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M.S.-53

**PRODUCTION /
OPERATIONS
MANAGEMENT**

Dr. Jyoti Kaur, M.C.A.

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QUESTION PAPER

(June – 2019)

(Solved)

PRODUCTION/OPERATIONS MANAGEMENT

Time: 3 Hours]

[Maximum Marks: 100

(Weightage: 70%)

Note: Attempt any four questions. All questions carry equal marks.

Q. 1. (a) Define a production system. Give its major characteristics. Taking example of a manufacturing company, explain the system view-point of operations management.

Ans. Ref.: See Chapter-2, Page No. 8, 'Introduction', 'Production/Operations Management Systems View-point'.

(b) Explain the complementary role of productivity and wastivity in effective utilization of resources.

Ans. Ref.: See Chapter-1, Page No. 5, Q. No. 5.

Q. 2. (a) Discuss the objectives of good facility planning. Name the various types of layout.

Ans. Ref.: See Chapter-8, Page No. 79, 'Facility Planning: Objectives' and 'Types of Layouts'.

(b) What are the major benefits of ISO 9000 certification? Discuss the utility of ISO 9000 certification for an automobile company.

Ans. Ref.: See Chapter-3, Page No. 33, Q. No. 11 and Page No. 26, 'ISO-9000 The International Quality System Standard'.

Q. 3. (a) Discuss 'Organized Problem Solving' in the context of quality management.

Ans. Ref.: See Chapter-3, Page No. 23, 'Organizing Problem Solving'.

(b) What are the main classes of quantitative models for forecasting? Explain exponential smoothing method.

Ans. Ref.: See Chapter-6, Page No. 60, 'Main Classes of Quantitative Models' and Page No. 63, 'Exponential Smoothing'.

Q. 4. (a) With the help of suitable examples, explain the characteristics of 'Just-in-time' concept.

Ans. Ref.: See Chapter-18, Page No. 191, 'Just-in-time Manufacturing Systems'.

(b) Why is inventory required in any manufacturing organization? State the assumptions for EOQ model.

Ans. Ref.: See Chapter-15, Page No. 156, 'Introduction' and 'EOQ Assumptions'.

Q. 5. (a) Discuss the application of Computer Aided Process Planning (CAPP) for production management.

Ans. Ref.: See Chapter-18, Page No. 190, 'Computer-Aided Process Planning'.

(b) Explain the characteristics of Total Preventive Maintenance (TPM). Why is it a preferred technique?

Ans. Ref.: See Chapter-17, Page No. 177-178, 'Motivation and Identifying Characteristics of TPM' and Page No. 185-186, Q. No.5.

Q. 6. (a) Explain Flexible Manufacturing System with the help of a suitable example.

Ans. Ref.: See Chapter-18, Page No. 190, 'Flexible Manufacturing System'.

(b) What is a 'bath-tub curve' Discuss in detail. Explain chronic and sporadic losses with examples.

Ans. Ref.: See Chapter-17, Page No. 184, Q. No. 2 and Page No. 179, 'Chronic and Sporadic Losses'.

■ ■

QUESTION PAPER

(December – 2018)

(Solved)

PRODUCTION/OPERATIONS MANAGEMENT

Time: 3 Hours /

[Maximum Marks: 100

(Weightage: 70%)

Note: Attempt any four questions. All questions carry equal marks.

Q. 1. (a) Richness of the job is measured by multi-disciplinary tapestry of the function involved. Justify that operations management is a multi-disciplinary function.

Ans. Ref.: See Chapter-1, Page No. 2, 'Operation Management is Multi-disciplinary'.

Also Add: Operation management encompasses following functions:

1. Product design, development and management.
2. Process design, development and management.
3. Methods and manufacturing engineering.
4. Material handling systems and layout studies.
5. Capacity and manning studies.
6. Site selection and facilities planning.
7. Project management-establishing or expanding a facility.
8. Purchasing, warehousing and materials management.
9. Operations planning, scheduling and control.
10. Material and resource planning for production and manufacturing.
11. Maintenance and up keep of machines.
12. Productivity management and designing effective man, machine and environment systems.
13. Quality control and management.
14. Safety, health and environment management.

Besides a good operations person must have good grounding in:

15. Finance and cost-accounting
16. Human resource and people management
17. Legal provisions for running an operations facility, etc.

There is, therefore, an urgent need to inject persons with multi-disciplinary knowledge in the functional area of operations management.

(b) With a sound IT system in place, the information flows electronically in an organisation. Evaluate the need of information system for planning, organizing and controlling in operations management.

Ans. Ref.: See Chapter-10, Page No. 105, Q. No. 8.

Q. 2. (a) Select a telecom service provider and discuss the dimensions of quality on which customer might evaluate it?

Ans. Quality and Customer Satisfaction: We achieve customer satisfaction with the help of several product features. Or through products that are free from deficiencies. Product having good features meant to attract customers are said to have good quality of design. The various dimensions of design quality could be performance, reliability durability, ease-of use, serviceability, aesthetics, availability of options (additional features and expandability), and reputation. In a service set-up the dimensions are accuracy, timeliness, completeness, friendliness, anticipating customer needs, knowledge of server aesthetics and reputation. Hence, they have the capabilities of commanding high price and share and therefore earning higher revenue. On the other hand, products having less deficiencies are said to have good quality of conformance. Lower deficiencies are achieved through waste reduction leading to lower costs thereby yielding higher profits. Freedom from deficiencies or conformance to standards are necessary a delivery, during use and during servicing. In addition, other supporting business processes such as sales and billing should be free from errors. Higher conformance means fewer complaints which implies greater customer satisfaction. The net effect of improved quality of design and conformance is increased profits.

Sample Preview of The Chapter

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PRODUCTION AND OPERATIONS MANAGEMENT

ISSUES IN PRODUCTION AND OPERATIONS MANAGEMENT

Production and Operations Management: An Overview



INTRODUCTION

In today's technological era companies are competing in a very difficult environment as compared to few years ago. To survive, organizations have to focus on quality, competition, efficiency and customer relationships. This focus has placed the production and operations management in the main attention of any business. Every business is managed through three main functions: finance, marketing and operations. The production and operations management is a management function that plans, organizes, coordinates and controls the resources required to produce goods and services. The main role of operations management is to transform a set of input resources into the finished goods or services.

CHAPTER AT A GLANCE

SCOPE AND SIGNIFICANCE

Generally, the term production refers to factories, machinery and equipments. But the field production management has expanded in scope to cover management of non-manufacturing activities like banking, hotel management, transportation, education etc. Due to this scope it is termed as production and operations management or simply operations management. Production and operations management

deals with design, operation and improvement of the systems that deliver a firm's products and services. Operations management focuses on managing the processes to produce and distribute products and services. It is related to all the activities like managing purchases, inventory control, quality control, storage, logistics and evaluation.

SYSTEMATIC VIEW OF OPERATIONS

There has been a great turn around in the development of operations management. The manufacturing facilities of producing concrete goods had been eliminated from the customer. This influences the customers unfavourably. The main focus of operations management is to converting raw materials into finished goods and services and delivering it to customers. It delivers the outcomes that are specified within the organization's overall strategy. The input resources primarily enhance value to raw materials and provide outputs to the customer. The conversion process gives importance to raw materials by transforming its shape, size or weight and transformation process results in form, location or time.

FACTORS OF PRODUCTION

In economics, there are four factors of production; namely land, labour, capital and entrepreneurship. Each factor plays a unique role in the production of goods.

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The industrial managers are engaged in effective and efficient utilization of various resources like men, money, machines, materials, methods, management, measurement, message and energy. Except men and money, rest all the resources are knowledge-based and technology-oriented.

PRODUCTIVE USE OF RESOURCES

Most people are “green” to the extent that they feel resources should be used wisely. Unfortunately, it is at that point that things become subjective. My definition of wise use of resources may differ from yours. It can depend on differences in our time preference (over what period of time); it can relate to our differing prioritization of wants (want vs. need); and it can depend on our perceived opportunity cost (what do we each give up) compounded by externalities (do we bear all the cost and/or receive all the benefits).

This piece in *The Economist* was interesting because, while it discussed the use of resources that many of us would feel are unproductive, it pointed out that there are benefits to (re)using the resources, as well as costs. I think it offers a good conversation starter or caper when discussing resource use and the constraints people face when applying resources to wants.

ENVIRONMENTAL CONCERNS OF OPERATIONS

UNHCR recognizes three main phases of assistance to refugees – “emergency”, “care and maintenance” and “durable solutions” – each of which requires specific attention. Environmental pressures too will differ between these stages, as well as from one situation to another. At each stage, however, consideration should be given to the basic principles outlined in UNHCR’s Environmental Guidelines.

Emergency in the Making

UNHCR and other relief organizations must be able to respond to emergencies whenever and wherever they arise. Sometimes these events may be predicted, for example, following increased political tensions in a particular country. Even then, however, no one can foresee what the response of people will be to these problems – the number of people involved, the direction in which they might flee for safety, or what the resulting impact on local settlements and the environment is likely to be.

The emergency phase is the most critical period for UNHCR operations and its field staff must be prepared for any eventuality. It is also probably the most critical time for environmental impacts, since the needs of homeless people must be given priority. Actions taken during this time to minimise impacts on the environment will have great importance for later phases of operations, and may have considerable bearing on the welfare of affected people.

Some environmental damage is unavoidable during the emergency phase, particularly where large numbers of people are involved. Roads may need to be constructed to reach inaccessible sites. Camp sites and shelters must be established to safely house and accommodate swelling numbers of refugees. Particular features which must be taken into account whenever refugees are gathered together include the availability of safe drinking water, avoiding areas of endemic disease, and areas at risk from flooding or landslides.

This, however, is also the time when maximum effort must be made to keep refugees away from ecologically sensitive sites such as national parks, World Heritage Sites (which can be of cultural and/or environmental importance), fragile ecological zones such as water catchment areas, and sites of local cultural and religious importance.

By confining the impact of refugees to a restricted area and protecting the environment to the greatest extent possible during emergency situations, UNHCR and other organizations will be better positioned to control and minimise the potentially damaging impacts of large gatherings of people on the environment.

Measures taken need not be complex or expensive. Painting marks on trees that refugees might cut is a simple way of demonstrating which trees they may cut and those which should remain standing. As long as refugees are clearly told which is which, and with limited controls, this can be an effective means of environmental protection and can avoid costly rehabilitation in later stages.

SOCIAL CONCERNS OF OPERATIONS

Operations management is increasing rapidly globally. New technologies have been provided a large number of products and services which are being available at reasonable prices. Due to which, the normal life of people has become more comfortable and enjoyable. This development has given rise to industrialization. Due to industrialization the agricultural related industries are reducing and moving increasingly to urbanization.

OPERATIONS MANAGEMENT IS MULTIDISCIPLINARY

Operations management is a multi-disciplinary field that focuses on managing all aspects of an organization’s operations. “The typical organization consists of the integration of many different functions,” wrote Howard J. Weiss and Mark E. Gershon in *Production and Operations Management*. “The two most obvious functions are to provide the product or service and to sell the product or service. Operations management focuses on the function of providing the product or service. It is concerned with the planning and controlling of all activities necessary for the provision of the firm’s

product or service.” Aspects of operations management, then, include products or services to emphasize; facility size and location with respect to customers and suppliers; marketing strategies to attract clients/customers; techniques and equipment to use to make the goods or to provide the services; work force management and training; and measurements of quality assurance. Operations managers apply ideas and technologies to increase productivity and reduce costs, improve flexibility to meet rapidly changing customer needs, enhance product quality, and improve customer service.

WHITHER OPERATIONS MANAGER IN INDIA

While there is an urgent requirement to make over operations management by recruiting and positioning multilevel fresher, but eventually it is not encouraging. There is affluence of technical specialties or graduates. Most of the operation facilities are located away from the residential area. Due to which the working hours, commuting time and distances are longer. Thus the operations managers are much in demand but there is a higher premium on distinct and separate factors. This causes an urgent need to change in favour of qualified engineers with professional degree. The operations manager's role is an internally focused role which is primarily concerned with maintaining day-to-day public and administrative functions of the organizations. He is a very visible, powerful and highly respected position. An operations manager must be a qualified engineer with MBA degree or a postgraduate qualification in management. In the current global scenario there are two models available – Japanese model and USA model. Japanese model have innovated various management

systems that support in all functional areas. The USA model strengthens the marketing-oriented approach.

SELF-ASSESSMENT QUESTIONS

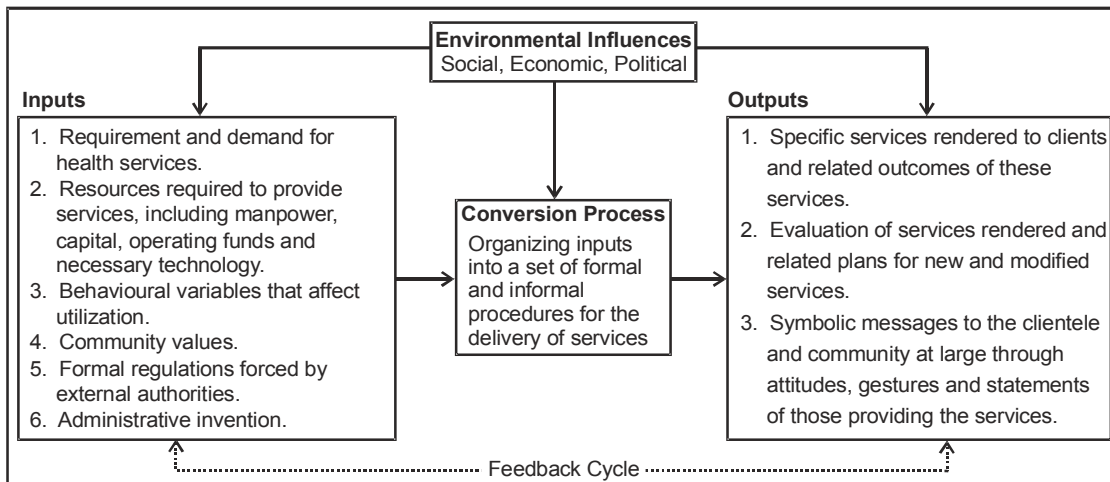
Q. 1. Why have we changed the name from production to operations management?

Ans. Over the year's operations and production management has been recognized as an important factor in a country's economic growth. The traditional view of manufacturing management began in 18th century. Adam Smith recommended breaking of jobs down into subtasks and recognizes workers to specialized tasks in which they become highly skilled and efficient. In the early twentieth century F.W. Taylor implanted this theory and developed scientific management. Since then, various techniques were developed prevailing the traditional view.

Production management becomes the more acceptable term. As F.W. Taylor's works become more widely known, managers developed techniques that focused on economic efficiency in manufacturing. At the same time, psychologists, socialists and other social scientists began to study people and human behaviour in the working environment. This emerges two distinct changes. One of them was reflected in the new name operations management. It was a move in the service and manufacturing sectors of the economy. The change from production to operations emphasized the broadening of field to service organizations. The second change was the prominence on the combination of production and manufacturing rather than just analysis in management practices.

Q. 2. Take any service organization and draw up a schematic of its overall process of inputs and outputs.

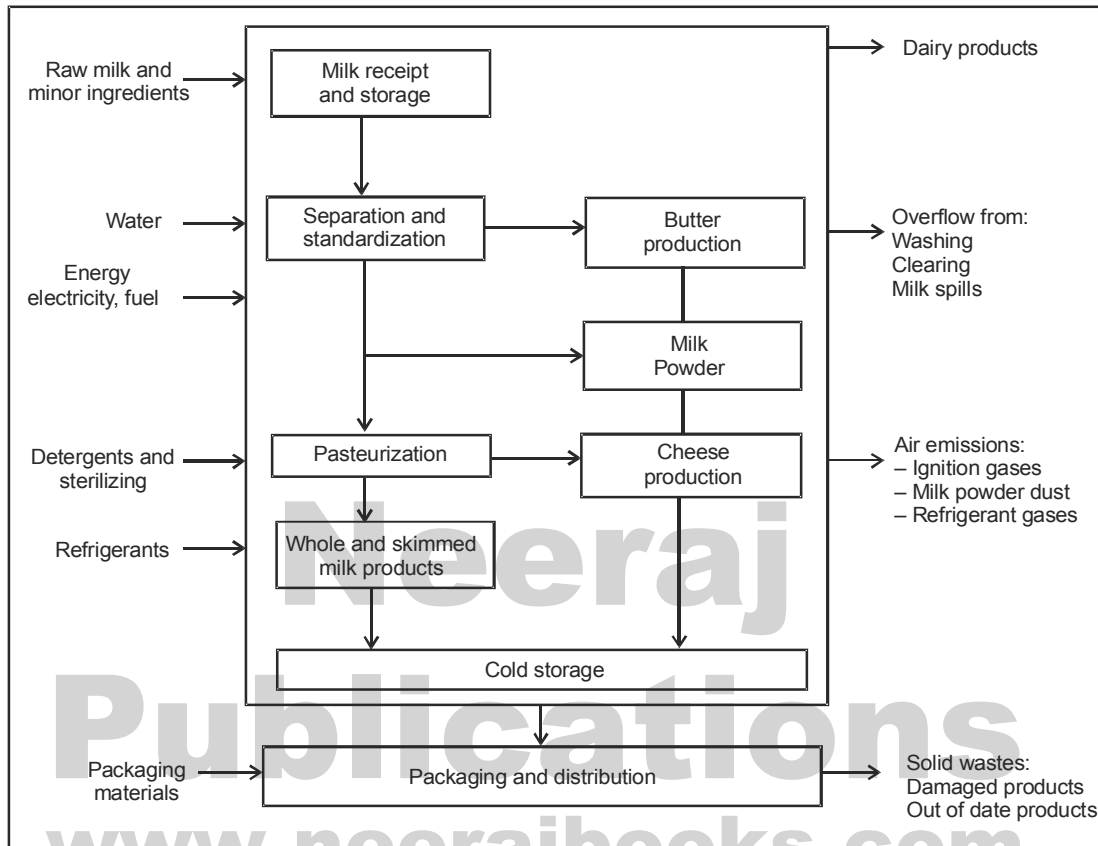
Ans. Following is a schematic view of a healthcare organization's overall process of inputs and outputs:



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Q. 3. Take a typical agriculture, poultry or dairy farm, draw up their schematics of the overall process. What are the common features?

Ans. Following is a schematic view of the overall process of a dairy farm. It includes resource inputs and waste outputs:



Schematic View of an Agricultural System

