**MS COURSE FILE R13:-**

**Contents of Course file for 2017-18**

1. Department vision & mission
2. List of PEOs and POs
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10. Sample assignment script
11. Unit-wise course material
12. Mid exam question papers
13. Sample mid answer script
14. Material collected from Internet/Websites
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16. Previous question papers
17. References (Text books/websites/Journals)
18. **Department Vision & Mission:**

**Vision**

* To promote excellence in technical education and scientific research in electronics and communication engineering for the benefit of society.

**Mission**

* To impart excellent technical education with state of art facilities inculcating values and lifelong learning attitude.
* To develop core competence in our students imbibing professional ethics and team spirit.
* To encourage research benefiting society through higher learning

1. **List of PEOs and POs**

**Program Educational Objectives**

* Managing an organization effectively requires the formulation of [clear](javascript:void(0);) objectives. The objective is well defined, and the objective points (question) of making necessary efforts to achieve it. Objects and aims direct a man to proceed in a certain way for achieving organizational aims.
* **To determine industrial and market trends.** **As a result of determination of industrial and market trends planned and balanced operations in an enterprise will assure continuous employment to the employees.**
* To ensure projects are delivered within scheduled commitments with the help of project management technique.
* To increasing organizational effectiveness with the optimum utilization of various resources & with better co-ordination.
* Organizational structures help everyone involved in a company to clarify and understand everyone else's role and scope. They help facilitate divisions of labor, efficiency and assist in avoiding conflicts and confusion.
* To develop a sound conceptual framework for understanding advanced research in specific areas in management sciences

**Program Outcomes**

**CO1:** Management studies are an important medium that facilitates improvement of leadership qualities and turns out excellent future managers & prepare students to face the constantly advancing corporate world and impart effective people-management skills.

**CO2:** Gives knowledge inOrganizational designing which determines who makes decisions and how those decisions will be made. It changes the role of the leaders as they become less decision makers and more decision shapers. Through organizational design, leaders become the shapers of the organization’s decision-making process.

**CO3:** Can enhance the flexibility intwo needs of organizations – first, to be adaptable to changing circumstances, and second, to be structured, predictable and organized. They can be also masters at adapting these schedules if something goes wrong, or things proceed better than expected.

**CO4: A**cquires ability to implement well-planned and well-thought out strategic human resource ideas that will be implemented to coordinate and channel the human capital into increased productivity. A solid human resource strategy will allow an organization to have a good relationship with its workers and to coexist peacefully and in a mutually beneficial manner with its host community.

**CO5:** By learing this subject an individual can come to know aboutthe efficient use of resources, establishing goals, managing risk and uncertainity, team building, creating competitive advantages **.**

1. **Mapping of Course Objectives, Course Outcomes with PEOs and Pos**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **P**  **E**  **O**  **S** |  | **A** | **b** | **C** | **d** | **e** |
| **I** | **X** | **X** | **X** | **X** |  |
| **II** | **X** | **X** | **X** | **X** | **X** |
| **III** |  | **X** | **X** | **X** |  |
| **IV** | **X** | **X** | **X** | **X** | **X** |
| **V** |  |  |  |  | **X** |

1. **Syllabus copy**

**SYLLABUS:**

**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY**

**HYDERABAD**

**MANAGEMENT SCIENCE**

**UNIT I**

Introduction to Management : Concepts of Management and organization- nature, importance and Functions of Management, Taylor’s Scientific Management Theory, Fayol’s Principles of Management, Mayo’s Hawthorne Experiments, Maslow’s Theory of Human Needs, Douglas McGregor’s Theory X and Theory Y, Herzberg’s Two-Factor Theory of Motivation, Systems Approach to Management, Leadership Styles, Social responsibilities of Management.

Designing Organisational Structures : Basic concepts related to Organisation - Departmentation and Decentralisation, Types of mechanistic and organic structures of organisation and their merits, demerits and suitability. Modern organizational structure.

**UNIT II**

**Operation and Marketing Management**

Principles and types of plant layout , methods of production basic procedure involved in method study ,work measurement, Business Process Re-engineering, statistical quality control, control charts for variables and attributes, simple problems. Total Quality Management (TQM), Six sigma,Materials Management: Objectives, Need for Inventory control, EOQ, ABC Analysis, Purchase Procedure, Stores Management and Stores Records. Marketing: Functions of Marketing, Marketing Mix, and Marketing Strategies based on Product Life Cycle, Channels of distribution.

**UNIT III**

Human Resources Management (HRM) : Concepts of HRM, HRD and Personnel Management and Industrial Relations (PMIR), HRM vs.PMIR, Basic functions of HR Manager: Manpower planning, Recruitment, Selection, Training and Development, Placement, Wage and Salary Administration, Promotion, Transfer, Separation, Performance Appraisal, Grievance Handling and Welfare Administration, Job Evaluation and Merit Rating. Capability maturity model, performance management system.

**UNIT IV**

Project Management (PERT/CPM) : Network Analysis, Programme Evaluation and Review Technique (PERT), Critical Path Method (CPM), Identifying critical path, Probability of Completing the project within given time, Project Cost Analysis, Project Crashing.(simple problems)

**UNIT V**

Strategic Management : Mission, Goals, Objectives, Policy, Strategy, Programmes, Elements of Corporate Planning Process, Environmental Scanning, Value Chain Analysis, SWOT Analysis, Steps in Strategy Formulation and Implementation, Generic Strategy alternatives.

Contemporary Management Practices : Basic concepts of MIS, End User Computing, and Capability Maturity Model (CMM) Levels, Supply Chain Management, Enterprise Resource Planning (ERP), Performance Management, Business Process outsourcing (BPO), and Bench Marking, Balanced Score Card.

**TEXT BOOKS:**   
1. Aryasri: Management Science, TMH, 2004.  
2. Stoner, Freeman, Gilbert, Management, 6th Ed, Pearson Education, New Delhi, 2004.

**REFERENCES:**   
1. Kotler Philip & Keller Kevin Lane: Marketing Mangement 12/e, PHI, 2005  
2. Koontz & Weihrich: Essentials of Management, 6/e, TMH, 2005  
3. Thomas N.Duening & John M.Ivancevich Management—Principles and Guidelines, Biztantra,2003.  
4. Kanishka Bedi, Production and Operations Management, Oxford University Press, 2004.  
5. Memoria & S.V.Gauker, Personnel Management, Himalaya, 25/e, 2005  
6. Samuel C.Certo: Modern Management, 9/e, PHI, 2005  
7. Schermerhorn, Capling, Poole & Wiesner: Management, Wiley, 2002.  
8. Parnell: Strategic Management, Biztantra,2003.  
9. Lawrence R Jauch, R.Gupta &William F.Glueck:Business Policy and Strategic Management, Frank Bros.2005.  
10. L.S.Srinath: PERT/CPM,Affiliated East-West Press, 2005

1. **Individual time table**

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **DAY/**  **TIME** | **9.10-10.10** | **10.10-11.00** | | **11.00-11.50** | | **11.50-12.40** | **12.40-01.20** | **01.20-02.20** | **2.20-3.10** | | **3.00-4.00** | |
| **MON** | **IV A** |  | |  | |  |  |  |  | |  | |
| **TUE** |  |  | **IV B** | | |  |  |  | | **IV B** | |
| **WED** | **IV B** |  | | **IV A** | |  |  |  | |  | |
| **THU** |  |  | | **IV A** | |  | **IV B** | |  | |  |
| **FRI** |  |  |  | | **IV A** | |  |  | | **IV B** | |
| **SAT** |  |  | |  | | **IV B** | **IV A** |  | |  | |

1. **Session plan**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **S.NO** | **Topic (JNTU syllabus)** | **Sub-Topic** | **NO. OF LECTURES REQUIRED** | **Suggested Books** | **Remarks** |
|  |  | **UNIT - I** |  |  |  |
| 1 | **INTRODUCTION TO MANAGEMENT:** | Concepts of Management and organization- Nature | **L1** | **T1** |  |
| 2 | Importance of Management, Functions of Management, | **L2** | **T1** |  |
| 3 | Taylor’s Scientific Management, Maslow’s Theory of Human Needs, | **L3** | **T1** |  |
| 4 | Theory, Fayol’s Principles of Management, McGregor’s Theory X and Theory Y, | **L4** | **T1** |  |
| 5 | Herzberg’s Two-Factor Theory of Motivation, Systems Approach to Management, Leadership Styles, Social responsibilities of Management. | **L5** | **T1** |  |
|  |  |  |  |  |  |
| 6 | **DESIGNING ORGANISATIONAL STRUCTURES**: | Basic concepts related to Organisation – Departmentation and Decentralisation, | **L6** | **T1** |  |
| 7 | Line organization, Line and staff organization, functional organization, | **L7** | **T1** |  |
| 8 | Committee organization, matrix organization, | **L8** | **T1** |  |
| 9 | Virtual Organisation, Cellular Organisation, team structure, boundaryless organization, inverted pyramid structure, lean and flat organization structure) and their merits, demerits | **L9,L10** | **T1** |  |
|  |  | **UNIT – II** |  |  |  |
| 10 | **OPERATIONS MANAGEMENT:** | Principles and Types of Plant Layout | **L11,L12** | **T1** |  |
| 11 | Principles and Types of Plant Layout | **L13** | **T1** |  |
| 12 | Methods of production. (Job, batch and Mass Production), | **L14** | **T1** |  |
| 13 | Methods of production. (Job, batch and Mass Production), | **L15,L16** | **T1** |  |
| 14 | Work Study -Basic procedure involved in Method Study and Work Measurement- | **L17** | **T1** |  |
| 15 | Statistical Quality Control: X chart, R chart, | **L18,L19** | **T1** |  |
| 16 | c chart, p chart, (simple problems), Acceptance Sampling, | **L20,L21** | **T1** |  |
| 17 | Deming’s contribution to quality | **L22** | **T1** |  |
|  |  |  |  |  |  |
| 18 | **MATERIALS MANAGEMENT.** | Objectives, Need for Inventory control, | **L23** | **T1** |  |
| 19 | EOQ, ABC Analysis, Purchase Procedure, | **L24,L25,L26** | **T1** |  |
| 20 | Stores Management and Stores Records | **L27,L28** | **T1** |  |
| 21 | Supply Chain Management B) Marketing: Functions of Marketing, | **L29,L30** | **T1** |  |
| 22 | Marketing Mix, Marketing Strategies based on Product Life Cycle., Channels of distribution | **L31,L32** | **T1** |  |
|  |  | **UNIT – III** |  |  |  |
| 23 | **HUMAN RESOURCES MANAGEMENT (HRM):** | Concepts of HRM, HRD and Personnel Management. | **L33** | **T1** |  |
| 24 | Basic functions of HR Manager: | **L34** | **T1** |  |
| 25 | and Industrial Relations Manpower planning, Recruitment, Selection, Training and Development, Placement, | **L35,L36** | **T1** |  |
| 26 | , Promotion, Transfer, Separation, and Welfare Administration, | **L37** | **T1** |  |
| 27 | Performance Appraisal, Grievance Handling, Wage and Salary Administration, Job Evaluation and Merit Rating. | **L38,L39,L40** | **T1** |  |
|  |  | **UNIT – IV** |  |  |  |
| 28 | **PROJECT MANAGEMENT (PERT/CPM): NETWORK ANALYSIS** | Project Management (PERT/CPM): Network Analysis, Critical Path Method (CPM), Identifying critical path, Probability of Completing the project within given time, Project Cost Analysis, Project Crashing. (simple problems) | **L41** | **T1,R1** |  |
| 29 | Critical Path Method (CPM), Identifying critical path, | **L42** | **T1,R1** |  |
| 30 | Critical Path Method (CPM), Identifying critical path, | **L43** | **T1,R1** |  |
| 31 | Programme Evaluation and Review Technique (PERT), | **L44** | **T1,R1** |  |
| 32 | Critical Path Method (CPM), Identifying critical path,Programme Evaluation and Review Technique (PERT), | **L45,L46** | **T1,R1** |  |
| 33 | Project Cost Analysis, Project Crashing. | **L47** | **T1,R1** |  |
| 34 | Project Cost Analysis, Project Crashing. | **L48** | **T1,R1** |  |
|  |  | **UNIT – V** |  |  |  |
| 35 | **STRATEGIC MANAGEMENT** | Strategic Management: Mission, Goals, Objectives, Policy, Strategy, , | **L49, L50** | **T1,R1** |  |
| 36 | Programmes, Elements of Corporate Planning Process | **L51 ,L52** | **T1,R1** |  |
| 37 | SWOT Analysis, Environmental Scanning, | **L53 ,L54** | **T1,R1** |  |
| 38 | Steps in.Strategy Formulation and Implementation, Generic Strategy alternatives | **L55 ,L56** | **T1,R1** |  |
|  |  |  |  |  |  |
| **39** | **CONTEMPORARY MANAGEMENT** | Contemporary Management Practices: Basic concepts of Just-In-Time (JIT) System, Total Quality Management (TQM), , | **L57 ,L58** | **T1,R1** |  |
| **40** | Six sigma and Capability Maturity Model (CMM) Levels | **L59 ,L60** | **T1,R1** |  |
| **41** | Value Chain Analysis,Enterprise Resource Planning (ERP), | **L61 ,L62** | **T1,R1** |  |
| **42** | Performance Management, Business Process outsourcing (BPO), Bench Marking, | **L63 ,L64** | **T1,R1** |  |
|  |  |  |  |  |  |

1. **Detailed lecture plan**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Lecture No.** | **JNTUH Topic** | **Objective of each Topic** | **Course Outcome** | **Method of Teaching** |
|  | **UNIT-1** | | | |
| L1,L2,L3,L4,L5 | Introduction to Management: Concepts of Management and organization- Nature and Importance of Management, Functions of Management, Taylor’s Scientific Management Theory, Fayol’s Principles of Management, Maslow’s Theory of Human Needs, Douglas McGregor’s Theory X and Theory Y, Herzberg’s Two-Factor Theory of Motivation, Systems Approach to Management, Leadership Styles, Social responsibilities of Management. | Enterpreneurship and Organisation,  Management.  .Various theories of Management.  Systematicapproach to Management.  Leadership and Socialresponsibilities of Management. | CO-1 | M1,M4 |
| L6,L7,L8,L9,L10 | Designing Organisational Structures: Basic concepts related to Organisation – Departmentation and Decentralisation, Types of mechanistic and organic structures of organisation (Line organization, Line and staff organization, functional organization, Committee organization, matrix organization, Virtual Organisation, Cellular Organisation, team structure, boundaryless organization, inverted pyramid structure, lean and flat organization structure) and their merits, demerits | Typesof organization structures.  Merits and Demerits of Organisational Structure | M1,M4 |
| L11,L12,L13,L14,L15,L16,L17,L18,L19,L20,L21,L22 | Operations Management: Principles and Types of Plant Layout-Methods of production (Job, batch and Mass Production), Work Study -Basic procedure involved in Method Study and Work Measurement-Statistical Quality Control: X chart, R chart, c chart, p chart, (simple problems),Acceptance Sampling,Deming’s contribution to quality | Principles and Types of Plant Layout  .Methods of production and Work study.  Statistical Quality Control and various charts. | M1 ,M4  M1,M4 |
| L23,L24,L25,L26,L27,L28,L29,L30,L31,L32 | Materials Management: Objectives, Need for Inventory control, EOQ, ABC Analysis, Purchase Procedure, Stores Management and Stores Records – Supply Chain Management B) Marketing: Functions of Marketing, Marketing Mix, Marketing Strategies based on Product Life Cycle., Channels of distribution. | Inventory Control  .ABCAnalysis and stores management.  Functions of marketing and strategy based cycles. | M1,M4 |
| L33,L34,L35,L36,L37,L38,L39,L40 | Human Resources Management (HRM): Concepts of HRM, HRD and Personnel Management and Industrial Relations (PMIR), HRM vs. PMIR, Basic functions of HR Manager: Manpower planning, Recruitment, Selection, Training and Development, Placement, Wage and Salary Administration, Promotion, Transfer, Separation, Performance Appraisal, Grievance Handling and Welfare Administration, Job Evaluation and Merit Rating | Human resources Management.  Training,deelopment,recruitement.  Administration. | M2,M5 |
| L41,L42,L43,L44,L45,L46,L47,L48 | Project Management (PERT/CPM): Network Analysis, Programme Evaluation and Review Technique (PERT), Critical Path Method (CPM), Identifying critical path, Probability of Completing the project within given time, Project Cost Analysis, Project Crashing. (simple problems) | .Network Analysis.  Programme evaluation and Review of Technics.  Projectcost Analysis.  Project Crashing | **CO-1** | M1,M6,M4 |
| L49,L50,L51,L52,L53,L54,L55,L56 | Strategic Management: Mission, Goals, Objectives, Policy, Strategy, Programmes, Elements of Corporate Planning Process, Environmental Scanning, SWOT Analysis, Steps in Strategy Formulation and Implementation, Generic Strategy alternatives | Missions,Goals of programmes.  Corporate planning process.  Environmental scanning. | M1,M4  M1,M4 |
| 57,L58,L59,L60,L61,L62,L63,L64 | Contemporary Management Practices: Basic concepts of Just-In-Time (JIT) System, Total Quality Management (TQM), Six sigma and Capability Maturity Model (CMM) Levels, Value Chain Analysis,Enterprise Resource Planning (ERP), Performance Management, Business Process outsourcing (BPO), Business Process Re-engineering and Bench Marking, Balanced Score Card. | Concepts of just in time.  .Total quality management.  Performance management | M1 ,M4 |

1. **Session Execution Log**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Slno** | **Unit** | **Scheduled Completion date** | **Actual Completed Date** | **Remarks** |
| **1** | **I** |  |  |  |
| **2** | **II** |  |  |  |
| **3** | **III** |  |  |  |
| **4** | **IV** |  |  |  |
| **5** | **V** |  |  |  |

1. **Assignment Questions**

MS ASSIGNMENT \_I

1. **Define management and organization and write importance and functions of management?(CO1)**
2. **Write in brief about system approach and Taylor’s scientific management theory and Henry Fayal’s principles of management?(CO1)**
3. **Maslow’s theory of hierarchy of human needs and also write in brief about theory X and theory Y and two factor theory of motivation?(CO1)**
4. **Write about types of plant layout and methods of production?(CO2)**
5. **Write in brief about SQC for variables and attributes?(CO3)**

**ASSIGNMENT PAPER – II**

1. **The following table gives the activities in a construction project and the other relevant information is as follows:-(CO-5)**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Activity** | **1-2** | **1-3** | **2-3** | **2-4** | **3-4** | **4-5** |
| **duration** | **20** | **25** | **10** | **12** | **6** | **10** |

1. **Draw the network diagram for the following project and find out critical path?(CO-5)**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **activity** | **1-2** | **1-3** | **2-3** | **2-4** | **3-4** | **3-5** | **4-6** | **5-6** |
| **duration** | **6** | **8** | **4** | **3** | **0** | **6** | **10** | **3** |

1. **Compute the project in 48 days?(CO-5)**

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Activity** | **1-2** | **2-3** | **2-4** | **3-5** | **4-6** | **5-7** | **5-8** | **7-9** | **8-9** | **9-10** | **6-10** |
| **a** | **4** | **1** | **8** | **3** | **3** | **3** | **4** | **4** | **2** | **4** | **4** |
| **m** | **8** | **4** | **12** | **5** | **6** | **6** | **6** | **8** | **5** | **10** | **6** |
| **b** | **12** | **7** | **16** | **7** | **9** | **9** | **8** | **12** | **8** | **16** | **8** |

1. **Write about steps in strategy formulation and implementation?(CO-4)**
2. **Write about manpower planning, recruitment, selection, training & development, placement, wages & salaries?(CO-4)**
3. **Write about job evaluation and merit rating and CMM levels and performance management?(CO-4)**
4. **Sample assignment script**
5. **Unit-wise course material**

**Lecturer Notes**

**UNIT-1**

# Definition of Management

**Production or efficiency-oriented Definitions:** those who have put forward the concept of management as a source of efficiency in organization have viewed that management is concerned with generating efficiency in organizational settings. For example, in an early stage of development of management, Taylor has defined management as follows:

*“Management is the art of knowing what you want to do and then seeing that it is done in the best & cheapest way.”*

In a similar way, john mee has defined management in terms of securing maximum results when he views that:

*“Management is the art of securing maximum results with minimum effort so as to secure maximum prosperity and happiness for both employer and employee and give the public the best possible service.”*

This Both these definitions emphasize on relationship between efforts and results as the objectives of management but do not specify how these objectives can be achieved. To that extent, these definitions do not offer exact explanation of the nature of management.

**Decision-oriented definitions:** The decision-oriented definitions of management have been provided by decision theorists who have seen management process in terms of decision making. For example, peter drucker, a noted management thinker, has viewed that the life of a manager is a perpetual decision-making authority. Whatever a manager does , he does only through decision making. Decision making power provides a dynamic force for managers to transform the resources of business organizations into a productive, cooperative concern. These decision theorists have emphasized the role of decision in management in such an extent that one of them has viewed that “management means decision making .“ A more formal decision-oriented definition of management has been provided by Stanley Vance as follows:

*“Management is simply the process of decision making and control over the action of human beings for the expressed purpose of attaining pre-determined goals.”*

The decision oriented definition of management indicates that the basic activity of a manager is to make decisions and enforce these decisions. However, this does not provide the processes in which context decision making is applied.

**People-oriented definitions:** in this group of definitions, management is defined as a process of coordinative efforts of people in organizations. Various authors have emphasized the role of people in the organizations. They have viewed that management is the direction of people and not of things; management is personnel management; and so on. Lawrence apply has called management as personnel management has defined it as follows:

*“Management is the accomplishment of results through the efforts of other people,”*

Koontz has defined management in similar way when he says that:

“*Management is the part of getting things done through and with people in formally organized groups.”*

These definitions, no doubt, offer better explanations of the nature of management through these do not specify the functions or activities involved in the process of getting things done by or with the cooperation of other people.

**Function-oriented definitions:** these definitions put emphasis on the various functions performed by managers in organizations though there is no uniformity in this functioning different definitions. For example, McFarland states that:

*Management is defined for conceptual, theoretical, and analytical purposes as that process by which managers create, direct, maintain and and operate purposive organizations through systematic, coordinated, cooperative human efforts.”*

This definition of management focus on management as the process of accomplishing work through the efforts of others. Skilled managers can accomplish much more through others than they can through their own single efforts.

*Effective utilization and coordination of resources such as capital, plant, materials, and labor to achieve defined objectives with maximum efficiency.*

This definition of management looks at not only the people but the entire range of resources necessary to follow a plan. Notice how it focuses on efficiency. Management isn’t just getting from point A to point B. It is getting there by choosing the best possible path.

*The process of getting activities completed efficiently with and through other people; 2. The process of setting and achieving goals through the execution of five basic management functions: planning, organizing, staffing, directing, and controlling; that utilize human, financial, and material resources.*

The first definition looks at the fact that management is getting work done through other people. The second definition divides management up into five components. These components are all parts of the three components (plan, execute, measure) that we looked at above. However the more detailed definition helps show the activities that occur in each of the three phase definition.

*The process of planning, leading, organizing and controlling people within a group in order to achieve goals; also used to mean the group of people who do this.*

Once again, this definition of management addresses accomplishing work through other people. This definition stresses the activities that are necessary for reaching particular goals.

*The process of achieving the objectives of the business organization by bringing together human, physical, and financial resources in an optimum combination and making the best decision for the organization while taking into consideration its operating environment.*

This definition talks about the different components that managers need to control in order to achieve objectives. One differentiator of this definition is the way it considers the operating environment as part of what a manager must understand.

# Management and Administration

According to *Theo Haimann*, “Administration means overall determination of policies, setting of major objectives, the identification of general purposes and laying down of broad programmes and projects”. It refers to the activities of higher level. It lays down basic principles of the enterprise. According to Newman, “Administration means guidance, leadership & control of the efforts of the groups towards some common goals”.

Whereas, management involves conceiving, initiating and bringing together the various elements; coordinating, actuating, integrating the diverse organizational components while sustaining the viability of the organization towards some pre-determined goals. In other words, it is an art of getting things done through & with the people in formally organized groups.

The difference between Management and Administration can be summarized under 2 categories: -

1. **Functions**
2. **Usage / Applicability**

**On the Basis of Functions:**

|  |  |  |
| --- | --- | --- |
| **Basis** | **Management** | **Administration** |
| Meaning | Management is an art of getting things done through others by directing their efforts towards achievement of pre-determined goals. | It is concerned with formulation of broad objectives, plans & policies. |
| Nature | Management is an executing function. | Administration is a decision-making function. |
| Process | Management decides who should as it & how should he dot it. | Administration decides what is to be done & when it is to be done. |
| Function | Management is a doing function because managers get work done under their supervision. | Administration is a thinking function because plans & policies are determined under it. |
| Skills | Technical and Human skills | Conceptual and Human skills |
| Level | Middle & lower level function | Top level function |

**On the Basis of Usage: -**

|  |  |  |
| --- | --- | --- |
| **Basis** | **Management** | **Administration** |
| Applicability | It is applicable to business concerns i.e. profit-making organization. | It is applicable to non-business concerns i.e. clubs, schools, hospitals etc. |
| Influence | The management decisions are influenced by the values, opinions, beliefs & decisions of the managers. | The administration is influenced by public opinion, govt. policies, religious organizations, customs etc. |
| Status | Management constitutes the employees of the organization who are paid remuneration (in the form of salaries & wages). | Administration represents owners of the enterprise who earn return on their capital invested & profits in the form of dividend. |

Practically, there is no difference between management & administration. Every manager is concerned with both – administrative management function and operative management function as shown in the figure. However, the managers who are higher up in the hierarchy denote more time on administrative function & the lower level denote more time on directing and controlling worker’s performance i.e. management.

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# The Figure above clearly shows the degree of administration and management performed by the different levels of management

**Concepts of management**

**Nature and importance of management**

Management is concerned with human beings whose behavior is highly unpredictable. Ever since people began forming groups to achieve goal, they could not achieve as individuals. Managing has been essential to provide the coordination of individual’s efforts. Management is found in every walk of life.  
  
Management does not perform specific jobs. It motivates other people to perform specific jobs. Management is not doing the work but getting the work done through the effort of others.  
  
Management brings together basic resources popularly known as 6 M’s – Men, Material, Machines, Methods, Money and Market.  
  
This helps to achieve the expected results quickly and economically in terms of  
(a) Production  
(b) Sales  
(c) Profit and  
(d) Goodwill in the Market  
  
Importance of Management  
  
The importance of management in business is universally accepted. It acts as a driving force in business. Modern business is highly competitive and need efficient and capable management. It is through management that business activities are organized and conducted efficiently and objectives are achieved.  
  
The following points will suggest the importance of management  
 **1) Optimum use of resources**: management facilities optimum utilization of available human and physical resources, which leads to progress and prosperity of a business enterprise. Even wastage of all types are eliminated or minimized.  
  
2**) Competitive strength**: Management develops competitive strength in an enterprise. This enables an enterprise to develop and expand its assets and profits.  
  
3) **Cordial industrial relations**: Management develops cordial industrial relation, ensures better life and welfare to employees and raises their morale through suitable incentives.  
  
4) **Motivates employees**: It motivates employees to take more interest and initiative in the work assigned and contributes for raising productivity and profitability of the enterprise.  
  
5**) New techniques**: Management facilities the introduction of new machines and new methods in the conduct of business activities. It also brings useful technologies developments and innovation in the management of business activities.  
  
6**) Effective management**: Society gets the benefits of efficient management in terms of industrial development, justice to different social groups, consumer’s satisfaction and welfare and proper discharge of social responsibilities.  
  
7) **Expansion of business**: Expansion growth and diversification of a business unit are possible through efficient management. It creates good corporate image to a business enterprise.  
  
8**) Stability and prosperity**: Efficient management brings success stability and prosperity to a business enterprise through cooperation and team spirit among employees.  
  
9**) Team spirit**: Management develops team spirit and raises overall efficiency of a business enterprise.  
  
10) **Effective use of managers**: Management ensures effective use of managers so that the benefits of their experience, skills and maturity are available to enterprise.  
  
11**) Smooth functioning**: Management ensures smooth, orderly and continuous functioning of an enterprise over a long period. It also raises the efficiency, productivity and profitability of an enterprise.  
  
12**) Reduces turnover and absenteeism**: It reduces Labour turnover and absenteeism and ensures continuity in the business activities and operations.  
  
13) **Sound organization**: A dynamic and progressive management guarantees development of sound organization, which can face any situation – favorable or unfavorable with ease and confidence.  
  
Management is not only practiced in organization and business entities but management plays an important role in our daily lives and is practiced by every individual is some or the other way.

# Importance of Management

 It **helps in Achieving Group Goals –** It arranges the factors of production, assembles and organizes the resources, integrates the resources in effective manner to achieve goals. It directs group efforts towards achievement of pre-determined goals. By defining objective of organization clearly there would be no wastage of time, money and effort. Management converts disorganized resources of men, machines, money etc. into useful enterprise. These resources are coordinated, directed and controlled in such a manner that enterprise work towards attainment of goals.

 **Optimum Utilization of Resources –** Management utilizes all the physical & human resources productively. This leads to efficacy in management. Management provides maximum utilization of scarce resources by selecting its best possible alternate use in industry from out of various uses. It makes use of experts, professional and these services leads to use of their skills, knowledge, and proper utilization and avoids wastage. If employees and machines are producing its maximum there is no under employment of any resources.

** Reduces Costs –** It gets maximum results through minimum input by proper planning and by using minimum input & getting maximum output. Management uses physical, human and financial resources in such a manner which results in best combination. This helps in cost reduction.

 **Establishes Sound Organization –** No overlapping of efforts (smooth and coordinated functions). To establish sound organizational structure is one of the objective of management which is in tune with objective of organization and for fulfillment of this, it establishes effective authority & responsibility relationship i.e. who is accountable to whom, who can give instructions to whom, who are superiors & who are subordinates. Management fills up various positions with right persons, having right skills, training and qualification. All jobs should be cleared to everyone.

 **Establishes Equilibrium –** It enables the organization to survive in changing environment. It keeps in touch with the changing environment. With the change is external environment, the initial co-ordination of organization must be changed. So it adapts organization to changing demand of market / changing needs of societies. It is responsible for growth and survival of organization.

 **Essentials for Prosperity of Society –** Efficient management leads to better economical production which helps in turn to increase the welfare of people. Good management makes a difficult task easier by avoiding wastage of scarce resource. It improves standard of living. It increases the profit which is beneficial to business and society will get maximum output at minimum cost by creating employment opportunities which generate income in hands. Organization comes with new products and researches beneficial for society.

# Objectives of Management

The main objectives of management are:

1. **Getting Maximum Results with Minimum Efforts –** The main objective of management is to secure maximum outputs with minimum efforts & resources. Management is basically concerned with thinking & utilizing human, material & financial resources in such a manner that would result in best combination. This combination results in reduction of various costs.
2. **Increasing the Efficiency of factors of Production –** Through proper utilization of various factors of production, their efficiency can be increased to a great extent which can be obtained by reducing spoilage, wastages and breakage of all kinds, this in turn leads to saving of time, effort and money which is essential for the growth & prosperity of the enterprise.
3. **Maximum Prosperity for Employer & Employees –** Management ensures smooth and coordinated functioning of the enterprise. This in turn helps in providing maximum benefits to the employee in the shape of good working condition, suitable wage system, incentive plans on the one hand and higher profits to the employer on the other hand.
4. **Human betterment & Social Justice –** Management serves as a tool for the upliftment as well as betterment of the society. Through increased productivity & employment, management ensures better standards of living for the society. It provides justice through its uniform policies.

# Management as a Process

As a process, management refers to a series of inter – related functions. It is the process by which management creates, operates and directs purposive organization through systematic, coordinated and co-operated human efforts, according to George R. Terry, “Management is a distinct process consisting of planning, organizing, actuating and controlling, performed to determine and accomplish stated objective by the use of human beings and other resources”. As a process, management consists of three aspects:

1. **Management is a social process –** Since human factor is most important among the other factors, therefore management is concerned with developing relationship among people. It is the duty of management to make interaction between people – productive and useful for obtaining organizational goals.
2. **Management is an integrating process –** Management undertakes the job of bringing together human physical and financial resources so as to achieve organizational purpose. Therefore, is an important function to bring harmony between various factors.
3. **Management is a continuous process –** It is a never ending process. It is concerned with constantly identifying the problem and solving them by taking adequate steps. It is an on-going process.

# Management as an Activity

Like various other activities performed by human beings such as writing, playing, eating, cooking etc, management is also an activity because a manager is one who accomplishes the objectives by directing the efforts of others. According to Koontz, “Management is what a manager does”. Management as an activity includes –

1. **Informational activities –** In the functioning of business enterprise, the manager constantly has to receive and give information orally or in written. A communication link has to be maintained with subordinates as well as superiors for effective functioning of an enterprise.
2. **Decisional activities –** Practically all types of managerial activities are based on one or the other types of decisions. Therefore, managers are continuously involved in decisions of different kinds since the decision made by one manager becomes the basis of action to be taken by other managers. (E.g. Sales Manager is deciding the media & content of advertising).
3. **Inter-personal activities –** Management involves achieving goals through people. Therefore, managers have to interact with superiors as well as the sub-ordinates. They must maintain good relations with them. The inter-personal activities include with the sub-ordinates and taking care of the problem. (E.g. Bonuses to be given to the sub-ordinates).

# Management as a Discipline

Management as a discipline refers to that branch of knowledge which is connected to study of principles & practices of basic administration. It specifies certain code of conduct to be followed by the manager & also various methods for managing resources efficiently.

Management as a discipline specifies certain code of conduct for managers & indicates various methods of managing an enterprise. Management is a course of study which is now formally being taught in the institutes and universities after completing a prescribed course or by obtaining degree or diploma in management, a person can get employment as a manager.

**Any branch of knowledge that fulfils following two requirements is known as discipline:**

1. There must be scholars & thinkers who communicate relevant knowledge through research and publications.
2. The knowledge should be formally imparted by education and training programmes.

Since management satisfies both these problems, therefore it qualifies to be a discipline. Though it is comparatively a new discipline but it is growing at a faster pace.

# Management as a Group

Management as a group refers to all those persons who perform the task of managing an enterprise. When we say that management of ABC & Co. is good, we are referring to a group of people those who are managing. Thus as a group technically speaking, management will include all managers from chief executive to the first – line managers (lower-level managers). But in common practice management includes only top management i.e. Chief Executive, Chairman, General Manager, Board of Directors etc. In other words, those who are concerned with making important decisions, these persons enjoy the authorities to use resources to accomplish organizational objectives & also responsibility to for their efficient utilization.

# Management as a Science

Science is a systematic body of knowledge pertaining to a specific field of study that contains general facts which explains a phenomenon. It establishes cause and effect relationship between two or more variables and underlines the principles governing their relationship. These principles are developed through scientific method of observation and verification through testing.

**Science is characterized by following main features**:

1. **Universally acceptance principles –** Scientific principles represents basic truth about a particular field of enquiry. These principles may be applied in all situations, at all time & at all places. E.g. – law of gravitation which can be applied in all countries irrespective of the time.

Management also contains some fundamental principles which can be applied universally like the Principle of Unity of Command i.e. one man, one boss. This principle is applicable to all type of organization – business or non business.

1. **Experimentation & Observation –** Scientific principles are derived through scientific investigation & researching i.e. they are based on logic. E.g. the principle that earth goes round the sun has been scientifically proved.

Management principles are also based on scientific enquiry & observation and not only on the opinion of Henry Fayol. They have been developed through experiments & practical experiences of large no. of managers. E.g. it is observed that fair remuneration to personal helps in creating a satisfied work force.

1. **Cause & Effect Relationship –** Principles of science lay down cause and effect relationship between various variables. E.g. when metals are heated, they are expanded. The cause is heating & result is expansion.

The same is true for management, therefore it also establishes cause and effect relationship. E.g. lack of parity (balance) between authority & responsibility will lead to ineffectiveness. If you know the cause i.e. lack of balance, the effect can be ascertained easily i.e. in effectiveness. Similarly if workers are given bonuses, fair wages they will work hard but when not treated in fair and just manner, reduces productivity of organization.

1. **Test of Validity & Predictability –** Validity of scientific principles can be tested at any time or any number of times i.e. they stand the test of time. Each time these tests will give same result. Moreover future events can be predicted with reasonable accuracy by using scientific principles. E.g. H2 & O2 will always give H2O.

Principles of management can also be tested for validity. E.g. principle of unity of command can be tested by comparing two persons – one having single boss and one having 2 bosses. The performance of 1st person will be better than 2nd.

It cannot be denied that management has a systematic body of knowledge but it is not as exact as that of other physical sciences like biology, physics, and chemistry etc. The main reason for the inexactness of science of management is that it deals with human beings and it is very difficult to predict their behavior accurately. Since it is a social process, therefore it falls in the area of social sciences. It is a flexible science & that is why its theories and principles may produce different results at different times and therefore it is a behavior science. Ernest Dale has called it as a *Soft Science*.

# Management as an Art

Art implies application of knowledge & skill to trying about desired results. An art may be defined as personalized application of general theoretical principles for achieving best possible results. Art has the following characters –

1. **Practical Knowledge:** Every art requires practical knowledge therefore learning of theory is not sufficient. It is very important to know practical application of theoretical principles. E.g. to become a good painter, the person may not only be knowing different colour and brushes but different designs, dimensions, situations etc to use them appropriately. A manager can never be successful just by obtaining degree or diploma in management; he must have also know how to apply various principles in real situations by functioning in capacity of manager.
2. **Personal Skill:** Although theoretical base may be same for every artist, but each one has his own style and approach towards his job. That is why the level of success and quality of performance differs from one person to another. E.g. there are several qualified painters but M.F. Hussain is recognized for his style. Similarly management as an art is also personalized. Every manager has his own way of managing things based on his knowledge, experience and personality, that is why some managers are known as good managers (like Aditya Birla, Rahul Bajaj) whereas others as bad.
3. **Creativity:** Every artist has an element of creativity in line. That is why he aims at producing something that has never existed before which requires combination of intelligence & imagination. Management is also creative in nature like any other art. It combines human and non-human resources in useful way so as to achieve desired results. It tries to produce sweet music by combining chords in an efficient manner.
4. **Perfection through practice:** Practice makes a man perfect. Every artist becomes more and more proficient through constant practice. Similarly managers learn through an art of trial and error initially but application of management principles over the years makes them perfect in the job of managing.
5. **Goal-Oriented:** Every art is result oriented as it seeks to achieve concrete results. In the same manner, management is also directed towards accomplishment of pre-determined goals. Managers use various resources like men, money, material, machinery & methods to promote growth of an organization.

Thus, we can say that management is an art therefore it requires application of certain principles rather it is an art of highest order because it deals with moulding the attitude and behavior of people at work towards desired goals.

### Management as both Science and Art

Management is both an art and a science. The above mentioned points clearly reveals that management combines features of both science as well as art. It is considered as a science because it has an organized body of knowledge which contains certain universal truth. It is called an art because managing requires certain skills which are personal possessions of managers. Science provides the knowledge & art deals with the application of knowledge and skills.

A manager to be successful in his profession must acquire the knowledge of science & the art of applying it. Therefore management is a judicious blend of science as well as an art because it proves the principles and the way these principles are applied is a matter of art. Science teaches to ’know’ and art teaches to ’do’. E.g. a person cannot become a good singer unless he has knowledge about various ragas & he also applies his personal skill in the art of singing. Same way it is not sufficient for manager to first know the principles but he must also apply them in solving various managerial problems that is why, science and art are not mutually exclusive but they are complementary to each other (like tea and biscuit, bread and butter etc.).

The old saying that “Manager are Born” has been rejected in favor of “Managers are Made”. It has been aptly remarked that management is the oldest of art and youngest of science. To conclude, we can say that science is the root and art is the fruit.

# Management as a Profession

Over a large few decades, factors such as growing size of business unit, separation of ownership from management, growing competition etc have led to an increased demand for professionally qualified managers. The task of manager has been quite specialized. As a result of these developments the management has reached a stage where everything is to be managed professionally.

A profession may be defined as an occupation that requires specialized knowledge and intensive academic preparations to which entry is regulated by a representative body. The essentials of a profession are:

1. **Specialized Knowledge –** A profession must have a systematic body of knowledge that can be used for development of professionals. Every professional must make deliberate efforts to acquire expertise in the principles and techniques. Similarly a manager must have devotion and involvement to acquire expertise in the science of management.
2. **Formal Education & Training –** There are no. of institutes and universities to impart education & training for a profession. No one can practice a profession without going through a prescribed course. Many institutes of management have been set up for imparting education and training. For example, a CA cannot audit the A/C’s unless he has acquired a degree or diploma for the same but no minimum qualifications and a course of study has been prescribed for managers by law. For example, MBA may be preferred but not necessary.
3. **Social Obligations –** Profession is a source of livelihood but professionals are primarily motivated by the desire to serve the society. Their actions are influenced by social norms and values. Similarly a manager is responsible not only to its owners but also to the society and therefore he is expected to provide quality goods at reasonable prices to the society.
4. **Code of Conduct –** Members of a profession have to abide by a code of conduct which contains certain rules and regulations, norms of honesty, integrity and special ethics. A code of conduct is enforced by a representative association to ensure self discipline among its members. Any member violating the code of conduct can be punished and his membership can be withdrawn. The AIMA has prescribed a code of conduct for managers but it has no right to take legal action against any manager who violates it.
5. **Representative Association –** For the regulation of profession, existance of a representative body is a must. For example, an institute of Charted Accountants of India establishes and administers standards of competence for the auditors but the AIMA however does not have any statuary powers to regulate the activities of managers.

**From above discussion, it is quite clear that management fulfills several essentials of a profession, even then it is not a full fledged profession because: -**

1. It does not restrict the entry in managerial jobs for account of one standard or other.
2. No minimum qualifications have been prescribed for managers.
3. No management association has the authority to grant a certificate of practice to various managers.
4. All managers are supposed to abide by the code formulated by AIMA,
5. Competent education and training facilities do not exist. .
6. Managers are responsible to many groups such as shareholders, employees and society. A regulatory code may curtail their freedom.
7. Managers are known by their performance and not mere degrees.
8. The ultimate goal of business is to maximize profit and not social welfare. That is why Haymes has rightly remarked, “The slogan for management is becoming – ’He who serves best, also profits most’.”

# Features of Management

Management is an activity concerned with guiding human and physical resources such that organizational goals can be achieved. Nature of management can be highlighted as: -

1. **Management is Goal-Oriented:** The success of any management activity is accessed by its achievement of the predetermined goals or objective. Management is a purposeful activity. It is a tool which helps use of human & physical resources to fulfill the pre-determined goals. For example, the goal of an enterprise is maximum consumer satisfaction by producing quality goods and at reasonable prices. This can be achieved by employing efficient persons and making better use of scarce resources.
2. **Management integrates Human, Physical and Financial Resources:** In an organization, human beings work with non-human resources like machines. Materials, financial assets, buildings etc. Management integrates human efforts to those resources. It brings harmony among the human, physical and financial resources.
3. **Management is Continuous:** Management is an ongoing process. It involves continuous handling of problems and issues. It is concerned with identifying the problem and taking appropriate steps to solve it. E.g. the target of a company is maximum production. For achieving this target various policies have to be framed but this is not the end. Marketing and Advertising is also to be done. For this policies have to be again framed. Hence this is an ongoing process.
4. **Management is all Pervasive:** Management is required in all types of organizations whether it is political, social, cultural or business because it helps and directs various efforts towards a definite purpose. Thus clubs, hospitals, political parties, colleges, hospitals, business firms all require management. When ever more than one person is engaged in working for a common goal, management is necessary. Whether it is a small business firm which may be engaged in trading or a large firm like Tata Iron & Steel, management is required everywhere irrespective of size or type of activity.
5. **Management is a Group Activity:** Management is very much less concerned with individual’s efforts. It is more concerned with groups. It involves the use of group effort to achieve predetermined goal of management of ABC & Co. is good refers to a group of persons managing the enterprise

**Levels of Management**

**Levels of Management:** There are three levels of management

1. Top level management
2. Middle level management
3. Low level management

**Top-level management**

* Require an extensive knowledge of management roles and skills.
* They have to be very aware of external factors such as markets.
* Their decisions are generally of a long-term nature
* Their decisions are made using analytic, directive, conceptual and/or behavioral/participative processes
* They are responsible for strategic decisions.
* They have to chalk out the plan and see that plan may be effective in the future.
* They are executive in nature.

**Middle management**

* Mid-level managers have a specialized understanding of certain managerial tasks.
* They are responsible for carrying out the decisions made by top-level management.

**Lower management**

* This level of management ensures that the decisions and plans taken by the other two are carried out.
* Lower-level managers' decisions are generally short-term ones.

**Foreman / lead hand**

* They are people who have direct supervision over the working force in office factory, sales field or other workgroup or areas of activity.

**Rank and File**

* The responsibilities of the persons belonging to this group are even more restricted and more specific than those of the foreman

The term “**Levels of Management**’ refers to a line of demarcation between various managerial positions in an organization. The number of levels in management increases when the size of the business and work force increases and vice versa. The level of management determines a chain of command, the amount of authority & status enjoyed by any managerial position. The levels of management can be classified in three broad categories: -

1. **Top level / Administrative level**
2. **Middle level / Executory**
3. **Low level / Supervisory / Operative / First-line managers**

Managers at all these levels perform different functions. The role of managers at all the three levels is discussed below:



##### *Top Level of Management*

It consists of board of directors, chief executive or managing director. The top management is the ultimate source of authority and it manages goals and policies for an enterprise. It devotes more time on planning and coordinating functions.

The role of the top management can be summarized as follows –

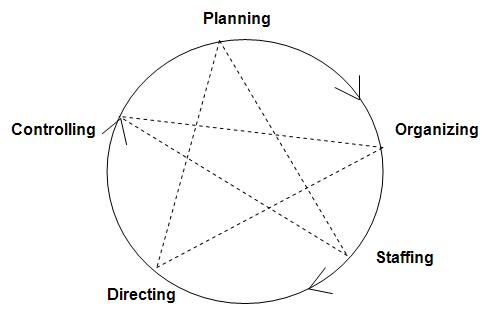
* 1. Top management lays down the objectives and broad policies of the enterprise.
  2. It issues necessary instructions for preparation of department budgets, procedures, schedules etc.
  3. It prepares strategic plans & policies for the enterprise.
  4. It appoints the executive for middle level i.e. departmental managers.
  5. It controls & coordinates the activities of all the departments.
  6. It is also responsible for maintaining a contact with the outside world.
  7. It provides guidance and direction.
  8. The top management is also responsible towards the shareholders for the performance of the enterprise.

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| *Middle Level of Management* The branch managers and departmental managers constitute middle level. They are responsible to the top management for the functioning of their department. They devote more time to organizational and directional functions. In small organization, there is only one layer of middle level of management but in big enterprises, there may be senior and junior middle level management. Their role can be emphasized as –   * 1. They execute the plans of the organization in accordance with the policies and directives of the top management.   2. They make plans for the sub-units of the organization.   3. They participate in employment & training of lower level management.   4. They interpret and explain policies from top level management to lower level.   5. They are responsible for coordinating the activities within the division or department.   6. It also sends important reports and other important data to top level management.   7. They evaluate performance of junior managers.   8. They are also responsible for inspiring lower level managers towards better performance.  *Lower Level of Management* Lower level is also known as supervisory / operative level of management. It consists of supervisors, foreman, section officers, superintendent etc. According to *R.C. Davis*, “Supervisory management refers to those executives whose work has to be largely with personal oversight and direction of operative employees”. In other words, they are concerned with direction and controlling function of management. Their activities include –   * 1. Assigning of jobs and tasks to various workers.   2. They guide and instruct workers for day to day activities.   3. They are responsible for the quality as well as quantity of production.   4. They are also entrusted with the responsibility of maintaining good relation in the organization.   5. They communicate workers problems, suggestions, and recommendatory appeals etc to the higher level and higher level goals and objectives to the workers.   6. They help to solve the grievances of the workers.   7. They supervise & guide the sub-ordinates.   8. They are responsible for providing training to the workers.   9. They arrange necessary materials, machines, tools etc for getting the things done.   10. They prepare periodical reports about the performance of the workers.   11. They ensure discipline in the enterprise.   12. They motivate workers.   13. They are the image builders of the enterprise because they are in direct contact with the workers. |

# Functions of Management

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| Management has been described as a social process involving responsibility for economical and effective planning & regulation of operation of an enterprise in the fulfillment of given purposes. It is a dynamic process consisting of various elements and activities. These activities are different from operative functions like marketing, finance, purchase etc. Rather these activities are common to each and every manger irrespective of his level or status.  Different experts have classified functions of management. According to *George & Jerry*, “There are four fundamental functions of management i.e. planning, organizing, actuating and controlling”. According to Henry Fayol, “To manage is to forecast and plan, to organize, to command, & to control”. Whereas Luther Gullick has given a keyword ’**POSDCORB**’ where P stands for Planning, O for Organizing, S for Staffing, D for Directing, Co for Co-ordination, R for reporting & B for Budgeting. But the most widely accepted are functions of management given by KOONTZ and O’DONNEL i.e. **Planning**, **Organizing**, **Staffing**, **Directing** and **Controlling**. |

For theoretical purposes, it may be convenient to separate the function of management but practically these functions are overlapping in nature i.e. they are highly inseparable. Each function blends into the other & each affects the performance of others.

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**1. Planning**

It is the basic function of management. It deals with chalking out a future course of action & deciding in advance the most appropriate course of actions for achievement of pre-determined goals. According to KOONTZ, “Planning is deciding in advance – what to do, when to do & how to do. It bridges the gap from where we are & where we want to be”. A plan is a future course of actions. It is an exercise in problem solving & decision making. Planning is determination of courses of action to achieve desired goals. Thus, planning is a systematic thinking about ways & means for accomplishment of pre-determined goals. Planning is necessary to ensure proper utilization of human & non-human resources. It is all pervasive, it is an intellectual activity and it also helps in avoiding confusion, uncertainties, risks, wastages etc.

**2. Organising**

It is the process of bringing together physical, financial and human resources and developing productive relationship amongst them for achievement of organizational goals. According to Henry Fayol, “To organize a business is to provide it with everything useful or its functioning i.e. raw material, tools, capital and personnel’s”. To organize a business involves determining & providing human and non-human resources to the organizational structure. Organizing as a process involves:

* Identification of activities.
* Classification of grouping of activities.
* Assignment of duties.
* Delegation of authority and creation of responsibility.
* Coordinating authority and responsibility relationships.

##### *3.Staffing*

It is the function of manning the organization structure and keeping it manned. Staffing has assumed greater importance in the recent years due to advancement of technology, increase in size of business, complexity of human behavior etc. The main purpose o staffing is to put right man on right job i.e. square pegs in square holes and round pegs in round holes. According to Kootz & O’Donell, “Managerial function of staffing involves manning the organization structure through proper and effective selection, appraisal & development of personnel to fill the roles designed un the structure”. Staffing involves:

* Manpower Planning (estimating man power in terms of searching, choose the person and giving the right place).
* Recruitment, selection & placement.
* Training & development.
* Remuneration.
* Performance appraisal.
* Promotions & transfer.

##### *4. Directing*

It is that part of managerial function which actuates the organizational methods to work efficiently for achievement of organizational purposes. It is considered life-spark of the enterprise which sets it in motion the action of people because planning, organizing and staffing are the mere preparations for doing the work. Direction is that inert-personnel aspect of management which deals directly with influencing, guiding, supervising, motivating sub-ordinate for the achievement of organizational goals. Direction has following elements:

* Supervision
* Motivation
* Leadership
* Communication

**Supervision-** implies overseeing the work of subordinates by their superiors. It is the act of watching & directing work & workers.

**Motivation-** means inspiring, stimulating or encouraging the sub-ordinates with zeal to work. Positive, negative, monetary, non-monetary incentives may be used for this purpose.

**Leadership-** may be defined as a process by which manager guides and influences the work of subordinates in desired direction.

**Communications-** is the process of passing information, experience, opinion etc from one person to another. It is a bridge of understanding.

##### *5. Controlling*

It implies measurement of accomplishment against the standards and correction of deviation if any to ensure achievement of organizational goals. The purpose of controlling is to ensure that everything occurs in conformities with the standards. An efficient system of control helps to predict deviations before they actually occur. According to *Theo Haimann*, “Controlling is the process of checking whether or not proper progress is being made towards the objectives and goals and acting if necessary, to correct any deviation”. According to Koontz & O’Donell “Controlling is the measurement & correction of performance activities of subordinates in order to make sure that the enterprise objectives and plans desired to obtain them as being accomplished”. Therefore controlling has following steps:

1. Establishment of standard performance.
2. Measurement of actual performance.
3. Comparison of actual performance with the standards and finding out deviation if any.
4. Corrective action.

**Functions of Management ( In brief)**

### Basic functions of management

Management operates through various functions, often classified as planning, organizing, leading/motivating, and controlling.

* **Planning**: Deciding what needs to happen in the future (today, next week, next month, next year, over the next 5 years, etc.) and generating plans for action.
* **Organizing**: (Implementation) making optimum use of the resources required to enable the successful carrying out of plans.
* **Staffing**: Job analyzing, recruitment, and hiring individuals for appropriate jobs.
* **Leading**: Determining what needs to be done in a situation and getting people to do it.
* **Controlling: Monitoring**, checking progress against plans, which may need modification based on feedback.
* **Motivating**: the process of stimulating an individual to take action that will accomplish a desired goal.

# Principles of Management

A principle refers to a fundamental truth. It establishes cause and effect relationship between two or more variables under given situation. They serve as a guide to thought & actions. Therefore, management principles are the statements of fundamental truth based on logic which provides guidelines for managerial decision making and actions. These principles are derived: -

1. On the basis of observation and analysis i.e. practical experience of managers.
2. By conducting experimental studies.

# There are 14 Principles of Management described by Henri Fayol.

##### *1. Division of Labor*

1. Henry Fayol has stressed on the specialization of jobs.
2. He recommended that work of all kinds must be divided & subdivided and allotted to various persons according to their expertise in a particular area.
3. Subdivision of work makes it simpler and results in efficiency.
4. It also helps the individual in acquiring speed, accuracy in his performance.
5. Specialization leads to efficiency & economy in spheres of business.

##### *2. Party of Authority & Responsibility*

1. Authority & responsibility are co-existing.
2. If authority is given to a person, he should also be made responsible.
3. In a same way, if anyone is made responsible for any job, he should also have concerned authority.
4. Authority refers to the right of superiors to get exactness from their sub-ordinates whereas responsibility means obligation for the performance of the job assigned.
5. There should be a balance between the two i.e. they must go hand in hand.
6. Authority without responsibility leads to irresponsible behavior whereas responsibility without authority makes the person ineffective.

##### *3. Principle of One Boss*

1. A sub-ordinate should receive orders and be accountable to one and only one boss at a time.
2. In other words, a sub-ordinate should not receive instructions from more than one person because –

-  It undermines authority  
-  Weakens discipline  
-  Divides loyalty  
-  Creates confusion  
-  Delays and chaos  
-  Escaping responsibilities  
-  Duplication of work  
-  Overlapping of efforts

1. Therefore, dual sub-ordination should be avoided unless and until it is absolutely essential.
2. Unity of command provides the enterprise a disciplined, stable & orderly existence.
3. It creates harmonious relationship between superiors and sub-ordinates.

##### *4. Unity of Direction*

1. Fayol advocates one head one plan which means that there should be one plan for a group of activities having similar objectives.
2. Related activities should be grouped together. There should be one plan of action for them and they should be under the charge of a particular manager.
3. According to this principle, efforts of all the members of the organization should be directed towards common goal.
4. Without unity of direction, unity of action cannot be achieved.
5. In fact, unity of command is not possible without unity of direction.

|  |  |  |
| --- | --- | --- |
| **Basis** | **Unity of command** | **Unity of direction** |
| Meaning | It implies that a sub-ordinate should receive orders & instructions from only one boss. | It means one head, one plan for a group of activities having similar objectives. |
| Nature | It is related to the functioning of personnel’s. | It is related to the functioning of departments, or organization as a whole. |
| Necessity | It is necessary for fixing responsibility of each subordinates. | It is necessary for sound organization. |
| Advantage | It avoids conflicts, confusion & chaos. | It avoids duplication of efforts and wastage of resources. |
| Result | It leads to better superior sub-ordinate relationship. | It leads to smooth running of the enterprise. |

Therefore it is obvious that they are different from each other but they are dependent on each other i.e. unity of direction is a pre-requisite for unity of command. But it does not automatically come from the unity of direction.

##### *Equity*

* 1. Equity means combination of fairness, kindness & justice.
  2. The employees should be treated with kindness & equity if devotion is expected of them.
  3. It implies that managers should be fair and impartial while dealing with the subordinates.
  4. They should give similar treatment to people of similar position.
  5. They should not discriminate with respect to age, caste, sex, religion, relation etc.
  6. Equity is essential to create and maintain cordial relations between the managers and sub-ordinate.
  7. But equity does not mean total absence of harshness.
  8. Fayol was of opinion that, “at times force and harshness might become necessary for the sake of equity”.

##### *Order*

* 1. This principle is concerned with proper & systematic arrangement of things and people.
  2. Arrangement of things is called material order and placement of people is called social order.
  3. Material order- There should be safe, appropriate and specific place for every article and every place to be effectively used for specific activity and commodity.
  4. Social order- Selection and appointment of most suitable person on the suitable job. There should be a specific place for every one and everyone should have a specific place so that they can easily be contacted whenever need arises.

##### Discipline

* 1. According to Fayol, “Discipline means sincerity, obedience, respect of authority & observance of rules and regulations of the enterprise”.
  2. This principle applies that subordinate should respect their superiors and obey their order.
  3. It is an important requisite for smooth running of the enterprise.
  4. Discipline is not only required on path of subordinates but also on the part of management.
  5. Discipline can be enforced if –

-  There are good superiors at all levels.   
-  There are clear & fair agreements with workers.   
-  Sanctions (punishments) are judiciously applied.

##### *Initiative*

* 1. Workers should be encouraged to take initiative in the work assigned to them.
  2. It means eagerness to initiate actions without being asked to do so.
  3. Fayol advised that management should provide opportunity to its employees to suggest ideas, experiences& new method of work.
  4. It helps in developing an atmosphere of trust and understanding.
  5. People then enjoy working in the organization because it adds to their zeal and energy.
  6. To suggest improvement in formulation & implementation of place.
  7. They can be encouraged with the help of monetary & non-monetary incentives.

##### *Fair Remuneration*

* 1. The quantum and method of remuneration to be paid to the workers should be fair, reasonable, satisfactory & rewarding of the efforts.
  2. As far as possible it should accord satisfaction to both employer and the employees.
  3. Wages should be determined on the basis of cost of living, work assigned, financial position of the business, wage rate prevailing etc.
  4. Logical & appropriate wage rates and methods of their payment reduce tension & differences between workers & management creates harmonious relationship and pleasing atmosphere of work.
  5. Fayol also recommended provision of other benefits such as free education, medical & residential facilities to workers.

##### Stability of Tenure

* 1. Fayol emphasized that employees should not be moved frequently from one job position to another i.e. the period of service in a job should be fixed.
  2. Therefore employees should be appointed after keeping in view principles of recruitment & selection but once they are appointed their services should be served.
  3. According to Fayol. “Time is required for an employee to get used to a new work & succeed to doing it well but if he is removed before that he will not be able to render worthwhile services”.
  4. As a result, the time, effort and money spent on training the worker will go waste.
  5. Stability of job creates team spirit and a sense of belongingness among workers which ultimately increase the quality as well as quantity of work.

##### *Scalar Chain*

* 1. Fayol defines scalar chain as ’The chain of superiors ranging from the ultimate authority to the lowest”.
  2. Every orders, instructions, messages, requests, explanation etc. has to pass through Scalar chain.
  3. But, for the sake of convenience & urgency, this path can be cut shirt and this short cut is known as Gang Plank.
  4. A **Gang Plank** is a temporary arrangement between two different points to facilitate quick & easy communication as explained below:

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 In the figure given, if D has to communicate with G he will first send the communication upwards with the help of C, B to A and then downwards with the help of E and F to G which will take quite some time and by that time, it may not be worth therefore a gang plank has been developed between the two.

# Gang Plank clarifies that management principles are not rigid rather they are very flexible. They can be moulded and modified as per the requirements of situations.

##### ***12****. Sub-Ordination of Individual Interest to General Interest*

1. An organization is much bigger than the individual it constitutes therefore interest of the undertaking should prevail in all circumstances.
2. As far as possible, reconciliation should be achieved between individual and group interests.
3. But in case of conflict, individual must sacrifice for bigger interests.
4. In order to achieve this attitude, it is essential that –

-  Employees should be honest & sincere.   
-  Proper & regular supervision of work.   
-  Reconciliation of mutual differences and clashes by mutual agreement. For example, for change of location of plant, for change of profit sharing ratio, etc.

##### *13. Espirit De’ Corps (can be achieved through unity of command)*

1. It refers to team spirit i.e. harmony in the work groups and mutual understanding among the members.
2. Spirit De’ Corps inspires workers to work harder.
3. Fayol cautioned the managers against dividing the employees into competing groups because it might damage the moral of the workers and interest of the undertaking in the long run.
4. To inculcate Espirit De’ Corps following steps should be undertaken –
   * There should be proper co-ordination of work at all levels
   * Subordinates should be encouraged to develop informal relations among themselves.
   * Efforts should be made to create enthusiasm and keenness among subordinates so that they can work to the maximum ability.
   * Efficient employees should be rewarded and those who are not up to the mark should be given a chance to improve their performance.
   * Subordinates should be made conscious of that whatever they are doing is of great importance to the business & society.
5. He also cautioned against the more use of Britain communication to the subordinates i.e. face to face communication should be developed. The managers should infuse team spirit & belongingness. There should be no place for misunderstanding. People then enjoy working in the organization & offer their best towards the organization.

##### *14. Centralization & De-Centralization*

1. Centralization means concentration of authority at the top level. In other words, centralization is a situation in which top management retains most of the decision making authority.
2. Decentralization means disposal of decision making authority to all the levels of the organization. In other words, sharing authority downwards is decentralization.
3. According to Fayol, “Degree of centralization or decentralization depends on no. of factors like size of business, experience of superiors, dependability & ability of subordinates etc.
4. Anything which increases the role of subordinate is decentralization & anything which decreases it is centralization.
5. Fayol suggested that absolute centralization or decentralization is not feasible. An organization should strike to achieve a lot between the two.

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**Management Theory**

**The Principles of Scientific Management**

**Frederick Winslow Taylor**

Fredrick Winslow Taylor ( March 20, 1856 - March 21, 1915) commonly known as **’Father of Scientific Management’** started his career as an operator and rose to the position of chief engineer. He conducted various experiments during this process which forms the basis of scientific management. It implies application of scientific principles for studying & identifying management problems.

According to Taylor, “Scientific Management is an art of knowing exactly what you want your men to do and seeing that they do it in the best and cheapest way”. In Taylors view, if a work is analysed scientifically it will be possible to find *one best way* to do it.

Hence scientific management is a thoughtful, organized, dual approach towards the job of management against hit or miss or Rule of Thumb.

According to *Drucker*, “The cost of scientific management is the organized study of work, the analysis of work into simplest element & systematic management of worker’s performance of each element”.

**Frederick Winslow Taylor** (March 20, 1856–March 21, 1915), widely known as **F. W. Taylor**, was an American mechanical engineer who sought to improve industrial efficiency. He is regarded as the father of scientific management, and was one of the first management consultants.

Taylor was one of the intellectual leaders of the Efficiency Movement and his ideas, broadly conceived, were highly influential in the Progressive Era.

Taylor thought that by analyzing work, the "One Best Way" to do it would be found. He is most remembered for developing the time and motion study. He would break a job into its component parts and measure each to the hundredth of a minute. One of his most famous studies involved shovels. He noticed that workers used the same shovel for all materials. He determined that the most effective load was 21½ lb, and found or designed shovels that for each material would scoop up that amount. He was generally unsuccessful in getting his concepts applied and was dismissed from Bethlehem Steel. It was largely through the efforts of his disciples (most notably H.L. Gantt) that industry came to implement his ideas. Nevertheless, the book he wrote after parting company with Bethlehem Steel.

**Mayo’s Hawthorne experiment**

**George Elton John Mayo** (26 December 1880 - 7 September 1949) was an Australian psychologist, sociologist and organization theorist.

**Elton Mayo’s Hawthorn experiments**

Elton Mayo’s team conducted a number of experiments involving six female workers. These experiments are often referred to as the Hawthorne experiments or Hawthorne studies as they took place at The Hawthorne Works of the Western Electric Company in Chicago.

Over the course of five years, Mayo’s team altered the female worker’s working conditions and then monitored how the working conditions affected the workers morale and productivity. The changes in working conditions included changes in working hours, rest brakes, lighting, humidity, and temperature. The changes were explained to the workers prior to implementation.

At the end of the five year period, the female worker’s working conditions, reverted back to the conditions before the experiment began. Unexpectedly the workers morale and productivity rose to levels higher than before and during the experiments.

The combination of results during and after the experiment (ie the increase in the workers productivity when they were returned to their original working conditions) led Mayo to conclude that workers were motivated by psychological conditions more than physical working condition. He also concluded that workers were motivated by more than self interest and instead the following applied:

* There is an unwritten understanding between the worker and employer regarding what is expected from them; Mayo called this the psychological contract.
* A worker’s motivation can be increased by showing an interest in them. Mayo classified studying the workers (through the experiments) as showing an interest in the workers.
* Work is a group activity, team work can increase a worker’s motivation as it allows people to form strong working relationships and increases trust between the workers. Work groups are created formally by the employer but also occur informally. Both informal and formal groups should be used to increase productivity as informal groups influence the worker’s habits and attitudes.
* Workers are motivated by the social aspect of work, as demonstrated by the female workers socialising during and outside work and the subsequent increase in motivation.
* Workers are motivated by recognition, security and a sense of belonging.
* The communication between workers and management influences workers’ morale and productivity. Workers are motivated through a good working relationship with management.

# Abraham Maslow Theory of Human needs

Abraham Maslow between 1943-1954 developed his 'Hierarchy of needs' motivation theory. It is probably the most popular and most read motivation theory. His theory suggests that within each person their is a hierarchy of needs and the individual must satisfy each level before they move onto the next. There are five hierarchical levels. These are:

* Physiological needs: Food, shelter, sexual satisfaction i.e those needs needed for basic survival.
* Safety needs: The need to feel safe within your environment. Also refers to emotional and physical safety.
* Social Needs: The need for love, friendship and belongingness
* Esteem needs: The need for self respect, status and recognition from others.
* Self actualisation: The point of reaching ones full potential. Are you capable at excelling yourself?

Diagram: **Maslow's Hierarchy of Needs**



So an individual will need to satisfy their most basic need before they can move onto the next. Only when that individual knows that they have met their physiological needs will they move onto their safety needs. Maslow suggests that if you wanted to motivate an individual you will need to know where within the hierarchy they are placed.

# Douglas McGregor’s Theory X and Theory Y

**Douglas McGregor** (1906 – 1964) was a Management professor at the MIT Sloan School of Management and president of Antioch College from 1948 to 1954. His 1960 book *The Human Side of Enterprise* had a profound influence on education practices. In the book he identified an approach of creating an environment within which employees are motivated via authoritative, direction and control or integration and self-control, which he called theory X and theory Y, respectively. Theory Y is the practical application of Dr. Abraham Maslow's Humanistic School of Psychology, or Third Force psychology, applied to scientific management.

He is commonly thought of as being a *proponent* of Theory Y, but, as Edgar Schein tells in his introduction to McGregor's subsequent, posthumous (1967), book *The Professional Manager* : "In my own contacts with Doug, I often found him to be discouraged by the degree to which theory Y had become as monolithic a set of principles as those of Theory X, the over-generalization which Doug was fighting....Yet few readers were willing to acknowledge that the content of Doug's book made such a neutral point or that Doug's own presentation of his point of view was that coldly scientific".

**Theory X**

This theory is also referred to as “the authoritarian management style”, as it states that the average person needs to be coerced (even threatened with punishment), into working towards organisational objectives.

* The average employee does not like work and will attempt to avoid it.
* As employees are lazy they do not want responsibility and have no ambition.
* Individuals prefer to be directed and want security above everything else.
* Individuals need to be closely supervised and controlled.

**Theory Y**

Also known as “the participative management style”, a theory Y organisation’s view of people is the opposite of an organisation applying theory X.

* The average employee likes work, and is self-motivated.
* Employees can learn to not only accept but seek greater responsibility.
* Individuals are ambitious not lazy, and work is as natural as rest and play.
* Individuals exercise self control and self-direction to achieve objectives that they are committed to. Threats of punishment are unnecessary.
* The rewards of achievement generate commitment from employees.
* If individuals are given freedom there is opportunity to increase productivity.

Managers applying theory Y believe that if employees are given the opportunity, they will develop a desire to be imaginative and creative at work. They will therefore try and remove obstacles that prevent employees from realising their potential. They believe that negative attitudes such as avoidance of responsibility are caused by experience and are not “inherent characteristics”. Therefore by creating the positive experiences and conditions such negatives can be banished.

McGregor’s theory of X and Y represents two extremes, which probably aren’t applied in full by today’s organisations. However the theory has provided the foundations for today’s management strategy and elements of it can be seen in other management evaluations

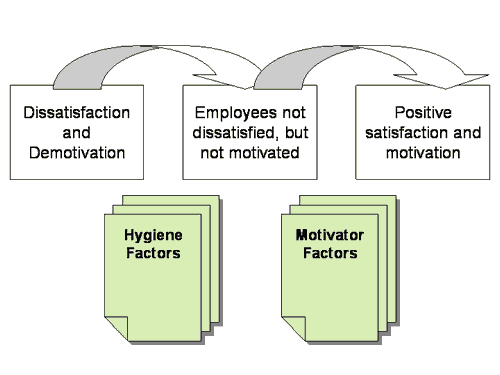
# Hertzberg’s Two Factor theory of Motivation

Herzberg's Motivation Hygiene Theory

Herzberg's Two Factor Theory is a "content theory" of motivation" [(the other main one is Maslow's Hierarchy of Needs)](http://tutor2u.net/business/people/motivation_theory_maslow.asp).

Herzberg analysed the job attitudes of 200 accountants and engineers who were asked to recall when they had felt positive or negative at work and the reasons why.

From this research, Herzberg suggested a two-step approach to understanding employee motivation and satisfaction:



**Hygiene Factors**

Hygiene factors are based on the need to for a business to avoid unpleasantness at work. If these factors are considered inadequate by employees, then they can cause dissatisfaction with work. Hygiene factors include:

- Company policy and administration

- Wages, salaries and other financial remuneration

- Quality of supervision

- Quality of inter-personal relations

- Working conditions

- Feelings of job security

**Motivator Factors**

Motivator factors are based on an individual's need for personal growth. When they exist, motivator factors actively create job satisfaction. If they are effective, then they can motivate an individual to achieve above-average performance and effort. Motivator factors include:

- Status

- Opportunity for advancement

- Gaining recognition

- Responsibility

- Challenging / stimulating work

- Sense of personal achievement & personal growth in a job

There is some similarity between Herzberg's and Maslow's models. They both suggest that needs have to be satisfied for the employee to be motivated. However, Herzberg argues that only the higher levels of the Maslow Hierarchy (e.g. self-actualisation, esteem needs) act as a motivator. The remaining needs can only cause dissatisfaction if not addressed.

**Applying Hertzberg's model to de-motivated workers**

What might the evidence of de-motivated employees be in a business?

- Low productivity

- Poor production or service quality

- Strikes / industrial disputes / breakdowns in employee communication and relationships

- Complaints about pay and working conditions

According to Herzberg, management should focus on rearranging work so that motivator factors can take effect. He suggested three ways in which this could be done:

- Job enlargement

- Job rotation and Job enrichment

**Leadership styles**

**The leadership styles we look at here are:**

* Autocratic leadership
* Bureaucratic leadership
* Charismatic leadership
* Democratic leadership
* Laissez-faire leadership
* People-oriented leadership
* Servant leadership
* Task-oriented leadership
* Transactional leadership
* Transformational leadership

## Autocratic Leadership

Autocratic leadership is an extreme form of transactional leadership, where a leader exerts high levels of power over his or her employees or team members. People within the team are given few opportunities for making suggestions, even if these would be in the team's or organization’s interest.

Many people resent being treated like this. Because of this, autocratic leadership often leads to high levels of absenteeism and staff turnover. Also, the team's output does not benefit from the creativity and experience of all team members, so many of the benefits of teamwork are lost.

For some routine and unskilled jobs, however, this style can remain effective, where the advantages of control outweigh the disadvantages.

## Bureaucratic Leadership

Bureaucratic leaders work “by the book”, ensuring that their staff follow procedures exactly. This is a very appropriate style for work involving serious safety risks (such as working with machinery, with toxic substances or at heights) or where large sums of money are involved (such as cash-handling).

In other situations, the inflexibility and high levels of control exerted can demoralize staff, and can diminish the organization's ability to react to changing external circumstances.

## Charismatic Leadership

A charismatic leadership style can appear similar to a transformational leadership style, in that the leader injects huge doses of enthusiasm into his or her team, and is very energetic in driving others forward.

However, charismatic leaders can tend to believe more in themselves than in their teams. This can create a risk that a project, or even an entire organization, might collapse if the leader were to leave: in the eyes of their followers, success is tied up with the presence of the charismatic leader. As such, charismatic leadership carries great responsibility, and needs long-term commitment from the leader.

## Democratic Leadership or Participative Leadership

Although a democratic leader will make the final decision, he or she invites other members of the team to contribute to the decision-making process. This not only increases job satisfaction by involving employees or team members in what’s going on, but it also helps to develop people’s skills. Employees and team members feel in control of their own destiny, and so are motivated to work hard by more than just a financial reward.  
  
As participation takes time, this style can lead to things happening more slowly than an autocratic approach, but often the end result is better. It can be most suitable where team working is essential, and where quality is more important than speed to market or productivity.

## Laissez-Faire Leadership

This French phrase means “leave it be” and is used to describe a leader who leaves his or her colleagues to get on with their work. It can be effective if the leader monitors what is being achieved and communicates this back to his or her team regularly. Most often, laissez-faire leadership works for teams in which the individuals are very experienced and skilled self-starters. Unfortunately, it can also refer to situations where managers are not exerting sufficient control.

## People-Oriented Leadership or Relations-Oriented Leadership

This style of leadership is the opposite of task-oriented leadership: the leader is totally focused on organizing, supporting and developing the people in the leader’s team. A participative style, it tends to lead to good teamwork and creative collaboration. However, taken to extremes, it can lead to failure to achieve the team's goals.

In practice, most leaders use both task-oriented and people-oriented styles of leadership.

## Servant Leadership

This term, coined by Robert Greenleaf in the 1970s, describes a leader who is often not formally recognized as such. When someone, at any level within an organization, leads simply by virtue of meeting the needs of his or her team, he or she is described as a “servant leader”.

In many ways, servant leadership is a form of democratic leadership, as the whole team tends to be involved in decision-making.

Supporters of the servant leadership model suggest it is an important way ahead in a world where values are increasingly important, and in which servant leaders achieve power on the basis of their values and ideals. Others believe that in competitive leadership situations, people practicing servant leadership can find themselves "left behind" by leaders using other leadership styles.

## Task-Oriented Leadership

A highly task-oriented leader focuses only on getting the job done, and can be quite autocratic. He or she will actively define the work and the roles required, put structures in place, plan, organize and monitor. However, as task-oriented leaders spare little thought for the well-being of their teams, this approach can suffer many of the flaws of autocratic leadership, with difficulties in motivating and retaining staff. Task-oriented leaders can benefit from an understanding of the Blake-Mouton Managerial Grid, which can help them identify specific areas for development that will help them involve people more.

## Transactional Leadership

This style of leadership starts with the premise that team members agree to obey their leader totally when they take a job on: the “transaction” is (usually) that the organization pays the team members, in return for their effort and compliance. As such, the leader has the right to “punish” team members if their work doesn’t meet the pre-determined standard.

Team members can do little to improve their job satisfaction under transactional leadership. The leader could give team members some control of their income/reward by using incentives that encourage even higher standards or greater productivity. Alternatively a transactional leader could practice “management by exception”, whereby, rather than rewarding better work, he or she would take corrective action if the required standards were not met.

Transactional leadership is really just a way of managing rather a true leadership style, as the focus is on short-term tasks. It has serious limitations for knowledge-based or creative work, but remains a common style in many organizations.

## Transformational Leadership

A person with this leadership style is a true leader who inspires his or her team with a shared vision of the future. Transformational leaders are highly visible, and spend a lot of time communicating. They don’t necessarily lead from the front, as they tend to delegate responsibility amongst their teams. While their enthusiasm is often infectious, they can need to be supported by “detail people”.

In many organizations, both transactional and transformational leadership are needed. The transactional leaders (or managers) ensure that routine work is done reliably, while the transformational leaders look after initiatives that add new value.

The transformational leadership style is the dominant leadership style taught in the How to Lead: Discover the Leader Within You leadership program, although we do recommend that other styles are brought as the situation demands.

## Using the Right Style – Situational Leadership

While the Transformation Leadership approach is often a highly effective style to use in business, there is no one “right” way to lead or manage that suits all situations. To choose the most effective approach for you, you must consider:

* The skill levels and experience of the members of your team.
* The work involved (routine or new and creative).
* The organizational environment (stable or radically changing, conservative or adventurous).
* You own preferred or natural style.

A good leader will find him or herself switching instinctively between styles according to the people and work they are dealing with. This is often referred to as “situational leadership”.

For example, the manager of a small factory trains new machine operatives using a bureaucratic style to ensure operatives know the procedures that achieve the right standards of product quality and workplace safety. The same manager may adopt a more participative style of leadership when working on production line improvement with his or her team of supervisors.

**Social Responsibilities of Management**

The term social responsibilities can be defined as the obligation of management towards the society and others concerned.  
  
**Reason for Social Responsibilities:** Business enterprises are creatures of society and should respond to the demands of society. If the management does not react to changes in social demands, the society will either force them to do so through laws or will not permit the enterprise to survive. Therefore the longterm interests of business are best served when management assume social responsibilities. The image of business organization liked with the quality of its products and customer service and the extent to which it fulfills the expectations of owners, employees, consumers, government and the community at large. For longterm success it matters a great deal if the firm has a favourable image in the public mind. Every business enterprise is a organ of society and its activities have impact on the social scene. Therefore, it is important for management to consider whether their policies and actions are likely to promote the public good, advances the basic values of society, and constitute to its stability, strength and harmony.  
  
Increasing concern for the social responsibility of management, it is now recognized that besides taking care of the financial interest of owners, managers of business firms must also take into account the interest of various other groups such as employees, consumers, the government and the community as a whole. These interested groups are directly or indirectly affected by the pursuit of business activities and they are the stake-holders of the business enterprise.  
  
**Responsibility towards owners:** The primary responsibilities of management is to assure a fair and reasonable rate of return on capital and fair return on investment can be determined on the basis of difference in the risks of business in different fields of activity. With the growth of business the shareholders can also expect appreciation in the value of their capital.  
 **Responsibility towards employees:** Management responsibility towards employees relate to the fair wages and salaries, satisfactory work environment, labour management relations and employee welfare. Fair wages should be fixed in the light of labor productivity, the prevailing wage rates in the same or neighbouring areas and relative importance of jobs. Managers salaries and allowances are expected to be linked with their responsibility, initiative and skill. But the spread between minimum wages and highest salaries should be reasonable. Employees are expected to build up and maintain harmonious relationships between superior and subordinates. Another aspect of responsibility towards employees is the provision of welfare amenities like safety and security of working conditions, medical facilities, housing, canteen, leave and retirement benefits.

**Responsibility towards consumers:** In a competitive market, serving consumers is supposed to be a prime concern of management. But in reality perfect competition does not prevail in all product markets. In the event of shortage of supply there is no automatic correction. Besides consumers are often victims of unfair trade practices and unethical conduct of business. Consumer interests are thus protected to some extent with laws and pressure of organized consumer groups. Management should anticipate these developments, satisfy consumer needs and protect consumer interests. Goods must be of appropriate standard and quality and be available in adequate quantities at reasonable prices. Management should avoid resorting to hoarding or creating artificial scarcity as well as false and misleading advertisements.

**Responsibility towards the Governments:** As a part of their social responsibility, management must conduct business affair in lawful manner, honestly pay all the taxes and dues, and should not corrupt public officials for selfish ends. Business activities must also confirm to the economic and social policies of the government.

**Responsibility towards the community and society:** The socially responsible role of management in relation to the community are expected to be revealed by its policies with respect to the employment of handicapped persons, and weaker sections of the community, environmental protection, pollution control, setting up industries in backward areas, and providing relief to the victims of natural calamities etc

### Frederick Taylor and Scientific Management

In 1911, Frederick Winslow Taylor published his work, *The Principles of Scientific Management*, in which he described how the application of the scientific method to the management of workers greatly could improve productivity. Scientific management methods called for optimizing the way that tasks were performed and simplifying the jobs enough so that workers could be trained to perform their specialized sequence of motions in the one "best" way.

Prior to scientific management, work was performed by skilled craftsmen who had learned their jobs in lengthy apprenticeships. They made their own decisions about how their job was to be performed. Scientific management took away much of this autonomy and converted skilled crafts into a series of simplified jobs that could be performed by unskilled workers who easily could be trained for the tasks.

Taylor became interested in improving worker productivity early in his career when he observed gross inefficiencies during his contact with steel workers.

#### Soldiering

Working in the steel industry, Taylor had observed the phenomenon of workers' purposely operating well below their capacity, that is, *soldiering*. He attributed soldiering to three causes:

1. The almost universally held belief among workers that if they became more productive, fewer of them would be needed and jobs would be eliminated.
2. Non-incentive wage systems encourage low productivity if the employee will receive the same pay regardless of how much is produced, assuming the employee can convince the employer that the slow pace really is a good pace for the job. Employees take great care never to work at a good pace for fear that this faster pace would become the new standard. If employees are paid by the quantity they produce, they fear that management will decrease their per-unit pay if the quantity increases.
3. Workers waste much of their effort by relying on rule-of-thumb methods rather than on optimal work methods that can be determined by scientific study of the task.

To counter soldiering and to improve efficiency, Taylor began to conduct experiments to determine the best level of performance for certain jobs, and what was necessary to achieve this performance.

#### Time Studies

Taylor argued that even the most basic, mindless tasks could be planned in a way that dramatically would increase productivity, and that scientific management of the work was more effective than the "initiative and incentive" method of motivating workers. The initiative and incentive method offered an incentive to increase productivity but placed the responsibility on the worker to figure out how to do it.

To scientifically determine the optimal way to perform a job, Taylor performed experiments that he called *time studies*, (also known as *time and motion studies*). These studies were characterized by the use of a stopwatch to time a worker's sequence of motions, with the goal of determining the one best way to perform a job.

The following are examples of some of the time-and-motion studies that were performed by Taylor and others in the era of scientific management.

Pig Iron

If workers were moving 12 1/2 tons of pig iron per day and they could be incentivized to try to move 47 1/2 tons per day, left to their own wits they probably would become exhausted after a few hours and fail to reach their goal. However, by first conducting experiments to determine the amount of resting that was necessary, the worker's manager could determine the optimal timing of lifting and resting so that the worker could move the 47 1/2 tons per day without tiring.

Not all workers were physically capable of moving 47 1/2 tons per day; perhaps only 1/8 of the pig iron handlers were capable of doing so. While these 1/8 were not extraordinary people who were highly prized by society, their physical capabilities were well-suited to moving pig iron. This example suggests that workers should be selected according to how well they are suited for a particular job.

The Science of Shoveling

In another study of the "science of shoveling", Taylor ran time studies to determine that the optimal weight that a worker should lift in a shovel was 21 pounds. Since there is a wide range of densities of materials, the shovel should be sized so that it would hold 21 pounds of the substance being shoveled. The firm provided the workers with optimal shovels. The result was a three to four fold increase in productivity and workers were rewarded with pay increases. Prior to scientific management, workers used their own shovels and rarely had the optimal one for the job.

Bricklaying

Others performed experiments that focused on specific motions, such as Gilbreth's bricklaying experiments that resulted in a dramatic decrease in the number of motions required to lay bricks. The husband and wife Gilbreth team used motion picture technology to study the motions of the workers in some of their experiments.

#### Taylor's 4 Principles of Scientific Management

After years of various experiments to determine optimal work methods, Taylor proposed the following four principles of scientific management:

1. Replace rule-of-thumb work methods with methods based on a scientific study of the tasks.
2. Scientifically select, train, and develop each worker rather than passively leaving them to train themselves.
3. Cooperate with the workers to ensure that the scientifically developed methods are being followed.
4. Divide work nearly equally between managers and workers, so that the managers apply scientific management principles to planning the work and the workers actually perform the tasks.

These principles were implemented in many factories, often increasing productivity by a factor of three or more. Henry Ford applied Taylor's principles in his automobile factories, and families even began to perform their household tasks based on the results of time and motion studies.

#### Drawbacks of Scientific Management

While scientific management principles improved productivity and had a substantial impact on industry, they also increased the monotony of work. The core job dimensions of skill variety, task identity, task significance, autonomy, and feedback all were missing from the picture of scientific management.

While in many cases the new ways of working were accepted by the workers, in some cases they were not. The use of stopwatches often was a protested issue and led to a strike at one factory where "Taylorism" was being tested. Complaints that Taylorism was dehumanizing led to an investigation by the United States Congress. Despite its controversy, scientific management changed the way that work was done, and forms of it continue to be used today.

**Deming's Contribution to Call Center Quality**

In part one of this ongoing series, we posed four vital questions to be addressed in any effective quality-monitoring program:

1)   How are we, as an organization, doing at representing our call center?

2)   What can we, as an organization, do to get better at representing our call center?

3)   How is this particular agent doing at representing our call center?

4)   What can we, as managers, do to help this agent to get better at representing our call center?

In the November issue, we began looking at the second question, by considering boundaries and starting points.  With this as a foundation, we are ready to consider the contributions of Edward Deming relevant to this discussion.  Although first published in 1986, Deming's classic book *Out of the Crisis* has stood the test of time.  Deming's most famous prescriptions for business are contained in his fourteen points and his seven deadly sins of management.  (If you haven't read the book, just do a Google search for "Deming 14 Points."  There you'll find several good introductions to his precepts.)  Deming said that, in his experience, 94 percent of all improvement opportunities come from answering vital question two and only 6 percent from answering the third one.

**Put First Things First:** While individual feedback is important to give, it is secondary, not primary.  This new model helps keep first things first.  It is in answering vital question two that you stand to gain the most from Getting Quality Right.  With a consistent system in place for answering question one, you can prioritize your efforts as you dig into question two.  Without answering question one first, it's easy become distracted about improvement that really won't make much difference in overall quality.

**Time Series View of Data:**  Deming considered a time series view of sampled data as important, as it is to most practitioners of total quality management.  We can learn a lot from studying quality scores through this lens.  This is because quality tends to vary over time.

The key measures we have used so far in analyzing distributed data include the mean, median, range, skewness, and standard deviation.  These results are typically represented visually in a histogram.  This approach to analysis has many benefits; however, it hides variations within that time frame.

In viewing a month's worth of data, you can learn a lot about how you did for the month, but not about what went on within shorter periods.  Therefore, you'll benefit from looking at a supplementary point of view that shows the time dimension.  That's what a run chart and its close cousin, a control chart, can do.

**Run Charts:** Your randomly selected calls are already identified by a date/time stamp.  All you need to do is sort them by time and date and draw a run chart.  A run chart gives you a visual impression of how variation happens over time.  Excel, Minitab, SPSS, and other statistical programs make it easy to generate run charts.

If you plot a month's worth of sampled calls, you're going to have a busy run chart.  That's okay; it's worth considering.  You can also simplify it by looking at shorter periods, or by combining data points into subgroups.  You can gain more meaning when you view the data through a control chart.

**Control Charts:** Control charts are more complex than run charts.  They allow you to convert your impressions into a quantitatively verifiable form from which you can draw conclusions.  Control charts are like run charts on steroids.

Be aware that control charts come in a variety of confusing types.  In addition, different authors tend to use slightly different terms for the various types.  Therefore, wading into this subject is like wandering into a swamp, but it's worth it because control charts allow you to convert your visual impressions into a statistically verifiable form.

For a classic text on this subject, see Kaoru Ishikawa's *Guide to Quality Control*.  At first glance, the many formulas are forbidding, but stay with him.  His explanations are clear, though technical.

**A Very Brief Overview:** Control charts work by overlaying additional information upon run charts.  The most typical of those are two boundaries known as Upper Control Limits (UCL) and Lower Control Limits (LCL).  These limits are mathematically derived statistical boundaries of the variation in your data; they are not boundaries that you set by management fiat.

 Control limits show you, given the variation in your quality scores as viewed over time, the range within which you can expect to see those scores vary.  If all of your scores fall within the control limits, then your call handling is known to be in statistical control.  Your scores may be in control, but you still may not like the wide range over which they vary.  Alternatively, you may be dissatisfied with the low level of your average scores.  If either is the case, it is time to address your training, coaching, or scoring processes.

This is what answering vital question two is all about.  Process improvement in quality call monitoring is largely about two things: reduce variation and raise overall performance.

Most likely, you'll find some scores that fall outside of the control limits.  Those calls are known as *outliers*.  Any call below the LCL is one that was scored low.  Any call above the UCL was scored high.  If a scored call is outside of those limits, you will want to investigate what went on with that call.  You may want to recheck your evaluator's scores.  Perhaps someone should evaluate the same call independently as a check on your calibration standards.

Once you confirm that your evaluator's scores are valid, you may want to bring that call to that agent's attention (or supervisor's) attention.  If it is high, this could be a really well handled call, worthy of praise.  If low, remedial training or coaching of that rep may be needed.

Outliers are just one way to use control charts to identify special causes in variation.  You can also use control charts as "early warning indicators" that there is something about the types of calls you are getting, or the way that reps are handling calls, that is changing over time.  There are a variety of statistical rules of thumb that you can use when studying data points in a control chart to determine this.  Some things to look for are a run of data points heading in the same direction or points alternating about the central tendency line.  Also, you'll want to scrutinize a cluster of scores that are higher or lower than the central line.

# ORGANIZATION

An **organization** is a social arrangement which pursues collective goals, controls its own performance, and has a boundary separating it from its environment. In the social sciences, organizations are studied by researchers from several disciplines, the most common of which are sociology, economics, political science, psychology, management, and organizational communication. The broad area is commonly referred to as organizational studies, organizational behavior or organization analysis. Therefore, a number of different theories and perspectives exist, some of which are compatible,

* Organization – process-related: an entity is being (re-)organized (organization as task or action).
* Organization – functional: organization as a function of how entities like businesses or state authorities are used (organization as a permanent structure).
* Organization – institutional: an entity is an organization (organization as an actual purposeful structure within a social context)

**Organizing** is the function of management which follows planning. It is a function in which the synchronization and combination of human, physical and financial resources takes place. All the three resources are important to get results. Therefore, organizational function helps in achievement of results which in fact is important for the functioning of a concern. According to *Chester Barnard*, “Organizing is a function by which the concern is able to define the role positions, the jobs related and the co- ordination between authority and responsibility. Hence, a manager always has to organize in order to get results.

A manager performs organizing function with the help of following steps:-

1. **Identification of activities -** All the activities which have to be performed in a concern have to be identified first. For example, preparation of accounts, making sales, record keeping, quality control, inventory control, etc. All these activities have to be grouped and classified into units.
2. **Departmentally organizing the activities -** In this step, the manager tries to combine and group similar and related activities into units or departments. This organization of dividing the whole concern into independent units and departments is called departmentation.
3. **Classifying the authority -** Once the departments are made, the manager likes to classify the powers and its extent to the managers. This activity of giving a rank in order to the managerial positions is called hierarchy. The top management is into formulation of policies, the middle level management into departmental supervision and lower level management into supervision of foremen. The clarification of authority help in bringing efficiency in the running of a concern. This helps in achieving efficiency in the running of a concern. This helps in avoiding wastage of time, money, effort, in avoidance of duplication or overlapping of efforts and this helps in bringing smoothness in a concern’s working.
4. **Co-ordination between authority and responsibility -** Relationships are established among various groups to enable smooth interaction toward the achievment of the organizational goal. Each individual is made aware of his authority and he/she knows whom they have to take orders from and to whom they are accountable and to whom they have to report. A clear organizational structure is drawn and all the employees are made aware of it.

# Importance of Organizing Function

 **Specialization -** Organizational structure is a network of relationships in which the work is divided into units and departments. This division of work is helping in bringing specialization in various activities of concern.

 **Well defined jobs -** Organizational structure helps in putting right men on right job which can be done by selecting people for various departments according to their qualifications, skill and experience. This is helping in defining the jobs properly which clarifies the role of every person.

 **Clarifies authority -** Organizational structure helps in clarifying the role positions to every manager (status quo). This can be done by clarifying the powers to every manager and the way he has to exercise those powers should be clarified so that misuse of powers do not take place. Well defined jobs and responsibilities attached helps in bringing efficiency into managers working. This helps in increasing productivity.

 **Co-ordination -** Organization is a means of creating co- ordination among different departments of the enterprise. It creates clear cut relationships among positions and ensure mutual co- operation among individuals. Harmony of work is brought by higher level managers exercising their authority over interconnected activities of lower level manager.

Authority responsibility relationships can be fruitful only when there is a formal relationship between the two. For smooth running of an organization, the co- ordination between authority- responsibility is very important. There should be co- ordination between different relationships. Clarity should be made for having an ultimate responsibility attached to every authority. There is a saying, “Authority without responsibility leads to ineffective behaviour and responsibility without authority makes person ineffective.’’ Therefore, co- ordination of authority- responsibility is very important.

 **Effective administration –** The organization structure is helpful in defining the jobs positions. The roles to be performed by different managers are clarified. Specialization is achieved through division of work. This all leads to efficient and effective administration.

 **Growth and diversification -** A company’s growth is totally dependant on how efficiently and smoothly a concern works. Efficiency can be brought about by clarifying the role positions to the managers, co-ordination between authority and responsibility and concentrating on specialization. In addition to this, a company can diversify if its potential grow. This is possible only when the organization structure is well- defined. This is possible through a set of formal structure.

 **Sense of security -** Organizational structure clarifies the job positions. The roles assigned to every manager is clear. Co- ordination is possible. Therefore, clarity of powers helps automatically in increasing mental satisfaction and thereby a sense of security in a concern. This is very important for job- satisfaction.

 **Scope for new changes -** Where the roles and activities to be performed are clear and every person gets independence in his working, this provides enough space to a manager to develop his talents and flourish his knowledge. A manager gets ready for taking independent decisions which can be a road or path to adoption of new techniques of production. This scope for bringing new changes into the running of an enterprise is possible only through a set of organizational structure.

# PRINCIPLES OF ORGANIZING

The organizing process can be done efficiently if the managers have certain guidelines so that they can take decisions and can act. To organize in an effective manner, the following principles of organization can be used by a manager.

##### *Principle of Specialization*

According to the principle, the whole work of a concern should be divided amongst the subordinates on the basis of qualifications, abilities and skills. It is through division of work specialization can be achieved which results in effective organization.

##### *Principle of Functional Definition*

According to this principle, all the functions in a concern should be completely and clearly defined to the managers and subordinates. This can be done by clearly defining the duties, responsibilities, authority and relationships of people towards each other. Clarifications in authority- responsibility relationships helps in achieving co- ordination and thereby organization can take place effectively. For example, the primary functions of production, marketing and finance and the authority responsibility relationships in these departments shouldbe clearly defined to every person attached to that department. Clarification in the authority-responsibility relationship helps in efficient organization.

##### *Principles of Span of Control/Supervision*

According to this principle, span of control is a span of supervision which depicts the number of employees that can be handled and controlled effectively by a single manager. According to this principle, a manager should be able to handle what number of employees under him should be decided. This decision can be taken by choosing either froma wide or narrow span. There are two types of span of control:-

* 1. **Wide span of control-** It is one in which a manager can supervise and control effectively a large group of persons at one time. The features of this span are:-
     1. Less overhead cost of supervision
     2. Prompt response from the employees
     3. Better communication
     4. Better supervision
     5. Better co-ordination
     6. Suitable for repetitive jobs

According to this span, one manager can effectively and efficiently handle a large number of subordinates at one time.

* 1. **Narrow span of control-** According to this span, the work and authority is divided amongst many subordinates and a manager doesn't supervises and control a very big group of people under him. The manager according to a narrow span supervises a selected number of employees at one time. The features are:-
     1. Work which requires tight control and supervision, for example, handicrafts, ivory work, etc. which requires craftsmanship, there narrow span is more helpful.
     2. Co-ordination is difficult to be achieved.
     3. Communication gaps can come.
     4. Messages can be distorted.
     5. Specialization work can be achieved.

##### *Factors influencing Span of Control*

**a.Managerial abilities-** In the concerns where managers are capable, qualified and experienced, wide span of control is always helpful.

**b.Competence of subordinates-** Where the subordinates are capable and competent and their understanding levels are proper, the subordinates tend to very frequently visit the superiors for solving their problems. In such cases, the manager can handle large number of employees. Hence wide span is suitable.

**c.Nature of work-** If the work is of repetitive nature, wide span of supervision is more helpful. On the other hand, if work requires mental skill or craftsmanship, tight control and supervision is required in which narrow span is more helpful.

**d.Delegation of authority-** When the work is delegated to lower levels in an efficient and proper way, confusions are less and congeniality of the environment can be maintained. In such cases, wide span of control is suitable and the supervisors can manage and control large number of sub- ordinates at one time.

**e.Degree of decentralization-** Decentralization is done in order to achieve specialization in which authority is shared by many people and managers at different levels. In such cases, a tall structure is helpful. There are certain concerns where decentralization is done in very effective way which results in direct and personal communication between superiors and sub- ordinates and there the superiors can manage large number of subordinates very easily. In such cases, wide span again helps.

##### 4. *Principle of Scalar Chain*

Scalar chain is a chain of command or authority which flows from top to bottom. With a chain of authority available, wastages of resources are minimized, communication is affected, overlapping of work is avoided and easy organization takes place. A scalar chain of command facilitates work flow in an organization which helps in achievement of effective results. As the authority flows from top to bottom, it clarifies the authority positions to managers at all level and that facilitates effective organization.

##### 5. *Principle of Unity of Command*

It implies one subordinate-one superior relationship. Every subordinate is answerable and accountable to one boss at one time. This helps in avoiding communication gaps and feedback and response is prompt. Unity of command also helps in effective combination of resources, that is, physical, financial resources which helps in easy co- ordination and ,therefore, effective organization.

# Authority Flows from Top to Bottom

# Managing Director

# ↓

# Marketing Manager

# ↓

# Sales/ Media Manager

# ↓

# Salesmen

According to the above diagram, the Managing Director has got the highest level of authority. This authority is shared by the Marketing Manager who shares his authority with the Sales Manager. From this chain of hierarchy, the official chain of communication becomes clear which is helpful in achievement of results and which provides stability to a concern. This scalar chain of command always flow from top to bottom and it defines the authority positions of different managers at different levels.

# Centralization and Decentralization

|  |
| --- |
| **Centralization** is said to be a process where the concentration of decision making is in a few hands. All the important decision and actions at the lower level, all subjects and actions at the lower level are subject to the approval of top management. According to Allen, “Centralization” is the systematic and consistent reservation of authority at central points in the organization. The implication of centralization can be :-   1. Reservation of decision making power at top level. 2. Reservation of operating authority with the middle level managers. 3. Reservation of operation at lower level at the directions of the top level.   Under centralization, the important and key decisions are taken by the top management and the other levels are into implementations as per the directions of top level. For example, in a business concern, the father & son being the owners decide about the important matters and all the rest of functions like product, finance, marketing, personnel, are carried out by the department heads and they have to act as per instruction and orders of the two people. Therefore in this case, decision making power remain in the hands of father & son. |

On the other hand, **Decentralization** is a systematic delegation of authority at all levels of management and in all of the organization. In a decentralization concern, authority in retained by the top management for taking major decisions and framing policies concerning the whole concern. Rest of the authority may be delegated to the middle level and lower level of management.

The degree of **centralization and decentralization** will depend upon the amount of authority delegated to the lowest level. According to Allen, “Decentralization refers to the systematic effort to delegate to the lowest level of authority except that which can be controlled and exercised at central points.

Decentralization is not the same as delegation. In fact, decentralization is all extension of delegation. Decentralization pattern is wider is scope and the authorities are diffused to the lowest most level of management. Delegation of authority is a complete process and takes place from one person to another. While decentralization is complete only when fullest possible delegation has taken place. For example, the general manager of a company is responsible for receiving the leave application for the whole of the concern. The general manager delegates this work to the personnel manager who is now responsible for receiving the leave applicants. In this situation delegation of authority has taken place. On the other hand, on the request of the personnel manager ,if the general manager delegates this power to all the departmental heads at all level, in this situation decentralization has taken place. There is a saying that “Everything that increasing the role of subordinates is decentralization and that decreases the role is centralization”. Decentralization is wider in scope and the subordinate’s responsibility increase in this case. On the other hand, in delegation the managers remain answerable even for the acts of subordinates to their superiors.

##### *Implications of Decentralization*

1. There is less burden on the Chief Executive as in the case of centralization.
2. In decentralization, the subordinates get a chance to decide and act independently which develops skills and capabilities. This way the organization is able to process reserve of talents in it.
3. In decentralization, diversification and horizontal can be easily implanted.
4. In decentralization, concern diversification of activities can place effectively since there is more scope for creating new departments. Therefore, diversification growth is of a degree.
5. In decentralization structure, operations can be coordinated at divisional level which is not possible in the centralization set up.
6. In the case of decentralization structure, there is greater motivation and morale of the employees since they get more independence to act and decide.
7. In a decentralization structure, co-ordination to some extent is difficult to maintain as there are lot many department divisions and authority is delegated to maximum possible extent ,i.e., to the bottom most level delegation reaches. Centralization and decentralization are the categories by which the pattern of authority relationships became clear. The degree of centralization and de-centralization can be affected by many factors like nature of operation, volume of profits, number of departments, size of a concern, etc. The larger the size of a concern, a decentralization set up is suitable in it.

Organisations are structured in a variety of ways, dependant on their objectives and culture. The structure of an organisation will determine the manner in which it operates and it’s performance. Structure allows the responsibilities for different functions and processes to be clearly allocated to different departments and employees.

The wrong organisation structure will hinder the success of the business. Organisational structures should aim to maximize the efficiency and success of the Organisation. An effective organisational structure will facilitate working relationships between various sections of the organisation. It will retain order and command whilst promoting flexibility and creativity.

Internal factors such as size, product and skills of the workforce influence the organizational structure. As a business expands the chain of command will lengthen and the spans of control will widen. The higher the level of skill each employee has the more the business will make use of the matrix structure to maximize these skills across the organization.

**Span of Control**

This term is used to describe the number of employees that each manager/supervisor is responsible for. The span of control is said to be wide if a superior is in charge of many employees and narrow if the superior is in charge of a few employees.

**Types of organizations**

**Different Structures**

The most common organisation structures are:

1. Tall

2. Flat

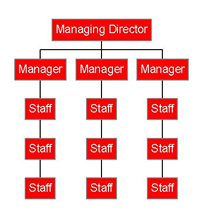
3. Hierarchical

4. Centralised and decentralized

**1. Tall Structure Organisation**

In its simplest form a tall organisation has many levels of management and supervision. There is a “long chain of command” running from the top of the organisation eg Chief Executive down to the bottom of the organisation eg shop floor worker. The diagram below neatly captures the concept of a tall structure.

**Diagram: Tall Structure**



However, tall structures rarely exceed 8 levels of management. This is firstly because the number of layers (i.e. management levels) decreases the span of control. Secondly the disadvantages of the tall structure begin to outweigh the advantages of a tall structure.

|  |  |
| --- | --- |
| **Advantages of tall Organisations** | **Disadvantages of tall Organisations** |
| * There is a narrow span of control ie each manager has a small number of employees under their control. This means that employees can be closely supervised. | * The freedom and responsibility of employees (subordinates) is restricted. |
| * There is a clear management structure. | * Decision making could be slowed down as approval may be needed by each of the layers of authority. |
| * The function of each layer will be clear and distinct. There will be clear lines of responsibility and control. | * Communication has to take place through many layers of management. |
| * Clear progression and promotion ladder. | * High management costs because managers are generally paid more than subordinates. Each layer will  tend to pay it’s managers more money than the layer below it. |

**2. Flat Structure Organisation**

In contrast to a tall organisation, a flat organisation will have relatively few layers or just one layer of management. This means that the “Chain of Command” from top to bottom is short and the “span of control is wide”. Due to the small number of management layers, flat organisations are often small organisations.

Diagram: Flat Structure

**

|  |  |
| --- | --- |
| **Advantages of flat Organisations** | **Disadvantages of flat Organisations** |
| * More/Greater communication between management and workers. | * Workers may have more than one manager/boss. |
| * Better team sprit. | * May limit/hinder the growth of the organisation. |
| * Less bureaucracy and easier decision making. | * Structure limited to small organisations such as partnerships, co-operatives and some private limited companies. |
| * Fewer levels of management which includes benefits such as lower costs as managers are generally paid more than worker. | * Function of each department/person could be blurred and merge into the job roles of others. |

# 3.Line and Staff Organization

Line and staff organization is a modification of line organization and it is more complex than line organization. According to this administrative organization, specialized and supportive activities are attached to the line of command by appointing staff supervisors and staff specialists who are attached to the line authority. The power of command always remains with the line executives and staff supervisors guide, advice and council the line executives. Personal Secretary to the Managing Director is a staff official.

|  |  |  |
| --- | --- | --- |
| **MANAGINGDIRECTOR     \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** | | |
| **↓** | **↓** | **↓** |
| Production Manager | Marketing Manager | Finance Manager |
| **↓** | **↓** | **↓** |
| Plant Supervisor | Market Supervisor | Chief Assisstant |
| **↓** | **↓** | **↓** |
| Foreman | Salesman | Accountant |

##### *Features of Line and Staff Organization*

1. There are two types of staff :
   1. Staff Assistants- P.A. to Managing Director, Secretary to Marketing Manager.
   2. Staff Supervisor- Operation Control Manager, Quality Controller, PRO
2. Line and Staff Organization is a compromise of line organization. It is more complex than line concern.
3. Division of work and specialization takes place in line and staff organization.
4. The whole organization is divided into different functional areas to which staff specialists are attached.
5. Efficiency can be achieved through the features of specialization.
6. There are two lines of authority which flow at one time in a concern :
   1. Line Authority
   2. Staff Authority
7. Power of command remains with the line executive and staff serves only as counselors.

##### *Merits of Line and Staff Organization*

1. **Relief to line of executives-** In a line and staff organization, the advice and counseling which is provided to the line executives divides the work between the two.The line executive can concentrate on the execution of plans and they get relieved of dividing their attention to many areas.
2. **Expert advice-** The line and staff organization facilitates expert advice to the line executive at the time of need. The planning and investigation which is related to different matters can be done by the staff specialist and line officers can concentrate on execution of plans.
3. **Benefit of Specialization-** Line and staff through division of whole concern into two types of authority divides the enterprise into parts and functional areas. This way every officer or official can concentrate in its own area.
4. **Better co-ordination-** Line and staff organization through specialization is able to provide better decision making and concentration remains in few hands. This feature helps in bringing co- ordination in work as every official is concentrating in their own area.
5. **Benefits of Research and Development-** Through the advice of specialized staff, the line executives, the line executives get time to execute plans by taking productive decisions which are helpful for a concern. This gives a wide scope to the line executive to bring innovations and go for research work in those areas. This is possible due to the presence of staff specialists.
6. **Training-** Due to the presence of staff specialists and their expert advice serves as ground for training to line officials. Line executives can give due concentration to their decision making. This in itself is a training ground for them.
7. **Balanced decisions-** The factor of specialization which is achieved by line staff helps in bringing co- ordination. This relationship automatically ends up the line official to take better and balanced decision.
8. **Unity of action-** Unity of action is a result of unified control. Control and its effectivity take place when co- ordination is present in the concern. In the line and staff authority all the officials have got independence to make decisions. This serves as effective control in the whole enterprise.

##### *Demerits of Line and Staff Organization*

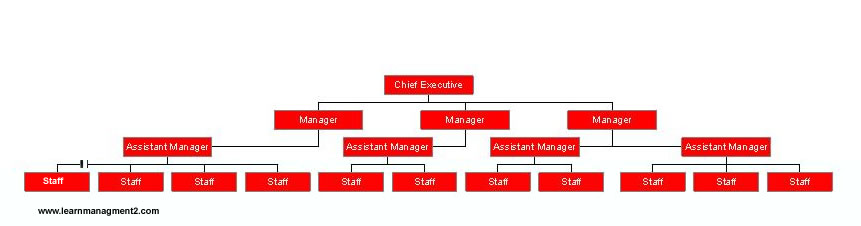
1. **Lack of understanding-** In a line and staff organization, there are two authority flowing at one time. This results in the confusion between the two. As a result, the workers are not able to understand as to who is their commanding authority. Hence the problem of understanding can be a hurdle in effective running.
2. **Lack of sound advice-** The line official get used to the expertise advice of the staff. At times the staff specialist also provide wrong decisions which the line executive have to consider. This can affect the efficient running of the enterprise.
3. **Line and staff conflicts-** Line and staff are two authorities which are flowing at the same time. The factors of designations, status influence sentiments which are related to their relation, can pose a distress on the minds of the employees. This leads to minimizing of co- ordination which hampers a concern’s working.
4. **Costly-** In line and staff concern, the concerns have to maintain the high remuneration of staff specialist. This proves to be costly for a concern with limited finance.
5. **Assumption of authority-** The power of concern is with the line official but the staff dislikes it as they are the one more in mental work.
6. **Staff steals the show-** In a line and staff concern, the higher returns are considered to be a product of staff advice and counseling. The line officials feel dissatisfied and a feeling of distress enters a concern. The satisfaction of line officials is very important for effective results.

**4. Hierarchical Organisation**

In a hierarchical organisation employees are ranked at various levels within the organisation, each level is one above the other. At each stage in the chain, one person has a number of workers directly under them, within their span of control. A tall hierarchical organisation has many levels and a flat hierarchical organisation will only have a few.

The chain of command (ie the way authority is organized) is a typical pyramid shape.

**Diagram:** Hierarchical Organization



 Above: A traditional hierarchy, senior managers make up the board of directors and are responsible for establishing strategy and overall business direction, whilst middle managers have responsibility for a specific function such as finance or marketing.

A traditional hierarchical structure clearly defines each employee’s role within the organisation and defines the nature of their relationship with other employees. Hierarchical organisations are often tall with narrow spans of control, which gets wider as we move down the structure. They are often centralised with the most important decisions being taken by senior management.

In the twentieth century as organisations grow bigger, hierarchical organisations were popular because they could ensure command and control of the organisation. However with the advent of globalisation and widespread use of technology, in the 1990’s tall hierarchical organisations began to downsize and reduce their workforce. Technology was able to carry out many of the functions previously carried out by humans.

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| **Advantages of Hierarchical  Organisations** | **Disadvantages of Hierarchical Organisations** |
| * Authority and responsibility and clearly defined * Clearly defined promotion path. | * The organisation can be bureaucratic and respond slowly to changing customer needs and the market within which the organisation operates. |
| * There are specialists managers and the hierarchical environment encourages the effective use of specialist managers. | * Communication across various sections can be poor especially horizontal communication. |
| * Employees very loyal to their department within the organisation. | * Departments can make decisions which benefit them rather than the business as a whole especially if there is Inter-departmental rivalry. |

**5. Centralised and Decentralised Organisation**

In a centralised organisation head office(or a few senior managers) will retain the major responsibilities and powers. Conversely decentralised organisations will spread responsibility for specific decisions across various outlets and lower level managers, including branches or units located away from head office/head quarters. An example of a decentralised structure is Tesco the supermarket chain. Each store of Tesco has a store manager who can make certain decisions concerning their store. The store manager is responsible to a regional manager.

Organisations may also decide that a combination of centralisation and decentralisation is more effective. For example functions such as accounting and purchasing may be centralised to save costs. Whilst tasks such as recruitment may be decentralised as units away from head office may have staffing needs specific only to them.

Certain organisations implement vertical decentralisation which means that they have handed the power to make certain decisions, down the hierarchy of their organisation. Vertical decentralisation increases the input, people at the bottom of the organisation chart have in decision making.

Horizontal decentralisation spreads responsibility across the organisation. A good example of this is the implementation of new technology across the whole business. This implementation will be the sole responsibility of technology specialists

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| **Advantages of Centralised Structure For Organisations** | **Advantages of Decentralised Structure For Organisations** |
| * Senior managers enjoy greater control over the organisation. | * Senior managers have time to concentrate on the most important decisions (as the other decisions can be undertaken by other people down the organisation structure. |
| * The use of standardised procedures can results in cost savings. | * Decision making is a form of empowerment. Empowerment can increase motivation and therefore mean that staff output increases. |
| * Decisions can be made to benefit the organisations as a whole. Whereas a decision made by a department manager may benefit their department, but disadvantage other departments. | * People lower down the chain have a greater understanding of the environment they work in and the people (customers and colleagues) that they interact with.  This knowledge skills and experience may enable them to make more effective decisions than senior managers. |
| * The organisation can benefit from the decision making of experienced senior managers. | * Empowerment will enable departments and their employees to respond faster to changes and new challenges. Whereas it may take senior managers longer to appreciate that business needs have changed. |
| * In uncertain times the organisation will need strong leadership and pull in the same direction. It is believed that strong leadership is often best given from above. | * Empowerment makes it easier for people to accept and make a success of more responsibility. |

**6. Matrix ( or project-based) organisations**

A Matrix structure organisation contains teams of people created from various sections of the business. These teams will be created for the purposes of a specific project and will be led by a project manager. Often the team will only exist for the duration of the project and matrix structures are usually deployed to develop new products and services. The advantages of a matrix include

* Individuals can be chosen according to the needs of the project.
* The use of a project team which is dynamic and able to view problems in a different way as specialists have been brought together in a new environment.
* Project managers are directly responsible for completing the project within a specific deadline and budget.

Whilst the disadvantages include

* A conflict of loyalty between line managers and project managers over the allocation of resources.
* If teams have a lot of independence can be difficult to monitor.
* Costs can be increased if more managers (ie project managers) are created through the use of project teams.

# 6. Functional Organization

**Functional organization** has been divided to put the specialists in the top position throughout the enterprise. This is an organization in which we can define as a system in which functional department are created to deal with the problems of business at various levels. Functional authority remains confined to functional guidance to different departments. This helps in maintaining quality and uniformity of performance of different functions throughout the enterprise.

The concept of Functional organization was suggested by F.W. Taylor who recommended the appointment of specialists at important positions. For example, the functional head and Marketing Director directs the subordinates throughout the organization in his particular area. This means that subordinates receives orders from several specialists, managers working above them.

##### *Features of Functional Organization*

1. The entire organizational activities are divided into specific functions such as operations, finance, marketing and personal relations.
2. Complex form of administrative organization compared to the other two.
3. Three authorities exist- Line, staff and function.
4. Each functional area is put under the charge of functional specialists and he has got the authority to give all decisions regarding the function whenever the function is performed throughout the enterprise.
5. Principle of unity of command does not apply to such organization as it is present in line organization.

##### *Merits of Functional Organization*

1. **Specialization-** Better division of labour takes place which results in specialization of function and it’s consequent benefit.
2. **Effective Control-** Management control is simplified as the mental functions are separated from manual functions. Checks and balances keep the authority within certain limits. Specialists may be asked to judge the performance of various sections.
3. **Efficiency-** Greater efficiency is achieved because of every function performing a limited number of functions.
4. **Economy-** Specialization compiled with standardization facilitates maximum production and economical costs.
5. **Expansion-** Expert knowledge of functional manager facilitates better control and supervision.

##### *Demerits of Functional Organization*

1. **Confusion-** The functional system is quite complicated to put into operation, especially when it is carried out at low levels. Therefore, co- ordination becomes difficult.
2. **Lack of Co- ordination-** Disciplinary control becomes weak as a worker is commanded not by one person but a large number of people. Thus, there is no unity of command.
3. **Difficulty in fixing responsibility-** Because of multiple authority, it is difficult to fix responsibility.
4. **Conflicts-** There may be conflicts among the supervisory staff of equal ranks. They may not agree on certain issues.
5. **Costly-** Maintainance of specialist’s staff of the highest order is expensive for a concern.

# 7. Matrix Organization

The **matrix organization** is an attempt to combine the advantages of the pure functional structure and the product organizational structure. This form is identically suited for companies, such as construction, that are “project-driven”. The figure below shows a typical Matrix organization.

In a matrix organization, each **project manager** reports directly to the vice president and the general manager. Since each project represents a potential profit centre, the power and authority used by the project manager come directly from the general manager.

**Information sharing** is mandatory in such an organization, and several people may be required for the same piece of work. However, in general, the project manager has the total responsibility and accountability for the success of the project. The functional departments, on the other hand, have functional responsibility to maintain technical excellence on the project. Each functional unit is headed by a department manager whose prime responsibility is to ensure that a unified technical base is maintained and that all available information can be exchanged for each project.

## Typical Matrix organization

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The basis for the **matrix organization** is an endeavor to create synergism through shared responsibility between project and functional management. Other advantages of a pure matrix organizational form, to project management, include:

* Because key people can be shared, the project cost is minimized
* Conflicts are minimal, and those requiring hierarchical referrals are more easily resolved
* There is a better balance between time, cost and performance
* Authority and responsibility are shared
* Stress is distributed among the team

**UNIT II**

**PLANT LAY OUT**

A plant layout study is an engineering study used to analyze different physical configurations for an industrial plant.

**Plant Layout** is the physical arrangement of equipment and facilities within a Plant. The **Plant Layout** can be indicated on a floor plan showing the distances between different features of the plant. Optimizing the Layout of a Plant can improve productivity, safety and quality of Products. Unnecessary efforts of materials handling can be avoided when the Plant Layout is optimized.

This is valid for:   
- Distances Material has to move  
- Distances Equipment has to move  
- Distances Operators have to move  
- Types of Handling Equipment needed  
- Energy required to move items against resistance (i.e. gravity)

**Types of Plant Layout**

The following are the popular types of plant layout:

(1) Process layout

(2) Product layout

(3) Combined layout

(4) Static product layout or Project layout

(5) Cellular layout

(6) Job Shop layout.

**Each layout is explained in brief in the following paragraphs**:

1. Process layout: It is also called functional layout. All machines performing similar type of operations are grouped at one location in the process layout e.g. all lathes, milling machines, cutting machines etc in the engineering shop will be clustered in their like groups. Thus all forging will be done in one area and all the lathes will be placed in another area. In this layout, several products may share a machine to make its full use. The sequential arrangement of the machine group is generally, but not necessarily made on the basis of labor operations. In this type of layout the process rather than the product has a dominating role. The product is given secondary consideration and is moved for the purpose of operations to the process section with like machines stationed at a particular point. This type of process is more suitable to job order type of production. In such production the operation differs from product to product. So, it is desirable to arrange the machines on the basis of process rather than on the products.

The typical arrangement of the machines in the process layout will be as under:

Product ‘A’ and Product ‘B’ with their differential sequence will be routed for the processing in the manner.

**Advantages:** The process layout avails of the following advantages:

1) Like product layout it eliminates the duplication of machines an enables the optimum use of installed capacity.  
2) It facilitates the flexibility in production. It is more flexible than a line layout. Different products can be made without the changes in the arrangement of machine. The production capacity is not arranged in rigid sequence and fixed rated capacity with line balancing.  
3) Like product layout, the break down of one machine does not interrupt the entire production flow.  
4) Specialization in supervision becomes possible.  
5) Individual incentive schemes can be developed.

**Disadvantages:** The following are the main disadvantages of the process layout:

1) Due to lack of straight line sequence of production, it is impossible to maintain the line balancing in production. So the problems of bottleneck and waiting and idle capacity arise.  
2) The cost of material handling increases due to long routing and back tracking between the processes.  
3) The processing time is prolonged which reduces the inventory turnover and increase the investments in inventories.  
4) The inspection cost increases. Due to frequent changes in the machine set-up inspection is required at each stage of the process.  
5) The cost of supervision increase due to specialist supervisors and more number of supervisors are required at each process unit.  
6) The production planning and control becomes difficult due to complexities arising in routing, scheduling, dispatching and follow up.  
7) It is not possible to implement the group inventive schemes on the basis of quantity of the products manufacturing  
More space is required for internal storing, reservoir of materials and provision for the expansion of the particular process section.

2**. Product layout:**

In this type of layout, the machines are arranged in the sequence as required by the particular product. All machines as required to balance the particular product the product line layout. In this layout, one product goes through all the machines lined up, in the order required by its manufacture. The best known example of this type of layout is seen in motor car production. To make this layout successful, the work load on the various machines must be balanced. The process of getting even loading at each stage of production is called line balancing.

In this type of layout, the product is dominating over the process, in the sense that the product is given the primary importance and the process machine must remain present at a point where the product needs its services. Thus, unlike the process layout, the process is given secondary importance in relation to the product. Product layout suitable for continuous flow production with few items of production:

It does not require frequent changes in machine set up. The typical arrangement of the machines in the product with the separate independent product lines for the Product ‘A’ and Product ‘B’ will be as shown.

**Advantages: The product layout is advantageous as under:**

1) Reduced material handling cost due to straight line production flow.  
2) Mechanization of material handling is possible due to handling between fixed points.  
3) Line balancing may eliminate bottlenecks an idle capacity.  
4) Shorter operating cycle due to shorter and speedier movement of materials.  
5) Maximum utilization of machine and labor capacity through developing proper balance between them.  
6) Effective control over production with reduced supervision by generalist supervisors. By reducing the manufacturing to simple steps we can often use less skilled labor.  
7) Effective quality control with reduced inspection points. It does not require frequent changes in machine set-up.  
Effective production planning and control. Unlike process layout, the routing, scheduling, dispatching and follow up are relatively easier.  
9) Maximum use of space due to straight production flow and reduced need of interim storing.  
10) It facilitates the implementation of the group inventive schemes for the workers.  
11) It is relatively easy to control

**Methods of Production**

1. Job production
2. Batch Production
3. Mass production

**1. Job production**

Job production involves firms producing items that meet the specific requirements of the customer. Often these are one-off, unique items such as those made by an architect or wedding dressmaker. For an architect, each building or structure that he designs will be different and tailored to the needs of each individual client.

With job production, a single worker or group of workers handles the complete task. Jobs can be on a small-scale involving little or no technology. However, jobs can also be complex requiring lots of technology.

With low technology jobs, production is simple and it is relatively easy to get hold of the skills and equipment required. Good examples of the job method include:

* Hairdressers
* Tailoring
* Painting and decorating
* Plumbing and heating repairs in the home

High technology jobs are much more complex and difficult. These jobs need to be very well project-managed and require highly qualified and skilled workers. Examples of high technology / complex jobs include:

* Film production
* Large construction projects (e.g. the Millennium Dome)
* Installing new transport systems (e.g. trams in Sheffield and Manchester)

Advantages

The advantage of job production is that each item can be altered for the specific customer and this provides genuine marketing benefits. A business is likely to be able to ‘add value’ to the products and possibly create a unique selling point (USP), both of which should enable it to sell at high prices.

Disadvantages

Whether it is based on low or high technology, Job production is an expensive process as it is labour intensive (uses more workers compared to machines). This raises costs to firms as the payment of wages and salaries is more expensive than the costs of running machines.

**2. Batch production**

As businesses grow and production volumes increase, the production process is often changed to a “batch method”. Batch methods require that a group of items move through the production process together, a stage at a time.

For example when a bakery bakes loaves of wholemeal bread, a large ball of wholemeal dough will be split into several loaves which will be spread out together on a large baking tray. The loaves on the tray will then together be cooked, wrapped and dispatched to shelves, before the bakery starts on a separate batch of, for example, crusty white bread. Note that each loaf is identical within a batch but that loaves can vary from batch to batch.

Batch production is a very common method of organising manufacture. Good examples include:

* Production of electronic instruments
* Fish and chip shops
* Paint and wallpaper manufacturers
* Cereal farming

Advantages

The batch method can be an advantage for businesses that produce a range of products. It is cheaper to produce a number of each item in one go because machines can be used more effectively, the materials can be bought in bulk and the workers can specialise in that task. There are two particular advantages of workers being able to concentrate their skills.

* They should become more expert at their tasks, which will in turn increase productivity (output per worker). This will lower costs, as fewer workers are needed to produce a set amount.
* Better quality products should be produced as workers are more familiar with the task and so can find ways of improving it.

Disadvantages

Batch production requires very careful planning to decide what batch will be produced when. Once a batch is in production it is difficult to change, as switching to another batch takes time and will mean a loss of output. Batch methods can also result in the build up of significant “work in progress” or stocks (i.e. completed batches waiting for their turn to be worked on in the next operation). This increases costs as it takes up space and raises the chance of damage to stock.

**Mass production** definition - business

The automated production of large quantities of identical products on a continuous basis. Mass production is used to produce a homogeneous product at low cost.

**Work Study**

**Work Study** is the systematic examination of the methods of carrying out activities such as to improve the effective use of resources and to set up standards of performance for the activities carried out.

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| **Work Study** |
| workstudy |

Work measurement

* Work measurement is the application of techniques designed to establish the time for a qualified worker to carry out specified jobs at a defined level of performance.
* Work measurement (WM) is concerned with investigating, reducing and eliminating ineffective time, whatever may be the cause.
* WM is the means of measuring the time taken in the performance of an operation or series of operations in such a way that the ineffective time is shown up and can be separated out.
* In practice, proving existence of the ineffective time is the most difficult task.

Work measurement is the careful analysis of a task, its size, the method used in its performance, and its efficiency. The objective is to determine the workload abor capacities.

Work measurement can be extremely effective at informing supervisors of the working times and delays inherent in different ways of carrying out work. The purpose of a measurement method is to achieve full coverage of the work to be measured.

A good work measurement system has many benefits. It helps to reduce labor costs, increase productivity, and improve supervision, planning, scheduling, performance appraisal, and decision making.

Work Measurement Components

A work measurement system has three components: preferred methods, time values, and re porting. *Preferred methods* are not always the most efficient or fastest way to do a task. They should enhance safety, quality, and productivity. Safety for the employee and for the product should be considered. Quality is equally important; it has been proven that good performance and good quality go hand in hand. People who are trained in the proper method and follow that method will produce high-quality work and per form at an acceptable performance level. *Time values* and *reporting* should also be considered. The time that a job should take is determined not on the basis of speeding up the motions a worker normally makes but on the normal pace of the average worker, taking into consideration allowances for rest periods, coffee breaks, and fatigue. A reporting system is important to the success of any work measurement method. Supervisors and managers must have access to labor-management information that is both timely and complete. Timely information can be used to manage and shift labor hours to areas where they are needed and to correct problems or at least prevent them from becoming a crisis. Personal computers help to apply work measurement more effectively and more cheaply and provide immediate feedback to the workers, supervisors, and managers.

**Work Measurement Methods**

Work measurement programs involve the use of a number of techniques, each selected to cover an appropriate part of the task. The purpose of measurement is to collect real data about actual events. To obtain time standards, the data are usually converted to target data or data that apply under known conditions. All work measurement systems are based on the same, simple three-stage procedure: analysis, data collection and measurement, and synthesis. They differ in the nature and degree of analysis, the nature and level of data collection and measurement, and the nature of the synthesis process. However, the three-stage procedure remains common.

Before measurement begins, the task to be measured is *analyzed* and broken down into convenient parts that are suitable for the chosen measurement technique. The purpose of the measurement technique is to derive a "basic time" for each of these activities, elements, or motions. At the *measurement* stage, it is necessary to collect descriptive or qualitative data on the nature of the task, the conditions under which it is performed, and other factors, which may have a bearing on the time that the task takes to be complete. When repetitive jobs are measured, data are collected over a number of representative cycles of a job to obtain a "mean" or "typical" value. An analysis of the results can be done using statistical techniques to determine the number of observations that must be made to provide a given level of confidence in the final results.

At the *synthesis* stage, the various parts of the task and their associated basic times are combined together in correct sequence and with the correct frequency to produce the time for a complete job. During this stage, the basic time will be adjusted for allowances to become the standard time for the task.

There are four work measurement methods, each of which has strengths and weaknesses. The *historical data* method shows the time it actually took to complete a task. Such data have the advantages of being easy to collect, understand, and communicate, but they provide no information for future improvement. For the *work sampling* method, a large number of random observations are made of the task to determine the steps in its normal performance. This method is easy to learn and use, and it provides more operational detail than historical data. The disadvantage of work sampling is that it requires thousands of samples to establish an accurate measure for each step.

The *time study* method uses continuous and snapback approaches to record the elapsed time of a task. The snapback approach requires a stopwatch with a reset button that allows the observer to read and record the time at the end of each work element then reset (snapback) the watch to zero. Although popular, the time-study method is subjective and relies heavily on the experience of the time-study analyst. A computerized data collector provides more accurate timing than the stopwatch. However, converting actual time to the expected or normal time remains a problem.

The *predetermined motion/time systems* method is based on the premises that all work consists of basic human motions and that times can be assigned to these motions if they are defined and classified in a systematic way. A film or videotape records what a job entails and how long it takes. This technique is used most frequently in studying high-volume settings such as a workstation or an assembly line. An observer measures a job by watching and analyzing it into its basic constituent motions. This method requires substantial training and practice to acquire and maintain accuracy. It enables all types of tasks to be assigned time/duration values that can then be extended into cost values. The results are not easy to communicate, but when properly executed, this method yields very accurate times.

**Method Study**

Method study is the systematic recording and critical examination of existing and proposed ways of doing work, as a means of developing and applying easier and more effective methods and reducing costs.

OBJECTIVES OF METHOD STUDY

    Improvement of processes and procedures

2.    Improvement in the design of plant and equipment

3.    Improvement of layout

4.    Improvement in the use of men, materials and machines

5.   Economy in human effort and reduction of unnecessary fatigue

6.   Improvement in safety standards

7.   Development of better working environment.

**Time Study**

Time study is a work measurement technique for recording the times of performing a certain specific job or its elements carried out under specified conditions, and for analyzing the data so as to obtain the time necessary for an operator to carry it out at a defined rate of performance.

Uses of Time Study

1. Determining schedules and planning work.

2. Determining standard costs and as an aid in preparing budgets.

3. Estimating the cost of a product before manufacturing it.

4. Determining machine effectiveness, the number of machines which one person can operate.

5. Determining time standards to be used as a basis for the payment of a wage incentive to direct labor and indirect labor.

6. Determining time standards to be used as a basis for labor cost control.

Time study equipment

* + a stop-watch
  + a study board
  + time study forms

**Statistical Quality control**

A system for ensuring the maintenance of proper standards in manufactured goods, especially by periodic random inspection of the product.

Quality control (QC) is a procedure or set of procedures intended to ensure that a manufactured product or performed service adheres to a defined set of quality criteria or meets the requirements of the client or customer. QC is similar to, but not identical with, quality assurance (QA). QA is defined as a procedure or set of procedures intended to ensure that a product or service under development (before work is complete, as opposed to afterwards) meets specified requirements. QA is sometimes expressed together with QC as a single expression, quality assurance and control (QA/QC).

In order to implement an effective QC program, an enterprise must first decide which specific standards the product or service must meet. Then the extent of QC actions must be determined (for example, the percentage of units to be tested from each lot). Next, real-world data must be collected (for example, the percentage of units that fail) and the results reported to management personnel. After this, corrective action must be decided upon and taken (for example, defective units must be repaired or rejected and poor service repeated at no charge until the customer is satisfied). If too many unit failures or instances of poor service occur, a plan must be devised to improve the production or service process and then that plan must be put into action. Finally, the QC process must be ongoing to ensure that remedial efforts, if required, have produced satisfactory results and to immediately detect recurrences or new instances of trouble.

**P-chart**

A p-chart is an attributes control chart used with data collected in subgroups of varying sizes. Because the subgroup size can vary, it shows a proportion on nonconforming items rather than the actual count. P-charts show how the process changes over time. The process attribute (or characteristic) is always described in a yes/no, pass/fail, go/no go form. For example, use a p-chart to plot the proportion of incomplete insurance claim forms received weekly. The subgroup would vary, depending on the total number of claims each week. P-charts are used to determine if the process is stable and predictable, as well as to monitor the effects of process improvement theories.

In statistical quality control, the **p-chart** is a type of control chart used to monitor the proportion of nonconforming units in a sample, where the sample proportion nonconforming is defined as the ratio of the number of nonconforming units to the sample size, n.

The p-chart only accommodates "pass"/"fail"-type inspection as determined by one or more go-no go gauges or tests, effectively applying the specifications to the data *before* they're plotted on the chart. Other types of control charts display the magnitude of the quality characteristic under study, making troubleshooting possible directly from those charts.

The binomial distribution is the basis for the p-chart and requires the following assumptions. The probability of nonconformity is the same for each unit and that each unit is independent of its predecessors or successors

* The inspection procedure is same for each sample and is carried out consistently from sample to sample

The control limits for this chart type are \bar p \pm 3\sqrt{\frac{\bar p(1-\bar p)}{n}}where \bar pis the estimate of the long-term process mean established during control-chart setup. Naturally, if the lower control limit is less than or equal to zero, process observations only need be plotted against the upper control limit. Note that observations of proportion nonconforming below a positive lower control limit are cause for concern as they are more frequently evidence of improperly calibrated test and inspection equipment or inadequately trained inspectors than of sustained quality improvement. Some organizations may elect to provide a standard value for p, effectively making it a target value for the proportion nonconforming. This may be useful when simple process adjustments can consistently move the process mean, but in general, this makes it more challenging to judge whether a process is fully out of control or merely off-target (but otherwise in control).

Sampling requires some careful consideration. If the organization elects to use 100% inspection on a process, the production rate determines an appropriate sampling rate which in turn determines the sample size. If the organization elects to only inspect a fraction of units produced, the sample size should be chosen large enough so that the chance of finding at least one nonconforming unit in a sample is high—otherwise the false alarm rate is too high. One technique is to fix sample size so that there is a 50% chance of detecting a process shift of a given amount (for example, from 1% defective to 5% defective). If δ is the size of the shift to detect, then the sample size should be set to n \ge \left ( \frac{3}{\delta} \right )^2 \bar p(1-\bar p).Another technique is to choose the sample size large enough so that the p-chart has a positive lower control limit or n > \frac{3^2 (1 - \bar p)}{\bar p}.

In the case of 100% inspection, variation in the production rate (e.g., due to maintenance or shift changes) conspires to produce different sample sizes for each observation plotted on the p-chart. There are three ways to deal with this:

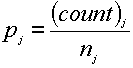
Technique Description Use variable-width control limits. Each observation plots against its own control limits: \bar p \pm 3\sqrt{\frac{\bar p(1-\bar p)}{n_i}}, where ni is the size of the sample that produced the ith observation on the p-chart Use control limits based on an average sample size. Control limits are \bar p \pm 3\sqrt{\frac{\bar p(1-\bar p)}{\bar n}}, where \bar nis the average size of all the samples on the p-chart, \frac {\sum_{i=1}^m n_i}{m}Use a standardized control chart.Control limits are ±3 and the observations, \hat{p}_i, are standardized using Z_i = \frac {\hat{p}_i - \bar p}{\sqrt {\frac {\bar p (1 - \bar p)}{n_i}}}, where ni is the size of the sample that produced the ith observation on the p-chart.

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| Technique | Description |
| Use variable-width control limits | Each observation plots against its own control limits: \bar p \pm 3\sqrt{\frac{\bar p(1-\bar p)}{n_i}}, where ni is the size of the sample that produced the ith observation on the p-chart |
| Use control limits based on an average sample size | Control limits are \bar p \pm 3\sqrt{\frac{\bar p(1-\bar p)}{\bar n}}, where \bar nis the average size of all the samples on the p-chart, \frac {\sum_{i=1}^m n_i}{m} |
| Use a standardized control chart | Control limits are ±3 and the observations, \hat{p}_i, are standardized using Z_i = \frac {\hat{p}_i - \bar p}{\sqrt {\frac {\bar p (1 - \bar p)}{n_i}}}, where ni is the size of the sample that produced the ith observation on the p-chart |
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**P Chart Calculations**

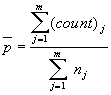
Plotted statistic

The percent of items in the sample meeting the criteria of interest



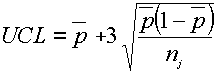
where nj is the sample size (number of units) of group j.

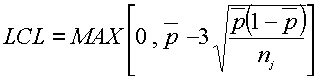
**Center Line**



where nj is the sample size (number of units) of group j, and m is the number of groups included in the analysis.

**UCL , LCL (Upper and Lower Control Limit)**





where nj is the sample size (number of units) of group j, p-bar is the Average perce

**Acceptance Sampling**

A statistical methodology for judging whether batches of products or data meet an acceptable standard of quality. A random sample of a given size is examined in order to determine if the sample is acceptable.

a statistical procedure for accepting or rejecting a batch of merchandise or documents; involves determining the maximum number of defects discovered in a sample before the entire batch is rejected

Acceptance sampling involves testing a batch of data to determine if the proportion of units having a particular attribute exceeds a given percentage. The sampling plan involves three determinations: (1) batch size; (2) sample size; and (3) maximum number of defects that can be uncovered before rejection of the entire batch. This technique permits acceptance or rejection of a batch of merchandise or documents under precisely specified circumstances.

Acceptance sampling is an important field of statistical quality control that was popularized by Dodge and Romig and originally applied by the U.S. military to the testing of bullets during World War II. If every bullet was tested in advance, no bullets would be left to ship. If, on the other hand, none were tested, malfunctions might occur in the field of battle, with potentially disastrous results.

Dodge reasoned that a sample should be picked at random from the lot, and on the basis of information that was yielded by the sample, a decision should be made regarding the disposition of the lot. In general, the decision is either to accept or reject the lot. This process is called *Lot Acceptance Sampling* or just *Acceptance Sampling*.

Acceptance sampling is "the middle of the road" approach between no inspection and 100% inspection. There are two major classifications of acceptance plans: by *attributes* ("go, no-go") and by *variables*. The attribute case is the most common for acceptance sampling, and will be assumed for the rest of this section.

A point to remember is that the main purpose of acceptance sampling is to decide whether or not the lot is likely to be acceptable, not to estimate the quality of the lot.

Acceptance sampling is employed when one or several of the following hold:

* Testing is destructive
* The cost of 100% inspection is very high
* 100% inspection takes too long

**Demings contribution to quality**

**William Edwards Deming** (October 14, 1900 – December 20, 1993) was an American statistician, professor, author, lecturer, and consultant. Deming is widely credited with improving production in the United States during the Cold War, although he is perhaps best known for his work in Japan. There, from 1950 onward he taught top management how to improve design (and thus service), product quality, testing and sales (the last through global markets) through various methods, including the application of statistical methods.

Deming made a significant contribution to Japan's later reputation for innovative high-quality products and its economic power. He is regarded as having had more impact upon Japanese manufacturing and business than any other individual not of Japanese heritage. Despite being considered something of a hero in Japan, he was only just beginning to win widespread recognition in the U.S. at the time of his death.

Deming advocated that all managers need to have what he called a System of Profound Knowledge, consisting of four parts:

1. ***Appreciation of a system***: understanding the overall processes involving suppliers, producers, and customers (or recipients) of goods and services (*explained below*);
2. ***Knowledge of variation***: the range and causes of variation in quality, and use of statistical sampling in measurements;
3. ***Theory of knowledge***: the concepts explaining knowledge and the limits of what can be known
4. ***Knowledge of psychology***: concepts of human nature.

Deming explained, "One need not be eminent in any part nor in all four parts in order to understand it and to apply it. The 14 points for management in industry, education, and government follow naturally as application of this outside knowledge, for transformation from the present style of Western management to one of optimization."

"The various segments of the system of profound knowledge proposed here cannot be separated. They interact with each other. Thus, knowledge of psychology is incomplete without knowledge of variation.

"A manager of people needs to understand that all people are different. This is not ranking people. He needs to understand that the performance of anyone is governed largely by the system that he works in, the responsibility of management. A psychologist that possesses even a crude understanding of variation as will be learned in the experiment with the Red Beads (Ch. 7) could no longer participate in refinement of a plan for ranking people.

The *Appreciation of a system* involves understanding how interactions (i.e., feedback) between the elements of a system can result in internal restrictions that force the system to behave as a single organism that automatically seeks a steady state. It is this steady state that determines the output of the system rather than the individual elements. Thus it is the structure of the organization rather than the employees, alone, which holds the key to improving the quality of output.

The *Knowledge of variation* involves understanding that everything measured consists of both "normal" variation due to the flexibility of the system and of "special causes" that create defects. Quality involves recognizing the difference to eliminate "special causes" while controlling normal variation. Deming taught that making changes in response to "normal" variation would only make the system perform worse. Understanding variation includes the mathematical certainty that variation will normally occur within six standard deviations of the mean.

**Deming’s 14 points**

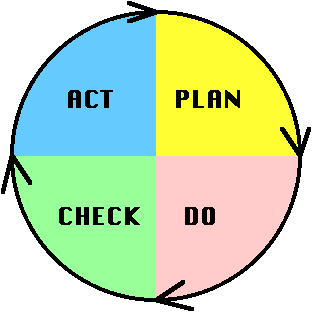
W Edwards Deming was an American statistician who was credited with the rise of Japan as a manufacturing nation, and with the invention of Total Quality Management (TQM). Deming went to Japan just after the War to help set up a census of the Japanese population. While he was there, he taught 'statistical process control' to Japanese engineers - a set of techniques which allowed them to manufacture high-quality goods without expensive machinery. In 1960 he was awarded a medal by the Japanese Emperor for his services to that country's industry.  
  
Deming returned to the US and spent some years in obscurity before the publication of his book "Out of the crisis" in 1982. In this book, Deming set out 14 points which, if applied to US manufacturing industry, would he believed, save the US from industrial doom at the hands of the Japanese.  
  
Although Deming does not use the term Total Quality Management in his book, it is credited with launching the movement. Most of the central ideas of TQM are contained in "Out of the crisis".  
  
The 14 points seem at first sight to be a rag-bag of radical ideas, but the key to understanding a number of them lies in Deming's thoughts about variation. Variation was seen by Deming as the disease that threatened US manufacturing. The more variation - in the length of parts supposed to be uniform, in delivery times, in prices, in work practices - the more waste, he reasoned.  
  
From this premise, he set out his 14 points for management, which we have paraphrased here:  
  
1."Create constancy of purpose towards improvement". Replace short-term reaction with long-term planning.   
  
2."Adopt the new philosophy". The implication is that management should actually adopt his philosophy, rather than merely expect the workforce to do so.   
  
3."Cease dependence on inspection". If variation is reduced, there is no need to inspect manufactured items for defects, because there won't be any.   
  
4."Move towards a single supplier for any one item." Multiple suppliers mean variation between feedstocks.   
  
5."Improve constantly and forever". Constantly strive to reduce variation.   
  
6."Institute training on the job". If people are inadequately trained, they will not all work the same way, and this will introduce variation.   
  
7."Institute leadership". Deming makes a distinction between leadership and mere supervision. The latter is quota- and target-based.   
  
8."Drive out fear". Deming sees management by fear as counter- productive in the long term, because it prevents workers from acting in the organisation's best interests.   
  
9."Break down barriers between departments". Another idea central to TQM is the concept of the 'internal customer', that each department serves not the management, but the other departments that use its outputs.   
  
10."Eliminate slogans". Another central TQM idea is that it's not people who make most mistakes - it's the process they are working within. Harassing the workforce without improving the processes they use is counter-productive.   
  
11."Eliminate management by objectives". Deming saw production targets as encouraging the delivery of poor-quality goods.   
  
12."Remove barriers to pride of workmanship". Many of the other problems outlined reduce worker satisfaction.   
  
13."Institute education and self-improvement".   
  
14."The transformation is everyone's job".   
  
Deming has been criticized for putting forward a set of goals without providing any tools for managers to use to reach those goals (just the problem he identified in point 10). His inevitable response to this question was: "You're the manager, you figure it out."

**The Deming quality cycle**

W. Edwards Deming in the 1950's proposed that business processes should be analyzed and measured to identify sources of variations that cause products to deviate from customer requirements. He recommended that business processes be placed in a continuous feedback loop so that managers can identify and change the parts of the process that need improvements. As a teacher, Deming created a (rather oversimplified) diagram to illustrate this continuous process, commonly known as the PDCA cycle for Plan, Do, Check, Act\*:

* **PLAN**: Design or revise business process components to improve results
* **DO**: Implement the plan and measure its performance
* **CHECK**: Assess the measurements and report the results to decision makers
* **ACT**: Decide on changes needed to improve the process

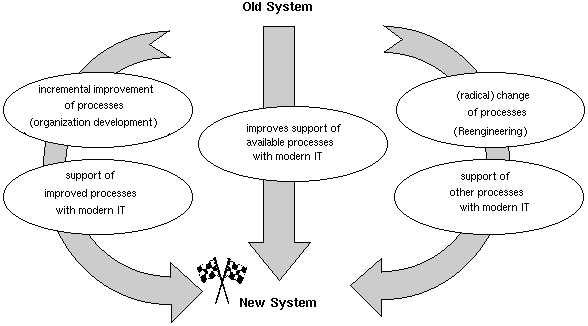
Deming's PDCA cycle can be illustrated as follows:

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**Business Process reengineering**

Business process reengineering (BPR) is the analysis and redesign of workflow within and between enterprises. BPR reached its heyday in the early 1990's when Michael Hammer and James Champy published their best-selling book, "Reengineering the Corporation". The authors promoted the idea that sometimes radical redesign and reorganization of an enterprise (wiping the slate clean) was necessary to lower costs and increase quality of service and that information technology was the key enabler for that radical change. Hammer and Champy felt that the design of workflow in most large corporations was based on assumptions about technology, people, and organizational goals that were no longer valid. They suggested seven principles of reengineering to streamline the work process and thereby achieve significant levels of improvement in quality, time management, and cost:

1. Organize around outcomes, not tasks.  
2. Identify all the processes in an organization and prioritize them in order of redesign urgency.  
3. Integrate information processing work into the real work that produces the information.  
4. Treat geographically dispersed resources as though they were centralized.  
5. Link parallel activities in the workflow instead of just integrating their results.  
6. Put the decision point where the work is performed, and build control into the process.  
7. Capture information once and at the source.



# Six Sigma

Six Sigma at many organizations simply means a measure of quality that strives for near perfection. Six Sigma is a disciplined, data-driven approach and methodology for eliminating defects (driving towards six standard deviations between the mean and the nearest specification limit) in any process -- from manufacturing to transactional and from product to service.

The statistical representation of Six Sigma describes quantitatively how a process is performing. To achieve Six Sigma, a process must not produce more than 3.4 defects per million opportunities. A Six Sigma defect is defined as anything outside of customer specifications. A Six Sigma opportunity is then the total quantity of chances for a defect. Process sigma can easily be calculated using a Six Sigma calculator.

The fundamental objective of the Six Sigma methodology is the implementation of a measurement-based strategy that focuses on process improvement and variation reduction through the application of Six Sigma improvement projects. This is accomplished through the use of two Six Sigma sub-methodologies: DMAIC and DMADV. The Six Sigma DMAIC process (define, measure, analyze, improve, control) is an improvement system for existing processes falling below specification and looking for incremental improvement. The Six Sigma DMADV process (define, measure, analyze, design, verify) is an improvement system used to develop new processes or products at Six Sigma quality levels. It can also be employed if a current process requires more than just incremental improvement. Both Six Sigma processes are executed by Six Sigma Green Belts and Six Sigma Black Belts, and are overseen by Six Sigm Master Black Belts.

According to the Six Sigma Academy, Black Belts save companies approximately $230,000 per project and can complete four to 6 projects per year. General Electric, one of the most successful companies implementing Six Sigma, has estimated benefits on the order of $10 billion during the first five years of implementation. GE first began Six Sigma in 1995 after Motorola and Allied Signal blazed the Six Sigma trail. Since then, thousands of companies around the world have discovered the far reaching benefits of Six Sigma.

**Total Quality Management (TQM)**

TQM is a set of management practices throughout the organization, geared to ensure the organization consistently meets or exceeds customer requirements. TQM places strong focus on process measurement and controls as means of continuous improvement.

# Basic Principles of Total Quality Management (TQM)

The basic principles for the Total Quality Management (TQM) philosophy of doing business are to satisfy the customer, satisfy the supplier, and continuously improve the business processes.

Questions you may have include:

* How do you satisfy the customer?
* Why should you satisfy the supplier?
* What is continuous improvement?

## Satisfy the customer

The first and major TQM principle is to satisfy the customer--the person who pays for the product or service. Customers want to get their money's worth from a product or service they purchase.

### Users

If the user of the product is different than the purchaser, then both the user and customer must be satisfied, although the person who pays gets priority.

### Company philosophy

A company that seeks to satisfy the customer by providing them value for what they buy and the quality they expect will get more repeat business, referral business, and reduced complaints and service expenses.

Some top companies not only provide quality products, but they also give extra service to make their customers feel important and valued.

### Internal customers

Within a company, a worker provides a product or service to his or her supervisors. If the person has any influence on the wages the worker receives, that person can be thought of as an internal customer. A worker should have the mind-set of satisfying internal customers in order to keep his or her job and to get a raise or promotion.

### Chain of customers

Often in a company, there is a chain of customers, -each improving a product and passing it along until it is finally sold to the external customer. Each worker must not only seek to satisfy the immediate internal customer, but he or she must look up the chain to try to satisfy the ultimate customer.

## Satisfy the supplier

A second TQM principle is to satisfy the supplier, which is the person or organization from whom you are purchasing goods or services.

### External suppliers

A company must look to satisfy their external suppliers by providing them with clear instructions and requirements and then paying them fairly and on time.

It is only in the company's best interest that its suppliers provide it with quality goods or services, if the company hopes to provide quality goods or services to its external customers.

### Internal suppliers

A supervisor must try to keep his or her workers happy and productive by providing good task instructions, the tools they need to do their job and good working conditions. The supervisor must also reward the workers with praise and good pay.

### Get better work

The reason to do this is to get more productivity out of the workers, as well as to keep the good workers. An effective supervisor with a good team of workers will  certainly satisfy his or her internal customers.

#### Empower workers

One area of satisfying the internal suppler is by empowering the workers. This means to allow them to make decisions on things that they can control. This not only takes the burden off the supervisor, but it also motivates these internal suppliers to do better work.

## Continuous improvement

The third principle of TQM is continuous improvement. You can never be satisfied with the method used, because there always can be improvements. Certainly, the competition is improving, so it is very necessary to strive to keep ahead of the game.

### Working smarter, not harder

Some companies have tried to improve by making employees work harder. This may be counter-productive, especially if the process itself is flawed. For example, trying to increase worker output on a defective machine may result in more defective parts.

Examining the source of problems and delays and then improving them is what is needed. Often the process has bottlenecks that are the real cause of the problem. These must be removed.

### Worker suggestions

Workers are often a source of continuous improvements. They can provide suggestions on how to improve a process and eliminate waste or unnecessary work.

### Quality methods

There are also many quality methods, such as just-in-time production, variability reduction, and poka-yoke that can improve processes and reduce waste.

## Summary

The principles of Total Quality Management are to seek to satisfy the external customer with quality goods and services, as well as your company internal customers; to satisfy your external and internal suppliers; and to continuously improve processes by working smarter and using special quality methods.

**MATERIAL MANAGEMENT**

Materials management is the branch of logistics that deals with the tangible components of a supply chain. Specifically, this covers the acquisition of spare parts and replacements, quality control of purchasing and ordering such parts, and the standards involved in ordering, shipping, and warehousing the said parts.

### Objectives of Materials Management:

* The objectives of integrated materials management can be classified in two categories ;
  + - Primary and
    - Secondary.
* These are discussed below ;

Primary Objectives*:* Following may be identified as primary objectives which are to be achieved.

(a) To purchase the required materials at minimum possible prices by following the prescribed purchase policies and encouraging healthy competition.

(b) To achieve high inventory turnover i.e. to meet materials requirement of the organization by keeping low average stocks so that the capital locked up in materials is turned over a large no of times.

(c) To incur minimum possible expenditure on administrative and other allied activities related to purchase of materials and also to keep the materials in stock till they are finally delivered to the users.

(d) To ensure that continuity of supply of materials to the users is maintained by avoiding out of stock situation.

(e) To supply materials of consistent quality i.e. of quality which meets user specification and is fit for service.

(f) To keep the wage bill of the department low by ensuring proper distribution of work among staff and not employing surplus staff.

(g) To maintain good relationship with the suppliers of materials and also develop new suppliers for the products for which reliable suppliers do not exist.

(h) To ensure training and development of personnel employed in the department so that good industrial relations are maintained.

(i) To maintain proper and up-to-date records of all stores transactions and purchases.

Secondary Objectives:

(a) To assist technical/design department in developing new materials and products which may be more profitable to the organization.

(b) To make economic 'make or buy' decisions.

(c) To ensure standardization of materials

(d) To contribute in the product improvement.

(e) To contribute in the development of inter departmental harmony.

(f) To follow scientific methods of forecasting prices and future consumption of materials.

**INVENTORY CONTROL TECHNIQUES**

**Optimizing Economic Order Quantity (EOQ)**

Inventory models for calculating optimal order quantities and reorder points have been in existence long before the arrival of the computer.  When the first Model T Fords were rolling off the assembly line, manufacturers were already reaping the financial benefits of inventory management by determining the most cost effective answers to the questions of  When? and How much?.  Yes long before JIT, TQM, TOC, and MRP, companies were using these same (then unnamed) concepts in managing their production and inventory.  I recently read *Purchasing and Storing,* a textbook that was part of a “Modern Business Course” at the Alexander Hamilton Institute in New York.  The textbook published in 1931 (that’s right 1931) was essentially a how to book on inventory management in a manufacturing environment.  If you’re wondering why I would want to read a 70-year-old business text, my answer would be that the fundamental concepts of managing a business change very little with time, and reading about these concepts in a vintage text is a great way to reinforce the value of the fundamentals.  The occasional reference to “The War” (referring to WWI) also keeps it interesting and the complete absence of acronyms is refreshing.

As you may have guessed, this 70-year-old book contained a section on *Minimum Cost Quantity*, which is what we now refer to as *Economic Order Quantity (EOQ)*.  I can imagine that in the 1930’s an accountant (or more likely a room full of accountants) would have calculated EOQ or other inventory related formulas one item at a time in a dimly lit office using the inventory books, a mechanical adding machine and a slide rule.  Time consuming as this was, some manufacturers of the time recognized the financial benefits of taking a scientific approach to making these inventory decisions.

So why is it that, in these days of advanced information technology, many companies are still not taking advantage of these fundamental inventory models?  Part of the answer lies in poor results received due to inaccurate data inputs.  Accurate product costs, activity costs, forecasts, history, and lead times are crucial in making inventory models work. Ironically, software advancements may also in part to blame. Many ERP packages come with built in calculations for EOQ which calculate automatically. Often the users do not understand how it is calculated and therefore do not understand the data inputs and system setup which controls the output. When the output appears to be "out of whack" it is simply ignored.  This sometimes creates a situation in which the executives who had purchased the software incorrectly assume the material planners and purchasing clerks are ordering based upon the systems recommendations.  I should also note that many operations will find these built-in EOQ calculations inadequate and in need of modifications to deal with the diversity of their product groups and processes.

Corporate goals and strategies may sometimes conflict with EOQ.  Measuring performance solely by inventory turns is one of the most prolific mistakes made in the name of inventory management.  Many companies have achieved aggressive goals in increasing inventory turns only to find their bottom line has shrunk due to increased operational costs.

EOQ is essentially an accounting formula that determines the point at which the combination of order costs and inventory carrying costs are the least. The result is the most cost effective quantity to order.  In purchasing this is known as the order quantity, in manufacturing it is known as the production lot size.

While EOQ may not apply to every inventory situation, most organizations will find it beneficial in at least some aspect of their operation.  Anytime you have repetitive purchasing or planning of an item, EOQ should be considered. Obvious applications for EOQ are purchase-to-stock distributors and make-to-stock manufacturers, however, make-to-order manufacturers should also consider EOQ when they have multiple orders or release dates for the same items and when planning components and sub-assemblies.  Repetitive buy maintenance, repair, and operating (MRO) inventory is also a good application for EOQ.  Though EOQ is generally recommended in operations where demand is relatively steady, items with demand variability such as seasonality can still use the model by going to shorter time periods for the EOQ calculation.  Just make sure your usage and carrying costs are based on the same time period.

Doesn’t EOQ conflict with Just-In-Time?  While I don’t want to get into a long discussion on the misconceptions of what Just-In-Time (JIT) is, I will address the most common misunderstanding in which JIT is assumed to mean all components should arrive in the exact run quantities “just in time” for the production run.  JIT is actually a quality initiative with the goal of eliminating wasted steps, wasted labor, and wasted cost. EOQ should be one of the tools used to achieve this. EOQ is used to determine which components fit into this JIT model and what level of JIT is economically advantageous for your operation.  As an example, let us assume you are a lawn equipment manufacturer and you produce 100 units per day of a specific model of lawn mower.  While it may be cost effective to have 100 engines arrive on your dock each day, it would certainly not be cost effective to have 500 screws (1 days supply) used to mount a plastic housing on the lawn mower shipped to you daily.  To determine the most cost effective quantities of screws or other components you will need to use the EOQ formula.

The basic Economic Order Quantity (EOQ) formula is as follows:



The Inputs

While the calculation itself is fairly simple the task of determining the correct data inputs to accurately represent your inventory and operation is a bit of a project.  Exaggerated order costs and carrying costs are common mistakes made in EOQ calculations.  Using all costs associated with your purchasing and receiving departments to calculate order cost or using all costs associated with storage and material handling to calculate carrying cost will give you highly inflated costs resulting in inaccurate results from your EOQ calculation.  I also caution against using benchmarks or published industry standards in calculations.  I have frequently seen references to average purchase order costs of $100 to $150 in magazine articles and product brochures.  Often these references trace back to studies performed by advocacy agencies working for business that directly benefit from these exaggerated (my opinion) costs used in ROI calculations for their products or services.  I am not denying that some operations may have purchase costs in this range, especially if you are frequently re-sourcing, re-quoting, and/or buying from overseas vendors. However if your operation is primarily involved with repetitive buying from domestic vendors — which is more common — you’ll likely see your purchase order costs in the substantially lower $10 to $30 range.

As you prepare to undertake this project keep in mind that even though accuracy is crucial, small variances in the data inputs generally have very little effect on the outputs.  The following breaks down the data inputs in more detail and gives insight into the aspects of each.

Annual Usage.

Expressed in units, this is generally the easiest part of the equation.  You simply input your forecasted annual usage.

Order Cost.

Also known as purchase cost or set up cost, this is the sum of the fixed costs that are incurred each time an item is ordered. These costs are not associated with the quantity ordered but primarily with physical activities required to process the order.

For purchased items, these would include the cost to enter the purchase order and/or requisition, any approval steps, the cost to process the receipt, incoming inspection, invoice processing and vendor payment, and in some cases a portion of the inbound freight may also be included in order cost.  It is important to understand that these are costs associated with the frequency of the orders and not the quantities ordered. For example, in your receiving department the time spent checking in the receipt, entering the receipt, and doing any other related paperwork would be included, while the time spent repacking materials, unloading trucks, and delivery to other departments would likely not be included.  If you have inbound quality inspection where you inspect a percentage of the quantity received you would include the time to get the specs and process the paperwork and not include time spent actually inspecting, however if you inspect a fixed quantity per receipt you would then include the entire time including inspecting, repacking, etc. In the purchasing department you would include all time associated with creating the purchase order, approval steps, contacting the vendor, expediting, and reviewing order reports, you would not include time spent reviewing forecasts, sourcing, getting quotes (unless you get quotes each time you order), and setting up new items. All time spent dealing with vendor invoices would be included in order cost.

Associating actual costs to the activities associated with order cost is where many an EOQ formula runs afoul.  Do not make a list of all of the activities and then ask the people performing the activities "how long does it take you to do this?"  The results of this type of measurement are rarely even close to accurate. I have found it to be more effective to determine the percentage of time within the department consumed performing the specific activities and multiplying this by the total labor costs for a certain time period (usually a month) and then dividing by the line items processed during that same period.

It is extremely difficult to associate inbound freight costs with order costs in an automated EOQ program and I suggest it only if the inbound freight cost has a significant effect on unit cost and its effect on unit cost varies significantly based upon the order quantity.

In manufacturing, the order cost would include the time to initiate the work order, time associated with picking and issuing components excluding time associated with counting and handling specific quantities, all production scheduling time, machine set up time, and inspection time.  Production scrap directly associated with the machine setup should also be included in order cost as would be any tooling that is discarded after each production run.  There may be times when you want to artificially inflate or deflate set-up costs.  If you lack the capacity to meet the production schedule using the EOQ, you may want to artificially increase set-up costs to increase lot sizes and reduce overall set up time.  If you have excess capacity you may want to artificially decrease set up costs, this will increase overall set up time and reduce inventory investment.  The idea being that if you are paying for the labor and machine overhead anyway it would make sense to take advantage of the savings in reduced inventories.

For the most part, order cost is primarily the labor associated with processing the order, however, you can include the other costs such as the costs of phone calls, faxes, postage, envelopes, etc.

Carrying cost.

Also called Holding cost, carrying cost is the cost associated with having inventory on hand.  It is primarily made up of the costs associated with the inventory investment and storage cost. For the purpose of the EOQ calculation, if  the cost does not change based upon the quantity of inventory on hand it should not be included in carrying cost.  In the EOQ formula, carrying cost is represented as the annual cost per average on hand inventory unit. Below are the primary components of carrying cost.

Interest.  If you had to borrow money to pay for your inventory, the interest rate would be part of the carrying cost.  If you did not borrow on the inventory, but have loans on other capital items, you can use the interest rate on those loans since a reduction in inventory would free up money that could be used to pay these loans.  If by some miracle you are debt free you would need to determine how much you could make if the money was invested.

Insurance.  Since insurance costs are directly related to the total value of the inventory, you would include this as part of carrying cost.

Taxes.  If you are required to pay any taxes on the value of your inventory they would also be included.

Storage Costs.  Mistakes in calculating storage costs are common in EOQ implementations.  Generally companies take all costs associated with the warehouse and divide it by the average inventory to determine a storage cost percentage for the EOQ calculation.  This tends to include costs that are not directly affected by the inventory levels and does not compensate for storage characteristics.  Carrying costs for the purpose of the EOQ calculation should only include costs that are variable based upon inventory levels.

If you are running a pick/pack operation where you have fixed picking locations assigned to each item where the locations are sized for picking efficiency and are not designed to hold the entire inventory, this portion of the warehouse should not be included in carrying cost since changes to inventory levels do not effect costs here.  Your overflow storage areas would be included in carrying cost.  Operations that use purely random storage for their product would include the entire storage area in the calculation.  Areas such as shipping/receiving and staging areas are usually not included in the storage calculations. However. if you have to add an additional warehouse just for overflow inventory then you would include all areas of the second warehouse as well as freight and labor costs associated with moving the material between the warehouses.

Since storage costs are generally applied as a percentage of the inventory value you may need to classify your inventory based upon a ratio of storage space requirements to value in order to assess storage costs accurately.  For example, let's say you have just opened a new E-business called "BobsWeSellEverything.com".  You calculated that overall your annual storage costs were 5% of your average inventory value, and applied this to your entire inventory in the EOQ calculation.  Your average inventory on a particular piece of software and on 80 lb. bags of concrete mix both came to $10,000.  The EOQ formula applied a $500 storage cost to the average quantity of each of these items even though the software actually took up only 1 pallet position while the concrete mix consumed 75 pallet positions.  Categorizing these items would place the software in a category with minimal storage costs (1% or less) and the concrete in a category with extreme storage costs (50%) that would then allow the EOQ formula to work correctly.

There are situations where you may not want to include any storage costs in your EOQ calculation.  If your operation has excess storage space of which it has no other uses you may decide not to include storage costs since reducing your inventory does not provide any actual savings in storage costs.  As your operation grows near a point at which you would need to expand your physical operations you may then start including storage in the calculation.

A portion of the time spent on cycle counting should also be included in carrying cost, remember to apply costs which change based upon changes to the average inventory level.  So with cycle counting, you would include the time spent physically counting and not the time spent filling out paperwork, data entry, and travel time between locations.

Other costs that can be included in carrying cost are risk factors associated with obsolescence, damage, and theft.  Do not factor in these costs unless they are a direct result of the inventory levels and are significant enough to change the results of the EOQ equation.

Variations

There are many variations on the basic EOQ model. I have listed the most useful ones below.

·        Quantity discount logic can be programmed to work in conjunction with the EOQ formula to determine optimum order quantities.  Most systems will require this additional programming.

·        Additional logic can be programmed to determine max quantities for items subject to spoilage or to prevent obsolescence on items reaching the end of their product life cycle.

·        When used in manufacturing to determine lot sizes where production runs are very long (weeks or months) and finished product is being released to stock and consumed/sold throughout the production run you may need to take into account the ratio of production to consumption to more accurately represent the average inventory level.

·        Your safety stock calculation may take into account the order cycle time that is driven by the EOQ.  If so, you may need to tie the cost of the change in safety stock levels into the formula.

Implementing EOQ

There are primarily two ways to implement EOQ. Both methods obviously require that you have already determined the associated costs.  The simplest method is to set up your calculation in a spreadsheet program, manually calculate EOQ one item at a time, and then manually enter the order quantity into your inventory system.  If your inventory has fairly steady demand and costs and you have less than one or two thousand SKUs you can probably get by using this method once per year.  If you have more than a couple thousand SKUs and/or higher variability in demand and costs you will need to program the EOQ formula into your existing inventory system.  This allows you to quickly re-calculate EOQ automatically as often as needed.  You can also use a hybrid of the two systems by downloading your data to a spreadsheet or database program, perform the calculations and then update your inventory system either manually or through a batch program.  Whichever method you use you should make sure to follow the following steps:

·        Test the formula.  Prior to final implementation you must test the programming and setup.  Run the EOQ program and then manually check the results using sample items that are representative of the variations of your inventory base.

·        Project results.  You'll need to run a simulation or use a representative sampling of items to determine the overall short-term and long-term effects the EOQ calculation will have on warehouse space, cash flow, and operations.  Dramatic increases in inventory levels may not be immediately feasible, if this is the case you may temporarily adjust the formula until arrangements can be made to handle the additional storage requirements and compensate for the effects on cash flow.  If the projection shows inventory levels dropping and order frequency increasing, you may need to evaluate staffing, equipment, and process changes to handle the increased activity.

·        Maintain EOQ.  The values for Order cost and Carrying cost should be evaluated at least once per year taking into account any changes in interest rates, storage costs, and operational costs.

 A related calculation is the Total Annual Cost calculation.  This calculation can be used to prove the EOQ calculation.  Total Annual Cost = [(annual usage in units)/(order quantity)(order cost)]+{[.5(order quantity)+(safety stock)]\*(annual carrying cost per unit)}.  This formula is also very useful when comparing quotes where vendors offer different minimum order quantities, price breaks, lead times, transportation costs.

Use it!  The EOQ calculation is "Hard Science", if you have accurate inputs the output is the most cost-effective quantity to order based upon your current operational costs.  To further increase inventory turns you will need to reduce the order costs.  E-procurement, vendor-managed inventories, bar coding, and vendor certification programs can reduce the costs associated with processing an order.  Equipment enhancements and process changes can reduce costs associated with manufacturing set up.  Increasing forecast accuracy and reducing lead times which result in the ability to operate with reduced safety stock can also reduce inventory levels.

**ABC Classification / Analysis of Inventory**

The ABC classification process is an analysis of a range of objects, such as finished products ,items lying in inventory or customers into three categories. It's a system of categorization, with similarities to Pareto analysis, and the method usually categorizes inventory into three classes with each class having a different management control associated :

|  |
| --- |
| A - outstandingly important; B - of average importance; C - relatively unimportant as a basis for a control scheme. Each category can and sometimes should be handled in a different way, with more attention being devoted to category A, less to B, and still less toC.   Popularly known as the "80/20" rule ABC concept is applied to inventory management as a rule-of-thumb. It says that about 80% of the Rupee value, consumption wise, of an inventory remains in about 20% of the items. |

|  |
| --- |
|  |

|  |
| --- |
| This rule , in general , applies well and is frequently used by inventory managers to put their efforts where greatest benefits , in terms of cost reduction as well as maintaining a smooth availability of stock, are attained.  The ABC concept is derived from the Pareto's 80/20 rule curve. It is also known as the 80-20 concept. Here, Rupee / Dollar value of each individual inventory item is calculated on annual consumption basis. |
| Thus, applied in the context of inventory, it's a determination of the relative ratios between the number of items and the currency value of the items purchased / consumed on a repetitive basis :   |  | | --- | | * 10-20% of the items ('A' class) account for 70-80% of the consumption * the next 15-25% ('B' class) account for 10-20% of the consumption and * the balance 65-75% ('C' class) account for 5-10% of the consumption | |

|  |
| --- |
| 'A' class items are closely monitored because of the value involved (70-80% !). |

High value (A), Low value (C) , intermediary value (B)

|  |
| --- |
| * 20% of the items account for 80% of total inventory consumption value (Qty consumed X unit rate) * Specific items on which efforts can be concentrated profitably * Provides a sound basis on which to allocate funds and time * A,B & C , all have a purchasing / storage policy - "A", most critically reviewed , "B" little less while "C" still less with greater results. |

ll the items of inventories are put in three categories, as below :

|  |  |  |
| --- | --- | --- |
| |  | | --- | | A Items : These Items are seen to be of high Rupee consumption volume. "A" items usually include 10-20% of all inventory items, and account for 50-60% of the total Rupee consumption volume.  B Items : "B" items are those that are 30-40% of all inventory items, and account for 30-40% of the total Rupee consumption volume of the inventory. These are important, but not critical, and don't  pose sourcing difficulties.  C Items : "C" items account for 40-50% of all inventory items, but only 5-10% of the total |  |  | | --- | | Rupee consumption volume. Characteristically, these are standard, low-cost and readily available items. ABC classifications allow the inventory manager to assign priorities for inventory control. Strict control needs to be kept on A and B items, with preferably low safety stock level. Taking a lenient view, the C class items can be maintained with looser control and  with high safety stock level. The ABC concept puts emphasis on the fact  that every item of inventory is critical and has the potential of affecting ,adversely, production, or sales to a customer or operations. The categorization helps in better  control on A and B items.  In addition to other management procedures, ABC classifications can be used to design cycle counting schemes. For example, A items may be counted 3 times per year, B items 1 to 2 times, and C items only once, or not at all. | |

Suggested policy guidelines for **A , B & C classes** of items

|  |  |  |
| --- | --- | --- |
| **A items (High cons. Val)        B items (Moderate cons.Val)          C item (Low cons. Val)** | | |
|  | | |
| Very strict cons. control | Moderate control | Loose control |
| No or very low safety stock | Low safety stock | High safety stock |
| Phased delivery (Weekly) | Once in three months | Once in 6 months |
| Weekly control report | Monthly control report | Quarterly report |
| Maximum follow up | Periodic follow up | Exceptional |
| As many sources as possible | Two or more reliable | Two reliable |
| Accurate forecasts | Estimates on past data | Rough estimate |
| Central purchasing /storage | Combination purchasing | Decentralised |
| Max.efforts to control LT | Moderate | Min.clerical efforts |
| To be handled by Sr.officers | Middle level | Can be delegated |

Finally, ABC Analysis is an intrinsic part of Materials Management and is the categorization of products into groups sorted by their spend volume. Given Pareto analysis a typical ABC analysis might find that 20% of a products equate for 70% of the value, these are termed A’s and are the more expensive group (often comprised of complex assets) . Cheap consumable (and often easily replaceable items) fall into the “C” class.

**PURCHASE PROCEDURE**

1**.Purchase request**

The specifications and number/quantity and delivery of equipment, devices and materials are determined by the department(s) that will be using the product(s) or materials. The Purchasing Department conducts purchase activities based on purchase requests submitted by the/these department(s).

2. **selection of companies for estimation submission**

The Purchasing Department, at its sole discretion, selects companies from which estimates will be sought. Suppliers are selected from the files of "Companies with Previously Established Business Relationships", "Companies from Which Estimates Can Be Requested" and "Products and Suppliers". Selection is made by comprehensivly evaluating such factors as the quality and performance of the equipment, device(s) or materials to be purchased, compatibility with existing facilities, degree of reliability, product requirements including safety, delivery time, the scale of the order, after-sale service and the company's previous business record. As a rule, Osaka Gas asks several companies to submit estimates. However, only one company may be specified for estimate submission in such special cases as those concerned with industrial property rights, those requiring maximum levels of safety that only one specific supplier can ensure, cases where only one specific supplier can assure compatibility with existing facilities, or in case of urgency.

3**. Estimate request**

As a rule, when requesting an estimate from a company that it has selected, Osaka Gas will set out a specification from listing Osaka Gas's requirements in respects of quality, performance standard, size, inspection and method of inspection. The selected companies will be asked to submit cost estimates and specifications to Osaka Gas prior to a specified date.

4. **Submission of Estimate**

Specification sheets submitted by potential suppliers at their own expense are checked by the Purchasing Department and the department(s) that will be using the product(s), in order to determine whether the required standards are met by the product(s). All products must pass this examination. During this process, Osaka Gas may request additions or changes to the specifications.

5**. Negotiation**

After valid cost estimates and specifications have been comprehensively evaluated in respect of price, technical requirements, etc. Osaka Gas will commence negotiation with the company with the most attractive proposal to discuss the amount of the contract and other terms and conditions. The selection of such a company shall be made by Osaka Gas at its sole discretion. Contract terms and conditions will be decided upon mutual agreement.

6. **Contract conclusion**

The business will be established upon conclusion of a contract, in the form of a written document if necessary. The obligations and liabilities of Osaka Gas arise only when such contract is concluded.

7. **Delivery and Inspection**

Delivery dates specified in the contract must be strictly observed. Precise details of the delivery schedule will be agreed between the supplier and the relevant department(s) of Osaka Gas. Delivered equipment, device(s) or materials must pass inspections conducted by the relevant department(s) of Osaka Gas. When deemed significant, an interim inspection may be conducted during the manufacturing process.

**Stores management and Stores record**

**The Supply Function:**

* Stores
* Responsibilities
* Organisation
* Position of Stores Within the Purchasing & Supply Organisation
* Relationships with Other Departments
* Materials Management
* Logistics
* The Supply Chain Concept
* The British Standard Guide to Stock Control

**Identification of Materials:**

* Coding of Materials
* Advantages of a Coding System
* Code Symbols
* Interpretation of Codes
* Methods of Coding
* Self-Validating Codes
* Organising a Materials Vocabulary
* Specification
* Bar Coding
* Variety Reductions
* Some Widely Used Coding Systems

**Receipt & Inspection:**

* Expediting
* Receipts from Suppliers
* Transfers from Other Storehouses
* Returns from Production or Other Departments
* Scrap Arising
* Inspection
* Vendor Quality Rating
* Marshalling Receipts
* Receipt of Capital Items Within the Organisation

**Issue & Dispatch:**

* Authorisation of Issues
* Identification of Requirements
* Timing of Issues
* Methods of Issuing Stores for Internal Use
* Dispatch of Goods Outside the Organisation

**Records & Systems:**

* Purpose of Stock Records
* Manual Systems
* Computerised Systems
* Electronic Data Interchange
* Current Developments

**Materials & Accounting**

* The Value of Stores in Stock
* Basis of Material Costing
* Methods of Pricing Material
* Arrangement of Stores Accounts
* Provisions
* Control of Stock by Value
* Budgetary Control
* Annual Audit

**Approach to the Provision of Materials:**

* Reasons for Holding Stock
* Dependent & Independent Demand
* Approaches Taken in Production Organisations
* Differing Stock Control Needs of Construction, Service & Retail Organisations
* The Extent of Stockholdings
* Ordering Quantities
* Range
* Consignment Stocktaking

**Stock Control Techniques:**

* Provisioning
* Approaches to Control
* Visual Approaches to Control
* Programming Deliveries
* Ordering Quantities
* The Need for Differential Control
* ABC Analysis Classification of Stock According to Purpose
* Forecasting Demand
* The Use of Probability in Inventory Control
* The Setting of Recorder Levels
* The Provision of Safety Stock
* Simulation
* Physical Security
* Responsibility for Stock
* Purpose of Stocktaking
* Periodic Stocktaking
* Continuous Stocktaking
* Stocktaking Procedure
* Treatment of Discrepancies
* Obsolescence & Redundancy
* Stock Checking

**Storehouses & Stockyards:**

* New Stores Buildings
* Large Central Storehouses
* Storehouses Serving One Factory or Operating Unit
* Hiring of Storage Accommodation
* Stockyards
* Construction of Stockyards
* Stockyard Facilities
* Buildings & Enclosures Within the Stockyard

**Stores Operations:**

* Security
* Knowledge of Materials
* Prevention of Deterioration
* Storehouse Location Systems
* Flow
* Departmental Stores
* Work-In-Progress Stores
* Special Storage Facilities
* Centralisation of Storage Central Stores
* The Assessment of Stores Efficiency
* The Measurement of Stores Efficiency
* Redundant Stock

**Health & Safety:**

* European Directives on Health & Safety at Work
* Manual Lifting
* The Control of Substances Hazardous to Health Regulations
* Mechanical Lifting
* Fire Precautions

**Storage Equipment:**

* Adjustable Steel Shelving
* Bins
* Pallets
* Racks
* Measuring Equipment
* Ladders & Steps
* Cleaning Equipment
* General Tools
* Live Storage
* Automation of Warehouse Work

**Materials Handling:**

* Benefits of Proper Materials Handling
* Manual Handling
* Mechanical Handling
* Assessment of Handling Problems for Mechanisation
* Hand-Operated Equipment
* Power-Driven Equipment
* The Relationship of Materials Handling to Transport

**Procedures Manuals:**

* The Need for Procedure Manuals
* Procedures
* Advantages & Disadvantages of a Manual
* Preparation of the Manual
* Contents of the Manual
* Publication & Distribution
* Implementation of the Manual
* Work Study

**MARKETING MANAGEMENT**

#### Definitions of marketing

Widely used definition of marketing is:

*"Marketing is a social and managerial process by which individuals and groups obtain what they need and want through creating and exchanging products and value with others."* (Kotler & Armstrong 1987)

The mission of marketing is satisfying customer needs. That takes place in a social context. In developed societies marketing is needed in order to satisfy the needs of society's members. Industry is the tool of society to produce products for the satisfaction of needs.

There are broad and narrow definitions of marketing. Different types of approaches to marketing are needed when analysing the possibilities to improve marketing.

Marketing has a connective function in society. It connects supply and demand or production and consumption. At micro-level, marketing builds and maintains the relationship between producer and consumer.

At business unit level, marketing can have an integrative function. It integrates all the functions and parts of a company to serve the markets.

The narrowest definition is to see marketing as a function of a business enterprise between production and markets taking care that products move smoothly from production to customers.

**Functions of marketing**

Marketing is sometimes thought of as simply the process of buying and selling. Its tasks are much more extensive than this simple description. For a marketing system to be operative and effective, there are three general types of functions which it must provide.

 Exchange functions:

- Buying  
- selling  
- pricing.

 Physical functions:

- Assembling  
- transport and handling  
- storage  
- processing and packaging  
- grading and standardization.

 Facilitating functions:

- Financing and risk-bearing  
- market information  
- demand and supply creation  
- market research.

Exchange functions are what is commonly thought of as marketing. They involve finding a buyer or a seller, negotiating price and transferring ownership (but not necessarily physical transfer). These functions take place at the "market" - that is, the physical meeting point for buyers and sellers at the point of production or *via* some other means of communication. At this point, formal or informal property rights are important to ensure the reliable transfer of ownership and to guarantee legality (e.g. those animals on sale were not stolen and will not be reclaimed).

Physical functions enable the actual flow of commodities through space and time from producer to consumer and their transformation to a form desirable to the consumer. Assembling or concentrating the product at convenient points allows its economical transport (i.e. getting enough animals together to transport cheaply). This is a valuable function which is often overlooked in the public perception of traders. Storage allows the commodity to be held until peak season demand, thereby stabilising supply. Processing transforms the commodity into the products desired by the consumers. Grading and standardization allow the consumer to be more confident of the characteristics of the good being purchased.

Financing and risk-bearing are two important facilitating functions. The owner of goods at any marketing stage must sacrifice the opportunity to use the working capital needed to buy those goods elsewhere. Or the owner must borrow that capital. In either case, capital must be provided by the trader or by some lending source. Regardless, cost is involved. Further, there is an implicit cost in the risk of losing all or part of that capital through theft, spoilage, mortality or changing market conditions. Without the willingness to provide the capital and to bear these costs, no stage of the market chain could function. Other facilitating functions enable producers to respond to consumer needs and thus provide goods in the locations, quantity and form desired.

These functions create the **marketing environment,** whose elements are:

 Market and facilities - including all of the physical infrastructure that a market may depend on.

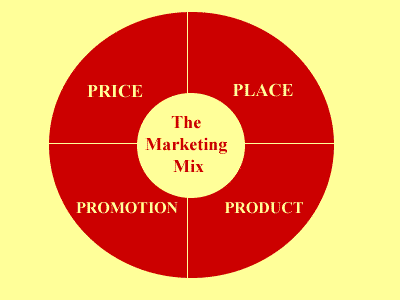
 Market information and intelligence - including informal and formal communication systems, and standard weights and grades on which market information depends.

 Institutional environment - including the government policy environment, regulations and supporting legislatio

# ****Marketing Mix.****

The **marketing mix** is probably the most famous marketing term. Its elements are the basic, tactical components of a marketing plan. Also known as the Four P's, the *marketing mix* elements are price, place, product, and promotion. Read on for more details on the marketing mix.

The concept is simple. Think about another common mix - a cake mix. All cakes contain eggs, milk, flour, and sugar. However, you can alter the final cake by altering the amounts of mix elements contained in it. So for a sweet cake add more sugar!



Some commentators will increase the marketing mix to the Five P's, to include [people](http://www.marketingteacher.com/Lessons/lesson_people.htm). Others will increase the mix to Seven P's, to include [physical evidence](http://www.marketingteacher.com/Lessons/lesson_physical_evidence.htm) (such as uniforms, facilities, or livery) and [process](http://www.marketingteacher.com/Lessons/lesson_process.htm) (i.e. the whole customer experience e.g. a visit the Disney World). The term was coined by Neil H. Borden in his article *The Concept of the Marketing Mix* in 1965.

Price

There are many ways to price a product. Let's have a look at some of them and try to understand the best policy/strategy in various situations.

Place

Another element of Neil H.Borden's Marketing Mix is Place. Place is also known as channel, distribution, or intermediary. It is the mechanism through which goods and/or services are moved from the manufacturer/ service provider to the user or consumer

Product

* For many a product is simply the tangible, phsysical entity that they may be buying or selling. You buy a new car and that's the product - simple! Or maybe not. When you buy a car, is the product more complex than you first thought? The Three Levels of a Product
* The Product Life Cycle (PLC) is based upon the biological life cycle. For example, a seed is planted (introduction); it begins to sprout (growth); it shoots out leaves and puts down roots as it becomes an adult (maturity); after a long period as an adult the plant begins to shrink and die out (decline).
* The Customer Life Cycle (CLC) has obvious similarities with the Product Life Cycle (PLC). However, CLC focuses upon the creation of and delivery of lifetime value to the customer i.e. looks at the products or services that customers NEED throughout their lives.

Promotion

Another one of the 4P's is promotion. This includes all of the tools available to the marketer for 'marketing communication'. As with Neil H.Borden's marketing mix, marketing communications has its own 'promotions mix.' Think of it like a cake mix, the basic ingredients are always the same. However if you vary the amounts of one of the ingredients, the final outcome is different.

Physical Evidence

Physical Evidence is the material part of a service. Strictly speaking there are no physical attributes to a service, so a consumer tends to rely on material cues. There are many examples of physical evidence, including some of the following:

People

People are the most important element of any service or experience. Services tend to be produced and consumed at the same moment, and aspects of the customer experience are altered to meet the 'individual needs' of the person consuming it.

Process

Process is another element of the extended marketing mix, or 7P's.There are a number of perceptions of the concept of process within the business and marketing literature. Some see processes as a means to achieve an outcome, for example - to achieve a 30% market share a company implements a marketing planning process.

#### A Summary Table of the Marketing Mix

The following table summarizes the marketing mix decisions, including a list of some of the aspects of each of the 4Ps.

Summary of Marketing Mix Decisions

|  |  |  |  |
| --- | --- | --- | --- |
| Product | Price | Place | Promotion |
| Functionality  Appearance  Quality  Packaging  Brand  Warranty  Service/Support | List price  Discounts  Allowances  Financing  Leasing options | Channel members  Channel motivation  Market coverage  Locations  Logistics  Service levels | Advertising  Personal selling  Public relations  Message  Media  Budget |

**Channels of distribution**

Distribution (or "Place") is the fourth traditional element of the marketing mix. The other three are Product, Price and Promotion.

**The Nature of Distribution Channels**

Most businesses use third parties or **intermediaries** to bring their products to market. They try to forge a "distribution channel" which can be defined as

***"all the organisations through which a product must pass between its point of production and consumption"***

Why does a business give the job of selling its products to intermediaries? After all, using intermediaries means giving up some control over how products are sold and who they are sold to.

The answer lies in efficiency of distribution costs. Intermediaries are specialists in selling. They have the contacts, experience and scale of operation which means that greater sales can be achieved than if the producing business tried run a sales operation itself.

**Functions of a Distribution Channel**

The main function of a distribution channel is to provide a link between production and consumption. Organisations that form any particular distribution channel perform many key functions:

|  |  |
| --- | --- |
| **Information** | Gathering and distributing market research and intelligence - important for marketing planning |
| **Promotion** | Developing and spreading communications about offers |
| **Contact** | Finding and communicating with prospective buyers |
| **Matching** | Adjusting the offer to fit a buyer's needs, including grading, assembling and packaging |
| **Negotiation** | Reaching agreement on price and other terms of the offer |
| **Physical distribution** | Transporting and storing goods |
| **Financing** | Acquiring and using funds to cover the costs of the distribution channel |
| **Risk taking** | Assuming some commercial risks by operating the channel (e.g. holding stock) |

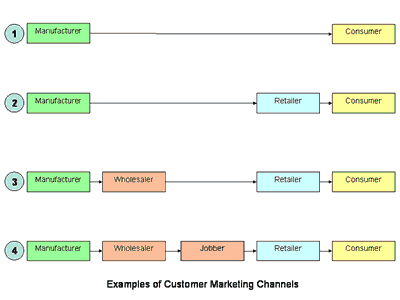
All of the above functions need to be undertaken in any market. The question is - who performs them and how many levels there need to be in the distribution channel in order to make it cost effective.

**Numbers of Distribution Channel Levels**

Each layer of marketing intermediaries that performs some work in bringing the product to its final buyer is a "channel level". The figure below shows some examples of channel levels for consumer marketing channels:

**Numbers of Distribution Channel Levels**

Each layer of marketing intermediaries that performs some work in bringing the product to its final buyer is a "channel level". The figure below shows some examples of channel levels for consumer marketing channels:



In the figure above, Channel 1 is called a **"direct-marketing"** channel, since it has no intermediary levels. In this case the manufacturer sells directly to customers. An example of a direct marketing channel would be a factory outlet store. Many holiday companies also market direct to consumers, bypassing a traditional retail intermediary - the travel agent.

The remaining channels are **"indirect-marketing channels"**.

Channel 2 contains one intermediary. In consumer markets, this is typically a **retailer**. The consumer electrical goods market in the UK is typical of this arrangement whereby producers such as Sony, Panasonic, Canon etc. sell their goods directly to large retailers such as Comet, Dixons and Currys which then sell the goods to the final consumers.

Channel 3 contains two intermediary levels - a wholesaler and a retailer. A wholesaler typically buys and stores large quantities of several producers goods and then breaks into the bulk deliveries to supply retailers with smaller quantities. For small retailers with limited order quantities, the use of wholesalers makes economic sense. This arrangement tends to work best where the retail channel is fragmented - i.e. not dominated by a small number of large, powerful retailers who have an incentive to cut out the wholesaler. A good example of this channel arrangement in the UK is the distribution of drugs.

**UNIT III**

HUMAN RESOURCE MANAGEMENT

**Definition**

Human Resource Management (HRM) is the function within an organization that focuses on recruitment of, management of, and providing direction for the people who work in the organization. Human Resource Management can also be performed by line managers.

Human Resource Management is the organizational function that deals with issues related to people such as compensation, hiring, performance management, organization development, safety, wellness, benefits, employee motivation, communication, administration, and training.

**Manpower planning**

The penalties for not being correctly staffed are costly.

* Understaffing loses the business economies of scale and specialization, orders, customers and profits.
* Overstaffing is wasteful and expensive, if sustained, and it is costly to eliminate because of modern legislation in respect of redundancy payments, consultation, minimum periods of notice, etc. Very importantly, overstaffing reduces the competitive efficiency of the business.

Planning staff levels requires that an assessment of present and future needs of the organization be compared with present resources and future predicted resources. Appropriate steps then be planned to bring demand and supply into balance.

Thus the first step is to take a 'satellite picture' of the existing workforce profile (numbers, skills, ages, flexibility, gender, experience, forecast capabilities, character, potential, etc. of existing employees) and then to adjust this for 1, 3 and 10 years ahead by amendments for normal turnover, planned staff movements, retirements, etc, in line with the business plan for the corresponding time frames.

The result should be a series of crude supply situations as would be the outcome of present planning if left unmodified. (This, clearly, requires a great deal of information accretion, classification and statistical analysis as a subsidiary aspect of personnel management.)

What future demands will be is only influenced in part by the forecast of the personnel manager, whose main task may well be to scrutinize and modify the crude predictions of other managers. Future staffing needs will derive from:

* Sales and production forecasts
* The effects of technological change on task needs
* Variations in the efficiency, productivity, flexibility of labor as a result of training, work study, organizational change, new motivations, etc.
* Changes in employment practices (e.g. use of subcontractors or agency staffs, hiving-off tasks, buying in, substitution, etc.)
* Variations, which respond to new legislation, e.g. payroll taxes or their abolition, new health and safety requirements
* Changes in Government policies (investment incentives, regional or trade grants, etc.)

What should emerge from this 'blue sky gazing' is a 'thought out' and logical staffing demand schedule for varying dates in the future which can then be compared with the crude supply schedules. The comparisons will then indicate what steps must be taken to achieve a balance.

That, in turn, will involve the further planning of such recruitment, training, retraining, labor reductions (early retirement/redundancy) or changes in workforce utilization as will bring supply and demand into equilibrium, not just as a one–off but as a continuing workforce planning exercise the inputs to which will need constant varying to reflect 'actual' as against predicted experience on the supply side and changes in production actually achieved as against forecast on the demand side

## Recruitment and selection of employees

Recruitment of staff should be preceded by:

An analysis of the job to be done (i.e. an analytical study of the tasks to be performed to determine their essential factors) written into a job description so that the selectors know what physical and mental characteristics applicants must possess, what qualities and attitudes are desirable and what characteristics are a decided disadvantage;

* In the case of replacement staff a critical questioning of the need to recruit at all (replacement should rarely be an automatic process).
* Effectively, selection is 'buying' an employee (the price being the wage or salary multiplied by probable years of service) hence bad buys can be very expensive. For that reason some firms (and some firms for particular jobs) use external expert consultants for recruitment and selection.
* Equally some small organizations exist to 'head hunt', i.e. to attract staff with high reputations from existing employers to the recruiting employer. However, the 'cost' of poor selection is such that, even for the mundane day-to-day jobs, those who recruit and select should be well trained to judge the suitability of applicants.

The main sources of recruitment are:

* Internal promotion and internal introductions (at times desirable for morale purposes)
* Careers officers (and careers masters at schools)
* University appointment boards
* Agencies for the unemployed
* Advertising (often via agents for specialist posts) or the use of other local media (e.g. commercial radio)

Where the organization does its own printed advertising it is useful if it has some identifying logo as its trade mark for rapid attraction and it must take care not to offend the sex, race, etc. antidiscrimination legislation either directly or indirectly. The form on which the applicant is to apply (personal appearance, letter of application, completion of a form) will vary according to the posts vacant and numbers to be recruited.

It is very desirable in many jobs that claim about experience and statements about qualifications are thoroughly checked and that applicants unfailingly complete a health questionnaire (the latter is not necessarily injurious to the applicants chance of being appointed as firms are required to employ a percentage of disabled people).

Before letters of appointment are sent any doubts about medical fitness or capacity (in employments where hygiene considerations are dominant) should be resolved by requiring applicants to attend a medical examination. This is especially so where, as for example in the case of apprentices, the recruitment is for a contractual period or involves the firm in training costs.

Interviewing can be carried out by individuals (e.g. supervisor or departmental manager), by panels of interviewers or in the form of sequential interviews by different experts and can vary from a five minute 'chat' to a process of several days. Ultimately personal skills in judgment are probably the most important, but techniques to aid judgment include selection testing for:

* Aptitudes (particularly useful for school leavers)
* Attainments
* General intelligence

(All of these need skilled testing and assessment.) In more senior posts other techniques are:

* Leaderless groups
* Command exercises
* Group problem solving

(These are some common techniques - professional selection organizations often use other techniques to aid in selection.)

Training in interviewing and in appraising candidates is clearly essential to good recruitment. Largely the former consists of teaching interviewers how to draw out the interviewee and the latter how to xratex the candidates. For consistency (and as an aid to checking that) rating often consists of scoring candidates for experience, knowledge, physical/mental capabilities, intellectual levels, motivation, prospective potential, leadership abilities etc. (according to the needs of the post). Application of the normal curve of distribution to scoring eliminates freak judgments.

## Employee motivation

To retain good staff and to encourage them to give of their best while at work requires attention to the financial and psychological and even physiological rewards offered by the organization as a continuous exercise.

Basic financial rewards and conditions of service (e.g. working hours per week) are determined externally (by national bargaining or government minimum wage legislation) in many occupations but as much as 50 per cent of the gross pay of manual workers is often the result of local negotiations and details (e.g. which particular hours shall be worked) of conditions of service are often more important than the basics. Hence there is scope for financial and other motivations to be used at local levels.

As staffing needs will vary with the productivity of the workforce (and the industrial peace achieved) so good personnel policies are desirable. The latter can depend upon other factors (like environment, welfare, employee benefits, etc.) but unless the wage packet is accepted as 'fair and just' there will be no motivation.

Hence while the technicalities of payment and other systems may be the concern of others, the outcome of them is a matter of great concern to human resource management.

Increasingly the influence of behavioral science discoveries are becoming important not merely because of the widely-acknowledged limitations of money as a motivator, but because of the changing mix and nature of tasks (e.g. more service and professional jobs and far fewer unskilled and repetitive production jobs).

The former demand better-educated, mobile and multi-skilled employees much more likely to be influenced by things like job satisfaction, involvement, participation, etc. than the economically dependent employees of yesteryear.

Hence human resource management must act as a source of information about and a source of inspiration for the application of the findings of behavioral science. It may be a matter of drawing the attention of senior managers to what is being achieved elsewhere and the gradual education of middle managers to new points of view on job design, work organization and worker autonomy.

## Employee evaluation

An organization needs constantly to take stock of its workforce and to assess its performance in existing jobs for three reasons:

* To improve organizational performance via improving the performance of individual contributors (should be an automatic process in the case of good managers, but (about annually) two key questions should be posed:
  + What has been done to improve the performance of a person last year?
  + And what can be done to improve his or her performance in the year to come?).
* To identify potential, i.e. to recognize existing talent and to use that to fill vacancies higher in the organization or to transfer individuals into jobs where better use can be made of their abilities or developing skills.
* To provide an equitable method of linking payment to performance where there are no numerical criteria (often this salary performance review takes place about three months later and is kept quite separate from 1. and 2. but is based on the same assessment).

On-the-spot managers and supervisors, not HR staffs, carry out evaluations. The personnel role is usually that of:

* Advising top management of the principles and objectives of an evaluation system and designing it for particular organizations and environments.
* Developing systems appropriately in consultation with managers, supervisors and staff representatives. Securing the involvement and cooperation of appraisers and those to be appraised.
* Assistance in the setting of objective standards of evaluation / assessment, for example:
  + Defining targets for achievement;
  + Explaining how to quantify and agree objectives;
  + Introducing self-assessment
  + Eliminating complexity and duplication.
* Publicizing the purposes of the exercise and explaining to staff how the system will be used.
* Organizing and establishing the necessary training of managers and supervisors who will carry out the actual evaluations/ appraisals. Not only training in principles and procedures but also in the human relations skills necessary. (Lack of confidence in their own ability to handle situations of poor performance is the main weakness of assessors.)
* Monitoring the scheme - ensuring it does not fall into disuse, following up on training/job exchange etc. recommendations, reminding managers of their responsibilities.

Full-scale periodic reviews should be a standard feature of schemes since resistance to evaluation / appraisal schemes is common and the temptation to water down or render schemes ineffectual is ever present (managers resent the time taken if nothing else).

Basically an evaluation / appraisal scheme is a formalization of what is done in a more casual manner anyway (e.g. if there is a vacancy, discussion about internal moves and internal attempts to put square pegs into 'squarer holes' are both the results of casual evaluation). Most managers approve merit payment and that too calls for evaluation. Made a standard routine task, it aids the development of talent, warns the inefficient or uncaring and can be an effective form of motivation.

## Industrial relations

Good industrial relations, while a recognizable and legitimate objective for an organization, are difficult to define since a good system of industrial relations involves complex relationships between:

(a) Workers (and their informal and formal groups, i. e. trade union, organizations and their representatives);

(b) Employers (and their managers and formal organizations like trade and professional associations);

(c) The government and legislation and government agencies l and 'independent' agencies like the Advisory Conciliation and Arbitration Service.

Oversimplified, work is a matter of managers giving instructions and workers following them - but (and even under slavery we recognize that different 'managing' produces very different results) the variety of 'forms' which have evolved to regulate the conduct of parties (i.e. laws, custom and practice, observances, agreements) makes the giving and receipt of instructions far from simple. Two types of 'rule' have evolved:

* 'Substantive', determining basic pay and conditions of service (what rewards workers should receive);
* 'Procedural,' determining how workers should be treated and methods and procedures.

Determining these rules are many common sense matters like:

* Financial, policy and market constraints on the parties (e.g. some unions do not have the finance to support industrial action, some have policies not to strike, some employers are more vulnerable than others to industrial action, some will not make changes unless worker agreement is made first, and rewards always ultimately reflect what the market will bear);
* The technology of production (the effect of a strike in newspaper production is immediate -it may be months before becoming effective in shipbuilding);
* The distribution of power within the community - that tends to vary over time and with economic conditions workers (or unions) dominating in times of full employment and employers in times of recession.

Broadly in the Western style economies the parties (workers and employers) are free to make their own agreements and rules. This is called 'voluntarism'. But it does not mean there is total noninterference by the government. That is necessary to:

* Protect the weak (hence minimum wage);
* Outlaw discrimination (race or sex);
* Determine minimum standards of safety, health, hygiene and even important conditions of service;
* To try to prevent the abuse of power by either party.

##### *HR managers responsibilities*

The personnel manager's involvement in the system of industrial relations varies from organization to organization, but normally he or she is required to provide seven identifiable functions, thus:

1. To keep abreast of industrial law (legislation and precedents) and to advise managers about their responsibilities e.g. to observe requirements in respect of employing disabled persons, not to discriminate, not to disclose 'spent' convictions of employees, to observe codes of practice etc. in relation to discipline and redundancy, and similarly to determine organizational policies (in conjunction with other managers) relevant to legal and moral requirements (see also 4.).
2. To conduct (or assist in the conduct) of either local negotiations (within the plant) or similarly to act as the employer's representative in national negotiations. This could be as a critic or advisor in respect of trade etc. association policies or as a member of a trade association negotiating team. Agreements could be in respect of substantive or procedural matters. Even if not directly involved the personnel manager will advise other managers and administrators of the outcome of negotiations.
3. To ensure that agreements reached are interpreted so as to make sense to those who must operate them at the appropriate level within the organization (this can involve a lot of new learning at supervisory level and new pay procedures and new recording requirements in administration and even the teaching of new employment concepts – like stagger systems of work - at management level).
4. To monitor the observance of agreements and to produce policies that ensure that agreements are followed within the organization. An example would be the policy to be followed on the appointment of a new but experienced recruit in relation to the offered salary where there is a choice of increments to be given for experience, ability or qualification.
5. To correct the situations which go wrong. 'Face' is of some importance in most organizations and operating at a 'remote' staff level personnel managers can correct industrial relations errors made at local level without occasioning any loss of dignity (face) at the working level. 'Human resource management' and the obscurity of its reasoning can be blamed for matters which go wrong at plant level and for unwelcome changes, variations of comfortable 'arrangements' and practices and unpopular interpretation of agreements.
6. To provide the impetus (and often devise the machinery) for the introduction of joint consultation and worker participation in decision-making in the organization. Formal agreement in respect of working conditions and behavior could never cover every situation likely to arise. Moreover the more demanding the task (in terms of the mental contribution by the worker to its completion) the more highly–educated the workers need to be and the more they will want to be consulted about and involved in the details of work life. Matters like the rules for a flexitime system or for determining the correction of absenteeism and the contents of jobs are three examples of the sort of matters that may be solely decided by management in some organizations but a matter for joint consultation (not negotiation) in others with a more twenty-first-century outlook and philosophy. Human resource management is very involved in promoting and originating ideas in this field.
7. To provide statistics and information about workforce numbers, costs, skills etc. as relevant to negotiations (i.e. the cost of pay rises or compromise proposals, effect on differentials and possible recruitment/retention consequences of this or whether agreement needs to be known instantly); to maintain personnel records of training, experience, achievements, qualifications, awards and possibly pension and other records; to produce data of interest to management in respect of personnel matters like absentee figures and costs, statistics of sickness absence, costs of welfare and other employee services, statements about development in policies by other organizations, ideas for innovations; to advise upon or operate directly, grievance, redundancy, disciplinary.

## Provision of employee services

Attention to the mental and physical well-being of employees is normal in many organizations as a means of keeping good staff and attracting others.

The forms this welfare can take are many and varied, from loans to the needy to counseling in respect of personal problems.

Among the activities regarded as normal are:

* Schemes for occupational sick pay, extended sick leave and access to the firm's medical adviser;
* Schemes for bereavement or other special leave;
* The rehabilitation of injured/unfit/ disabled employees and temporary or permanent move to lighter work;
* The maintenance of disablement statistics and registers (there are complicated legal requirements in respect of quotas of disabled workers and a need for 'certificates' where quota are not fulfilled and recruitment must take place);
* Provision of financial and other support for sports, social, hobbies, activities of many kinds which are work related;
* Provision of canteens and other catering facilities;
* Possibly assistance with financial and other aid to employees in difficulty (supervision, maybe, of an employee managed benevolent fund or scheme);
* Provision of information handbooks,
* Running of pre-retirement courses and similar fringe activities;
* Care for the welfare aspects of health and safety legislation and provision of first-aid training.

The location of the health and safety function within the organization varies. Commonly a split of responsibilities exists under which 'production' or 'engineering' management cares for the provision of safe systems of work and safe places and machines etc., but HRM is responsible for administration, training and education in awareness and understanding of the law, and for the alerting of all levels to new requirements.

## Employee education, training and development

In general, education is 'mind preparation' and is carried out remote from the actual work area, training is the systematic development of the attitude, knowledge, skill pattern required by a person to perform a given task or job adequately and development is 'the growth of the individual in terms of ability, understanding and awareness'.

Within an organization all three are necessary in order to:

* Develop workers to undertake higher-grade tasks;
* Provide the conventional training of new and young workers (e.g. as apprentices, clerks, etc.);
* Raise efficiency and standards of performance;
* Meet legislative requirements (e.g. health and safety);
* Inform people (induction training, pre-retirement courses, etc.);

From time to time meet special needs arising from technical, legislative, and knowledge need changes. Meeting these needs is achieved via the 'training loop'. (Schematic available in PDF version.)

The diagnosis of other than conventional needs is complex and often depends upon the intuition or personal experience of managers and needs revealed by deficiencies. Sources of inspiration include:

* Common sense - it is often obvious that new machines, work systems, task requirements and changes in job content will require workers to be prepared;
* Shortcomings revealed by statistics of output per head, performance indices, unit costs, etc. and behavioral failures revealed by absentee figures, lateness, sickness etc. records;
* Recommendations of government and industry training organizations;
* Inspiration and innovations of individual managers and supervisors;
* Forecasts and predictions about staffing needs;
* Inspirations prompted by the technical press, training journals, reports of the experience of others;
* The suggestions made by specialist (e.g. education and training officers, safety engineers, work-study staff and management services personnel).

Designing training is far more than devising courses; it can include activities such as:

* Learning from observation of trained workers;
* Receiving coaching from seniors;
* Discovery as the result of working party, project team membership or attendance at meetings;
* Job swaps within and without the organization;
* Undertaking planned reading, or follow from the use of self–teaching texts and video tapes;
* Learning via involvement in research, report writing and visiting other works or organizations.

**So far as group training is concerned in addition to formal courses there are:**

* Lectures and talks by senior or specialist managers;
* Discussion group (conference and meeting) activities;
* Briefing by senior staffs;
* Role-playing exercises and simulation of actual conditions;
* Video and computer teaching activities;
* Case studies (and discussion) tests, quizzes, panel 'games', group forums, observation exercises and inspection and reporting techniques.

Evaluation of the effectiveness of training is done to ensure that it is cost effective, to identify needs to modify or extend what is being provided, to reveal new needs and redefine priorities and most of all to ensure that the objectives of the training are being met.

The latter may not be easy to ascertain where results cannot be measured mathematically. In the case of attitude and behavioral changes sought, leadership abilities, drive and ambition fostered, etc., achievement is a matter of the judgment of senior staffs. Exact validation might be impossible but unless on the whole the judgments are favorable the cooperation of managers in identifying needs, releasing personnel and assisting in training ventures will cease.

**In making their judgments senior managers will question whether the efforts expended have produced:**

* More effective, efficient, flexible employees;
* Faster results in making newcomers knowledgeable and effective than would follow from experience;
* More effective or efficient use of machinery, equipment and work procedures;
* Fewer requirements to implement redundancy (by retraining);
* Fewer accidents both personal and to property;
* Improvements in the qualifications of staff and their ability to take on tougher roles;
* Better employee loyalty to the organization with more willingness to innovate and accept change.

# Performance Appraisal

|  |  |
| --- | --- |
| |  | | --- | | Is the process of obtaining, analyzing and recording information about the relative worth of an employee. The focus of the performance appraisal is measuring and improving the actual performance of the employee and also the future potential of the employee. Its aim is to measure what an employee does.  According to Flippo, a prominent personality in the field of Human resources, "performance appraisal is the systematic, periodic and an impartial rating of an employee’s excellence in the matters pertaining to his present job and his potential for a better job." Performance appraisal is a systematic way of reviewing and assessing the performance of an employee during a given period of time and planning for his future. | |
| It is a powerful tool to calibrate, refine and reward the performance of the employee. It helps to analyze his achievements and evaluate his contribution towards the achievements of the overall organizational goals.  By focusing the attention on performance, performance appraisal goes to the heart of personnel management and reflects the management's interest in the progress of the employees. Objectives Of Performance appraisal:  * To review the performance of the employees over a given period of time. * To judge the gap between the actual and the desired performance. * To help the management in exercising organizational control. * Helps to strengthen the relationship and communication between superior – subordinates and management – employees. * To diagnose the strengths and weaknesses of the individuals so as to identify the training and development needs of the future. * To provide feedback to the employees regarding their past performance. * Provide information to assist in the other personal decisions in the organization. * Provide clarity of the expectations and responsibilities of the functions to be performed by the employees. * To judge the effectiveness of the other human resource functions of the organization such as recruitment, selection, training and development. * To reduce the grievances of the employees. |
|  |

**Grievance Handling**

A grievance is a sign of an employee's discontentment with his job or his relationship with his colleagues. Grievances generally arise out of the day-to-day working relations in an organization. An employee or a trade union protests against an act or policy of the management that they consider as violating employee's rights.  
  
One of the effective ways of minimizing and eliminating the source of an employee's grievance is by having an ‘open door policy'. An ‘open door policy'facilitates upward communication in the organization where employees can walk into a superiors'cabin at any time and express their grievances. The National Commission on Labor suggested a Model Grievance Procedure, which lays down the sequence of steps to be taken whenever a grievance is expressed.  
  
Conflict occurs when two or more people or parties perceive an incompatibility in their goals or expectations. There are seven methods for achieving reconciliation of conflict. These methods are win-lose, withdrawal and retreat from argument, smoothing and playing down the difference, arbitration, mediation, compromise and problem solving. Of all these methods ‘problem-solving'method is most likely to bring about a win-win situation.

## Essential Pre requisites of a Grievance Procedure

Every organization should have a systematic grievance procedure in order to redress the grievances effectively. As explained above, unattended grievances may culminate in the form of violent conflicts later on. The grievance procedure, to be sound and effective should possess certain pre-requisites:

1. *Conformity with statutory provisions:* Due consideration must be given to the prevailing legislation while designing the grievance handling procedure.
2. *Unambiguity:*  Every aspect of the grievance handling procedure should be clear and unambiguous. All employees should know whom to approach first when they have a grievance, whether the complaint should be written or oral, the maximum time in which the redressal is assured, etc. The redressing official should also know the limits within which he can take the required action.
3. *Simplicity:* The grievance handling procedure should be simple and short. If the procedure is complicated it may discourage employees and they may fail to make use of it in a proper manner.
4. *Promptness:* The grievance of the employee should be promptly handled and necessary action must be taken immediately. This is good for both the employee and management, because if the wrong doer is punished late, it may affect the morale of other employees as well.
5. *Training:* The supervisors and the union representatives should be properly trained in all aspects of grievance handling beforehand or else it will complicate the problem.
6. *Follow up:* The Personnel Department should keep track of the effectiveness and the functioning of grievance handling procedure and make necessary changes to improve it from time to time.

### Steps in the Grievance Procedure

1. Employee dissatisfaction or grievance should be identified by the management if they are not expressed. If they are ventilated, management has to promptly acknowledge them.
2. The management has to define the problem properly and accurately after it is identified/acknowledged.
3. Complete information should be collected from all the parties relating to the grievance. Information should be classified as facts, data, opinions, etc.
4. The information should be analyzed, alternative solutions to the problem should be developed and the best solution should be selected.
5. The grievance should be redressed by implementing the solution.
6. Implementation of the solution must be followed up at every stage in order to ensure effective and speedy implementation.

**Job evaluation**

**Job evaluation** is the process of systematically determining a relative internal value of a job in an organization. In all cases the idea is to evaluate the job, not the person doing it. Job evaluation is the process of determining the worth of one job in relation to that of the other jobs in a company so that a fair and equitable wage and salary system can be established.

Job evaluation is a practical technique, designed to enable trained and experienced staff to judge the size of one job relative to others. It does not directly determine pay levels, but will establish the basis for an internal ranking of jobs.

The two most common methods of job evaluation that have been used are first, whole job ranking, where jobs are taken as a whole and ranked against each other. The second method is one of awarding points for various aspects of the job. In the points system various aspects or parts of the job such as education and experience required to perform the job are assessed and a points value awarded - the higher the educational requirements of the job the higher the points scored. The most well known points scheme was introduced by Hay management consultants in 1951. This scheme evaluates job responsibilities in the light of three major factors - know how, problem solving and accountability.

### Some Principles of Job Evaluation

* Clearly defined and identifiable jobs must exist. These jobs will be accurately described in an agreed job description.
* All jobs in an organisation will be evaluated using an agreed job evaluation scheme.
* Job evaluators will need to gain a thorough understanding of the job
* Job evaluation is concerned with jobs, not people. It is not the person that is being evaluated.
* The job is assessed as if it were being carried out in a fully competent and acceptable manner.
* Job evaluation is based on judgement and is not scientific. However if applied correctly it can enable objective judgements to be made.
* It is possible to make a judgement about a job's contribution relative to other jobs in an organisation.
* The real test of the evaluation results is their acceptability to all participants.
* Job evaluation can aid organisational problem solving as it highlights duplication of tasks and gaps between jobs and functions

## Job Evaluation Methods

There are three basic methods of job evaluation: (1) ranking, (2) classification, (3) factor comparison. While many variations of these methods exist in practice, the three basic approaches are described here.

### Ranking Method

Perhaps the simplest method of job evaluation is the ranking method. According to this method, jobs are arranged from highest to lowest, in order of their value or merit to the organization. Jobs also can be arranged according to the relative difficulty in performing them. The jobs are examined as a whole rather than on the basis of important factors in the job; and the job at the top of the list has the highest value and obviously the job at the bottom of the list will have the lowest value.

Jobs are usually ranked in each department and then the department rankings are combined to develop an organizational ranking. The following table is a hypothetical illustration of ranking of jobs.

#### Table: Array of Jobs according to the Ranking Method

Rank                                Monthly salaries

1. Accountant                             Rs 3,000

2. Accounts clerk                Rs 1,800

3. Purchase assistant                   Rs 1,700

4. Machine-operator           Rs 1,400

5. Typist                            Rs 900

6. Office boy                     Rs 600

The variation in payment of salaries depends on the variation of the nature of the job performed by the employees. The ranking method is simple to understand and practice and it is best suited for a small organization. Its simplicity, however, works to its disadvantage in big organizations because rankings are difficult to develop in a large, complex organization. Moreover, this kind of ranking is highly subjective in nature and may offend many employees. Therefore, a more scientific and fruitful way of job evaluation is called for.

### Classification Method

According to this method, a predetermined number of job groups or job classes are established and jobs are assigned to these classifications. This method places groups of jobs into job classes or job grades. Separate classes may include office, clerical, managerial, personnel, etc. Following is a brief description of such a classification in an office.

**(a)**             Class I - Executives: Further classification under this category may be Office manager, Deputy office manager, Office superintendent, Departmental supervisor, etc.

**(b)**             Class II - Skilled workers: Under this category may come the Purchasing assistant, Cashier, Receipts clerk, etc.

**(c)**             Class III - Semiskilled workers: Under this category may come Stenotypists, Machine-operators, Switchboard operators, etc.

**(d)**             Class IV - Semiskilled workers: This category comprises Daftaris, File clerks, Office boys, etc.

The job classification method is less subjective when compared to the earlier ranking method. The system is very easy to understand and acceptable to almost all employees without hesitation. One strong point in favor of the method is that it takes into account all the factors that a job comprises. This system can be effectively used for a variety of jobs.

The weaknesses of the job classification method are:

* Even when the requirements of different jobs differ, they may be combined into a single category, depending on the status a job carries.
* It is difficult to write all-inclusive descriptions of a grade.
* The method oversimplifies sharp differences between different jobs and different grades.
* When individual job descriptions and grade descriptions do not match well, the evaluators have the tendency to classify the job using their subjective judgments.

### Factor Comparison Method

A more systematic and scientific method of job evaluation is the factor comparison method. Though it is the most complex method of all, it is consistent and appreciable. Under this method, instead of ranking complete jobs, each job is ranked according to a series of factors. These factors include mental effort, physical effort, skill needed, supervisory responsibility, working conditions and other relevant factors (for instance, know-how, problem solving abilities, accountability, etc.). Pay will be assigned in this method by comparing the weights of the factors required for each job, i.e., the present wages paid for key jobs may be divided among the factors weighed by importance (the most important factor, for instance, mental effort, receives the highest weight). In other words, wages are assigned to the job in comparison to its ranking on each job factor.

**The steps involved in factor comparison method may be briefly stated thus:**

* Select key jobs (say 15 to 20), representing wage/salary levels across the organization. The selected jobs must represent as many departments as possible.
* Find the factors in terms of which the jobs are evaluated (such as skill, mental effort, responsibility, physical effort, working conditions, etc.).
* Rank the selected jobs under each factor (by each and every member of the job evaluation committee) independently.
* Assign money value to each factor and determine the wage rates for each key job.
* The wage rate for a job is apportioned along the identified factors.
* All other jobs are compared with the list of key jobs and wage rates are determined.

An example of how the factor comparison method works is given below:

#### Table: Merits and Demerits of Factor Comparison Method

|  |  |
| --- | --- |
| Merits | **Demerits** |
| * Analytical and objective. * Reliable and valid as each job is compared with all other jobs in terms of key factors. * Money values are assigned in a fair way based on an agreed rank order fixed by the job evaluation committee. * Flexible as there is no upper limitation on the rating of a factor. | * Difficult to understand, explain and operate. * Its use of the same criteria to assess all jobs is questionable as jobs differ across and within organizations. * Time consuming and costly. |

### Point method

This method is widely used currently. Here, jobs are expressed in terms of key factors. Points are assigned to each factor after prioritizing each factor in the order of importance. The points are summed up to determine the wage rate for the job. Jobs with similar point totals are placed in similar pay grades. The procedure involved may be explained thus:

(a)      Select key jobs. Identify the factors common to all the identified jobs such as skill, effort, responsibility, etc.

(b)      Divide each major factor into a number of sub factors. Each sub factor is defined and expressed clearly in the order of importance, preferably along a scale.

The most frequent factors employed in point systems are:

                         I.      Skill (key factor): Education and training required, Breadth/depth of experience required, Social skills required, Problem-solving skills, Degree of discretion/use of judgment, Creative thinking;

                       II.      Responsibility/Accountability: Breadth of responsibility, Specialized responsibility, Complexity of the work, Degree of freedom to act, Number and nature of subordinate staff, Extent of accountability for equipment/plant, Extent of accountability for product/materials;

                    III.      Effort: Mental demands of a job, Physical demands of a job, Degree of potential stress.

The educational requirements (sub factor) under the skill (key factor) may be expressed thus in the order of importance.

*Degree          Define*

1.       Able to carry out simple calculations; High school educated

2.       Does all the clerical operations; computer literate; graduate

3        Handles mail, develops contacts, takes initiative and does work independently; post graduate

Assign point values to degrees after fixing a relative value for each key factor.

#### Table: Point Values to Factors along a Scale

                             Point values for Degrees                                   Total

Factor                    1        2        3        4        5

Skill                         10      20      30      40      50                          150

Physical effort        8        16      24      32      40                          120

Mental effort          5        10      15      20      25                           75

Responsibility        7        14      21      28      35                          105

Working conditions    6        12      18      24      30                          90

Maximum total points of all factors depending on their importance to job =       540

(Bank Officer)

4        Find the maximum number of points assigned to each job (after adding up the point values of all sub-factors of such a job). This would help in finding the relative worth of a job. For instance, the maximum points assigned to an officer’s job in a bank come to 540. The manager’s job, after adding up key factors + sub factors’ points, may be getting a point value of, say 650 from the job evaluation committee. This job is now priced at a higher level.

5        Once the worth of a job in terms of total points is expressed, the points are converted into money values keeping in view the hourly/daily wage rates. A wage survey, usually, is undertaken to collect wage rates of certain key jobs in the organization. Let’s explain this:

#### Table: Conversion of Job Grade Points into Money Value

          Point range    Daily wage rate (Rs)  Job grades of key bank officials

          500-600        300-400        1        Officer

          600-700        400-500        2        Accountant

          700-800        500-600        3        Manager I Scale

          800-900        600-700        4        Manager II Scale

          900-1,000      700-800        5        Manager III Scale

##### Merits and Demerits

The point method is a superior and widely used method of evaluating jobs. It forces raters to look into all keys factors and sub-factors of a job. Point values are assigned to all factors in a systematic way, eliminating bias at every stage. It is reliable because raters using similar criteria would get more or less similar answers. “The methodology underlying the approach contributes to a minimum of rating error” (Robbins, p.361). It accounts for differences in wage rates for various jobs on the strength of job factors. Jobs may change over time, but the rating scales established under the point method remain unaffected.

On the negative side, the point method is complex. Preparing a manual for various jobs, fixing values for key and sub-factors, establishing wage rates for different grades, etc., is a time consuming process. According to Decenzo and Robbins, “the key criteria must be carefully and clearly identified, degrees of factors have to be agreed upon in terms that mean the same to all rates, the weight of each criterion has to be established and point values must be assigned to degrees”. This may be too taxing, especially while evaluating managerial jobs where the nature of work (varied, complex, novel) is such that it cannot be expressed in quantifiable numbers.

**Unit IV**

### PERT

## PERT (Program Evaluation and Review Technique)

PERT is a variation on Critical Path Analysis that takes a slightly more skeptical view of time estimates made for each project stage. To use it, estimate the shortest possible time each activity will take, the most likely length of time, and the longest time that might be taken if the activity takes longer than expected.  
  
Use the formula below to calculate the time to use for each project stage:

shortest time + 4 x likely time + longest time  
-----------------------------------------------------------  
6

This helps to bias time estimates away from the unrealistically short time-scales normally assumed.

## Key points:

Critical Path Analysis is an effective and powerful method of assessing:

* What tasks must be carried out.
* Where parallel activity can be performed.
* The shortest time in which you can complete a project.
* Resources needed to execute a project.
* The sequence of activities, scheduling and timings involved.
* Task priorities.
* The most efficient way of shortening time on urgent projects.

An effective Critical Path Analysis can make the difference between success and failure on complex projects. It can be very useful for assessing the importance of problems faced during the implementation of the plan.  
  
PERT is a variant of Critical Path Analysis that takes a more skeptical view of the time needed to complete each project stage.

Complex projects require a series of activities, some of which must be performed sequentially and others that can be performed in parallel with other activities. This collection of series and parallel tasks can be modeled as a network.

In 1957 the Critical Path Method (CPM) was developed as a network model for project management. CPM is a deterministic method that uses a fixed time estimate for each activity. While CPM is easy to understand and use, it does not consider the time variations that can have a great impact on the completion time of a complex project.

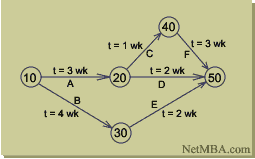
The *Program Evaluation and Review Technique* (PERT) is a network model that allows for randomness in activity completion times. PERT was developed in the late 1950's for the U.S. Navy's Polaris project having thousands of contractors. It has the potential to reduce both the time and cost required to complete a project.

#### The Network Diagram

In a project, an activity is a task that must be performed and an event is a milestone marking the completion of one or more activities. Before an activity can begin, all of its predecessor activities must be completed. Project network models represent activities and milestones by arcs and nodes. PERT originally was an *activity on arc* network, in which the activities are represented on the lines and milestones on the nodes. Over time, some people began to use PERT as an *activity on node* network. For this discussion, we will use the original form of activity on arc.

The PERT chart may have multiple pages with many sub-tasks. The following is a very simple example of a PERT diagram:

#### PERT Chart



The milestones generally are numbered so that the ending node of an activity has a higher number than the beginning node. Incrementing the numbers by 10 allows for new ones to be inserted without modifying the numbering of the entire diagram. The activities in the above diagram are labeled with letters along with the expected time required to complete the activity.

#### Steps in the PERT Planning Process

PERT planning involves the following steps:

1. Identify the specific activities and milestones.
2. Determine the proper sequence of the activities.
3. Construct a network diagram.
4. Estimate the time required for each activity.
5. Determine the *critical path*.
6. Update the PERT chart as the project progresses.

#### 1.  Identify Activities and Milestones

The activities are the tasks required to complete the project. The milestones are the events marking the beginning and end of one or more activities. It is helpful to list the tasks in a table that in later steps can be expanded to include information on sequence and duration.

#### 2.  Determine Activity Sequence

This step may be combined with the activity identification step since the activity sequence is evident for some tasks. Other tasks may require more analysis to determine the exact order in which they must be performed.

#### 3.  Construct the Network Diagram

Using the activity sequence information, a network diagram can be drawn showing the sequence of the serial and parallel activities. For the original activity-on-arc model, the activities are depicted by arrowed lines and milestones are depicted by circles or "bubbles".

If done manually, several drafts may be required to correctly portray the relationships among activities. Software packages simplify this step by automatically converting tabular activity information into a network diagram.

#### 4.  Estimate Activity Times

Weeks are a commonly used unit of time for activity completion, but any consistent unit of time can be used.

A distinguishing feature of PERT is its ability to deal with uncertainty in activity completion times. For each activity, the model usually includes three time estimates:

* *Optimistic time* - generally the shortest time in which the activity can be completed. It is common practice to specify optimistic times to be three standard deviations from the mean so that there is approximately a 1% chance that the activity will be completed within the optimistic time.
* *Most likely time* - the completion time having the highest probability. Note that this time is different from the *expected time*.
* *Pessimistic time* - the longest time that an activity might require. Three standard deviations from the mean is commonly used for the pessimistic time.

PERT assumes a beta probability distribution for the time estimates. For a beta distribution, the expected time for each activity can be approximated using the following weighted average:

Expected time  =  ( Optimistic  +  4 x Most likely  +  Pessimistic ) / 6

This expected time may be displayed on the network diagram.

To calculate the variance for each activity completion time, if three standard deviation times were selected for the optimistic and pessimistic times, then there are six standard deviations between them, so the variance is given by:

[ ( Pessimistic  -  Optimistic ) / 6 ]2

#### 5.  Determine the Critical Path

The critical path is determined by adding the times for the activities in each sequence and determining the longest path in the project. The critical path determines the total calendar time required for the project. If activities outside the critical path speed up or slow down (within limits), the total project time does not change. The amount of time that a non-critical path activity can be delayed without delaying the project is referred to as *slack time*.

If the critical path is not immediately obvious, it may be helpful to determine the following four quantities for each activity:

* ES - Earliest Start time
* EF - Earliest Finish time
* LS - Latest Start time
* LF - Latest Finish time

These times are calculated using the expected time for the relevant activities. The earliest start and finish times of each activity are determined by working forward through the network and determining the earliest time at which an activity can start and finish considering its predecessor activities. The latest start and finish times are the latest times that an activity can start and finish without delaying the project. LS and LF are found by working backward through the network. The difference in the latest and earliest finish of each activity is that activity's slack. The critical path then is the path through the network in which none of the activities have slack.

The variance in the project completion time can be calculated by summing the variances in the completion times of the activities in the critical path. Given this variance, one can calculate the probability that the project will be completed by a certain date assuming a normal probability distribution for the critical path. The normal distribution assumption holds if the number of activities in the path is large enough for the central limit theorem to be applied.

Since the critical path determines the completion date of the project, the project can be accelerated by adding the resources required to decrease the time for the activities in the critical path. Such a shortening of the project sometimes is referred to as *project crashing*.

#### 6.  Update as Project Progresses

Make adjustments in the PERT chart as the project progresses. As the project unfolds, the estimated times can be replaced with actual times. In cases where there are delays, additional resources may be needed to stay on schedule and the PERT chart may be modified to reflect the new situation.

#### Benefits of PERT

PERT is useful because it provides the following information:

* Expected project completion time.
* Probability of completion before a specified date.
* The critical path activities that directly impact the completion time.
* The activities that have slack time and that can lend resources to critical path activities.
* Activity start and end dates.

#### Limitations

The following are some of PERT's weaknesses:

* The activity time estimates are somewhat subjective and depend on judgement. In cases where there is little experience in performing an activity, the numbers may be only a guess. In other cases, if the person or group performing the activity estimates the time there may be bias in the estimate.
* Even if the activity times are well-estimated, PERT assumes a beta distribution for these time estimates, but the actual distribution may be different.
* Even if the beta distribution assumption holds, PERT assumes that the probability distribution of the project completion time is the same as the that of the critical path. Because other paths can become the critical path if their associated activities are delayed, PERT consistently underestimates the expected project completion time.

The underestimation of the project completion time due to alternate paths becoming critical is perhaps the most serious of these issues. To overcome this limitation, Monte Carlo simulations can be performed on the network to eliminate this optimistic bias in the expected project completion time.

# Critical Path Analysis and PERT Charts

### Planning and Scheduling Complex Projects Related variants: AOA or Activity-on-Arc or Activity-on-Arrow Diagrams

 Critical Path Analysis and PERT are powerful tools that help you to schedule and manage complex projects. They were developed in the 1950s to control large defense projects, and have been used routinely since then.

As with Gantt Charts, Critical Path Analysis (CPA) or the Critical Path Method (CPM) helps you to plan all tasks that must be completed as part of a project. They act as the basis both for preparation of a schedule, and of resource planning. During management of a project, they allow you to monitor achievement of project goals. They help you to see where remedial action needs to be taken to get a project back on course.

Within a project it is likely that you will display your final project plan as a Gantt Chart (using Microsoft Project or other software for projects of medium complexity or an excel spreadsheet for projects of low complexity).The benefit of using CPA within the planning process is to help you develop and test your plan to ensure that it is robust. Critical Path Analysis formally identifies tasks which must be completed on time for the whole project to be completed on time. It also identifies which tasks can be delayed if resource needs to be reallocated to catch up on missed or overrunning tasks. The disadvantage of CPA, if you use it as the technique by which your project plans are communicated and managed against, is that the relation of tasks to time is not as immediately obvious as with Gantt Charts. This can make them more difficult to understand.

A further benefit of Critical Path Analysis is that it helps you to identify the minimum length of time needed to complete a project. Where you need to run an accelerated project, it helps you to identify which project steps you should accelerate to complete the project within the available time.

## How to Use the Tool:

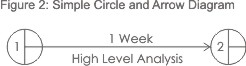
As with Gantt Charts, the essential concept behind Critical Path Analysis is that you cannot start some activities until others are finished. These activities need to be completed in a sequence, with each stage being more-or-less completed before the next stage can begin. These are 'sequential' activities.  
  
Other activities are not dependent on completion of any other tasks. You can do these at any time before or after a particular stage is reached. These are non-dependent or 'parallel' tasks.

## Drawing a Critical Path Analysis Chart

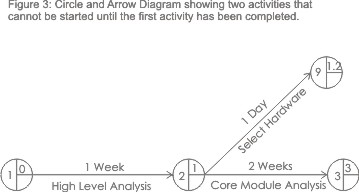
Use the following steps to draw a CPA Chart:  
  
**Step 1. List all activities in the plan**  
For each activity, show the earliest start date, estimated length of time it will take, and whether it is parallel or sequential. If tasks are sequential, show which stage they depend on.  
  
For the project example used here, you will end up with the same task list as explained in the article on Gantt Charts (we will use the same example as with Gantt Charts to compare the two techniques). The chart is repeated in Figure 1 below:  
  
**Figure 1. Task List: Planning a custom-written computer project**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Task** | **Earliest start** | **Length** | **Type** | **Dependent on...** |
| A. High level analysis | Week 0 | 1 week | Sequential |  |
| B. Selection of hardware platform | Week 1 | 1 day | Sequential | A |
| C. Installation and commissioning of hardware | Week 1.2 | 2 weeks | Parallel | B |
| D. Detailed analysis of core modules | Week 1 | 2 weeks | Sequential | A |
| E. Detailed analysis of supporting modules | Week 3 | 2 weeks | Sequential | D |
| F. Programming of core modules | Week 3 | 2 weeks | Sequential | D |
| G. Programming of supporting modules | Week 5 | 3 weeks | Sequential | E |
| H. Quality assurance of core modules | Week 5 | 1 week | Sequential | F |
| I. Quality assurance of supporting modules | Week 8 | 1 week | Sequential | G |
| J.Core module training | Week 6 | 1 day | Parallel | C,H |
| K. Development and QA of accounting reporting | Week 5 | 1 week | Parallel | E |
| L. Development and QA of management reporting | Week 5 | 1 week | Parallel | E |
| M. Development of Management Information System | Week 6 | 1 week | Sequential | L |
| N. Detailed training | Week 9 | 1 week | Sequential | I, J, K, M |

**Step 2. Plot the activities as a circle and arrow diagram**  
Critical Path Analyses are presented using circle and arrow diagrams.  
  
In these, circles show events within the project, such as the start and finish of tasks. The number shown in the left hand half of the circle allows you to identify each one easily. Circles are sometimes known as nodes.  
  
An arrow running between two event circles shows the activity needed to complete that task. A description of the task is written underneath the arrow. The length of the task is shown above it. By convention, all arrows run left to right. Arrows are also sometimes called arcs.  
  
An example of a very simple diagram is shown below:



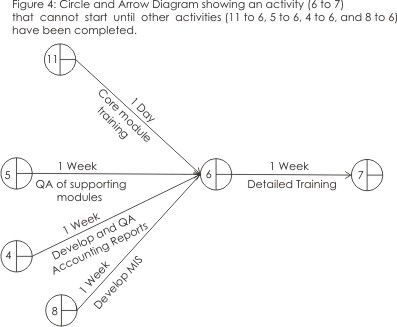
This shows the start event (circle 1), and the completion of the 'High Level Analysis' task (circle 2). The arrow between them shows the activity of carrying out the High Level Analysis. This activity should take 1 week.  
  
Where one activity cannot start until another has been completed, we start the arrow for the dependent activity at the completion event circle of the previous activity. An example of this is shown below:



Here the activities of 'Select Hardware' and 'Core Module Analysis' cannot be started until 'High Level Analysis' has been completed. This diagram also brings out a number of other important points:

* Within Critical Path Analysis, we refer to activities by the numbers in the circles at each end. For example, the task 'Core Module Analysis' would be called activity 2 to 3. 'Select Hardware' would be activity 2 to 9.
* Activities are not drawn to scale. In the diagram above, activities are 1 week long, 2 weeks long, and 1 day long. Arrows in this case are all the same length.
* In the example above, you can see a second number in the top, right hand quadrant of each circle. This shows the **earliest start time** for the following activity. It is conventional to start at 0. Here units are whole weeks.

A different case is shown below:



Here activity 6 to 7 cannot start until the other four activities (11 to 6, 5 to 6, 4 to 6, and 8 to 6) have been completed.  
  
Click the link below for the full circle and arrow diagram for the computer project we are using as an example.

Figure 5: Full Critical Path Diagram

This shows all the activities that will take place as part of the project. Notice that each event circle also has a figure in the bottom, right hand quadrant. This shows the latest finish time that's permissible for the preceding activity if the project is to be completed in the minimum time possible. You can calculate this by starting at the last event and working backwards.The latest finish time of the preceding event and the earliest start time of the following even will be the same for circles on the critical path.  
  
You can see that event M can start any time between weeks 6 and 8. The timing of this event is not critical. Events 1 to 2, 2 to 3, 3 to 4, 4 to 5, 5 to 6 and 6 to 7 must be started and completed on time if the project is to be completed in 10 weeks. This is the 'critical path' – these activities must be very closely managed to ensure that activities are completed on time. If jobs on the critical path slip, immediate action should be taken to get the project back on schedule. Otherwise completion of the whole project will slip.

## 'Crash Action'

You may find that you need to complete a project earlier than your Critical Path Analysis says is possible. In this case you need to re-plan your project.  
  
You have a number of options and would need to assess the impact of each on the project’s cost, quality and time required to complete it. For example, you could increase resource available for each project activity to bring down time spent on each but the impact of some of this would be insignificant and a more efficient way of doing this would be to look only at activities on the critical path.  
  
As an example, it may be necessary to complete the computer project in Figure 5 in 8 weeks rather than 10 weeks. In this case you could look at using two analysts in activities 2 to 3 and 3 to 4. This would shorten the project by two weeks, but may raise the project cost – doubling resources at any stage may only improve productivity by, say, 50% as additional time may need to be spent getting the team members up to speed on what is required, coordinating tasks split between them, integrating their contributions etc.   
  
In some situations, shortening the original critical path of a project can lead to a different series of activities becoming the critical path. For example, if activity 4 to 5 were reduced to 1 week, activities 4 to 8 and 8 to 6 would come onto the critical path.  
  
As with Gantt Charts, in practice project managers use software tools like Microsoft Project to create CPA Charts. Not only do these ease make them easier to draw, they also make modification of plans easier and provide facilities for monitoring progress against plans.

**UNIT V**

**STRATEGIC OR INSTITUTIONAL MANAGEMENT**

**Strategic or institutional management** is the conduct of drafting, implementing and evaluating cross-functional decisions that will enable an organization to achieve its long-term objectives. It is the process of specifying the organization's mission, vision and objectives, developing policies and plans, often in terms of projects and programs, which are designed to achieve these objectives, and then allocating resources to implement the policies and plans, projects and programs. A balanced scorecard is often used to evaluate the overall performance of the business and its progress towards objectives.

Strategic management is a level of managerial activity under setting goals and over Tactics. Strategic management provides overall direction to the enterprise and is closely related to the field of Organization Studies. In the field of business administration it is useful to talk about "strategic alignment" between the organization and its environment or "strategic consistency". According to Arieu (2007), "there is strategic consistency when the actions of an organization are consistent with the expectations of management, and these in turn are with the market and the context."

“Strategic management is an ongoing process that evaluates and controls the business and the industries in which the company is involved; assesses its competitors and sets goals and strategies to meet all existing and potential competitors; and then reassesses each strategy annually or quarterly [i.e. regularly] to determine how it has been implemented and whether it has succeeded or needs replacement by a new strategy to meet changed circumstances, new technology, new competitors, a new economic environment., or a new social, financial, or political environment.”

##### *Strategic Management - An Introduction*

Strategic Management is all about identification and description of the strategies that managers can carry so as to achieve better performance and a competitive advantage for their organization. An organization is said to have competitive advantage if its profitability is higher than the average profitability for all companies in its industry.

Strategic Management is a way in which strategists set the objectives and proceed about attaining them. It deals with making and implementing decisions about future direction of an organization. It helps us to identify the direction in which an organization is moving.

Strategic management is a continuous process that evaluates and controls the business and the industries in which an organization is involved; evaluates its competitors and sets goals and strategies to meet all existing and potential competitors; and then reevaluates strategies on a regular basis to determine how it has been implemented and whether it was successful or does it needs replacement.

Strategic Management gives a broader perspective to the employees of an organization and they can better understand how their job fits into the entire organizational plan and how it is co-related to other organizational members. The employees become more trustworthy, more committed and more satisfied as they can co-relate themselves very well with each organizational task. They can understand the reaction of environmental changes on the organization and the probable response of the organization with the help of strategic management. Thus the employees can judge the impact of such changes on their own job and can effectively face the changes.

**MISSION**

A **mission statement** is a formal short written statement of the purpose of a company or organization. The mission statement should guide the actions of the organization, spell out its overall goal, provide a sense of direction, and guide decision-making. It provides "the framework or context within which the company’s strategies are formulated."

Contents of Mission statement

Mission statements often contain the following:

* Purpose and aim of the organization
* The organization's primary stakeholders: clients, stockholders, congregation, etc.
* Responsibilities of the organization toward these stakeholders
* Products and services offered

According to Hill, the mission statement consists of: 1. a statement containing the reason for the existence of the organization (mission) 2. a statement of some desired future state (vision) 3. a statement of the key values the organization is committed to 4. a statement of major goals

The mission statement can be used to resolve differences between business stakeholders. Stakeholders include: employees including managers and executives, stockholders, board of directors, customers, suppliers, distributors, creditors, governments (local, state, federal, etc.), unions, competitors, NGO's, and the general public. Stakeholders affect and are affected by the organization's strategies. According to Vern McGinis, a mission should:

Define what the company is

Define what the company aspires to be

Limited to exclude some ventures

Broad enough to allow for creative growth

Distinguish the company from all others

Serve as framework to evaluate current activities

Stated clearly so that it is understood by all

Mission of the company communicates the firm´s core ideology and visionary goals. It should contain the company´s core values, core purpose and visionary goals. While the visionary goals are selected the core values and purpose of the firms should be discovered. Values and purpose are in the company already, the mission just describes them. In that case, the stakeholders are more likely to believe in company´s mission

**GOALS**

Setting Goals and Objectives

The difference between where we are (current status) and where we want to be (vision and goals) is what we do (target objectives and action plans).e

As this statement shows, setting goals and objectives builds on the previous steps of visioning and taking stock. Goals are simply a clearer statement of the visions, specifying the accomplishments to be achieved if the vision is to become real. The target objectives are clearer statements of the specific activities required to achieve the goals, starting from the current status.

At this point, strategic planning begins to produce lots of ideas and action steps. A common practice for keeping individual workloads to a manageable level is to delegate different topics to different teams. For example, there could be a curriculum team, a facilities team, a budgeting team, etc. A useful tool for keeping track of ideas and seeing how they relate to each other is the affinity diagram.

**The Affinity Diagram**

The affinity diagram is a general planning tool. It is a creative process that helps you to identify and gather large amounts of information, ideas, opinions, or issues and organize them in a relatively short amount of time.

A finished affinity diagram looks like the picture below:

|  |  |  |
| --- | --- | --- |
| **Theme** | Community Involvement | Ongoing Tech Support |
| **Idea** | Tech Use Survey | One professional/building |
| **Idea** | Open House | Students as Tech Support |
| **Idea** | Include Community Members in Teams | Regular Professional Development Using Tech |

The affinity diagram is used when:

* You need to sift through large volumes of information.
* You want new patterns of information to rise to the surface.
* Issues seem too large or complex to grasp.

**POLICY**

Policy setting

Effective policies provide the framework for education in a district. This section provides information on policy setting in relationship to technology and change implementation.

Policy development

Clear technology policy statements can help eliminate confusion and pave the way for instructional reform. Such statements guide district administrators in developing guidelines that allow school personnel to acquire and use technology in efficient and effective ways. As for any district policy, technology policies relate to basic issues:

* The basic ideas, values, and beliefs at the core of the district’s reason for existence;
* Students and the instructional program;
* Personnel and administrative matters; and
* Facilities, equipment, and materials.

This section provides guidance on policy development that incorporates these considerations.

Policy Development Steps

Use the following steps for defining your policies.

**Step One: Define the Issue or Problem**

The process of policy development begins with recognizing the need for written policy. Often a board or superintendent faces a decision that would be easier to make if a policy existed.

The board is not alone in identifying policy needs. Parents, students, teachers, local taxpayers, the superintendent, the state or federal government, and pressure groups are all sources of policy issues and problems.

**Step Two: Gather Necessary Information on the Issue**

Bullet8Sample policy language and analysis from your state association and NSBA

Bullet8Experience from other districts

Bullet8Education research

Bullet8Local input

Bullet8State association seminars

Bullet8State or federal laws and regulations

**Step Three: Secure Recommendations from Superintendent**

Once facts are available, the board listens to recommendations for handling the policy issue. The superintendent is often changed with recommending policy action, since he/she is the one responsible for carrying out the policy.

**Step Four: Discuss and Debate at the Board Level (**include input of affected parties)

* Is the content within the scope of the board’s authority?
* Is it consistent with local, state, and federal law? The U.S. and the state’s constitution?
* Does it support the school district’s goals or objectives?
* Is it good educational (personnel, business) practice?
* Is it reasonable? (Are any requirements or prohibitions arbitrary, discriminatory or capricious?)
* Does it adequately cover the subject?
* Is it limited to one policy topic?
* Is it consistent with board’s existing policies?
* Can it be administered? Is it practical? How much will it cost?

**Step Five: Draft Policy**

After the board has reached consensus on policy content, the board’s policy writer goes to work. This person must be able to write clearly, directly, and succinctly. Pomposity, verbosity, educational jargon, and "legalese" should be avoided unless necessary to meet legal requirements. Policy must be broadly stated with room for adjustment to fit special circumstances.

**Step Six: Hold First Reading**

Once in writing, the policy draft is placed on the board’s agenda for a first reading, giving notice to everyone interested that the board has a specific policy under consideration. At this time the board has the opportunity for preliminary discussion of the proposed policy and, if it chooses, may hold a public hearing. This is recommended for important or controversial draft policies.

**Step Seven: Make Revisions**

Revise the policy based on the information gained form the questions, comments and suggestions obtained after the first reading.

**Step Eight: Hold Second Reading**

The period between the first and second reading allows time for all concerned persons to ask questions, make comments, and offer suggestions for changes and improvements. A second public hearing may also be held.

**Step Nine: Adopt the Policy**

**Step Ten: Distribute to the Public**

Seeing the policies are distributed as widely as possible is one way to ensure implementation.

**Step Eleven: Oversee Policy Implementation**

Policy oversight is a dynamic process that includes an evaluative component. Oversight is intended to make sure that the policy accomplishes its goal. Policy oversight can provide guidance on whether to continue or modify the policy and to determine future courses of action.

**Step Twelve: Policy Evaluation and Revision or Modification**

Policies should be reviewed on a regular basis as a part of the board’s standard operating principles. They can become out of date, unclear, or even contrary to the way in which the school district is operating. When any of this occurs the policy needs modification or elimination. The policy amendment process is the same as the policy adoption process. The board sets policy and the superintendent implements the policy and manages the schools within the guidelines set forth in board policy. In the absence of policy, the superintendent must use his/her own judgment

The Difference  
between goals and objectives

Goals are broad objectives are narrow.  
Goals are general intentions; objectives are precise.  
Goals are intangible; objectives are tangible.   
Goals are abstract; objectives are concrete.  
Goals can't be validated as is; objectives can be validated.

**Strategy**

The word “strategy” is derived from the Greek word “stratçgos”; stratus (meaning army) and “ago” (meaning leading/moving).

**Strategy** is an action that managers take to attain one or more of the organization’s goals. Strategy can also be defined as “A general direction set for the company and its various components to achieve a desired state in the future. Strategy results from the detailed strategic planning process”.

A strategy is all about integrating organizational activities and utilizing and allocating the scarce resources within the organizational environment so as to meet the present objectives. While planning a strategy it is essential to consider that decisions are not taken in a vaccum and that any act taken by a firm is likely to be met by a reaction from those affected, competitors, customers, employees or suppliers.

Strategy can also be defined as knowledge of the goals, the uncertainty of events and the need to take into consideration the likely or actual behavior of others. Strategy is the blueprint of decisions in an organization that shows its objectives and goals, reduces the key policies, and plans for achieving these goals, and defines the business the company is to carry on, the type of economic and human organization it wants to be, and the contribution it plans to make to its shareholders, customers and society at large.

##### *Features of Strategy*

1. Strategy is Significant because it is not possible to foresee the future. Without a perfect foresight, the firms must be ready to deal with the uncertain events which constitute the business environment.
2. Strategy deals with long term developments rather than routine operations, i.e. it deals with probability of innovations or new products, new methods of productions, or new markets to be developed in future.
3. Strategy is created to take into account the probable behavior of customers and competitors. Strategies dealing with employees will predict the employee behavior.

Strategy is a well defined roadmap of an organization. It defines the overall mission, vision and direction of an organization. The objective of a strategy is to maximize an organization’s strengths and to minimize the strengths of the competitors.

Strategy, in short, bridges the gap between “where we are” and “where we want to be”.

# Components of a Strategy Statement

he strategy statement of a firm sets the firm’s long-term strategic direction and broad policy directions. It gives the firm a clear sense of direction and a blueprint for the firm’s activities for the upcoming years. The main constituents of a strategic statement are as follows:

##### Strategic Intent

An organization’s strategic intent is the purpose that it exists and why it will continue to exist, providing it maintains a competitive advantage. Strategic intent gives a picture about what an organization must get into immediately in order to achieve the company’s vision. It motivates the people. It clarifies the vision of the vision of the company. Strategic intent helps management to emphasize and concentrate on the priorities. Strategic intent is ,nothing but, the influencing of an organization’s resource potential and core competencies to achieve what at first may seem to be unachievable goals in the competitive environment. A well expressed strategic intent should guide/steer the development of strategic intent or the setting of goals and objectives that require that all of organization’s competencies be controlled to maximum value. Strategic intent includes directing organization’s attention on the need of winning; inspiring people by telling them that the targets are valuable; encouraging individual and team participation as well as contribution; and utilizing intent to direct allocation of resources. Strategic intent differs from strategic fit in a way that while strategic fit deals with harmonizing available resources and potentials to the external environment, strategic intent emphasizes on building new resources and potentials so as to create and exploit future opportunities.

##### Mission Statement

Mission statement is the statement of the role by which an organization intends to serve it’s stakeholders. It describes why an organization is operating and thus provides a framework within which strategies are formulated. It describes what the organization does (i.e., present capabilities), who all it serves (i.e., stakeholders) and what makes an organization unique (i.e., reason for existence). A mission statement differentiates an organization from others by explaining its broad scope of activities, its products, and technologies it uses to achieve its goals and objectives. It talks about an organization’s present (i.e., “about where we are”).For instance, **Microsoft’s mission** is to help people and businesses throughout the world to realize their full potential. **Wal-Mart’s mission** is “To give ordinary folk the chance to buy the same thing as rich people.” Mission statements always exist at top level of an organization, but may also be made for various organizational levels. Chief executive plays a significant role in formulation of mission statement. Once the mission statement is formulated, it serves the organization in long run, but it may become ambiguous with organizational growth and innovations. In today’s dynamic and competitive environment, mission may need to be redefined. However, care must be taken that the redefined mission statement should have original fundamentals/components. Mission statement has three main components-a statement of mission or vision of the company, a statement of the core values that shape the acts and behaviour of the employees, and a statement of the goals and objectives.

##### Features of a Mission

* 1. Mission must be **feasible** and attainable. It should be possible to achieve it.
  2. Mission should be **clear** enough so that any action can be taken.
  3. It should be **inspiring** for the management, staff and society at large.
  4. It should be **precise** enough, i.e., it should be neither too broad nor too narrow.
  5. It should be **unique** and distinctive to leave an impact in everyone’s mind.
  6. It should be **analytical**,i.e., it should analyze the key components of the strategy.
  7. It should be **credible**, i.e., all stakeholders should be able to believe it.

##### Vision

A vision statement identifies where the organization wants or intends to be in future or where it should be to best meet the needs of the stakeholders. It describes dreams and aspirations for future. For instance, **Microsoft’s vision** is “to empower people through great software, any time, any place, or any device.” **Wal-Mart’s vision** is to become worldwide leader in retailing. A vision is the potential to view things ahead of themselves. It answers the question “where we want to be”. It gives us a reminder about what we attempt to develop. A vision statement is for the organization and it’s members, unlike the mission statement which is for the customers/clients. It contributes in effective decision making as well as effective business planning. It incorporates a shared understanding about the nature and aim of the organization and utilizes this understanding to direct and guide the organization towards a better purpose. It describes that on achieving the mission, how the organizational future would appear to be.

An effective vision statement must have following features-

* 1. It must be **unambiguous**.
  2. It must be **clear**.
  3. It must **harmonize** with organization’s culture and values.
  4. The dreams and aspirations must be **rational/realistic**.
  5. Vision statements should be **shorter** so that they are easier to memorize.

In order to realize the vision, it must be deeply instilled in the organization, being owned and shared by everyone involved in the organization.

##### Goals and objectives

A goal is a desired future state or objective that an organization tries to achieve. Goals specify in particular what must be done if an organization is to attain mission or vision. Goals make mission more prominent and concrete. They co-ordinate and integrate various functional and departmental areas in an organization. Well made goals have following features-

* 1. These are **precise and measurable**.
  2. These look after **critical and significant** issues.
  3. These are **realistic** and challenging.
  4. These must be achieved within a **specific time** frame.
  5. These include both **financial as well as non-financial components**.

Objectives are defined as goals that organization wants to achieve over a period of time. These are the foundation of planning. Policies are developed in an organization so as to achieve these objectives. Formulation of objectives is the task of top level management. Effective objectives have following features-

* 1. These are not single for an organization, but **multiple**.
  2. Objectives should be both **short-term as well as long–term**.
  3. Objectives must respond and react to changes in environment, i.e., they must be **flexible**.
  4. These must be feasible, **realistic and operational**.

# Strategic Decisions

Strategic decisions are the decisions that are concerned with whole environment in which the firm operates, the entire resources and the people who form the company and the interface between the two.

##### Characteristics/Features of Strategic Decisions

1. Strategic decisions have major resource propositions for an organization. These decisions may be concerned with possessing new resources, organizing others or reallocating others.
2. Strategic decisions deal with harmonizing organizational resource capabilities with the threats and opportunities.
3. Strategic decisions deal with the range of organizational activities. It is all about what they want the organization to be like and to be about.
4. Strategic decisions involve a change of major kind since an organization operates in ever-changing environment.
5. Strategic decisions are complex in nature.
6. Strategic decisions are at the top most level, are uncertain as they deal with the future, and involve a lot of risk.
7. Strategic decisions are different from administrative and operational decisions. Administrative decisions are routine decisions which help or rather facilitate strategic decisions or operational decisions. Operational decisions are technical decisions which help execution of strategic decisions. To reduce cost is a strategic decision which is achieved through operational decision of reducing the number of employees and how we carry out these reductions will be administrative decision.

The differences between Strategic, Administrative and Operational decisions can be summarized as follows-

|  |  |  |
| --- | --- | --- |
| **Strategic Decisions** | **Administrative Decisions** | **Operational Decisions** |
| Strategic decisions are long-term decisions. | Administrative decisions are taken daily. | Operational decisions are not frequently taken. |
| These are considered where The future planning is concerned. | These are short-term based Decisions. | These are medium-period based decisions. |
| Strategic decisions are taken in Accordance with organizational mission and vision. | These are taken according to strategic and operational Decisions. | These are taken in accordance with strategic and administrative decision. |
| These are related to overall Counter planning of all Organization. | These are related to working of employees in an Organization. | These are related to production. |
| These deal with organizational Growth. | These are in welfare of employees working in an organization. | These are related to production and factory growth. |

Strategy is the ***direction*** and ***scope*** of an organisation over the ***long-term:*** which achieves ***advantage*** for the organisation through its configuration of ***resources*** within a challenging ***environment***, to meet the needs of ***markets*** and to fulfil ***stakeholder*** expectations".

In other words, strategy is about:

|  |
| --- |
| \* Where is the business trying to get to in the long-term (**direction)** |
| \* Which markets should a business compete in and what kind of activities are involved in such markets? (**markets**; **scope**) |
| \* How can the business perform better than the competition in those markets? (**advantage**)? |
| \* What resources (skills, assets, finance, relationships, technical competence, facilities) are required in order to be able to compete? (**resources**)? |
| \* What external, environmental factors affect the businesses' ability to compete? (**environment**)? |
| \* What are the values and expectations of those who have power in and around the business? (**stakeholders)** |

**Strategy at Different Levels of a Business**

Strategies exist at several levels in any organisation - ranging from the overall business (or group of businesses) through to individuals working in it.

***Corporate Strategy*** - is concerned with the overall purpose and scope of the business to meet stakeholder expectations. This is a crucial level since it is heavily influenced by investors in the business and acts to guide strategic decision-making throughout the business. Corporate strategy is often stated explicitly in a "mission statement".

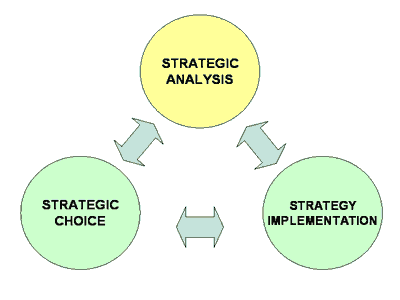
***Business Unit Strategy*** - is concerned more with how a business competes successfully in a particular market. It concerns strategic decisions about choice of products, meeting needs of customers, gaining advantage over competitors, exploiting or creating new opportunities etc.

***Operational Strategy*** - is concerned with how each part of the business is organised to deliver the corporate and business-unit level strategic direction. Operational strategy therefore focuses on issues of resources, processes, people etc.

**How Strategy is Managed - Strategic Management**

In its broadest sense, strategic management is about taking "strategic decisions" - decisions that answer the questions above.

In practice, a thorough strategic management process has three main components, shown in the figure below:



**Strategic Analysis**

This is all about the analysing the strength of businesses' position and understanding the important external factors that may influence that position. The process of Strategic Analysis can be assisted by a number of tools, including:

**Strategic Choice**

This process involves understanding the nature of stakeholder expectations (the "ground rules"), identifying strategic options, and then evaluating and selecting strategic options.

**Strategy Implementation**

Often the hardest part. When a strategy has been analysed and selected, the task is then to translate it into organisational action.

**SWOT Analysis**

**Definition:**

SWOT is an abbreviation for **Strengths, Weaknesses, Opportunities and Threats**

SWOT analysis is an important tool for auditing the overall strategic position of a business and its environment.

Once key strategic issues have been identified, they feed into business objectives, particularly marketing objectives. SWOT analysis can be used in conjunction with other tools for audit and analysis, such as [PEST analysis](http://www.tutor2u.net/business/strategy/PEST_analysis.htm) and [Porter's Five-Forces analysis](http://www.tutor2u.net/business/strategy/porter_five_forces.htm). It is also a very popular tool with business and marketing students because it is quick and easy to learn.

**The Key Distinction - Internal and External Issues**

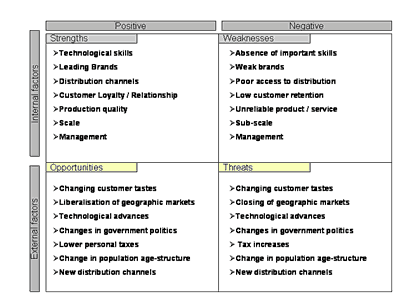
***Strengths and weaknesses are Internal factors.*** For example, a strength could be your specialist marketing expertise. A weakness could be the lack of a new product.

***Opportunities and threats are external factors.*** For example, an opportunity could be a developing distribution channel such as the Internet, or changing consumer lifestyles that potentially increase demand for a company's products. A threat could be a new competitor in an important existing market or a technological change that makes existing products potentially obsolete.

it is worth pointing out that SWOT analysis can be very subjective - two people rarely come-up with the same version of a SWOT analysis even when given the same information about the same business and its environment. Accordingly, SWOT analysis is best used as a guide and not a prescription. Adding and weighting criteria to each factor increases the validity of the analysis.

**Areas to Consider**

Some of the key areas to consider when identifying and evaluating Strengths, Weaknesses, Opportunities and Threats are listed in the example SWOT analysis below:



 Programmers

Traditional Project Management approaches tend to look at a project as a discrete entity having its own set of resources (the budget and project team) and producing its own set of deliverables that deliver benefit to the organisation. In a complex organisation such as a college or university rarely is any project completely self-contained. Even a relatively simple IT application is likely to require interfaces to other systems and most of our activities impact on a diverse range of stakeholder groups. Large organisations such as ours also tend to have hundreds of individual projects running at the same time and many find themselves at the mercy of inter-departmental competition for resources. The principles behind Programme Management will help you to manage in this complex environment.

Programme Management is a means of organising a range of projects. Just to make matters confusing you will often see Programme Management described as a means of organising a portfolio of projects. JISC infoNet uses the term Portfolio Management to describe the next stage up the hierarchy i.e. managing a portfolio of programmes. Our brand describes how projects, programmes and portfolios interrelate.

Programme Management enables resources to be shared across projects, thus reducing the problems faced by individual Project Managers and recognises the dependencies that exist between projects. It provides a framework for senior management engagement and, with a focus on benefits, can deliver a sum greater than the outputs of individual projects. Programme Management relates also to the process of business change - you can find further discussion in our Change Management infoKit.

Programme Management is normally a top-down approach. A programme should take forward the strategy of the organisation. It should be formed around a single strategic objective of the organisation (even though it may have benefits for another). Aligning the programme with a single main objective should help to ensure that it is possible to identify a single owner - this is considered further under Key Roles.

As an example, to achieve a strategic objective of offering Value for Money, projects may be started to:

* implement a new information system to increase efficiency in administration
* set up a new team to co-ordinate Business and Community Engagement activities
* build a new library to replace an existing outdated and inadequate library space

These seemingly unconnected projects can all contribute to the strategic aim of the programme.

Alternatively when adding a new building to a campus there are likely to be projects that have a clearer relationship:

* clearing the site, which may include some demolition
* infrastructure (roadways, pathways, services)
* construction
* furniture and equipment

It is possible to call these either a programme or a single project and for all practical purposes it may not matter as long as everyone is in agreement about the terminology. However, as a general rule, programmes are about co-ordinating and organising. Programmes are generally more complex than projects, are concerned with longer timescales and have a wider scope. A programme has focus on achievement of benefits whereas projects focus on outputs.

A project to implement a new VLE might have a technical and procurement focus, ending with the handover of a working system. A programme to implement a new VLE will include both that project and ongoing projects to develop skills, content, innovation and to handle any change in working practices.

**Projects versus Programmes**

|  |  |
| --- | --- |
| **Projects Feature** | **Programmes Feature** |
| * Outputs * Closely bounded and scoped deliverables * Benefits after closure | * Outcomes * Wider strategic benefits * Complex relationships * Benefits during and after * Benefits management * Transition to a new state |

|  |
| --- |
| **SWOT is an acronym for Strengths, Weaknesses, Opportunities and Threats**. By definition, Strengths (S) and Weaknesses (W) are considered to be internal factors over which you have some measure of control. Also, by definition, Opportunities (O) and Threats (T) are considered to be external factors over which you have essentially no control.  **SWOT Analysis** is the most renowned tool for audit and analysis of the overall strategic position of the business and its environment. Its key purpose is to identify the strategies that will create a firm specific business model that will best align an organization’s resources and capabilities to the requirements of the environment in which the firm operates. In other words, it is the foundation for evaluating the internal potential and limitations and the probable/likely opportunities and threats from the external environment. It views all positive and negative factors inside and outside the firm that affect the success. A consistent study of the environment in which the firm operates helps in forecasting/predicting the changing trends and also helps in including them in the decision-making process of the organization. |

An overview of the four factors (Strengths, Weaknesses, Opportunities and Threats) is given below-

1. **Strengths-** Strengths are the qualities that enable us to accomplish the organization’s mission. These are the basis on which continued success can be made and continued/sustained. Strengths can be either tangible or intangible. These are what you are well-versed in or what you have expertise in, the traits and qualities your employees possess (individually and as a team) and the distinct features that give your organization its consistency. Strengths are the beneficial aspects of the organization or the capabilities of an organization, which includes human competencies, process capabilities, financial resources, products and services, customer goodwill and brand loyalty. Examples of organizational strengths are huge financial resources, broad product line, no debt, committed employees, etc.
2. **Weaknesses-** Weaknesses are the qualities that prevent us from accomplishing our mission and achieving our full potential. These weaknesses deteriorate influences on the organizational success and growth. Weaknesses are the factors which do not meet the standards we feel they should meet. Weaknesses in an organization may be depreciating machinery, insufficient research and development facilities, narrow product range, poor decision-making, etc. Weaknesses are controllable. They must be minimized and eliminated. For instance - to overcome obsolete machinery, new machinery can be purchased. Other examples of organizational weaknesses are huge debts, high employee turnover, complex decision making process, narrow product range, large wastage of raw materials, etc.
3. **Opportunities-** Opportunities are presented by the environment within which our organization operates. These arise when an organization can take benefit of conditions in its environment to plan and execute strategies that enable it to become more profitable. Organizations can gain competitive advantage by making use of opportunities. Organization should be careful and recognize the opportunities and grasp them whenever they arise. Selecting the targets that will best serve the clients while getting desired results is a difficult task. Opportunities may arise from market, competition, industry/government and technology. Increasing demand for telecommunications accompanied by deregulation is a great opportunity for new firms to enter telecom sector and compete with existing firms for revenue.
4. **Threats-** Threats arise when conditions in external environment jeopardize the reliability and profitability of the organization’s business. They compound the vulnerability when they relate to the weaknesses. Threats are uncontrollable. When a threat comes, the stability and survival can be at stake. Examples of threats are - unrest among employees; ever changing technology; increasing competition leading to excess capacity, price wars and reducing industry profits; etc.

##### *Advantages of SWOT Analysis*

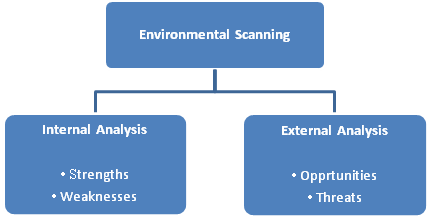
SWOT Analysis is instrumental in strategy formulation and selection. It is a strong tool, but it involves a great subjective element. It is best when used as a guide, and not as a prescription. Successful businesses build on their strengths, correct their weakness and protect against internal weaknesses and external threats. They also keep a watch on their overall business environment and recognize and exploit new opportunities faster than its competitors.

SWOT Analysis helps in strategic planning in following manner-

1. It is a source of information for strategic planning.
2. Builds organization’s strengths.
3. Reverse its weaknesses.
4. Maximize its response to opportunities.
5. Overcome organization’s threats.
6. It helps in identifying core competencies of the firm.
7. It helps in setting of objectives for strategic planning.
8. It helps in knowing past, present and future so that by using past and current data, future plans can be chalked out.

SWOT Analysis provide information that helps in synchronizing the firm’s resources and capabilities with the competitive environment in which the firm operates.

**SWOT ANALYSIS FRAMEWORK**



##### *Limitations of SWOT Analysis*

SWOT Analysis is not free from its limitations. It may cause organizations to view circumstances as very simple because of which the organizations might overlook certain key strategic contact which may occur. Moreover, categorizing aspects as strengths, weaknesses, opportunities and threats might be very subjective as there is great degree of uncertainty in market. SWOT Analysis does stress upon the significance of these four aspects, but it does not tell how an organization can identify these aspects for itself.

There are certain limitations of SWOT Analysis which are not in control of management. These include-

1. Price increase;
2. Inputs/raw materials;
3. Government legislation;
4. Economic environment;
5. Searching a new market for the product which is not having overseas market due to import restrictions; etc.

Internal limitations may include-

1. Insufficient research and development facilities;
2. Faulty products due to poor quality control;
3. Poor industrial relations;
4. Lack of skilled and efficient labour; etc

**Corporate Planning**

* The process of drawing up detailed action plans to achieve an organization's goals and objectives, taking into account the resources of the organization and the environment within which it operates. Corporate planning represents a formal, structured approach to achieving objectives and to implementing the corporate strategy of an organization. It has traditionally been seen as the responsibility of senior management. The use of the term became predominant during the 1960s but has now been largely superseded by the concept of strategic management.
* Corporate planning often ends with a hastily prepared business plan, prepared to satisfy debt or equity funding sources.  While a plan prepared in such a way may meet it's immediate objectives, it is near worthless as a sound operations planning tool.  What is real corporate planning and how is it done?  
    
  A corporate planning process is described below.  It is not the only viable method of corporate planning.  But it does serve to outline the steps necessary to a good corporate plan.  The key to success here, is not only the planning process, but also the successful implementation of the plan.  It must be supported, monitored, and modified where necessary in order to be effective.

**What Corporate Planning is NOT:**

* The creation and production of a business plan
* A manufacturing or production plan
* A program Gantt chart or program schedule
* A budget created exclusively from the top-down

A true corporate plan includes all of the above.  But as the following process example illustrates, it is a sequential process, it is a comprehensive process and it is an ongoing process which needs to be managed.

**What Corporate Planning Is**

***Phase I - Strategic Planning***The Strategic planning phase begins the corporate planning process.  This is the planning phase in which all management come to an agreement as to the mission statement of the company.  Then more detailed strategic plans are created which deal with market targets, product development issues and competitive issues.  Corporate strengths and weaknesses are discussed and plans are made to shore up weaknesses and to continue to strengthen competitive strengths.  The customer receives a good bit of focus and definition during this phase as well.  
  
Once the corporate strategic plan is complete, the department strategic planning can begin.  Department management can now work jointly to prepare their best implementation of the corporate strategic plan within their own departments.  This planning process can work very rapidly into operations planning at the department level.  
  
***Phase II - Operations Planning***This phase begins with management setting objectives within their individual departments which would ensure that the company can meet the strategic objectives set out for the year.  Then, with the assistance of a financial modeler, a corporate operations plan is prepared which will integrate and orchestrate all of the resources needed to meet the individual department objectives.  
  
***Phase III - Feedback and Control***No planning is ever complete unless it puts measurable standards into effect, and then compares those standards against actual performance and actively reviews and manages the variances accordingly.  Standards measurement includes budget to actual expenditure comparisons on a monthly basis, milestone performance measurements, market research results, questioning and interviewing.  
  
These phases must all be done to some degree, and they must be completed in the order given to maximize their impact to the company.

**Regarding Outside Assistance :**It is not always necessary to contract with a corporate planning consultant to accomplish this process.  Alternatively, it can be very beneficial to employ outside counsel in developing your corporate plan.  It is most important that a process is in place and is being continually improved upon.  How you get the process going and how it is directed is entirely at the discretion of corporate management.  
  
A good corporate planning consultant can provide a framework or structure, oversight, or management of part or all of the process.  The comprehensive modeling of the corporate plan is often best left to a consultant who has the software tools to prepare a comprehensive corporate operating plan and model the financial impact of the plan for the next two years.  Having the tools available will save an enormous amount of time for an internal financial analyst.

**Every Company is Different:**Corporate planning must be a process personalized to the company.  I have never been able to recommend the same template for every client with whom I have worked.  Corporate cultures and personalities vary considerably. Corporate strengths and weaknesses vary considerably.  Accordingly, the planning process and its implementation must vary as well.  
  
In summary, a company without a comprehensive corporate plan is wandering aimlessly.  It is imperative that the company have a plan in place, particularly if the company is growing or moving onto another field of endeavor.  Regarding the implementation process, Nike said it best in their advertising campaign of some years ago, "Just Do It".  Don't wait.  Do it now.  Stockholders want to see a management team who has vision and who knows how to implement and control this vision.

Process of Corporate Planning

## Establishing Mission and Objectives

1. Corporate planning is an important and vital business process. Under this, the organization's top management sits down to formulate policies and strategies and communicate them downward for implementation.   
     
   This process of corporate planning entails preparing the company's mission, goals and objectives. Any organization's mission statement clearly elucidates its purpose of existence. Through this, the organization projects a corporate image to the customers and provides direction for the employees.   
     
   Once the mission statement is prepared, the organization next chalks out its objectives. These are tangible and measurable targets the organization is aiming to achieve. With these measurable targets, the organization can monitor growth and make necessary corrections.

## Situation Analysis

1. After the establishment of objectives, the organization devises a plan to reach those in accordance to its current situation. The changes in the environment provide newer ways to reach them. The organization conducts an environmental scan to assess available opportunities and identify its limitations and capabilities.   
     
   Two types of environmental analysis are usually conducted by organizations: external and internal. External analysis comprises macro and micro aspects.   
     
   Macro environment analysis consists of analyzing political, economic, social and technological aspects. Micro environment analysis is the study of the industry in which the firm operates or is considering operating in.   
     
   Internal analysis is analyzing the organization's culture, structure, image, capacity, resources and access of key staff. Also the organization's position on the experience curve is calculated. The operational efficiency and capacity are measured. The firm's patents, market share, finances and contracts are studied.  
     
   With the external and internal analysis, the organization can conduct a SWOT analysis. This is analyzing the strengths and weaknesses (internal environment analysis) and analyzing the opportunities and threats (external environment analysis).

## Strategy Formulation and Implementation

1. After analysis of the firm and the environment in which it operates, the strategies are then formulated. Three generic strategies that are considered while formulating strategy are cost leadership, differentiation and focus. Only one of the three should be used for any product.   
     
   Then the formulated strategy is implemented. It is then translated into elaborate policies for everyone in the organization to understand. The functional areas for which policies are made are marketing, R&D (research and development), procurement, production, HR (Human Resources) and IS (Information Systems).

## Control

1. The implemented strategies are continuously considered and appraised. Modifications are made from time to time to avoid deviations on the plan. The standards of performance are set, performance is monitored and necessary action is taken to guarantee success.

**Environmental Scanning**

**Environmental scanning** is a process of gathering, analyzing, and dispensing information for tactical or strategic purposes. The environmental scanning process entails obtaining both factual and subjective information on the business environments in which a company is operating or considering entering.

There are three ways of scanning the business environment:

* Ad-hoc scanning - Short term, infrequent examinations usually initiated by a crisis
* Regular scanning - Studies done on a regular schedule (e.g. once a year)
* Continuous scanning (also called continuous learning) - continuous structured data collection and processing on a broad range of environmental factors

Most commentators feel that in today's turbulent business environment the best scanning method available is continuous scanning because this allows the firm to act quickly, take advantage of opportunities before competitors do and respond to environmental threats before significant damage is done.

Macro environment

Environmental scanning usually refers just to the macro environment, but it can also include industry, competitor analysis, marketing research (consumer analysis), new product development (product innovations) or the company's internal environment.

Macro environmental scanning involves analysing:

### Economy

* GDP per capita
* economic growth
* unemployment]] rate
* inflation]] rate
* consumer and investor confidence
* inventory levels
* currency exchange rates
* merchandise trade balance
* financial and political health of trading partners
* balance of payments
* future trends

### Government

* political climate - amount of government activity
* political stability and risk
* government debt
* budget deficit or surplus
* corporate and personal tax rates
* payroll taxes
* import tariffs and quotas
* export restrictions
* restrictions on international financial flows

### Legal

* minimum wage laws
* environmental protection laws
* worker safety laws
* union laws
* copyright and patent laws
* anti- monopoly laws
* Sunday closing laws
* municipal licences
* laws that favour business investment

### Technology

* efficiency of infrastructure, including: roads, ports, airports, rolling stock, hospitals, education, healthcare, communication, etc.
* industrial productivity
* new manufacturing processes
* new products and services of competitors
* new products and services of supply chain partners
* any new technology that could impact the company
* cost and accessibility of electrical power

### Ecology

* ecological concerns that affect the firms production processes
* ecological concerns that affect customers' buying habits
* ecological concerns that affect customers' perception of the company or product

### Socio-cultural

* demographic factors such as:
  + population size and distribution
  + age distribution
  + education levels
  + income levels
  + ethnic origins
  + religious affiliations
* attitudes towards:
  + materialism, capitalism, free enterprise
  + individualism, role of family, role of government, collectivism
  + role of church and religion
  + consumerism
  + environmentalism
  + importance of work, pride of accomplishment
* cultural structures including:
  + diet and nutrition
  + housing conditions

### Potential suppliers

* Labour supply
  + quantity of labour available
  + quality of labour available
  + stability of labour supply
  + wage expectations
  + employee turn-over rate
  + strikes and labour relations
  + educational facilities
* Material suppliers
  + quality, quantity, price, and stability of material inputs
  + delivery delays
  + proximity of bulky or heavy material inputs
  + level of competition among suppliers
* Service providers
  + quantity, quality, price, and stability of service facilitators
  + special requirements

### Stakeholders

* Lobbyists
* Shareholders
* Employees
* Partners

Scanning these macro environmental variables for threats and opportunities requires that each issue be rated on two dimensions. It must be rated on its potential impact on the company, and rated on its likeliness of occurrence. Multiplying the potential impact parameter by the likeliness of occurrence parameter gives a good indication of its importance to the firm.

**Value chain analysis**

Value Chain Analysis describes the activities that take place in a business and relates them to an analysis of the competitive strength of the business. Influential work by Michael Porter suggested that the activities of a business could be grouped under two headings:

(1) **Primary Activities** - those that are directly concerned with creating and delivering a product (e.g. component assembly); and

(2) **Support Activities**, which whilst they are not directly involved in production, may increase effectiveness or efficiency (e.g. human resource management). It is rare for a business to undertake all primary and support activities.

Value Chain Analysis is one way of identifying which activities are best undertaken by a business and which are best provided by others ("out sourced").

**Linking Value Chain Analysis to Competitive Advantage**

What activities a business undertakes is directly linked to achieving competitive advantage. For example, a business which wishes to outperform its competitors through **differentiating** itself through higher quality will have to perform its value chain activities better than the opposition. By contrast, a strategy based on seeking **cost leadership** will require a reduction in the costs associated with the value chain activities, or a reduction in the total amount of resources used.

**Primary Activities**

Primary value chain activities include:

|  |  |
| --- | --- |
| **Primary Activity** | **Description** |
| ***Inbound logistics*** | All those activities concerned with receiving and storing externally sourced materials |
| ***Operations*** | The manufacture of products and services - the way in which resource **inputs** (e.g. materials) are converted to **outputs** (e.g. products) |
| ***Outbound logistics*** | All those activities associated with getting finished goods and services to buyers |
| ***Marketing and sales*** | Essentially an information activity - informing buyers and consumers about products and services (benefits, use, price etc.) |
| ***Service*** | All those activities associated with maintaining product performance after the product has been sold |

**Support Activities**

Support activities include:

|  |  |
| --- | --- |
| **Secondary Activity** | **Description** |
| ***Procurement*** | This concerns how resources are acquired for a business (e.g. sourcing and negotiating with materials suppliers) |
| ***Human Resource Management*** | Those activities concerned with recruiting, developing, motivating and rewarding the workforce of a business |
| ***Technology Development*** | Activities concerned with managing information processing and the development and protection of "knowledge" in a business |
| ***Infrastructure*** | Concerned with a wide range of support systems and functions such as finance, planning, quality control and general senior management |

**Steps in Value Chain Analysis**

Value chain analysis can be broken down into a three sequential steps:

(1) Break down a market/organisation into its key activities under each of the major headings in the model;

(2) Assess the potential for adding value via cost advantage or differentiation, or identify current activities where a business appears to be at a competitive disadvantage;

(3) Determine strategies built around focusing on activities where competitive advantage can be sustained

#### JIT (Just in Time)

Just-in-time (JIT) and MRP are two different systems for controlling production. It is often said that:

* MRP = a 'Push' system
* JIT = a 'Pull' system

Really this is an incorrect analysis - MRP is a system based on fulfilling *predicted* usage in a set time period. This can be seen in the example considered above. We never stocked out.

JIT is a system based on *actual* usage - parts of the production system are "linked" together via the use of Kanban's as the system runs.

It is this linkage that is the distinguishing difference between MRP and JIT - JIT is a dynamic linked system, MRP is not. This implies that JIT can be used when lead times are short, MRP is more appropriate when lead times are long.

In addition MRP is much better suited for computerised implementation then JIT. Consider, for example, the large number of finished products (4,500) and raw materials (13,500) mentioned in the ICI example considered above. Do you relish the idea of controlling that factory via a JIT system, or would you prefer a computerised MRP system?

## Capability Maturity Model CMM

The Capability Maturity Model is an organizational model that describes 5 evolutionary stages (levels) in which an organization manages its processes.

**CMM** describes 5 evolutionary stages in which an organization manages its processes. The thought behind the Capability Maturity Model, originally developed for software development, is that an organization should be able to absorb and carry its software applications. The model also provides specific steps and activities to get from one level to the next.

The 5 stages of the Capability Maturity Model are:

 1. **Initial** (processes are ad-hoc, chaotic, or actually few processes are defined)

2. **Repeatable** (basic processes are established and there is a level of discipline to stick to these processes)

3. **Defined** (all processes are defined, documented, standardized and integrated into each other)

4. **Managed** (processes are measured by collecting detailed data on the processes and their quality)

5. **Optimizing** (continuous process improvement is adopted and in place by quantitative feedback and from piloting new ideas ands technologies)

The Capability Maturity Model is useful not only for software development, but also for describing evolutionary levels of organizations in general and in order to describe the level of Value Based Management that an organization has realized or wants to aim for.

**Supply chain management (SCM)**

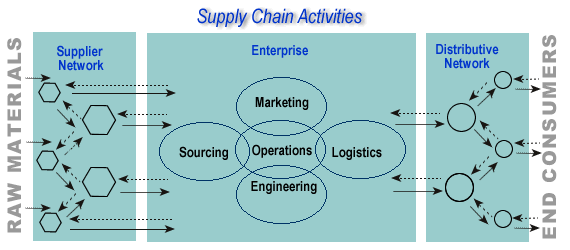
**Supply chain management (SCM)** is the management of a network of interconnected businesses involved in the ultimate provision of product and service packages required by end customers (Harland, 1996). Supply Chain Management spans all movement and storage of raw materials, work-in-process inventory, and finished goods from point of origin to point of consumption (supply chain).

Another definition is provided by the APICS Dictionary when it defines SCM as the "design, planning, execution, control, and monitoring of supply chain activities with the objective of creating net value, building a competitive infrastructure, leveraging worldwide logistics, synchronizing supply with demand, and measuring performance globally."

As defined by the world famous, Institute of Supply Management Inc., USA, SupplyChain Management is the design and management of seamless, value added process across organizational boundaries to meet the real needs of the end customer.

Supply Chain Management is the process of planning, implementing and controlling the operations of the supply chain with the purpose of satisfying the customer's requirement as efficiently as possible. Supply Chain spans all movement and storage of raw materials, Work-in-process, inventory and finished goods from the point of origin to the point of consumption.

he development and integration of people and technological resources are critical to successful **supply chain integration.** As the corporations strive to focus on core competencies and become more flexible, they have reduced their ownership of raw materials sources. These functions are increasingly being outsourced to other corporations that can perform the activities better or more cost effectively. The effect has been to increase the number of companies involved in satisfying consumer demand while reducing the management control on daily logistics operations.  Less control and more supply chain partners led to the creation of Supply Chain management concepts. The purpose of Supply chain management is to   improve trust and  collaboration among supply chain partners thus improving inventory visibility and improving inventory velocity.                    



Goals an

d Objectives

**ERP**

ERP, which is an abbreviation for Enterprise Resource Planning, is principally an integration of business management practices and modern technology. Information Technology (IT) integrates with the core business processes of a corporate house to streamline and accomplish specific business objectives. Consequently, ERP is an amalgamation of three most important components; Business Management Practices, Information Technology and Specific Business Objectives.

In simpler words, an ERP is a massive software architecture that supports the streaming and distribution of geographically scattered enterprise wide information across all the functional units of a business house. It provides the business management executives with a comprehensive overview of the complete business execution which in turn influences their decisions in a productive way. At the core of ERP is a well managed centralized data repository which acquires information from and supply information into the fragmented applications operating on a universal computing platform.

Information in large business organizations is accumulated on various servers across many functional units and sometimes separated by geographical boundaries. Such information islands can possibly service individual organizational units but fail to enhance enterprise wide performance, speed and competence.

The term ERP originally referred to the way a large organization planned to use its organizational wide resources. Formerly, ERP systems were used in larger and more industrial types of companies. However, the use of ERP has changed radically over a period of few years. Today the term can be applied to any type of company, operating in any kind of field and of any magnitude.

## The Ideal ERP System

An ERP system would qualify as the best model for enterprise wide solution architecture, if it chains all the below organizational processes together with a central database repository and a fused computing platform.

* Manufacturing  
  Engineering, resource & capacity planning, material planning, workflow management, shop floor management, quality control, bills of material, manufacturing process, etc.
* Financials  
  Accounts payable, accounts receivable, fixed assets, general ledger, cash management, and billing (contract/service)
* Human Resources  
  Recruitment, benefits, compensations, training, payroll, time and attendance, labour rules, people management
* Supply Chain Management  
  Inventory management, supply chain planning, supplier scheduling, claim processing, sales order administration, procurement planning, transportation and distribution
* Projects  
  Costing, billing, activity management, time and expense
* Customer Relationship Management  
  Sales and marketing, service, commissions, customer contact and after sales support
* Data Warehouse  
  Generally, this is an information storehouse that can be accessed by organizations, customers, suppliers and employees for their learning and orientation

# Performance management

performance management includes activities to ensure that goals are consistently being met in an effective and efficient manner. Performance management can focus on performance of the organization, a department, processes to build a product or service, employees, etc. Information in this topic will give you some sense of the overall activities involved in performance management. Then you might enhance your understanding by reviewing closely related library topics referenced from the sidebar.

## Benefits

Managing employee or system performance facilitates the effective delivery of strategic and operational goals. There is a clear and immediate correlation between using performance management programs or software and improved business and organizational results.

For employee performance management, using integrated software, rather than a spreadsheet based recording system, may deliver a significant return on investment through a range of direct and indirect sales benefits, operational efficiency benefits and by unlocking the latent potential in every employees work day i.e. the time they spend not actually doing their job. Benefits may include :

Direct financial gains

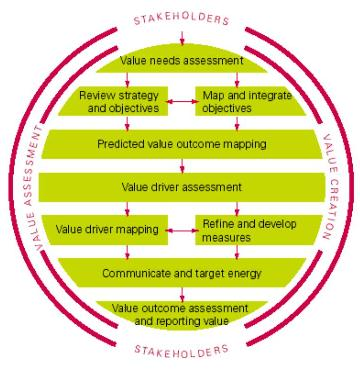
* Grow sales
* Reduce costs
* Stop project overruns
* Aligns the organization directly behind the CEO's goals
* Decreases the time it takes to create strategic or operational changes by communicating the changes through a new set of goals

Motivated workforce

* Optimizes incentive plans to specific goals for over achievement, not just business as usual
* Improves employee engagement because everyone understands how they are directly contributing to the organisations high level goals
* Create transparency in achievement of goals
* High confidence in bonus payment process
* Professional development programs are better aligned directly to achieving business leval goals

Improved management control

* Flexible, responsive to management needs
* Displays data relationships
* Helps audit / comply with legislative requirements
* Simplifies communication of strategic goals scenario planning
* Provides well documented and communicated process documentation



**BPO**

# Business Process Outsourcing

Business process outsourcing (BPO) is the act of giving a third-party the responsibility of running what would otherwise be an internal system or service. For instance, an insurance company might outsource their claims processing program or a bank might outsource their loan processing system. Other common examples of BPO are call centres and payroll outsourcing.

Typically, companies that are looking at business process outsourcing are hoping to achieve cost savings by handing the work to a third-party that can take advantage of economies of scale by doing the same work for many companies. Or perhaps the cost savings can be achieved because labor costs are lower due to different costs of living in different countries.

In exchange for the potential cost savings, the company in question must relinquish control over an aspect of their business which explains why business process outsourcing is often reserved for non-critical, non-core type of work.

# Benchmark

A **benchmark** is the act of running a computer program a set of programs, or other operations, in order to assess the relative **performance** of an object, normally by running a number of standard tests and trials against it. The term 'benchmark' is also mostly utilized for the purposes of elaborately-designed benchmarking programs themselves. Benchmarking is usually associated with assessing performance characteristics of computer hardware, for example, the floating point operation performance of a CPU but there are circumstances when the technique is also applicable to software. Software benchmarks are, for example, run against compilers or database management systems. Another type of test program, namely test suites or validation suites, are intended to assess the **correctness** of software.

**Balanced Score card**

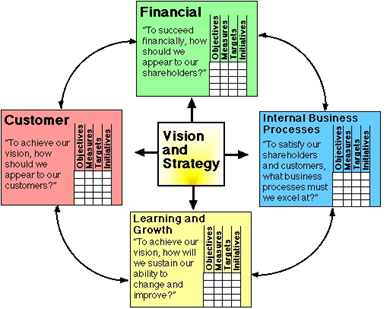
The balanced scorecard is a strategic planning and management system that is used extensively in business and industry, government, and nonprofit organizations worldwide to align business activities to the vision and strategy of the organization, improve internal and external communications, and monitor organization performance against strategic goals. It was originated by Drs. Robert Kaplan (Harvard Business School) and David Norton as a performance measurement framework that added strategic non-financial performance measures to traditional financial metrics to give managers and executives a more 'balanced' view of organizational performance.  While the phrase balanced scorecard was coined in the early 1990s, the roots of the this type of approach are deep, and include the pioneering work of General Electric on performance measurement reporting in the 1950’s and the work of French process engineers (who created the Tableau de Bord – literally, a "dashboard" of performance measures) in the early part of the 20th century.

The balanced scorecard has evolved from its early use as a simple performance measurement framework to a full strategic planning and management system. The “new” balanced scorecard transforms an organization’s strategic plan from an attractive but passive document into the "marching orders" for the organization on a daily basis. It provides a framework that not only provides performance measurements, but helps planners identify what should be done and measured. It enables executives to truly execute their strategies.

This new approach to strategic management was first detailed in a series of articles and books by Drs. Kaplan and Norton. Recognizing some of the weaknesses and vagueness of previous management approaches, the balanced scorecard approach provides a clear prescription as to what companies should measure in order to 'balance' the financial perspective. The balanced scorecard is a management system (not only a measurement system) that enables organizations to clarify their vision and strategy and translate them into action. It provides feedback around both the internal business processes and external outcomes in order to continuously improve strategic performance and results. When fully deployed, the balanced scorecard transforms strategic planning from an academic exercise into the nerve center of an enterprise.

Kaplan and Norton describe the innovation of the balanced scorecard as follows:

"The balanced scorecard retains traditional financial measures. But financial measures tell the story of past events, an adequate story for industrial age companies for which investments in long-term capabilities and customer relationships were not critical for success. These financial measures are inadequate, however, for guiding and evaluating the journey that information age companies must make to create future value through investment in customers, suppliers, employees, processes, technology, and innovation."



1. **Mid exam question papers**

**MS MID QP\_I**

SET-I

1. Explain the term management? Classify in detail Henry Fayal‘s principles of management?(co1)

2. Explain the following terms: (co3)

a) EQO b) Purchase procedure c) Supply chain management.

3. Write in brief about (co1)

A) Maslow’s theory of hierarchy of human needs b) theory x and theory y(CO1)

4. Write in brief about SQC for variables and attributes?(co3)

SET-2

1. What are the advantages of Work study, Method study &Work Measurement?(co3)
2. Write about Taylor’s scientific management theory and also write about leader ship styles?(co1)
3. Write about plant layout and plant location also write about methods of production?(co2)
4. Write about theory x theory y and Maslow’s theory of hierarchy of human needs?(co1)

SET-3

1. Define management and organization and also write about functions of management? (co1)

2. Explain about Maslow’s theory of hierarchy of human needs and also write in brief about theory X and theory Y and two factor theory of motivation?(co1)

3. write in brief about(co3)

A) TQM b)Six Sigma c)EOQ d)ABC analysis

4. Write in brief about system approach and Taylor’s scientific management theory and Henry Fayal’s principles of management?(co1)

**MID EXAM-II**

**SET-I**

**1. The following table gives the activities in a construction project and the other relevant information is as follows:-(CO-5)**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **activity** | **1-2** | **1-3** | **2-3** | **2-4** | **3-4** | **4-5** |
| **duration** | **20** | **25** | **10** | **12** | **6** | **10** |

1. **Write about manpower planning, recruitment, selection, training & development, placement, wages & salaries?(CO-4)**
2. **Write about job evaluation and merit rating and CMM levels and performance management?(CO-4)**
3. **Compute the project in 48 days?(CO-5)**

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **activity** | **1-2** | **2-3** | **2-4** | **3-5** | **4-6** | **5-7** | **5-8** | **7-9** | **8-9** | **9-10** | **6-10** |
| **A** | **4** | **1** | **8** | **3** | **3** | **3** | **4** | **4** | **2** | **4** | **4** |
| **M** | **8** | **4** | **12** | **5** | **6** | **6** | **6** | **8** | **5** | **10** | **6** |
| **B** | **12** | **7** | **16** | **7** | **9** | **9** | **8** | **12** | **8** | **16** | **8** |

**SET-II**

1. **Compute the project in 48 days?(CO-5)**

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **activity** | **1-2** | **2-3** | **2-4** | **3-5** | **4-6** | **5-7** | **5-8** | **7-9** | **8-9** | **9-10** | **6-10** |
| **A** | **4** | **1** | **8** | **3** | **3** | **3** | **4** | **4** | **2** | **4** | **4** |
| **M** | **8** | **4** | **12** | **5** | **6** | **6** | **6** | **8** | **5** | **10** | **6** |
| **B** | **12** | **7** | **16** | **7** | **9** | **9** | **8** | **12** | **8** | **16** | **8** |

1. **Write about steps in strategy formulation and implementation?(CO-4)**
2. **Write about job evaluation and merit rating and CMM levels and performance management?(CO-4)**
3. **Draw the network diagram for the following project and find out critical path?(CO-5)**
4. **Sample mid answer script**
5. **Material collected from Internet/Websites**

***Websites***

***Do not confine yourself to the list of websites mentioned here alone. Be cognizant and keep yourself abreast of the others too. The given list is not exhaustive.***

<https://uwaterloo.ca/management-sciences/graduate-studies/new-students>

www.lse.ac.uk/**management**/programmes/.../**management**-**science**/home.

**7**www.**science**ofbetter.org/‎***)***

www.mansci.uwaterloo.ca/

1. **Power point presentations**

**16. Previous question papers**

1. Name and describe the various levels of management with their functions. [16]

 2. What is departmentation? How is it essential for the management of a business

enterprise? [16]

 3. Define work measurement. What are its objectives? [16]

 4. What do you mean by marketing? How is it different from selling. [16]

 5. Explain some of the problems in interview as a method of selection? [16]

 6. The following table lists the jobs of a network along with the time estimates.Jobs Duration in daysOptimistic Most likely Pessimistic

1-4 3 9 27

1-3 3 6 15

1-2 6 12 30

4-5 1 4 7

3-5 3 9 27

3-6 2 5 8

5-6 6 12 30

2-6 4 19 28

(a) Draw the project network

(b) What is the approximate probability that jobs on the critical path will be

completed by the due date of 35 days

(c) What is your estimate of the probability that the entire project will be completed by the due date? Explain.

7. What are the criteria used to determine the corporate strengths and weaknesses?

Use these criteria for a company you are familiar with to identify its strengths and

weaknesses. Suggest corrective actions. [16]

 8. What is Material Requirement Planning (MRP)

Answer any FIVE Questions

All Questions carry equal marks

\*\*\*\*\*

1.(a) Define Management? Explain its significance andimportance?

(b) Management is an Art or Science? Discuss?

2.(a) Explain the types of Organization Structure andImportance?

(b) How to design the Organization Structure?

3.(a) Explain the Principle considerations for location of a Plan?

(b) Explain the Procedure and Techniques used in Plant Layout?

4.Define Inventory Control? What are the basic functions of Inventory Control and also

explain its importance?

5.Define Marketing? Explain its significance and functions of Marketing?

6.(a) Discuss the Major Functions of Human Resource Management?

(b) Briefly Explain Human Resource Planning?

7.Explain the role of CPM in Project Planning and scheduling?

8.Write short notes on

(i)Work Sampling

(ii)Just- In- Time (JIT)

Answer any FIVE Questions

All Questions carry equal marks

\*\*\*\*\*

1.(a) Briefly explain phases in Management Development?

(b) What are the contents and Principles of Management?

2.(a) How can you quantitatively find out the Responsibility of an Executive Official in

an Industry in relation to the persons working under him?

(b) Discuss the theory and principles of providing the Span of Control?

3.Explain Weber’s Material Index and Sargent’s location factor in relation to the site

location for plant. How Economic Cost difference and local loyalty can play their part in this?

4.(a) Briefly explain principles of inventory control?

(b) Explain different Inventory Policies?

5.Briefly explain various channels of distribution inMarketing?

6.(a) Distinguish between Human Resource Management and Personal Management

and Industrial Relations?

(b) What are the Basic Functions of HR Manager?

7.Distinguish between PERT and CPM?

8.(a) Define Strategic Management? Explain its Significance and Importance?

(b) Briefly explain SWOT Analysis?

Answer any FIVE Questions

All Questions carry equal marks

1.(a) Define Management? What are the functions of Management

(b) Briefly Explain Importance and Significance of Motivation?

2.(a) Define organization? What are the Basic Concepts related to Organization?

(b) Briefly explain Line and Staff Organization?

3.(a) What are the various types of Basic Layouts? Explain?

(b) List and explain the principles of Material Handling?

4.(a) Describe the concept and utility of ABC Analysis as applied to Inventory Control?

(b) Explain about Economic Order Quantity?

5.Briefly Explain about Marketing Research Procedure?

6.(a) Define Staffing? Explain various Staffing Policies and Process?

(b) Briefly Explain Administrative Functions?

7.Briefly Explain Network Representation of Projects and also explain Slack Time?

8.Write notes about

i)Total Quality Management.

ii)Balanced Score Card.

Answer any FIVE Questions

All Questions carry equal marks

\*\*\*\*\*

1.(a) Describe Taylor’s Scientific Management Theory?

(b) Define the Management? What are the Basic Concepts of Management and Organization?

2.(a) Distinguish between Departmentation and Decentralization?

(b) Distinguish between Matrix Organization and Virtual Organization?

3.(a) Briefly explain Layout Decisions?

(b) Name Different Methods developed for Plant Layout?

4.(a) Explain Classification of Inventory Systems?

(b) Write a note on Functions of Inventory Management?

5.Define Marketing Mix? Explain its significance and

importance of Marketing Mix?

6.(a) Briefly Explain Job Evaluation and System of Merit Rating?

(b) Write about various systems of Wage Payments?

7.Briefly Explain Phases of an Operations Research Project?

8.(a) What is Performance Management? Explain its significance and importance?

(b) Write about Business Process Out Sourcing (BPO)

**17. References (Text books/websites/Journals)**

**References (Text books/Websites/Journals)**

***Suggested Books***

**TEXT BOOKS**

1. Aryasri:ManagementScience,TMH,2004.

2.Stoner,Freeman,Gilbert,Management,6thEd,PearsonEducation,NewDelhi,2004.  
  
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1. Kotler Philip & Keller Kevin Lane: Marketing Mangement 12/e, PHI, 2005  
2. Koontz & Weihrich: Essentials of Management, 6/e, TMH, 2005  
3. Thomas N.Duening & John M.Ivancevich Management—Principles and Guidelines, Biztantra,2003.  
4. Kanishka Bedi, Production and Operations Management, Oxford University Press, 2004.  
5. Memoria & S.V.Gauker, Personnel Management, Himalaya, 25/e, 2005  
6. Samuel C.Certo: Modern Management, 9/e, PHI, 2005  
7. Schermerhorn, Capling, Poole & Wiesner: Management, Wiley, 2002.  
8. Parnell: Strategic Management, Biztantra,2003.  
9. Lawrence R Jauch, R.Gupta &William F.Glueck:Business Policy and Strategic Management, Frank Bros.2005.  
10. L.S.Srinath: PERT/CPM,Affiliated East-West Press, 2005

***Journals***

[**journal of management and social sciences**](http://www.buzzdock.com/Pages/Search.aspx?q=journal+of+management+and+social+sciences&guid=45ef820f-1ed5-41b5-a759-a7f3951ec6a4)

[**journal of economic and management sciences**](http://www.buzzdock.com/Pages/Search.aspx?q=journal+of+economic+and+management+sciences&guid=45ef820f-1ed5-41b5-a759-a7f3951ec6a4)

[**journal of management and system sciences**](http://www.buzzdock.com/Pages/Search.aspx?q=journal+of+management+and+system+sciences&guid=45ef820f-1ed5-41b5-a759-a7f3951ec6a4)