

INTERMEDIATE

Paper 9

OPERATIONS MANAGEMENT AND STRATEGIC MANAGEMENT

Study Notes

SYLLABUS 2022



The Institute of Cost Accountants of India

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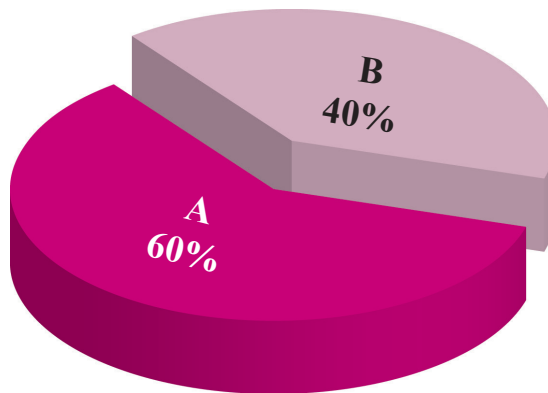
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PAPER 9 : OPERATIONS MANAGEMENT AND STRATEGIC MANAGEMENT

Syllabus Structure:

The syllabus in this module comprises the following topics and study weightage:

Module No.	Module Description	Weight
Section A: Operations Management		60%
1	Operation Management – Introduction	5%
2	Operations Planning	5%
3	Designing of Operational System and Control	5%
4	Production Planning and Control	20%
5	Productivity Management and Quality Management	5%
6	Project Management	15%
7	Economics of Maintenance and Spares Management	5%
Section B: Strategic Management		40%
8	Introduction	10%
9	Strategic Analysis and Strategic Planning	10%
10	Formulation and Implementation of Strategy	10%
11	Digital Strategy	10%



Learning Environment – Paper 9

Subject Title	OPERATIONS MANAGEMENT AND STRATEGIC MANAGEMENT
Subject Code	OMSM
Paper No.	9
Course Description	<p>The subject comprises two sections – Operations Management and Strategic Management.</p> <p>The former aims to provide students with a critical understanding of the scope and strategic importance of operations management, various tools and techniques for operations planning and designing as well as production planning. It also offers detail coverage of important techniques for measurement and management of productivity, project management and inventory management which lie at the core of a successful organisation.</p> <p>The section, Strategic Management, tries to address different aspects of strategy formulation and implementation in an organisation. It tries to take into account the problems that strategic managers face while developing and implementing strategies within a dynamic business environment. The subject also deals with the contemporary issues such as digital and social marketing strategies that have immense impact on organisation's competitive advantage.</p>
CMA Course Learning Objectives (CMLOs)	<ol style="list-style-type: none"> 1. Interpret and appreciate emerging national and global concerns affecting organizations and be in a state of readiness for business management. <ol style="list-style-type: none"> a. Identify emerging national and global forces responsible for enhanced/varied business challenges. b. Assess how far these forces pose threats to the status-quo and creating new opportunities. c. Find out ways and means to convert challenges into opportunities 2. Acquire skill sets for critical thinking, analyses and evaluations, comprehension, syntheses, and applications for optimization of sustainable goals. <ol style="list-style-type: none"> a. Be equipped with the appropriate tools for analyses of business risks and hurdles. b. Learn to apply tools and systems for evaluation of decision alternatives with a 360-degree approach. c. Develop solutions through critical thinking to optimize sustainable goals. 3. Develop an understanding of strategic, financial, cost and risk-enabled performance management in a dynamic business environment. <ol style="list-style-type: none"> a. Study the impacts of dynamic business environment on existing business strategies. b. Learn to adopt, adapt and innovate financial, cost and operating strategies to cope up with the dynamic business environment. c. Come up with strategies and tactics that create sustainable competitive advantages. 4. Learn to design the optimal approach for management of legal, institutional, regulatory and ESG frameworks, stakeholders' dynamics; monitoring, control, and reporting with application-oriented knowledge. <ol style="list-style-type: none"> a. Develop an understanding of the legal, institutional and regulatory and ESG frameworks within which a firm operates. b. Learn to articulate optimal responses to the changes in the above frameworks. c. Appreciate stakeholders' dynamics and expectations, and develop appropriate reporting mechanisms to address their concerns.

	<ol style="list-style-type: none"> 5. Prepare to adopt an integrated cross functional approach for decision management and execution with cost leadership, optimized value creations and deliveries. <ol style="list-style-type: none"> a. Acquire knowledge of cross functional tools for decision management. b. Take an industry specific approach towards cost optimization, and control to achieve sustainable cost leadership. c. Attain exclusive knowledge of data science and engineering to analyze and create value.
Subject Learning Objectives [SLOB(s)]	<p>A. Operations Management</p> <ol style="list-style-type: none"> 1. To appreciate the recent trends and challenges in production and operations management and understand the relationships between operations and other business functions. (CMLO 1a, b, c) 2. To attain knowledge on techniques and tools to be applied for product and process designing, capacity planning and production line balancing; and job designing; in operations management. (CMLO 3c, 5a, b, c) 3. To develop detailed understanding about frameworks and tools for measuring and managing productivity of resources as well as quality control of outputs. (CMLO 2q 3c, 5c) 4. To gain knowledge on project planning, managing and control to ensure optimum utilization of time and resources. (CMLO 2b, 3c, 5b) 5. To appreciate the importance and gather knowledge about processes for spares management in mitigating related risks and optimising costs. (CMLO 2a, 3c, 5b) <p>B. Strategic Management</p> <ol style="list-style-type: none"> 1. To analyse the dynamics of national and global business environment in order to assess the potential impacts of changes on existing strategies and risks and challenges. (CMLO 1a, 3a) 2. To assess organisational strengths, weaknesses, opportunities, threats, and challenges with introspective analysis of internal realities with applications of various managerial tools and frameworks. (CMLO 1b) 3. To develop the ability to identify, understand, assimilate, and use innovative strategies to create and sustain with competitive advantages. (CMLO 3 b, c) 4. To gain a comprehensive views and abilities towards achieving the overall organisational vision, mission, always remaining in search of excellence for value creation and high ESG score. (CMLO 2, c, 4a 5 c)
Subject Learning Outcome [SLOC(s)] and Application Skill [APS]	<p>A. Operations Management SLOC(s)</p> <ol style="list-style-type: none"> 1. Students will be able to attain abilities to identify the elements of operations management and various transformation processes to enhance productivity and competitiveness. 2. They will achieve application-oriented skills for analysing and evaluating various facility alternatives and their capacity decisions, develop a balanced line of production, scheduling and sequencing techniques in different operating environments. 3. They will acquire knowledge and application skills for project planning and control with the objective to ensure optimised utilisation of time and resources. 4. They will be equipped with knowledge and skills to apply materials handling principles and operating practices, measures in quality control, Quality Circles and TQM.

5. Students will accomplish application skills for mathematical tools that are needed to solve optimisation problems.
6. They will attain application-oriented knowledge for using mathematical models and software to solve various problems of operations management for improved performance and optimisation of results.

APS

1. Students will be able to independently apply attained skills to identify relevant frameworks, models and tools for solving optimisation problems and analyse how different factors in various areas of operations can affect success of business.
2. They will be able to apply attained skills for planning and time management in scheduling deadlines, monitoring important production milestones and ensuring teams finish projects within specific deadlines.
3. They will be able to apply the attained skills to examine the associated information for figuring out relevant factors responsible for a problem, and apply frameworks, methods, and tools to analyse the issues and solve problems for optimisation of results from operating actions.

B. Strategic Management

SLOC(s)

1. Students will be able to analyse an organisation’s competitive position within a dynamic business environment and devise appropriate strategies to create and sustain with competitive advantage both nationally and globally.
2. Students will be capable of identifying the core competencies of an organisation and the critical success factors which would enable them to continuously nurture and build on those to achieve a state of readiness for future.
3. Students will develop a fair understanding of the requirements to provide strategic leadership in an organisation. They will know the common gaps, biases and heuristics in decision making and how to overcome those.

APS

1. Students will be able to apply various management tools and frameworks for continuous evaluation of both present realities and emerging dimensions of external and internal business environment and impacts thereof prepare a SWOTC analyses report.
2. Students will be able to apply the acquired skill sets to frame an organisation’s strategies and tactical plans for execution thereof with a 3600 view and considering the dynamics of ever emerging business ecosystem.

Module wise Mapping of SLOB(s)

Module No.	Topics	Additional Resources (Research articles, books, case studies, blogs)	SLOB Mapped
A. Operations Management			
1	Operation Management – Introduction	Sustainable operations management: recent trends and future directions – Walker et al. https://www.emerald.com/insight/content/doi/10.1108/IJOPM-12-2013-0557/full/html	To appreciate the recent trends and challenges in production and operations management and understand the relationships between operations and other

2	Operations Planning	Orlicky's Material Requirements Planning – Ptak et al. McGraw Hill Education	To attain knowledge on techniques and tools to be applied for product and process designing, capacity planning and production line balancing; and job designing; in operations management.
3	Designing of Operational System and Control	Principles of Process Planning – A Logical Approach Halevi & Weill Springer Publication	
4	Production Planning and Control	Lean operations management: Identifying and bridging the gap between theory and practice – Tracy & Knight https://scholar.google.com/scholar?hl=en&as_sdt=0%2C5&q=lean+operations&btnG=	
5	Productivity Management and Quality Management	ISO 9000 Family Quality Management https://www.iso.org/iso-9001-quality-management.html	
6	Project Management	Fundamentals of Project Management (Fifth Edition)- Joseph Heagney Amacom Publication	To gain knowledge on project planning, managing and control to ensure optimum utilization of time and resources.
7	Economics of Maintenance and Spares Management	Maintenance and Spare Parts Management – Gopalakrishnan & Banerji PHI Learning	To appreciate the importance and gather knowledge about processes for spares management in mitigating related risks and optimising costs.

B. Strategic Management

8	Introduction	Conceptual Foundations of the Balanced Scorecard – Kaplan https://www.sciencedirect.com/science/article/abs/pii/S1751324307030039	<ol style="list-style-type: none"> 1. To analyse the dynamics of national and global business environment in order to assess the potential impacts of changes on existing strategies and risks and challenges. 2. To gain a comprehensive views and abilities towards achieving the overall organisational vision, mission, always remaining in search of excellence for value creation and high ESG score.
9	Strategic Analysis and Strategic Planning	Not dead yet: the rise, fall and persistence of the BCG Matrix – Madsen https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2954610	To assess organisational strengths, weaknesses, opportunities, threats, and challenges with introspective analysis of internal

			realities with applications of various managerial tools and frameworks.
10	Formulation and Implementation of Strategy	Measuring the Success of Technology-Based Strategic Business Units – Dvir&Shenhar https://www.tandfonline.com/doi/abs/10.1080/10429247.1992.11414701	To develop the ability to identify, understand, assimilate, and use innovative strategies to create and sustain with competitive advantages.
11	Digital Strategy	Digital Transformation - Interplay of Strategies and Technologies for Customers’ Delight in Banking Industry – CMA. ParitoshBasu http://52.172.159.94/public/journals/255/images/Volume-27-November-2021.pdf	

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SECTION-A

Operations Management

Introduction

1

This Module Includes

- 1.1 Scope**
- 1.2 Characteristics of Modern Operation Functions**
- 1.3 Recent Trends in Production and Operations Management**

Introduction

SLOB Mapped against the Module

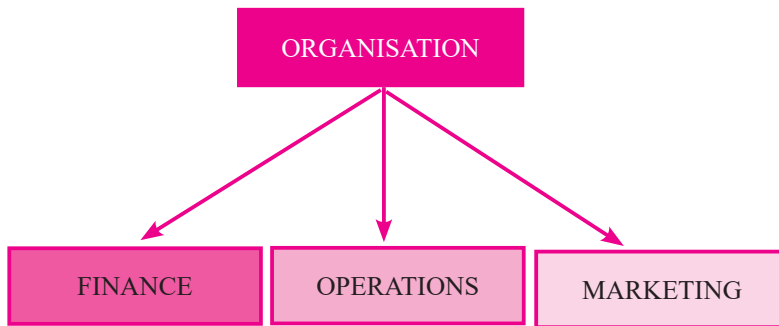
To appreciate the recent trends and challenges in production and operations management and understand the relationships between operations and other

Module Learning Objectives:

After studying this module, the students will be able to:

- ⊙ Understand the concept of operation management
- ⊙ Identify the resource utilisation objectives
- ⊙ Describe objectives of operation management.

Operations is that part of a business organisation that is responsible for producing goods and/or services. The three basic functions of a business organisation are



The ideal situation for a business organisation is to achieve an economic match of supply and demand.

Having excess supply or excess capacity is wasteful and costly; having too little means lost opportunity and possible customer dissatisfaction.

The key function on the supply side are Operations & Supply chains;

The key function on the demand side are Sales & Marketing;

The driving fuel to all these is Finance;

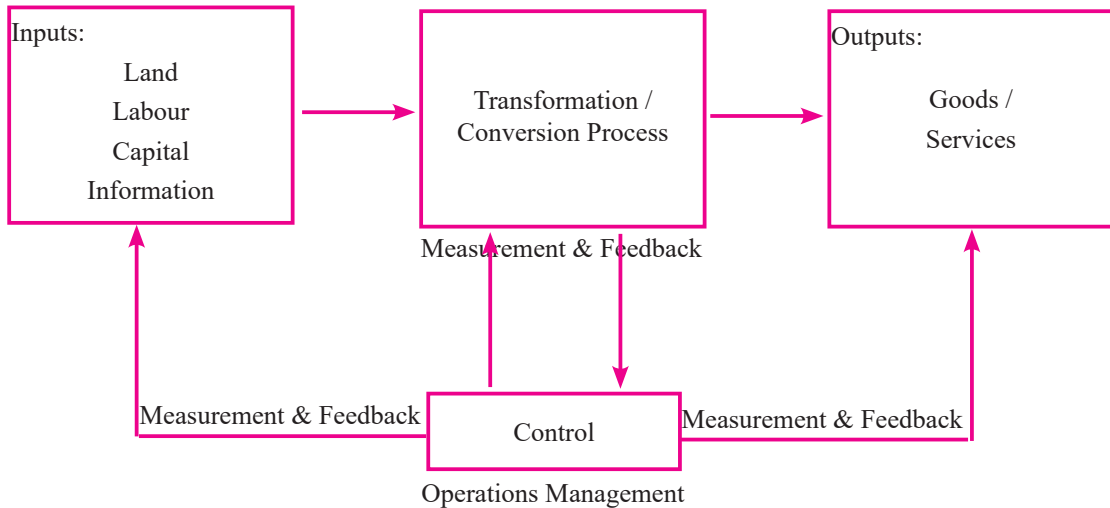
If the business organisation is a Car, Operations would be its engine. And just as the engine is the core of what a car does, in a business organisation operations is the core of what the organisation does.

Operations Management is responsible for managing that core. Operations management is the management of systems or processes that create goods and/or provide services.

Operations Management (OM) encompasses all organizational activities that acquire the raw form of inputs, process or convert into a consumable products and services as required to meet the needs of the end customers. OM deals with both tangible products and intangible services.

Sometimes from inputs goods and services often occur jointly. Like painting of a house is a service but paint which is used is a good.

The whole gamut of Operations management is represented in the following figure:



Objectives of Operations Management

Objectives of operations management can be categorised into (i) Customer service and (ii) Resource utilisation.

(i) Customer service

The first objective is the customer service which means the service for the satisfaction of customer wants. Customer service is therefore a key objective of operations management.

The Operations Management must provide something to a specification which can satisfy the customer in terms of cost and timing. Thus, primary objective can be satisfied by providing the ‘right thing at the right price at the right time’.

These three aspects of customer service - specification, cost and timing - are described in a little more detail for the four functions in **Table 1**. They are the principal sources of customer satisfaction and must, therefore, be the principal dimension of the customer service objective for operation managers.

Table 1: Aspects of Customer Service

Principal customer wants		
Principal function	Primary consideration	Other consideration
Manufacture	Goods of a given, requested or acceptable specification	Cost i.e. purchase price or cost of obtaining goods Timing, i.e. delivery delay from order or request to receipt of goods
Transport	Movement of a given, requested or acceptable specification	Cost, i.e. cost of movement, Timing, i.e. (i) duration or time to move (ii) wait, or delay from requesting to its commencement

Supply	Goods of a given, requested or acceptable specification	Cost, that is purchase price or cost obtaining goods Timing, i.e. delivery delay from order or request to supply, to receipt of goods
Service	Treatment of a given, requested or acceptable specification	Cost, i.e. cost of treatment Timing, i.e. (i) Duration or timing required for treatment (ii) wait, or delay from requesting to its commencement

Generally an organization will aim reliably and consistently to achieve certain standards, or levels, on these dimensions, and operations managers will be influential in attempting to achieve these standards.

Hence, this objective will influence the operations manager's decisions to achieve the required customer service.

(ii) Resource Utilization

Another major objective is to utilize resources for the satisfaction of customer wants effectively, i.e., customer service must be provided with the achievement of effective operations through efficient use of resources. Inefficient use of resources or inadequate customer service leads to commercial failure of an operating system.

Operations management is concerned essentially with the utilization of resources, i.e., obtaining maximum effect from resources or minimizing their loss, under utilization or waste. The extent of the utilization of the resources' potential might be expressed in terms of the proportion of available time used or occupied, space utilization, levels of activity, etc. Each measure indicates the extent to which the potential or capacity of such resources is utilized. This is referred as the objective of resource utilization.

Operations management is also concerned with the achievement of both satisfactory customer service and resource utilization. An improvement in one will often give rise to deterioration in the other. Often both cannot be maximized, and hence a satisfactory performance must be achieved on both objectives. All the activities of operations management must be tackled with these two objectives in mind, and many of the problems will be faced by operations managers because of this conflict. Hence, operations managers must attempt to balance these basic objectives.

Below **Table 2** summarizes the twin objectives of operations management. The type of balance established both between and within these basic objectives will be influenced by market considerations, competitions, the strengths and weaknesses of the organization, etc. Hence, the operations managers should make a contribution when these objectives are set.

Table 2 : The twin objectives of operations management

The customer service objective.	The resource utilization objective.
To provide agreed/adequate levels of customer service (and hence customer satisfaction) by providing goods or services with the right specification, at the right cost and at the right time.	To achieve adequate levels of resource utilization (or productivity) e.g., to achieve agreed levels of utilization of materials, machines and labour.

Scope of Operation Management

Operations Management concerns with the conversion of inputs into outputs, using physical resources, so as to provide the desired utilities to the customer while meeting the other organizational objectives of effectiveness, efficiency and adoptability. It distinguishes itself from other functions such as personnel, marketing, finance, etc. by its primary concern for 'conversion by using physical resources'. Following are the activities, which are listed under Production and Operations Management functions:

1. Location of facilities.
2. Plant layouts and Material Handling.
3. Product Design.
4. Process Design.
5. Production Planning and Control.
6. Quality Control.
7. Materials Management.
8. Maintenance Management.



Figure 1.1 : Scope of Production and Operations Management

Let us take an example of a product manufacturing company xyz Ltd.

The xyz Ltd requires to take few important decisions. The first question comes into picture is: "What to produce?"

This question is linked with the basic existence of the company It talks about the product that xyz Ltd. is manufacturing. Here, the organization needs to understand that what is the need of the customers in terms of product attributes/Features & quality. In other words, it talks about the competitive positioning of the company, its products acceptability at the market place this decision is based on the input received from market intelligence team and often is a part of the product design process later on we will study an important concept related to product

design, such as QFD. In this regard, one important point to be noted that, many a times the organizations need to forecast about product life cycle & related requirement of the technology. Forecasting we will discuss separately.

One the company is aware that what it needs to produce, the second question comes: “How much to produce?”

This question is an ongoing questions, as the organization is engaged in estimating the quantity (“How much”) on a daily, weekly, monthly, quarterly & yearly basis. Again this information is obtained from marketing team. Based on the information received, the planning team (as a part of supply chain’s planning section) provides a forecast of demand. Hence, here deal with an important aspect of operational planning known as Demand Forecasting.

The next question is: “Where to produce?”.

This question leads to facility location selection problem after this, a series of questions need to be answered that lead to a member of decision areas such as “

Q: “How to produce?” (Process selection & Layout)

Q: “When to produce?” (Aggregate Planning inventory Master Production decision schedule)

Q: “Do we have materials to produce?” (MRP, Inventory Management)

It also deals with Sourcing

Q: “Are we producing right things?” (Quality Management)

Q: “Are our machines able to provide desired results?” (Maintenance Management)

Q: “How to reach the products to the customers?”(Distribution or Delivery planning)

It includes transportation decision, warehousing, materials handling etc. Logistics issues

In case the organization is practicing sustainability then another important decision area is reverse Logistics i.e., taking returns

Therefore, in summary the major decision areas are:

1. Product selection
2. Facility Location Selection
3. Demand Forecasting
4. Process selection & Layout decision
5. Capacity planning
6. Aggregate Planning, Master production schedule
7. Materials Requirement Planning (MRP)/Manufacturing Resource Planning (MRP I)/ Distribution Resource Planning (DRP) / Enterprise Resource Planning (ERP)
8. Inventory Management
9. Supplier Selection/Sourcing
10. Process Management
11. Quality Management
12. Maintenance
13. Warehousing /Transportation
14. Reverse Logistics

In Addition, an operations manager is also responsible for working capital management, skill-management etc.

Characteristics of Modern Operations Functions

1.2

The production management of today presents certain characteristics which make it look totally different from what it was during the past. Specifically, today's production system is characterised by at least four features.

1. Manufacturing as Competitive Advantage

In the past production was considered to be like any other function in the organisation. When demand was high and production capacities were inadequate, the concern was to somehow muster all inputs and use them to produce goods which would be grabbed by market. But today's scenario is contrasting. Plants have excess capacities, competition is mounting and firms look and gain competitive advantage to survive and succeed. Interestingly, production system offers vast scope to gain competitive edge and firms intend to exploit the potential. Total Quality Management (TQM), Time-Based Competition, Business Process Re-engineering (BPRE), Just-in-Time (JIT), Focused Factory, Flexible Manufacturing Systems (FMS), Computer Integrated Manufacturing (CIM), and The Virtual Corporation are but only some techniques which the companies are employing to gain competitive advantage.

2. Services Orientation

As was stated earlier, service sector is gaining greater relevance these days. The production system, therefore, needs to be organised keeping in mind the peculiar requirements of the service component. The entire manufacturing needs to be geared to serve (i) intangible and perishable nature of the services, (ii) constant interaction with clients or customers, (iii) small volumes of production to serve local markets, and (iv) need to locate facilities to serve local markets. There is increased presence of professionals on the production, instead of technicians and engineers.

3. Disappearance of Smokestacks

Protective labour legislation, environmental movement and gradual emergence of knowledge based organisations have brought total transformation in the production system. Today's factories are aesthetically designed and built, environment friendly - in fact, they are homes away from homes. Going to factory everyday is no more excruciating experience, it is like holidaying at a scenic spot. A visit to ABB, L & T or Smith Kline and Beecham should convince the reader about the transformation that has taken place in the wealth creation system.

4. Small has Become Beautiful

It was E.F. Schumacher who, in his famous book *Small is Beautiful*, opposed giant organisations and increased specialisation. He advocated, instead, intermediate technology based on smaller working units, community ownership, and regional workplaces utilising local labour and resources. For him, small was beautiful. Businessmen, all over the world, did not believe in Schumacher's philosophy. Inspired by economies of scale, industrialists went in for huge organisations and mass production systems.

Recent Trends in Production and Operations Management

1.3

Modern Operations Management is characterized by the following :

- (a) Technological development
- (b) Shorter product life cycle
- (c) Changing needs and preferences of the customers
- (d) Disruptions (market and product) and pressure for innovation
- (e) Globalization
- (f) Requirement for supreme service at an affordable price
- (g) Pressure for optimization of operational cost

Production Management vs Operations Management

There are two points of distinction between production management and operations management. First, the term production management is more used for a system where tangible goods are produced. Whereas, operations management is more frequently used where various inputs are transformed into intangible services. Viewed from this perspective, operations management will cover such service organisations as banks, airlines, utilities, pollution control agencies, super bazaars, educational institutions, libraries, consultancy firms and police departments, in addition, of course, to manufacturing enterprises. The second distinction relates to the evolution of the subject. Operations management is the term that is used nowadays. Production management precedes operations management in the historical growth of the subject.

Recent trends in production and operations management relate to global competition and the impact it has on manufacturing firms. Some of the recent trends are :

- 1. Global Market Place :** Globalisation of business has compelled many manufacturing firms to have operations in many countries where they have certain economic advantage. This has resulted in a steep increase in the level of competition among manufacturing firms throughout the world.
- 2. Production/Operations Strategy :** More and more firms are recognising the importance of production/operations strategy for the overall success of their business and the necessity for relating it to their overall business strategy.
- 3. Total Quality Management (TQM) :** TQM approach has been adopted by many firms to achieve customer satisfaction by a never-ending quest for improving the quality of goods and services.
- 4. Flexibility :** The ability to adapt quickly to changes in volume of demand, in the product mix demanded, and in product design or in delivery schedules, has become a major competitive strategy and a competitive advantage to the firms. This is sometimes called as agile manufacturing.

5. **Time Reduction** : Reduction of manufacturing cycle time and speed to market for a new product provide competitive edge to a firm over other firms. When companies can provide products at the same price and quality, quicker delivery (short lead times) provide one firm competitive edge over the other.
6. **Technology** : Advances in technology have led to a vast array of new products, new processes and new materials and components. Automation, computerisation, information and communication technologies have revolutionised the way companies operate. Technological changes in products and processes can have great impact on competitiveness and quality, if the advanced technology is carefully integrated into the existing system.
7. **Worker Involvement** : The recent trend is to assign responsibility for decision making and problem solving to the lower levels in the organisation. This is known as employee involvement and empowerment. Examples of worker involvement are quality circles and use of work teams or quality improvement teams.
8. **Re-engineering** : This involves drastic measures or break-through improvements to improve the performance of a firm. It involves the concept of clean-slate approach or starting from scratch in redesigning the business processes.
9. **Environmental Issues** : Today's production managers are concerned more and more with pollution control and waste disposal which are key issues in protection of environment and social responsibility. There is increasing emphasis on reducing waste, recycling waste, using less-toxic chemicals and using biodegradable materials for packaging.
10. **Corporate Downsizing (or Right Sizing)** : Downsizing or right sizing has been forced on firms to shed their obesity. This has become necessary due to competition, lowering productivity, need for improved profit and for higher dividend payment to shareholders.
11. **Supply-Chain Management** : Management of supply-chain, from suppliers to final customers reduces the cost of transportation, warehousing and distribution throughout the supply chain.
12. **Lean Production** : Production systems have become lean production systems which use minimal amounts of resources to produce a high volume of high quality goods with some variety. These systems use flexible manufacturing systems and multi-skilled workforce to have advantages of both mass production and job production (or craft production).