. For example, information on supplier pertaining to organization capabilities, capacity, skill sets, references, etc.

**Invitation for bid (IFB):** Invitation for bid is a formal way of buyer asking suppliers to provide the bid. IFB is primarily used when buyer has a good understanding on what work is involved and solution is also more or less the same from all sellers and the prime differentiator is only the price.

**Request for proposal (RFP):** On the other hand, request for proposal (RFP) is like IFB and will be issued by the buyer to suppliers. However, this involves buyer asking for sellers’ proposal to solve an issue or complete a project. This usually includes a solution to propose along with commercials, level of compliances, and other terms and conditions.

**Invitation for quote (IFQ):** Invitation for quote is a type of procurement solicitation in which buyer asks the suppliers or sellers for a fixed price quotation to bid for a project. Sometimes buyers ask the sellers for IFQ or (request for quotation) RFQ to understand the cost of the project in very high level before issuing an RFP.

**Purchase order (PO):** Purchase order is type of fixed price agreement or contract from buyer to seller asking the seller to supply the products and services that are agreed by both the parties.

1. **Identify and explain some of the attributes to look for when choosing a supplier.**

**Accountability for quality issues:** Admitting to a mistake can be difficult. But when your goods are on the line, working with a quality supplier that takes responsibility for their half of a deal can make a world of difference. That is why accountability for quality issues tops the list of characteristics of a good supplier.

**Production capabilities:** Most importers understand the importance of looking for suppliers who can actually manufacture the product they want. A quality supplier should be able to consistently manufacture a product that meets your requirements.

**Expertise in your product type and target market:** A supplier is more likely to be familiar with common quality issues related to your product if they have experience manufacturing a similar product. They are more likely to be able to identify and fix problems proactively before those problems affect a large portion of the order.

**Culture fit:** Suppliers with a customer profile similar to your business will be better equipped to meet your requirements. Willing to work with you and prioritize your requirements is a vital characteristic of a good supplier.

**Ease of communication:** Language and cultural barriers can present real challenges for importers looking for suppliers overseas. You will benefit greatly from working with a supplier that is easy to communicate with. Effective communication can prevent a variety of problems ranging from production delays to product nonconformities.

**Regulatory compliance:** Checking whether the supplier has a valid business license and export license can help you avoid working with a factory that is operating illegally.

**Ethical compliance:** Many importers do not want to work with a factory that treats their workers unfairly or maintains unsafe working conditions. (Oliver Knack 9 Oct 2018)

1. **What is inventory management. What is the importance of keeping an inventory in an organization? Identify the different types of inventory.**

Inventory management refers to the process of ordering, storing, and using a company's inventory. These include the management of raw materials, components, and finished products, as well as warehousing and processing such items.

When you have control over your inventory, you are able to provide better customer service. It will also help you get a better, more real-time understanding of what is selling and what isn’t.

**Increases productivity and efficiency:** Stock management devices such as bar-code scanners and stock management software can help drastically improve your efficiency and productivity. These tools will help eliminate manual processes so your employees can focus on other, more important areas of the business.

**Creates a more organised warehouse:** A good stock management strategy supports an organised warehouse. If your warehouse is not organised properly, you will have a hard time managing your inventory. Many companies choose to optimise their warehouses by placing the best selling products together and in easily accessible places in the warehouse. This, in turn, helps to speed up the order fulfillment process and keeps customers happy.

**Helps save time and money:** Inventory management can have time and monetary benefits. By keeping track of which products you have in stock and ordered, you can save yourself the effort of having to do an additional stock take to ensure your records are accurate. A good stock management strategy also helps you save money that could otherwise be wasted on slow-moving products.

**Improves accuracy of inventory orders:** Good stock management also helps you calculate exactly how much inventory you need to have on-hand at any time. This helps prevent product shortages and allows you to keep just enough inventory without having a surplus of stock in the warehouse.

**Keeps customers coming back for more:** It is a fact that good stock management leads to returning customers. If you want your hard-earned customers to come back for your products and services, you need to be able to meet customer demand quickly and efficiently. In this way, stock management helps you meet demand by giving you the tools to have the right products as soon as your customers require them.

**Identify the different types of inventory**

The following are common types of inventory

**Materials and components:** These are inputs that are used in the production of products and services, for example sugarcane used to produce sugar and other animal products.

**Work in process inventory:** these are partially finished products awaiting in the warehouse for completion such as bicycles waiting for tire rims to arrive.

**Finished goods inventory:** these are goods stored in warehouse waiting or in transit to the company end-customer or other distribution channels.

**Maintenance, repair and operating inventory:** stock used or consumed in the production or operations activities, for example spare parts used for maintenance of fleet and office and cleaning supplies.

**References:**

*Oliver Knack 9 Oct 2018* attributes to look for in suppliers

*Martin. 2014* bargaining power of suppliers article posted on www.cleverism.com

*Monczka, Handfield, Giunipero, & Patterson 2011* sheds more light on supply chain and supply chain definition

*Micah Pratt, 2013* more on Supplier management article from [www.business.org](http://www.business.org)

*Paul A. Jensen, 2004* Operations Research Models and Methods; Read more on strategies of operations research an article by;

<https://www.thebalancesmb.com/measuring-purchasing-performance>; Ways of enhancing supply chain management.