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**22CB004**

# **FUNDAMENTALS OF MANAGEMENT**

Department: CSE & EEE

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# Course Objective

- Understand the theories, concept, and evolution of management.
- Demonstrate the ability to employ 'the management way of thinking'.
- Understand how organizations work and find it easier to grasp the intricacies of other management areas such as finance, marketing, strategy etc.
- Understand the qualities of a leader in the managerial aspect in future terms.
- Understand the managerial ethics and CSR and its importance



# Pre Requisites

- ❖ 22CB302 Fundamentals of Economics



# Syllabus

<b>22CB004</b>	<b>FUNDAMENTALS OF MANAGEMENT</b>	<b>L T P C</b>
		<b>3 0 0 3</b>

## **❖ UNIT I MANAGEMENT THEORIES**

Concept and Foundations of Management, Evolution of Management Thoughts [Pre-Scientific Management Era (before 1880), Classical management Era (1880-1930), Neo-classical Management Era (1930-1950), Modern Management era (1950-onward). Contribution of Management Thinkers: Taylor, Fayol, Elton Mayo etc.

## **❖ UNIT II FUNCTIONS OF MANAGEMENT & LEADERSHIP**

Planning, Organizing, Staffing, Directing, Controlling, Leadership - Concept, Nature, Importance, Attributes of a leader, developing leaders across the organization, Leadership Grid.

## **❖ UNIT III ORGANIZATION BEHAVIOR**

Introduction, Personality, Perception, Learning and Reinforcement, Motivation, Group Dynamics, Power & Influence, Work Stress and Stress Management, Decision Making, Problems in Decision Making, Decision Making, Organizational Culture, Managing Cultural Diversity.

#### **❖ UNIT IV ORGANIZATIONAL DESIGN**

Classical, Neoclassical and Contingency approaches to organizational design; Organizational theory and design, Organizational structure (Simple Structure, Functional Structure, Divisional Structure, Matrix Structure).

#### **❖ UNIT V MANAGERIAL ETHICS**

Ethics and Business, Ethics of Marketing & advertising, Ethics of Finance & Accounting, Decision – making frameworks, Business and Social Responsibility, International Standards, Corporate Governance, Corporate Citizenship, Corporate Social Responsibility.



# Course Outcomes

- ❖ Understand the theories, concept, and evolution of management..
- ❖ Demonstrate the ability to employ 'the management way of thinking'.
- ❖ Understand how organizations work and find it easier to grasp the intricacies of other management areas such as finance, marketing, strategy etc.
- ❖ Understand the qualities of a leader in the managerial aspect in future terms.
- ❖ Understand the managerial ethics and CSR and its importance.



# CO-PO/PSO Mapping

COs	POs/PSOs														
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	-	-	-	-	-	3	3	3	3	3	-	3	-	-	-
CO2	-	-	-	-	-	3	3	3	3	3	-	3	-	-	-
CO3	-	-	-	-	-	3	3	3	3	3	-	3	-	-	-
CO4	-	-	-	-	-	3	3	3	3	3	-	3	-	-	-
CO5	-	-	-	-	-	3	3	3	3	3	-	3	-	-	-



# **Unit I**

## **MANAGEMENT THEORIES**



# Lecture Plan

UNIT - I						
S. No.	Topic	Scheduled Date	Actual Date of Completion	CO	Mode of Delivery	Taxonomy Level
1	Concept and Foundations of Management			CO1	Chalk & Talk	K1
2	Pre-Scientific Management Era			CO1	Chalk & Talk	K1
3	Classical management Era			CO1	Chalk & Talk	K1
4	Neo-classical Management Era			CO1	Chalk & Talk	K2
5	Modern Management era			CO1	Chalk & Talk	K2
6	Contribution of Management Thinkers			CO1	PPT	K2

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## Activity Based Learning - Quiz

1. Management deals with \_\_\_\_\_

- A. internal environment
- B. external environment
- C. both internal and external environment
- D. None of the above

2. Management functions include \_\_\_\_\_

- A. planning & organizing
- B. directing
- C. controlling
- D. All of the above

3. \_\_\_\_\_ is known as "the father of scientific management."

- A. Fredrick W. Taylor
- B. Henry Fayol
- C. Robert Owen
- D. None of these

4. Management is \_\_\_\_\_ in order to create a surplus.

- A. an art
- B. a science
- C. both A & B
- D. None of these

5. Management skills applies to managers at \_\_\_\_\_

- A. Middle levels in an organization
- B. Top levels in an organization
- C. Executive levels in an organization
- D. All levels in an organization

6. \_\_\_\_\_ is the basic reason for it's existence.

- A. The organizational vision
- B. The organizational mission
- C. The organizational objectives
- D. The organizations CEO

7. \_\_\_\_\_ is about deciding in advance what should be done.

- A. organising
- B. directing
- C. planning
- D. controlling

# **1. CONCEPT AND FOUNDATIONS OF MANAGEMENT**

## **2. MANAGEMENT: CONCEPT AND MEANING**

- Management is the act of getting people together to accomplish desired goals and objectives using available resources efficiently and effectively.
- Management comprises planning, organizing, staffing, leading, coordinating and controlling an organization or effort for the purpose of accomplishing a goal.
- Resourcing encompasses the development and manipulation of human resources, financial resources, technological resources and natural resources.
- Since organizations can be viewed as systems, management can also be defined as human action, including design, to facilitate the production of useful outcomes from a system. This view opens the opportunity to 'manage' oneself, a pre-requisite to attempting to manage others.
- Management is essential for the conduct of business activity in an orderly manner. It is a vital function concerned with all aspects of working of an enterprise.



### **1. DEFINITIONS OF MANAGEMENT**

- According to George R. Terry, "Management is a distinct process consisting of planning, organising, actuating and controlling, performed to determine and accomplish stated objectives by the use of human beings and other resources".
- According to Henry Fayol, "To manage is to forecast and to plan, to organise, to command, to coordinate and to control".

- According to Peter Drucker, "Management is a multi-purpose organ that manages business and manages managers and manages workers and work".
- According to Harold Koontz, "Management is the art of getting things done through and with people in formally organized groups||.
- According to Mary Parker Fallett, "Management is the art of getting things done through people".

### 1.1.2 CHARACTERISTICS OF MANAGEMENT

- **Management is a managerial process:**

- Management is a process and not merely a body of individuals. Those who perform this process are called managers.
  - The managers exercise leadership by assuming authority and direct others to act within the organisation.
- leading and Management process involves planning, organising, controlling, human efforts for the accomplishment of given tasks.



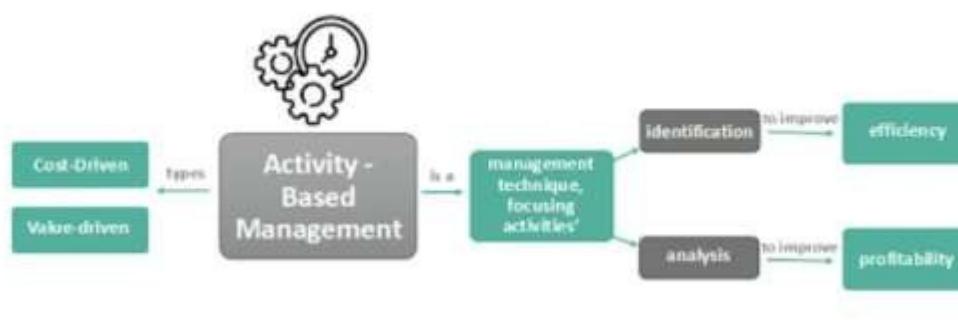
- **Management is a social process-**

Management is done by the people, through people and for people. It is a social process because it is concerned with interpersonal relations. Human factor is most important element in management.

- **Management is action-based:**

Management is always for achieving certain objectives in terms of sales, profit, etc. It is a result-oriented concept and not merely an abstract philosophy. It gives importance to concrete performance through suitable actions. It is an action based activity.

#### Activity - Based Management



Management involves achieving results through the efforts of others: Management is the art of getting the things done through others. Managers are expected to guide and motivate subordinates and get the expected performance from them. Management acts as an activating factor.

- **Management is a group activity:**

Management is not an isolated individual activity but it is a collective activity or an activity of a group. It aims at using group efforts for achieving objectives. Managers manage the groups and coordinate the activities of groups functioning in an organization.



- **Management is intangible:**

Management is intangible. Management is not directly visible but its presence is noticed in the form of results. It is like invisible spirit, which guides and motivates people working in a business unit. Management is like government, which functions but is not visible in physical form.



- **Management is aided, not replaced by computers:**

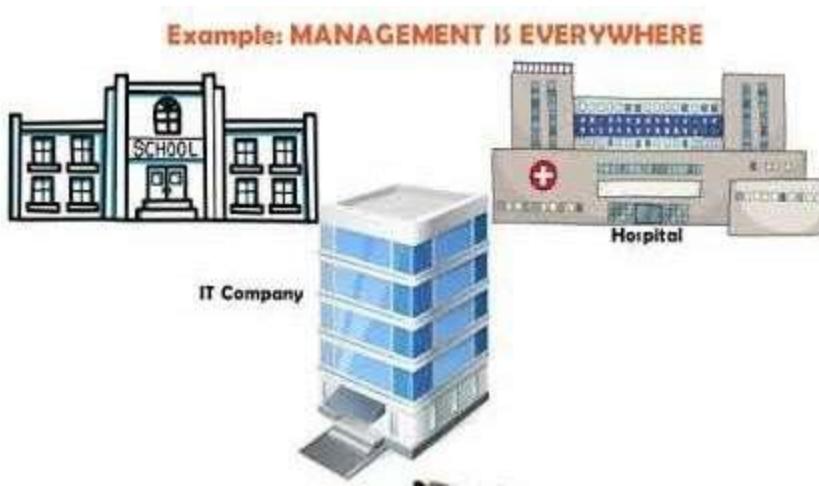
The computer is an extremely powerful tool of management. However, computers can only help management. Computers cannot replace management. This is because management takes the final responsibility. Thus Management is aided (helped) but not replaced by computers.



- **Management is all pervasive:**

Management is comprehensive and covers all departments, activities and employees.

Managers operate at different levels but their functions are identical. This indicates that management is a universal and all pervasive process. Management is all pervasive because the activities involved in managing an enterprise are common to all, whether it is a profit making or non-profit making, social or political, public or private, small or large organisation.



- **Management is an art, science as well as a profession:**

- Management is an art because certain skills, essential for good management, are unique to individuals.
- Management is a science because it has an organised body of knowledge.
- Management is also a profession because it is based on advanced and cultivated knowledge.

## Management as Science, Art, and Profession



- **Management aims at coordination of activities:**

Coordination is the essence of management. It gives one clear direction to the whole organisation and brings unity and harmony in the whole business unit. For such coordination, effective communication at all levels is essential.



- **Management is innovative:**

Management techniques are dynamic and innovative. They need to be adjusted as per the requirements of the situations. The process of creating and implementing new ideas, methods, and strategies to improve organizational effectiveness and achieve goals.



- **Management has different operational levels:**

It is commonly accepted that there are three management levels, generically described as top, middle, and lower management. While there are no universally accepted designations for these three levels, they are often described as senior management, middle management and frontline management. The managers at the higher levels have more important duties while managers at the lower levels have to perform routine functions i.e duties.



- **Management is different from ownership:**

Management is concerned with the management of business activities. Managers are not the owners but they manage the business on behalf of the owners. While the owner holds legal rights and responsibilities for the company, the management "team"

is responsible for the day-to-day operations and decision-making.

- **Management has vast scope:**

The scope of management is quite comprehensive. It covers all aspects of business. The principles of management guide managers while managing various business activities.



- **Management is dynamic:**

Business is influenced by changes in economic, social, political technological and human resource.

Management adjusts itself to the changing atmosphere making suitable forecasts and changes in the policies. Hence, management is treated as a dynamic activity.



- **Management aims at achieving predetermined objectives:**

Management is a meaningful activity. All organisations are essentially groups of individuals formed for achieving common objectives. An Organisation exists for the attainment of specific objectives.



### **1.1.3 NEED OF MANAGEMENT**

- Direction, coordination and control of group efforts:**

In business, many persons work together. They need proper direction and guidance for raising their efficiency. In the absence of guidance, people will work as per their desire and the, orderly working of enterprise will not be possible.

Management is needed for planning business activities, for guiding employees in the right direction and finally for coordinating their efforts for achieving best/most favorable results.

- Orderly achievement of business objectives:**

Efficient management is needed in order to achieve the objectives of business activity in an orderly and quick manner.

- Performance of basic managerial functions:**

Planning, Organising, Co-ordinating and Controlling are the basic functions of management. Management is needed as these functions are performed through the management process.

- Effective communication at all levels:**

Management is needed for effective communication within and outside the Organisation.

- Motivation of employees:**

Management is needed for motivating employees and also for coordinating their efforts so as to achieve business objectives quickly.

- Success and stability of business enterprise:**

Efficient management is needed for success, stability and prosperity of a business enterprise.

- Modern business is highly competitive and needs efficient and capable management for survival and growth. Management is needed as it occupies a unique position in the smooth functioning of a business unit. This suggests the need of efficient management of business enterprises. Profitable/successful business may not be possible without efficient management. In this sense, "No management, no business" is true. Survival of a business unit in the present competitive world is possible only through efficient and competent management.**

#### **1.1.4 MEANING OF MANAGEMENT PROCESS**

- The term management is explained in different ways. For example, it is said that management is what management does. Here, management is explained with reference to its basic functions which include planning, organizing, coordinating and controlling.
- Similarly, management is described as a process which involves various elements. Management process is a continuous one and is run by the managers functioning at different levels. Management is now recognized as a distinct process in which managers plan, organize, lead, motivate and control human efforts in order to achieve well defined goals.
- In fact, process means a series of activities/operations undertaken/conducted for achieving a specific objective. Process is a systematic way of doing things.
- For example, in a factory there is a production process. Similarly, in the management process, resources and human efforts are used in an orderly manner for achieving specific objectives. The management process suggests functions to be performed by the managers.

#### **Definition of Management Process**

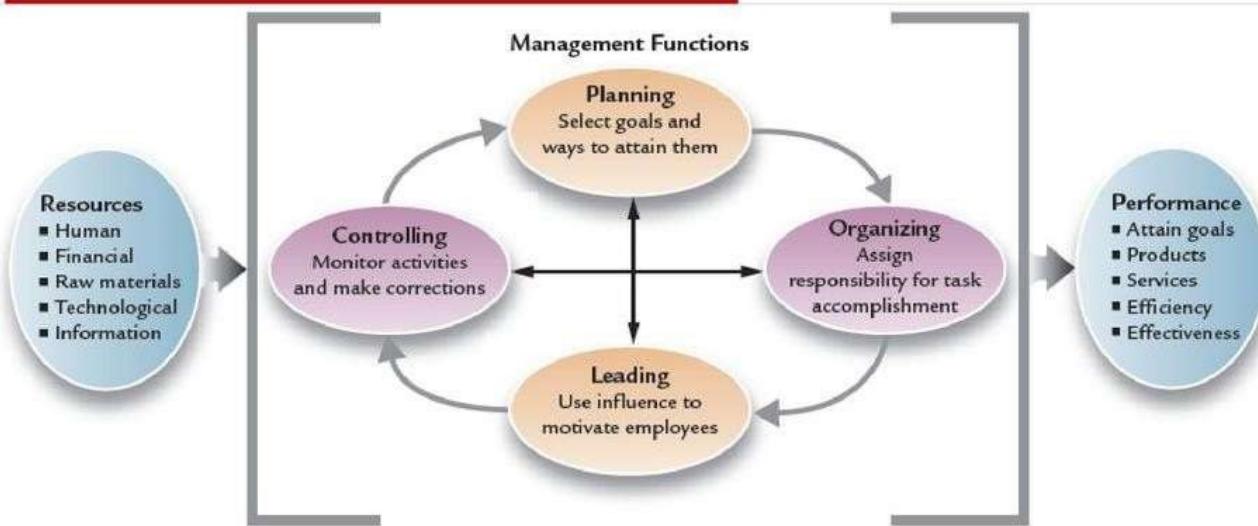
According to D. E. McFarland, "Management is the distinct process by which the managers create, direct, maintain and operate purposive organisation through systematic, co-coordinated and cooperative human efforts".

According to Gemp R. Terry, "Management is a distinct process consisting of planning, organisng, actuating, and controlling, performed to determine and accomplish objectives by the use of people and other resources".

## 1.1.5 FUNCTIONS OF MANAGEMENT

The essential elements/components of Management Process are four.

# 1.2 The Process of Management



**The essential elements/components of Management Process are four.**

- Planning
- Organising
- Directing and
- Controlling.

**We may add some more elements in the management process. Such elements are:-**

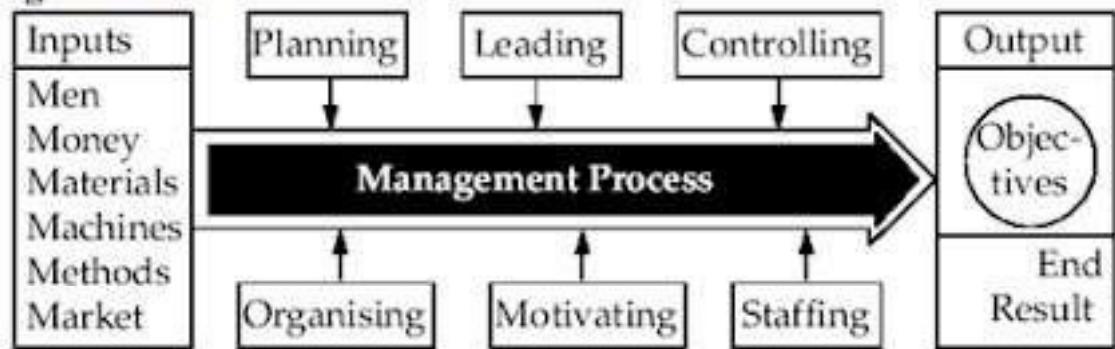
- Motivating
- Co-coordinating
- Staffing and
- Communicating.

The elements in the management process are actually the basic functions of management these functions constitute the management process in practice. Management process is in fact, management in practice. This process suggests what a manager is supposed to, do or the basic functions that he has to perform while managing the job assigned to him.

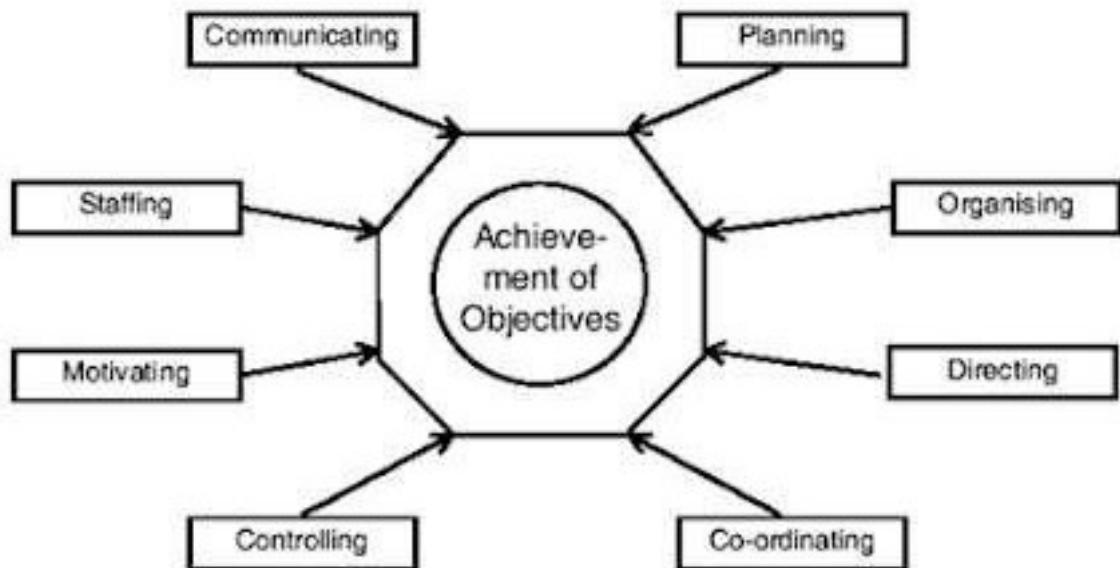
Luther Gullic gave a new formula to suggest the elements of Management Process i.e. basic functions of management. According to him, management process may be indicated by the word "PODSCORB". Here, 'P' states for 'planning'. "O" for 'organising', "D" for 'directing', "S" for 'Staffing', "CO" for 'Coordinating', "R" for 'Reporting' and "B" for 'Budgeting'. Gullic coined the word "PODSCORB" to suggest seven functions of management.

**The following figures show the management process and the elements involved:**

**(A) Management Process:**



**(B) Elements of Management Process (Functions of Management):**



## **1.1.6 Elements of Management Process**

### **1. Planning:**

Planning is the primary function of management. It involves determination of a course of action to achieve desired results/objectives. Planning is the starting point of management process and all other functions of management are related to and dependent on planning function. Planning is the key to success, stability and prosperity in business. It acts as a tool for solving the problems of a business unit. Planning plays a pivotal role in business management. It helps to visualize the future problems and keeps management ready with possible solutions.

### **2. Organising:**

Organising is next to planning. It means to bring the resources (men, materials, machines, etc.) together and use them properly for achieving the objectives. Organisation is a process as well as it is a structure. Organising means arranging ways and means for the execution of a business plan. It provides suitable administrative structure and facilitates execution of proposed plan. Organising involves different aspects such as departmentation, span of control delegation of authority, establishment of superior-subordinate relationship and provision of mechanism for co-ordination of various business activities.

- **Coordinating:**

Effective coordination and also integration of activities of different departments are essential for orderly working of an organization. This suggests the importance of coordinating as management function. A manager must coordinate the work for which he is accountable. Co-ordination is rightly treated as the essence of management. It may be treated as an independent function or as a part of organisms function. Coordination is essential at all levels of management.

- **Controlling:**

Controlling is an important function of management. It is necessary in the case of individuals and departments so as to avoid wrong actions and activities. Controlling involves three broad aspects: (a) establishing standards of performance, (b) measuring work in progress and interpreting results achieved, and (c) taking corrective actions, if required.

- **Motivating:**

Motivating is one managerial function in which a manager motivates his men to give their best to the organization. It means to encourage people to take more interest and initiative in the work assigned. Organizations prosper when the employees are motivated through special efforts including provision of facilities and incentives. Motivation is actually inspiring and encouraging people to work more and contribute more to achieve organizational objectives. It is a psychological process of great significance.

- **Communicating:**

Communication (written or oral) is necessary for the exchange of facts, opinions, ideas and information between individual's and departments. In an organisation, communication is useful for giving information, guidance and instructions. Managers should be good communicators. They have to use major portion of their time on communication in order to direct, motivate and co-ordinate activities of their subordinates.

### **1.1.6 Level of management**

Personnel in an organization are prearranged in a ladder and they all have the relationship of senior to junior post. Every manager in an organization performs all five management functions. The relative importance of these functions varies along the managerial levels. E.F.L. Brech has categorized management levels into three categories that include Top Management, Middle Management and Supervisory/Lower Level.



- Top management of an organization comprises of board of directors, chairman and chief executive officer. Top level management determines goals and objectives. They are involved in planning, organizing, staffing, directing and controlling. Senior management personnel incorporate organization with environment, balance the interest groups and are responsible for overall results.
- Middle management staff lies between top management and supervisory management level. Middle level management develops programs for department and perform functions to accomplish corporate goals. The other functions of middle level management are training and development of employees, integrating various parts of the department.
- Supervisory management is associated with efficiency in using resources of the organization. A supervisor implements policies and procedures making a series of decisions with well-defined and specified grounds.

### **1.1.7 MANAGER**

Manager is a person who is responsible for performing the functions of management such as planning, organising and directing the group towards the goals of management.

#### **ROLE OF MANAGER**

Role of Managers To meet the many demands of performing their functions, managers assume multiple roles. A role is an organized set of behaviours. Henry Mintzberg has identified ten roles common to the work of all managers. The ten roles are divided into three groups.

1. Interpersonal
2. Informational
3. Decisional

The performance of managerial roles and the requirements of these roles can be played at different times by the same manager and to different degrees depending on the level and function of management. The ten roles are described individually, but they form an integrated whole.

## **INTERPERSONAL ROLES**

The interpersonal roles link all managerial work together. The three interpersonal roles are primarily concerned with interpersonal relationships.

1. Figurehead Role: The manager represents the organization in all matters of formality.  
The top level manager represents the company legally and socially to those outside of the organization. The supervisor represents the work group to higher management and higher management to the work group.
2. Liaison Role: The manager interacts with peers and people outside the organization.  
The top level manager uses the liaison role to gain favors and information, while the supervisor uses it to maintain the routine flow of work.
3. The leader Role: It defines the relationships between the manager and employees.

## **INFORMATIONAL ROLES**

The informational roles ensure that information is provided. The three informational roles are primarily concerned with the information aspects of managerial work.

1. Monitor Role: The manager receives and collects information about the operation of an enterprise.
2. Disseminator Role: The manager transmits special information into the organization.  
The top level manager receives and transmits more information from people outside the organization than the supervisor.
3. Spokesperson Role: The manager disseminates the organization's information into its environment. Thus, the top level manager is seen as an industry expert, while the supervisor is seen as a unit or departmental expert.

## **DECISIONAL ROLES:**

The decisional roles make significant use of the information and there are four decisional roles.

1. Entrepreneur Role: The manager initiates change, new projects; identify new ideas, delegate idea responsibility to others.

2. Disturbance Handler Role: The manager deals with threats to the organization. The manager takes corrective action during disputes or crises; resolve conflicts among subordinates; adapt to environmental crisis.
3. Resource Allocator Role: The manager decides who gets resources; schedule, budget set priorities and chooses where the organization will apply its efforts.
4. Negotiator Role: The manager negotiates on behalf of the organization. The top level manager makes the decisions about the organization as a whole, while the supervisor makes decisions about his or her particular work unit.

## **2. EVOLUTION OF MANAGEMENT THOUGHT**

### **1. Early Management**

Management has been practiced a long time. Organized endeavors directed by people responsible for planning, organizing, leading, and controlling activities have existed for thousands of years. Regardless of what these individuals were called, someone had to perform those functions.

#### **3000 – 2500 B.C.E.**

The Egyptian pyramids are proof that projects of tremendous scope, employing tens of thousands of people were completed in ancient times. It took more than 100,000 workers some 20 years to construct a single pyramid. Someone had to plan what was to be done, organize people and materials to do it, make sure those workers got the work done, and impose some controls to ensure that everything was done as planned. That someone was managers.

## **1400s**

At the arsenal of Venice, warships were floated along the canals, and at each stop, materials and riggings were added to the ship. Sounds a lot like a car “floating” along an assembly line, doesn’t it? In addition, the Venetians used ware- house and inventory systems to keep track of materials, human resource management functions to manage the labor force and an accounting system to keep track of revenues and costs.

## **1780s – Mid 1800**

The Industrial Revolution may be the most important pre- twentieth-century influence on management. Because with the industrial age came the birth of the corporation. With large, efficient factories pumping out products, someone needed to forecast demand, make sure adequate supplies of materials were available, assign tasks to workers, and so forth. Again, that someone was managers! It was indeed a historical event for two reasons:

- (1) because of all the organizational aspects (hierarchy, control, job specialization, and so forth) that became a part of the way work was done, and
- (2) because management had become a necessary component to ensure the success of the enterprise.

## **1776**

Although this is an important date in U.S. history, it’s also important because it’s the year Adam Smith’s Wealth of Nations was published. In it, he argued the economic advantages of the division of labor (or job specialization) that is, breaking down jobs into narrow, repetitive tasks. Using division of labor, individual productivity could be increased dramatically. Job specialization continues to be a popular way to determine how work gets done in organizations.

## **1.2.2 CLASSICAL APPROACHES**

Beginning around the turn of the twentieth century, the discipline of management began to evolve as a unified body of knowledge. Rules and principles were developed that could be taught and used in a variety of settings. These early management proponents were called classical theorists.

### **1911**

That's the year Frederick W. Taylor's *Principles of Scientific Management* was published. His groundbreaking book described a theory of scientific management—the use of scientific methods to determine the “one best way” for a job to be done. His theories were widely accepted and used by managers around the world and Taylor became known as the “father” of scientific management. Other major contributors to scientific management were Frank and Lillian Gilbreth and Henry Gantt.

### **1916 – 1947**

Unlike Taylor who focused on an individual production worker's job, Henri Fayol and Max Weber looked at organizational practices by focusing on what managers do and what constituted good management. This approach is known as general administrative theory. Fayol first identified five management functions. He also identified 14 principles of management fundamental rules of management that could be applied to all organizations.

Weber is known for his description and analysis of bureaucracy, which he believed was an ideal, rational form of organization structure, especially for large organizations.

## **1. Fayol's Fourteen Principles of Management**

### **• Division of Work.**

This principle is the same as Adam Smith's "division of labor." Specialization increases output by making employees more efficient.

### **• Authority.**

Managers must be able to give orders. Authority gives them this right. Along with authority, however, goes responsibility. Whenever authority is exercised, responsibility arises.

### **• Discipline.**

Employees must obey and respect the rules that govern the organization. Good discipline is the result of effective leadership, a clear understanding between management and workers regarding the organization's rules, and the judicious use of penalties for infractions of the rules.

### **• Unity of Command.**

Every employee should receive orders from only one superior.

### **• Unity of Direction.**

Each group of organizational activities that have the same objective should be directed by one manager using one plan.

### **• Subordination of Individual Interests to the General Interest.**

The interests of any one employee or group of employees should not take precedence over the interests of the organization as a whole.

### **• Remuneration.**

Workers must be paid a fair wage for their services.

- **Centralization.**

Centralization refers to the degree to which subordinates are involved in decision making. Whether decision making is centralized (to management) or decentralized (to subordinates) is a question of proper proportion. The task is to find the optimum degree of centralization for each situation.

- **Scalar Chain.**

The line of authority from top management to the lowest ranks represents the scalar chain. Communications should follow this chain. However, if following the chain creates delays, cross-communications can be allowed if agreed to by all parties and if superiors are kept informed. Also called chain of command.

- **Order.**

People and materials should be in the right place at the right time.

- **Equity.**

Managers should be kind and fair to their subordinates.

- **Stability of Tenure of Personnel.**

High employee turnover is inefficient. Management should provide orderly personnel planning and ensure that replacements are available to fill vacancies.

- **Initiative.**

Employees who are allowed to originate and carry out plans will exert high levels of effort.

- **Esprit de Corps.**

Promoting team spirit will build harmony and unity within the organization.

### **1.2.3 BEHAVIORAL APPROACH**

The behavioral approach to management focused on the actions of workers.

#### **Late 1700s – Early 1900s**

Managers get things done by working with people. Several early management writers recognized how important people are to an organization's success. For instance, Robert Owen, who was concerned about deplorable working conditions, proposed an idealistic workplace. Hugo Munsterberg, a pioneer in the field of industrial psychology, suggested using psychological tests for employee selection, learning theory concepts for employee training, and studies of human behavior for employee motivation. Mary Parker Follett was one of the first to recognize that organizations could be viewed from both individual and group behavior. She thought that organizations should be based on a group ethic rather than on individualism.

**1924 – Mid-1930s** The Hawthorne studies, a series of studies that provided new insights into individual and group behavior, were without question the most important contribution to the behavioral approach to management. Conducted at the Hawthorne (Cicero, Illinois) Works of the Western Electric Company, the studies were initially designed as a scientific management experiment. Company engineers wanted to see the effect of various lighting levels on worker productivity. Using control and experimental groups of workers, they expected to find that individual output in the experimental group would be directly related to the intensity of the light. However, much to their surprise, they found that productivity in both groups varied with the level of lighting.

## **1930s – 1950s**

The human relations movement is important to management history because its supporters never wavered from their commitment to making management practices more humane. Proponents of this movement uniformly believed in the importance of employee satisfaction a satisfied worker was believed to be a productive worker. So they offered suggestions like employee participation, praise, and being nice to people to increase employee satisfaction. For instance, Abraham Maslow said that once a need was substantially satisfied, it no longer served to motivate behavior. Douglas McGregor developed Theory X and Theory Y assumptions, which related to a manager's beliefs about an employee's motivation to work. Even though both Maslow's and McGregor's theories were never fully supported by research, they're important because they represent the foundation from which contemporary motivation theories were developed.

## **4. MODERN MANAGEMENT ERA**

### **1. Quantitative Approach**

The quantitative approach, which focuses on the application of statistics, optimization models, information models, computer simulations, and other quantitative techniques to management activities, provided tools for managers to make their jobs easier.

#### **1940s**

The quantitative approach to management—which is the use of quantitative techniques to improve decision making—evolved from mathematical and statistical solutions developed for military problems during World War II. After the war was over, many of these techniques used for military problems were applied to businesses. For instance, one group of military officers, dubbed the “Whiz Kids,” joined Ford Motor Company in the mid-1940s and immediately began using statistical methods to improve decision making at Ford.

#### **1950s**

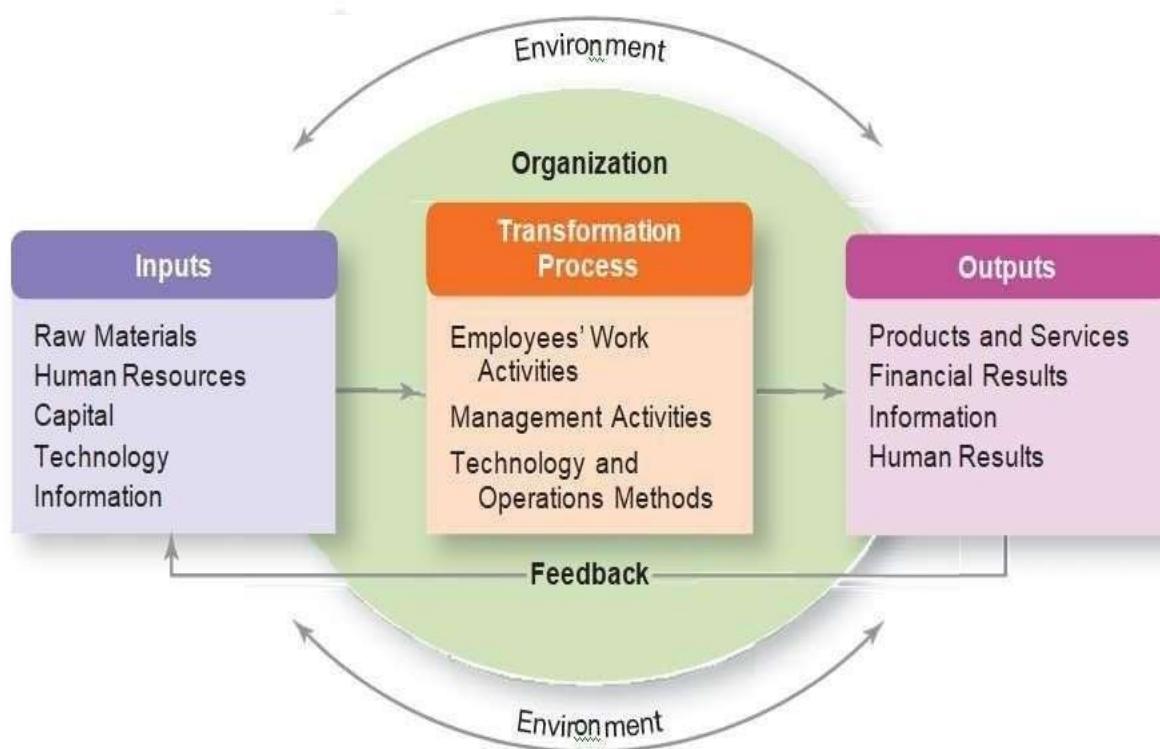
After World War II, Japanese organizations enthusiastically embraced the concepts espoused by a small group of quality experts, the most famous being W. Edwards Deming and Joseph M. Duran. As these Japanese manufacturers began beating U.S. competitors in quality comparisons, Western managers soon took a more serious look at Deming’s and Juran’s ideas. Their ideas became the basis for total quality management (TQM), which is a management philosophy devoted to continual improvement and responding to customer needs and expectations.

### **2. Contemporary Approaches**

Most of the early approaches to management focused on managers’ concerns inside the organization. Starting in the 1960s, management researchers began to look at what was happening in the external environment outside the organization.

## 1960s

Although Chester Barnard, a telephone company executive, wrote in his 1938 book *The Functions of the Executive* that an organization functioned as a cooperative system, it wasn't until the 1960s that management researchers began to look more carefully at systems theory and how it related to organizations. The idea of a system is a basic concept in the physical sciences. As related to organizations, the systems approach views systems as a set of interrelated and interdependent parts arranged in a manner that produces a unified whole. Organizations function as open systems, which means they are influenced by and interact with their environment. A manager has to efficiently and effectively manage all parts of the system in order to achieve established goals.



## **1960s**

Early management theorists proposed management principles that they generally assumed to be universally applicable. Later research found exceptions to many of these principles. The contingency approach (or situational approach) says that organizations, employees, and situations are different and require different ways of managing. A good way to describe contingency is "if . . . then." If this is the way my situation is, then this is the best way for me to manage in this situation. One of the earliest contingency studies was done by Fred Fiedler and looked at what style of leadership was most effective in what situation. Popular contingency variables have been found to include organization size, the routineness of task technology, environmental uncertainty, and individual differences.

## **1980s – Present**

Although the dawn of the information age is said to have begun with Samuel Morse's telegraph in 1837, the most dramatic changes in information technology have occurred in the latter part of the twentieth century and have directly affected the manager's job. Managers now may manage employees who are working from home or working halfway around the world. An organization's computing resources used to be mainframe computers locked away in temperature-controlled rooms and only accessed by the experts. Now, practically everyone in an organization is connected wired or wireless with devices no larger than the palm of the hand. Just like the impact of the Industrial Revolution in the 1700s on the emergence of management, the information age has brought dramatic changes that continue to influence the way organizations are managed. The impact of information technology on how managers do their work is so profound that we've included in several chapters a boxed feature on "Technology and the Manager's Job."

### **3. Contribution of Management Thinkers: Taylor, Fayol, Elton Mayo**

#### **1. F.W.Taylor's Contribution to the Development of Management Thought / Science**

Fredrick Winslow Taylor joined as a labour at Midvale steel company in U.S.A in 1878. He became a chief engineer in the same company. He published a book on "Principles of scientific management" in 1911.

Taylor attempted a more scientific approach to management as well as the problems and the approach was based upon four basic principles.

Study each part of the task scientifically and develop the best method to perform it. Carefully select workers and train them to perform a task using the scientifically developed method. Cooperate fully with workers to ensure they use the proper method.

Divide work and responsibility.

#### **Elements of Scientific management**

##### **Planning the work**

Taylor suggests the separation of planning from actual doing. Taylor says that the supervisor should do the planning. The workers only concentrate on doing the work.

##### **Work study**

Work study is defined as the systematic objective and critical examination of all factors governing the efficiency of any specified activity in order to obtain the effective improvement.

###### **a. Method study**

This study is conducted to find out the 'best method or way' of performing a particular task. The objective of this study is to minimize the quality and satisfaction of the customer.

###### **b. Motion Study**

It is an in-depth study of movement of a worker while doing a task. Taylor recognized three types of movements:

Productive, Unproductive, Incidental

The objective of motion study is to eliminate unproductive movement in doing a task.

###### **c. Time study**

It determines the standard time taken to perform a well defined job.

###### **d. Fatigue study**

Fatigue study is conducted to find out the amount and frequency of rest intervals to be given to workers in completing a task. The objective of this study is to find out how long a person can perform the standard task without any adverse effects on his health and productivity.

### **3. Rate setting**

Taylor recommended the differential piece wage system under which workers performing the standard task within prescribed time are paid much higher rate per unit than inefficient workers who are not able to come up to the standard set.

### **4. Scientific selection and training**

- a. Taylor suggested that the workers should scientifically be selected by a central personnel department. The procedure of selection will also have to be systematized.
- b. A worker should be physically and technically most suitable for the selected post.
- c. After selected, the workers should be given a proper training which makes them more efficient and effective.

### **5. Standardisation**

Standards must be maintained in the aspect of equipment and tools, materials, period of work, amount of work, working conditions, cost of production. Normally these standards will be fixed in advance on the basis of various experiments.

### **6. Specialisation**

Taylor developed a theory called functional foremanship based on the specialization of function. Under this plan, the two functions of planning and doing are separated in the organization of the plant. The functional foremen are specialist who join their heads to give thought to the planning of the performance of operations in the workshop. In this system eight functional foremen were involved to direct and control the activities of the workers.

#### **Route clerk**

To lay down the sequence of operations, the workers are instructed about it.

#### **Instruction card clerk**

To prepare the detailed instructions regarding the different aspects of work.

#### **Time and cost clerk**

To send all information relating to their pay of the workers and to secure the proper returns of work from them.

#### **Shop disciplinarian**

To deal with cases of breach of discipline and absentees.

#### **Gang boss**

To assemble and set up tools and machines and to teach the workers to make all their personal motions at the quickest and best way.

### **Speed boss**

To ensure that machines are run at their best speeds and proper tools are used by the workers.

### **Repair boss**

To ensure that each workers keeps his machine in a good order and maintains cleanliness around them and his machines.

### **Inspector**

To show to the worker how to do the work.

## **7. Economy**

- a) Scientific management enhances profit and economy.
- b) The economy and profit can be achieved by making the resources more productive as well as by eliminating the wastages.

### **Benefits of Scientific management**

- Replacement of traditional rule of thumb method by scientific techniques
- Proper selection and training of workers.
- Incentive wages to the workers for higher production.
- Elimination of wastes and rationalization of system of control.
- Standardization of tools, equipment, material and work methods.
- Detailed instructions and constant guidance of the workers.
- Establishment of harmonious relationship between workers.
- Better utilization of resources.
- Satisfaction of the needs of customers by providing higher quality products at lower price.

### **Criticism of Scientific Management or Opposition to Scientific Management**

Scientific management has wider economic and social significance. It has succeeded in revolutionizing the very concept of management by offering a novel approach to the managers in managing men, materials and methods. In spite of several benefits, Taylor's scientific management concept has widely been criticized by employers, workers, trade unions and also by theorists. They oppose Taylor's scientific management on different grounds. The points of criticism we as explained below:

## **Criticism from Employers**

- **Huge investment required:**

Heavy investment is necessary for reorganization of preliminary standardization of tools, machines and equipment and conduct of time and motion studies and other research activities for the introduction of scientific management. Such investment may not be possible in small and medium size enterprises.

- **Sudden change may disturb existing working arrangements:**

Sudden change due to the introduction of scientific management may paralyze the existing arrangement of work and will bring the entire Organization in difficulties. There will be loss due to reorganization, if scientific management is to be introduced.

- **Unsuitable to small units:**

Small manufacturers argue that the concept of scientific management is not suitable to their units due to financial and other difficulties.

- **Benefits after a long period:**

The benefit of scientific management will be available only after a long period and the business unit may come in financial and other difficulties during the process of introduction of new changes as suggested in the scientific management.

- **Huge overhead expenses required:**

Introduction of scientific management involves huge overhead expenses which may erode profitability.

## **Criticism from Workers and Trade Unions:**

### **Why did Trade Unions Oppose Scientific Management?**

- **Heavy burden on workers:** Workers feel that they will have to share more burden of work as a result of introduction of scientific management. They also fear that the benefits will be shared by the employer alone and that they will be at a loss from all sides. Workers and their unions feel that it will lead to their exploitation and they oppose scientific management on this ground.

- **Reduces initiative among workers:** Workers and trade unions argue that scientific management will destroy their initiative and they will be converted into machines in the production process with no freedom, initiative and choice. Similarity, over-specialization (excessive specialization) will lead to monotony and mental fatigue. Hence they oppose Taylor's scientific management.

- **Possibility of unemployment:**

Workers and their unions also feel that scientific management will lead to unemployment and that workers will be removed due to the use of labour-saving devices. This will lead to loss of employment and income to workers. This is likely to make trade unions weak and hence they oppose scientific management.

- **Exploitation of workers:**

Workers argue that they will be exploited under scientific management as they will have to share more burden of work without corresponding increase in the wage rate. Trade unions also oppose to scientific management as it is likely to put more burden of work on the workers without corresponding monetary benefit.

- **Possible adverse effects on workers unity:**

Trade unions also oppose scientific management as they fear that the unity among workers will be adversely affected. Workers will be divided into efficient and inefficient categories. In addition, different piece rate plans will be introduced in place of uniform wage rate. As a result, workers will be divided.

- The criticism of scientific management by employers and workers/trade unions is not based on sound reasoning. Their arguments are not based on realities. It is possible to give counter-arguments to every point of criticism noted by them. For example, employers object scientific management on the ground of huge investment for its introduction. It is true that huge investment will be necessary but it is likely to give greater return in due course. In addition, scientific management will bring down the cost and thereby enhance the profits.

### **1.3.2 Contribution of Henry Fayol to Management Thought**

Henry Fayol (1841-1925) is rightly treated as the father of modern theory of general and industrial management. The credit of suggesting the basic principles of management in an orderly manner goes to Henry Fayol. After obtaining an engineering degree, Henry Fayol, joined as chief executive in a coal mining company. He developed his management

principles and general management theory and published them in the form of a book (in French) "General and Industrial Administration" in 1916. It was translated into English in 1930. In due course of time, Henry Fayol came to be recognized as the founder of modern management theory.

Henry Fayol suggested important qualities of managers and stressed the need for raising such qualities. He developed fourteen principles of management out of his practical experience. These principles are universal in character and are applicable to all types of organisations.

Each principle suggested by him has specific meaning and significance. According to him, managers in all organisations need to follow these principles/guidelines while managing the affairs of their business units. The management principles suggested by him in 1916 are universally accepted by modern authorities on management and are treated as valid even to this day.

This is because these principles are practical in nature and also result-oriented. In fact, these principles are the outcome of his long experience as a practicing manager. These basic principals are useful for effective management of business activities. They are related to the basic components of management process such as planning, organizing, staffing, leading, coordinating and controlling.

He incorporated these principles in the management theory suggested by him. The principles of management suggested by him are useful not only in business/industrial enterprises but also in other organizations such as colleges, hospitals, charitable institutions and government departments. Due to his contribution to management theory and principles, Henry Fayol is rightly treated as the Father of Modern Management Thought. Fayol is the first management thinker who provided the conceptual framework of the functions of management in his book —General and Industrial Management.

The functions of management according to Fayol are,

1. Planning
2. Organising
3. Staffing
4. Commanding
5. Coordinating
6. Controlling

The fourteen principles of management suggested by him are related to these basic functions of management process and are universally accepted. Fayol has given adequate details of every principle suggested by him. He also made them easily acceptable by others. According to Henry Fayol, managers should be flexible in the application of these principles.

The fourteen principles of management suggested by him are related to these basic functions of management process and are universally accepted. Fayol has given adequate details of every principle suggested by him. He also made them easily acceptable by others. According to Henry Fayol, managers should be flexible in the application of these principles.

Fayol divided general and industrial management into following six groups:-

- Technical activities (production, manufacture, adaptation).
- Commercial activities (buying, selling and exchange).
- Financial activities (search for and optimum use of capital).
- Security activities (protection of property and persons).
- Accounting activities (stock taking, balance sheet, cost, and statistics).
- Managerial activities (planning, organising, command, coordination and control).

Henry Fayol also suggested 14 principles of management.

These principles are:-

1. Division of work,
2. Authority and responsibility,
3. Discipline,
4. Unity of command,
5. Unity of direction,
6. Subordination of personal interest to organizational interests,
7. Remuneration,
8. Centralization,
9. Scalar chain,
10. Order,
11. Equity,
12. Stability of tenure,
13. Span of co-operation and
14. Initiative

Henry Fayol's contribution to management theory is certainly remarkable. He gave overall concepts of general management and suggested the basic functions of management. He recommended the selection and training of workers and managers. He also advocated the use of organization charts. He suggested certain qualities of manager's which include physical, mental, moral, educational technical and experience. Fayol's theory of management was the first complete theory of management as we understand today. It incorporated proven principles, elements, procedures and techniques based on his practical experience.

### **1.3.3 Contribution of Elton Mayo to the Development of Management Thought**

Elton Mayo (1880-1949) is recommended as the Father of Human Relations School. He introduced human relations approach to management thought. His contribution to the development of management thought is unique and is also treated as human relations approach to management. It was Mayo who led the team for conducting the study at Western Electric's Hawthorne Plant to evaluate the attributes and psychological reactions of workers in on-the-job situations. His associates included John Dewey, Kurt Lewin and others. They conducted the following experiments:

#### **ILLUMINATION EXPERIMENT (1924-27)**

It was done to determine the effect of different levels of illumination on workers' productivity. In this experiment, two group of female workers were located in separate rooms, each group performing the same task. The rooms were equally illuminated with stabilized room temperature, humidity, etc. Slowly the conditions of work were changed to mark change in production. After a period of one-and-a half year, it was concluded that – illumination doesn't affect productivity of workers.

**RELAY ASSEMBLY TEST ROOM EXPERIMENT (1927)** This experiment was conducted to observe the effects of various changes in working conditions on the workers' output and morale. MASS

#### **INTERVIEWING PROGRAMME (1928-31)**

It was launched to explore the employees' feelings (i.e., human attitudes and sentiments) by the worker's social group (informal organization). The workers were asked to express freely and frankly their likes and dislike on the programmes and

policies of the management, working conditions, and behaviour of their boss with workers, etc. After a few days there was a change in the attitude of the workers, however no reforms were introduced. That change was seen because of the following reasons:- The workers thought that the working conditions were changed because of their complaints. They also felt that the wages were better although the wage scale remained at the same level. After interviewing 21, 126 workers, and analysing their complaints, it was found that – there was no correlation between the nature of complaints and the facts. It was concluded that – the experiment succeeded in identifying the following three aspects:- 1. Workers feel elated if they were allowed to express freely. They develop a feeling that the conditions in the environment were changed to the better although no such change took place. 2. Subordinates should be allowed to comment freely about their supervisor. 3. It is difficult to understand the real problems, personal feelings and sentiments of the workers derived from both an employee's personal history and his social situations at work, without appreciating their feelings and sentiments.

### **BANK WIRING EXPERIMENT (1931-32)**

This experiment was done to observe and analyse the group behaviour, workers performing a task in a natural setting. For the experiment, a number of employees consisting of three groups of workmen whose work was inter-related were chosen. Their job was to solder, fix the terminals and finish the wiring. It was known as 'The Bank Wiring Experiment'. Wages were paid on the basis of a group incentive plan and each member got his share on the basis of the total output of the group. It was found that workers had a fixed clear-cut standard of output, which was lower than management target, however they were capable of increasing their output. It was also found that the group did not allow its members to increase or decrease the output. They were highly integrated with their social structure, and informal pressure was used to set right the erring members. The following code of conduct was maintained for group solidarity: One should not turn out too much work. If one does, he is a 'rat buster'. One should not turn out too little work. If one does, he is a 'chesler'. One should not tell a supervisor anything detrimental to an associate. If one does, he is a 'squealer'. One should not attempt to maintain social distance or act officious. If one is an inspector, for example, he should not act like one.

Mayo and his associates came to the following conclusions from their famous Hawthorne experiments:

1. The amount of work to be done by a worker is not determined by his physical capacity but by the social norms.
2. Non-economic rewards play a significant role in influencing the behavior of the workers.
3. Generally the workers do not react as individuals, but as members of group.
4. Informal leaders play an important part in setting and enforcing the group norms.

Mayo discussed the factors that cause a change in human behavior. He concluded that the cause of increase in the productivity of the workers is not a single factor like rest pauses or changing working hours but a combination and several other factors such as less restrictive supervision, giving autonomy to workers, allowing the formation of small cohesive groups of workers and so on. Today, as a result of the efforts of Mayo and his associates, the managers in different organizations recognize that workers' performance is related to psychological, sociological and physical factors.

- Thus, Hawthorne Study was an important landmark to study the behavior of worker and his relationship to the job, his fellow workers and the organization. It proved that informal work groups and the opportunity to be heard and participate in decision-making have an important impact on the productivity of the workers.
- Mayo is one leading management thinker and also a leading advocate of neo-classical theory. The concept of participative management style was suggested in the neo-classical theory.
- The human relations approach suggested by Mayo has special importance in the present period.
- He rightly suggested that management is not a mechanical process but a study of people involved in the production activities. Management will get positive response from its employees when their actions, sentiments and expectations are given due attention.
- Mayo is best known for his work on the project commonly referred to as the Hawthorne Studies. They were conducted in the Hawthorne plant of Western Electric Company in the USA between 1927 and 1932.

- It is said that Mayo applied psychological approach to management for the first time. He used clinical and diagnostic methods. Mayo has drawn various conclusions from these studies.
- The Hawthorne Studies have had a shattering impact on management thinking. Mayo is regarded as revolutionary thinker because of his contribution to the management thought in the recent period. The credit of humanization of management with a view to achieve common interest of management and workers goes to Elton Mayo.



# Assignments

- Compare and contrast the Classical and Neo-classical management theories.(CO1,K4)
- Discuss the significance of Henri Fayol's 14 principles of management in today's business world. (CO1,K4)
- Evaluate Frederick Taylor's Scientific Management and its impact on productivity. (CO1,K3)
- Analyze the Hawthorne Studies conducted by Elton Mayo and their impact on human relations in the workplace. (CO1,K4)
- How has modern management theory evolved to incorporate technological advancements and globalization? (CO1,K3)
- Prepare a timeline showcasing the major eras and contributors to management thought. (CO1,K3)



# **Part A – Q & A (with K level and CO)**

## **1. Define Management. (CO1) (K1)**

Koontz and Weihrich defines Management as “the process of designing and maintaining an environment in which individuals, working together in groups, accomplish their aims effectively and efficiently”.

## **2. What are the various levels of management? (CO1) (K1)**

The various levels existing in an average firm / company are:

Top level management

Middle level management

Lower level management

## **3. What are the various skills required of a manager? (CO1) (K1)**

Managers require four kinds of skills:

Technical skill — Knowledge of and proficiency in working with tools and technology

Human skill — Ability to work with people

Conceptual skill — Ability to recognize important element in a situation and understand relationship among elements, Design skill

## **4. What are the roles played by managers?(CO1)(K1)**

Interpersonal roles: Figurehead, Leader, Liaison.

Informational roles: Recipient, Disseminator, Spokesman.

Decision roles: Entrepreneur, Disturbance handler, Resource allocator, Negotiator.

## **5. What are the functions of a manager? (CO1) (K1)**

Planning, Organizing, Directing. and Controlling. Some people include additional roles such as Leading, Staffing, Coordinating, etc.

## **6. What is scientific management? (CO1) (K1)**

Scientific management is an approach that emphasizes the scientific study of work methods in order to improve worker efficiency and productivity.

It includes task and deadline setting, planning the task, employee selection and training, standardization of working conditions, material, equipment etc. specialization and mental revolution.

## **7. What are the major contributions of Taylor ? (CO1) (K1)**

The major contributions of F.W.Taylor are as follows

He developed the principle of division of labor/work

He developed method study

He advocated time study

He developed certain principles to breakup each job into small independent elements

He developed the concept of fair day's work

He proposed the functional organization

## **8. What do you mean by 'unity of command'? (CO1) (K2)**

'Unity of command' is an important principle proposed by Henry Fayol. This implies that an employee should receive orders from one superior only.

## **9. What is authority? (CO1) (K1)**

It is the power given to a person to get work from his subordinates.

## **10. How did Fayol classify business activities? (CO1) (K1)**

Fayol classified business activities into six groups:, Technical ,Commercial, Financial ,Accounting Security, and Administrative (Managerial).

## **11. What is the interpersonal roles of manager? (CO1) (K1)**

The manager responsibilities related to interactions with employees and other stakeholders. Through these interactions, the manager can achieve organizational goals. The managerial roles included in this category are figurehead, leader and liaison.

## **12. What is the informational role of manager? (CO1) (K1)**

The manager represents situations when a manager generates, receives or shares knowledge with employees and higher-level colleagues to accomplish objectives.

The managerial roles included in this category are monitor, disseminator and spokesperson.

## **13. What is the decisional role of manager? (CO1) (K1)**

To describes a manager's responsibility to use the information they gain to form business and strategic decisions. The managerial roles included in this category are entrepreneur, disturbance-handler, resource-allocator and negotiator.

## **14. What is the dissemination role of manager ? (CO1) (K1)**

Disseminator Role: The manager transmits special information into the organization.

The top level manager receives and transmits more information from people outside the organization than the supervisor.

## **15. What is the general and industrial management six groups? (CO1) (K1)**

- Technical activities (production, manufacture, adaptation).
- Commercial activities (buying, selling and exchange).
- Financial activities (search for and optimum use of capital).
- Security activities (protection of property and persons).
- Accounting activities (stock taking, balance sheet, cost, and statistics).
- Managerial activities (planning, organising, command, coordination and control)

## **16. Name two key contributors to the Classical Management Era.**

Frederick W. Taylor and Henri Fayol are two major contributors to the Classical Management Era.

## **17. What is the focus of the Pre-Scientific Management Era?**

The Pre-Scientific Management Era focused on trial-and-error methods, no standardized practices, and personalized management styles.

## **18. What is Scientific Management?**

Scientific Management is an approach by Taylor that emphasizes efficiency and productivity through scientific study of tasks, time studies, and standardization.

# Part B Qs (with K level and CO)

1. Explain the various concepts and foundations of management. (13) **CO1, K2**
2. Discuss scientific management era and modern management era. (13) **CO1, K2**
3. Explain classical and neo classical management era. (13) **CO1, K2**
4. Discuss the contribution of management thinkers. (13) **CO1, K2**
5. Explain the Fayol's Fourteen Principles of Management. (13) **CO1, K2**



## **Supportive Online Courses**

### **Supportive Online Courses**

#### ❖ Swayam Course

Course: Principles of Management

Link : [https://swayam.gov.in/nd1\\_noc20mg58/preview](https://swayam.gov.in/nd1_noc20mg58/preview)

By Prof. Susmita Mukhopadhyay, Prof. S. Srinivasan

IIT Kharagpur

#### ❖ Coursera Course

Course: Project Management Principles and Practices Specialization

Link: <https://www.coursera.org/specializations/project-management>

## **Real time Applications in day to day life and to Industry**

Management theories are used in all industries to improve

#### ❖ productivity, efficiency, optimize resource utilization and satisfy all stakeholders.

# Contents beyond the Syllabus

## Links to Additional Information

Introduction to Organization and Management Video

Link: <https://nptel.ac.in/courses/110/102/110102016/#>

Henry Fayal's Management Theory

Video Link :

<https://www.youtube.com/watch?v=9daoqvyAob0>

Scientific Management theory

<http://la.utexas.edu/users/hcleaver/330T/350kPEETaylorSciManagementTable.pdf>

<https://kalyan-city.blogspot.com/2010/06/management-functions-process-management.html>

# Real time Applications

- Scientific Management: Applied in manufacturing units like Toyota's assembly lines (time-motion studies). (C01,K3)
- Administrative Theory: Used in public sector and bureaucratic organizations with structured hierarchies. (C01,K3)
- Hawthorne Studies: Basis for modern HR practices like employee engagement, feedback systems. (C01,K3)
- Modern Theories: Lean management, agile methodology, and systems thinking used in IT firms and global businesses. (C01,K3)



# Assessment Schedule

\* Assessment I

\* Proposed Date :

\* Actual Date : .....



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# **Text Books & References**

## **TEXT BOOKS**

1. Richard L. Daft, Understanding the Theory and Design of Organization,Cengage Learning India Private Limited, Eleventh Edition, 2020.

## **REFERENCES**

1. Stephen P. Robbins, Timothy A. Judge, Neharika Vohra, Organizational Behavior, Eighteenth Edition, Pearson India, 2019.



## **GATE Level Conceptual Questions – (MCQ/Descriptive)**

1. MCQ: Who is known as the father of Scientific Management?

- a) Henri Fayol
- b) Max Weber
- c) Frederick Taylor
- d) Elton Mayo

Ans: c) Frederick Taylor

2. MCQ: The Hawthorne experiments were conducted in which company?

- a) Western Electric Company
- b) Ford Motors
- c) General Electric
- D) Siemens

Ans: a) Western Electric Company

3. True /False

The Modern Management Era includes the use of software tools like ERP systems. → True



4. T/F: Henri Fayol introduced time and motion studies. → False

5. Which of the following is NOT one of Fayol's principles of management?

- a) Unity of command
- b) Scalar chain
- c) Job rotation
- d) Equity

Ans: c) Job rotation

6. The Classical Management Era focused more on efficiency and structure. → True

7.: Who emphasized the need for cooperation between management and labor?

- a) Fayol
- b) Elton Mayo
- c) Taylor
- d) Peter Drucker

Ans: c) Taylor

## **Descriptive:**

1. Explain how Henri Fayol's administrative theory complements or differs from Taylor's scientific management. (CO1,K1)

# Mini Project suggestions

1. Comparative Study: Impact of Classical vs. Modern Management Theories in Today's Startups. (CO1,K4)
2. Case Study Analysis: Application of Fayol's Principles in Indian PSUs (like BHEL, ONGC, etc.). (CO1,K4)
3. Behavioral Approach: Conducting a mini Hawthorne experiment in a classroom or small organization. (CO1,K3)
4. Management Timeline: Creating an interactive digital timeline of the evolution of management theories. (CO1,K4)
5. Survey Project: Analyzing how different management approaches are applied in small vs. large businesses(CO1,K4)



# ENTERPRISE CYBER SECURITY



# Course Objectives

- ▶ Learn the fundamentals of cryptography.
- ▶ Learn the key management techniques and authentication approaches.
- ▶ Explore the network and transport layer security techniques.
- ▶ Understand the application layer security standards.
- ▶ Learn the real time security practices.

# Course Outcomes

- ▶ Understanding the core concepts and importance of cybersecurity in organizational settings.
- ▶ Acquire the knowledge common network attacks and deploy appropriate security measures.
- ▶ Implement encryption and secure communication protocols for data integrity and confidentiality.
- ▶ Deploy and manage Intrusion Detection and Prevention Systems for threat detection.
- ▶ Identify and mitigate common web application vulnerabilities.
- ▶ Conduct penetration tests to evaluate the security posture of web applications.

# Unit-1

## INTRODUCTION TO CYBERSECURITY

- Cyber Security
- Need of Cybersecurity in Organizations
- CIA Triad
- Confidentiality, Integrity, Availability
- Reason for Cyber Crime
- Need for Cyber Security
- History of Cyber Crime; Cybercriminals
- Classification of Cybercrimes
- A Global Perspective on Cyber Crimes; Cyber Laws
- The Indian IT Act
- Cybercrime and Punishment.

# Module 2

## NETWORK SECURITY BASICS

- Network Security Concepts
- Basics of Networks
- Common Types of Network Attacks
- Introduction to Firewalls
- Types of Firewalls
- IDS/IPS
- Virtual Private Networks (VPN's)
- Secure configuration and management of network devices.
- Case Study: Install Kali Linux on Virtual box.

# Module 3

## SECURE COMMUNICATION PROTOCOLS

- Encryption Principles
- Cryptography, Cryptanalysis, Feistel Cipher Structure.
- Block Encryption algorithms: DES, triple DES, and AES.
- Transport Level Security: Secure Sockets Layer (SSL), Transport Layer Security
- Electronic Mail Security
- Pretty Good Privacy (PGP), S/MIME
- Securing wireless networks: WPA, WPA2, WPA3

# Module 4

## INTRUSION DETECTION AND PREVENTION SYSTEMS

- IDPS
- Need of Intrusion Detection Systems in Cyber Security
- Types of IDPS: Network-based and Host-based
- Configuring and Managing IDPS for threat detection using Honeypots
- Case Study: Setup a honey pot and monitor the honey pot on network

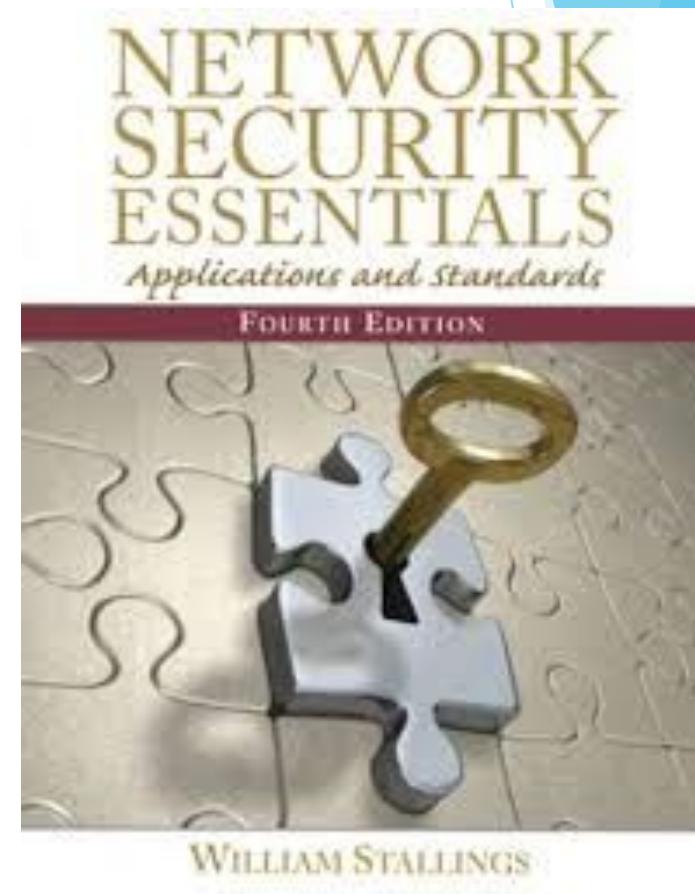
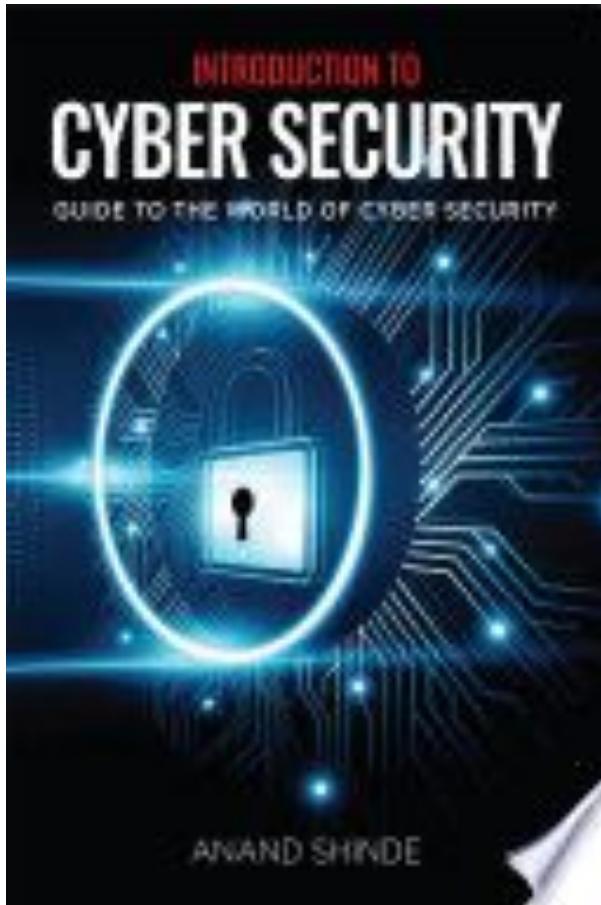
# Module 5

## WEB APPLICATION SECURITY

- Introduction to Web Application Vulnerabilities
- Cross Site Scripting (XSS)
- SQL injection- Denial of Service (DoS)
- Web Application Testing
- Types of Penetration Tests
- OWASP and OWASP Top.

# Text Books

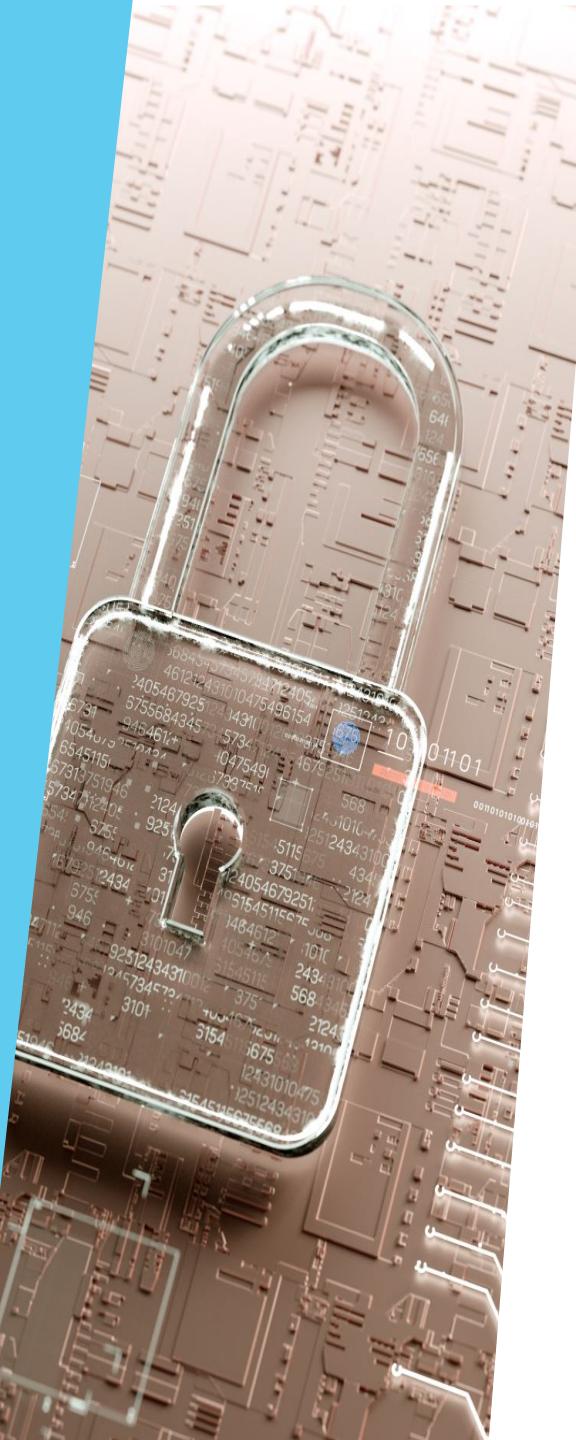
- Anand Shinde, “Introduction to Cyber Security Guide to the World of Cyber Security”, Notion Press, 2021.
- Network Security Essentials (Applications and Standards) by William Stallings Pearson Education, 2018.



# Reference Books

- ▶ William Stallings, "Cryptography and Network Security - Principles and Practice", Seventh Edition, Pearson Education, 2017.
- ▶ Ravi Das and Greg Johnson, “Testing and Securing Web Applications”, 2021.
- ▶ Andrew Hoffmann, Web Application Security: Exploitation and Countermeasures for Modern Web Applications, O'Reilly Media, Inc, 2020.

# Cyber security



# What is Cybersecurity?

- ▶ The term cyber security is used to refer to the **security offered through on-line services** to protect your online information.
- ▶ Cyber Security and Information Security differs only in its **response and Reduction/Prevention**.
- ▶ Cyber security encompasses all aspects of security viz., Physical, Technical, Environmental, Regulations and Compliance including Third Parties involved in delivering an objective
- ▶ With an increasing amount of people getting connected to Internet, the security threats that cause massive harm are increasing also

# Need For Cybersecurity

Our world today is ruled by technology and we can't do without it at all. From booking our flight tickets, to catching up with an old friend, technology plays an important role in it.



However, the same technology **may expose** you when it's **vulnerable** and could lead to loss of essential data. Cyber security, alongside physical commercial security has thus, slowly and steadily, become one of the most important topics in the business industry to be talked about.



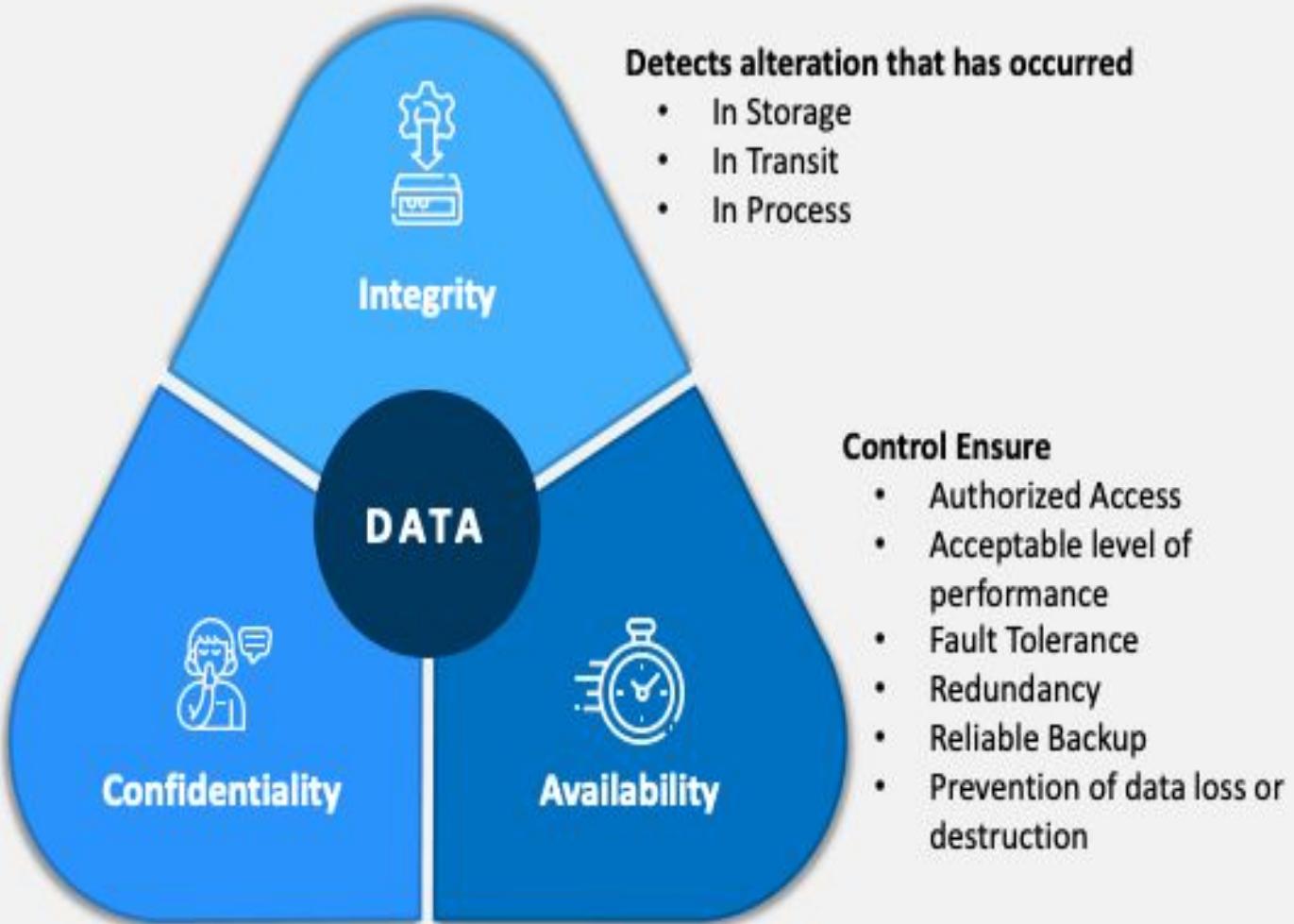
Cyber security is necessary since it helps in **securing data from threats** such as data theft or misuse, also safeguards your system from viruses.



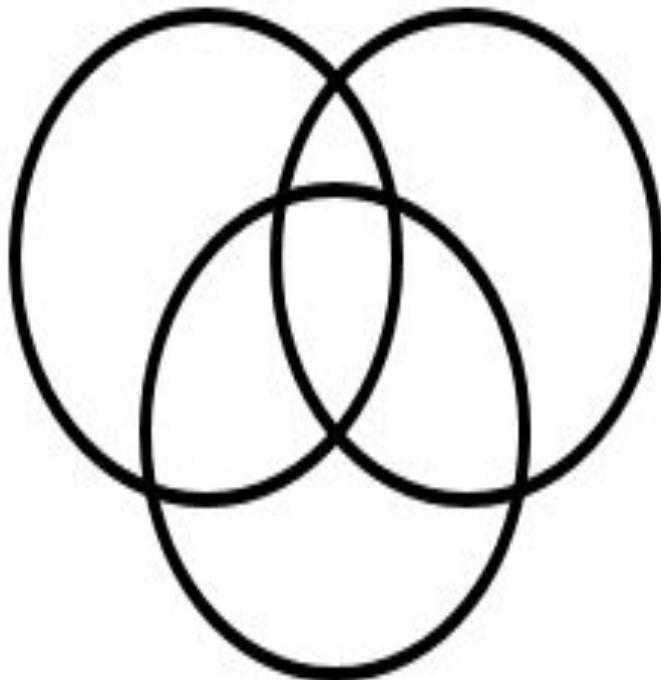
## Need For Cybersecurity

- ▶ Cyber security becomes important as **Business** are being carried now on **Network** of Networks. Computer **networks** have always been the **target** of **criminals**, and it is likely that the danger of cyber security breaches will only increase in the future as these networks expand, but there are sensible precautions that organizations can take to minimize losses from those who seek to do harm.

# CIA TRAID



# CIA TRAID



**INTEGRITY**  
authenticity

**CONFIDENTIALITY**  
disclosure

**AVAILABILITY**  
access

# Confidentiality

- ◆ *the property that information is not made available or disclosed to unauthorized individuals, entities, or processes*



# Confidentiality

- ◆ *Confidentiality* refers to **protecting information** from being accessed by **unauthorized parties**. In other words, only the people who are **authorized** to do so can gain **access to sensitive data**.
- ◆ A failure to maintain confidentiality means that someone who shouldn't have **access** has managed to get it, through intentional behavior or by accident. Such a failure of confidentiality, commonly known as a **breach**

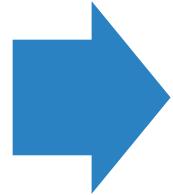
# Integrity

*the property of  
safeguarding the  
accuracy and  
completeness of assets*



# Integrity

*Integrity* authenticity of information refers to ensuring the fact that information is not altered, and that the source of the information is genuine.



Imagine that you have a website and you sell products on that site. Now imagine that an attacker can shop on your web site and maliciously alter the prices of your products, so that they can buy anything for whatever price they choose. That would be a failure of integrity, because your information—in this case, the price of a product—has been altered and you didn't authorize this alteration.



# Availability

- ▶ *The property of being accessible and usable upon demand by an authorized entity*



# Availability

- ▶ *Availability* means that information is accessible by authorized users.
- ▶ Information and other critical assets are accessible to customers and the business when needed. Note, information is unavailable not only when it is lost or destroyed, but also when access to the information is denied or delayed

	Threats	Consequences	Countermeasures
Integrity	<ul style="list-style-type: none"> <li>• Modification of user data</li> <li>• Trojan horse browser</li> <li>• Modification of memory</li> <li>• Modification of message traffic in transit</li> </ul>	<ul style="list-style-type: none"> <li>• Loss of information</li> <li>• Compromise of machine</li> <li>• Vulnerability to all other threats</li> </ul>	Cryptographic checksums
Confidentiality	<ul style="list-style-type: none"> <li>• Eavesdropping on the Net</li> <li>• Theft of info from server</li> <li>• Theft of data from client</li> <li>• Info about network configuration</li> <li>• Info about which client talks to server</li> </ul>	<ul style="list-style-type: none"> <li>• Loss of information</li> <li>• Loss of privacy</li> </ul>	Encryption, web proxies
Denial of Service	<ul style="list-style-type: none"> <li>• Killing of user threads</li> <li>• Flooding machine with bogus requests</li> <li>• Filling up disk or memory</li> <li>• Isolating machine by DNS attacks</li> </ul>	<ul style="list-style-type: none"> <li>• Disruptive</li> <li>• Annoying</li> <li>• Prevent user from getting work done</li> </ul>	Difficult to prevent
Authentication	<ul style="list-style-type: none"> <li>• Impersonation of legitimate users</li> <li>• Data forgery</li> </ul>	<ul style="list-style-type: none"> <li>• Misrepresentation of user</li> <li>• Belief that false information is valid</li> </ul>	Cryptographic techniques <sup>23</sup>

# Cybercrime

Experts estimate that cybercrime damages will reach \$6 trillion annually by 2021, making it one of the most lucrative criminal enterprises



# Reason for Cyber Crime



FINANCIAL  
GAIN



LACK OF  
AWARENESS



ANONYMITY ON THE  
INTERNET



WEAK CYBER  
LAWS



POLITICAL/PERSONAL  
REVENGE<sup>25</sup>

# Need for Cyber Security



DATA  
PROTECTION



INFRASTRUCTU  
RE SECURITY



MAINTAINING  
TRUST

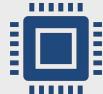


PREVENT  
ECONOMIC LOSS



ENSURE  
CONTINUITY

# History of Cyber Crime



**1970s–1990s**  
Early Hacking,  
Phone  
Phreaking



**1990s–2000s**  
Email and  
Web Attacks



**2000s–Now**  
Organized  
Crime,  
Ransomware,  
AI-based  
Attacks

# Cybercriminals

# Classification of Cybercrimes

- **Hacking**
- **Identity theft**
- **Cyber Terrorism**
- **Cyber Stalking**
- **Defamation**
- **Intellectual Property crime**
- **Violation of privacy**
- **Receipt of stolen property**
- **Publishing or transmitting obscene material**
- **Spamming**
- **Spreading virus**
- **Denying access to an Authorized Person**
- **Damaging Computers and Disrupting Networks**
- **Selling illegal Items Online**

# Global Perspective on Cyber Crimes

Transnational Nature

Global Syndicates

International Organizations: Interpol, Europol

Cyberwarfare and Cyberespionage

# Cyber Laws

Covers Data Protection, IP, e-signatures

Penalties: Fines, Imprisonment

Examples: GDPR fines, IT Act prosecutions

The Information Technology Act, 2000, was passed as the Act No.21 of 2000, got President assent on 9 June and was made effective from 17 October 2000.

The Act essentially deals with the following issues:

- ❑ Legal Recognition of Electronic Documents
- ❑ Legal Recognition of Digital Signatures
- ❑ Offenses and Contraventions
- ❑ Justice Dispensation Systems for cyber crimes

Information Technology Amendment Act 2008 was placed in the Parliament and passed without much debate, towards the end of 2008. Some of the notable features of the ITAA are as follows:

- Focussing on data privacy
- Focussing on Information Security
- Defining cyber café
- Making digital signature technology neutral
- Defining reasonable security practices to be followed by corporate
- Redefining the role of intermediaries
- Recognising the role of Indian Computer Emergency Response Team
- Inclusion of some additional cyber crimes like child pornography and cyber terrorism
- authorizing an Inspector to investigate cyber offences (as against the DSP earlier)

**The Act totally has 13 chapters and 90 sections**

**Hacking and Data Theft:** Sections 43 and 66 of the IT Act penalise a number of activities ranging from hacking into a computer network,

- data theft, introducing and spreading viruses through computer networks
- damaging computers or computer networks or computer programmes
- disrupting any computer or computer system or computer network
- denying an authorised person access to a computer or computer network
- damaging or destroying information residing in a computer etc.

**The maximum punishment for the above offences is imprisonment of up to 3 (three) years or a fine or Rs. 5,00,000 (Rupees five lac) or both.**

**Receipt of stolen property:** Section 66B of the IT Act prescribes punishment for

- dishonestly receiving any stolen computer resource or communication device.

The punishment for this offence under Section 66B of the IT Act is imprisonment of up to 3 (three) years or a fine of up to Rs. 1,00,000 (Rupees one lac) or both.

**Identity theft :** Section 66C of the IT Act prescribes punishment for identity theft

- Anyone who fraudulently or dishonestly makes use of the electronic signature, password or any other unique identification feature of any other person

They will be punished with imprisonment of either description for a term which may extend to 3 (three) years and shall also be liable to fine which may extend to Rs. 1,00,000 (Rupees one lac).

- **Violation of privacy:** Section 66E of the IT Act prescribes punishment for violation of privacy and provides
  - that any person who intentionally or knowingly captures, publishes or transmits the image of a private area of any person without his or her consent, under circumstances violating the privacy of that person,
  - **shall be punished with imprisonment which may extend to 3 (three) years or with fine not exceeding Rs. 2,00,000 (Rupees two lac) or with both.**

- **Cyber terrorism:** Section 66F of the IT Act prescribes punishment for cyber terrorism.
  - Whoever, with intent to threaten the unity, integrity, security or sovereignty of India or to strike terror in the people or any section of the people,
  - denies or causes the denial of access to any person authorized to access a computer resource, or attempts to penetrate or access a computer resource without authorisation or exceeding authorised access, or
  - introduces or causes the introduction of any computer contaminant, and by means of such conduct causes or is likely to cause death or injuries to persons or damage to or destruction of property or disrupts or knowing that it is likely to cause damage or disruption of supplies or services essential to the life of the community or adversely affect critical information infrastructure, is guilty of 'cyber terrorism'.

**Section 69:** This is an interesting section in the sense that it empowers the Government or agencies as stipulated in the Section, to intercept, monitor or decrypt any information generated, transmitted, received or stored in any computer resource, subject to compliance of procedure as laid down here.

# The Indian IT Act, 2000

# Cyber attack

- ▶ A malicious attempt, using digital technologies, to cause personal or property loss or damage, and/or steal or alter confidential personal or organizational data

# Major security problems



- ▶ Virus
- ▶ Hacker
- ▶ Malware
- ▶ Trojan horses
- ▶ Password cracking

# Viruses and worms

- ▶ Virus - malware attached to a carrier such as an email message or a word processing document
- ▶ A Virus is a “program that is loaded onto your computer without your knowledge and runs against your wishes
- ▶ Worm - malware can autonomously spread itself without a carrier, using information about connected computers



# Solution

- ▶ Install a security suite that protects the computer against threats such as viruses and worms.



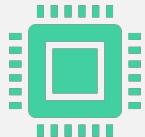
# How To prevent hacking

- ▶ It may be impossible to prevent computer hacking, however effective security controls including strong passwords, and the use of firewalls can help.

# Malware



The word "malware" comes from the term "MALicious softWARE."

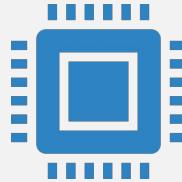


Software that has some malicious intent and which is installed on a user's computer without that user's consent.

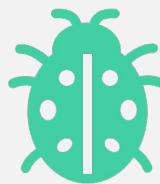


Key loggers – Software installed on a computer that captures key strokes and sends these to a remote system. Used to try and get personal information to gain access to sites such as banks

# Malware Cont.



Ransomware— Software that runs on a user's computer and demands that the user pays some other organization. If they don't, the information on their computer will be destroyed.



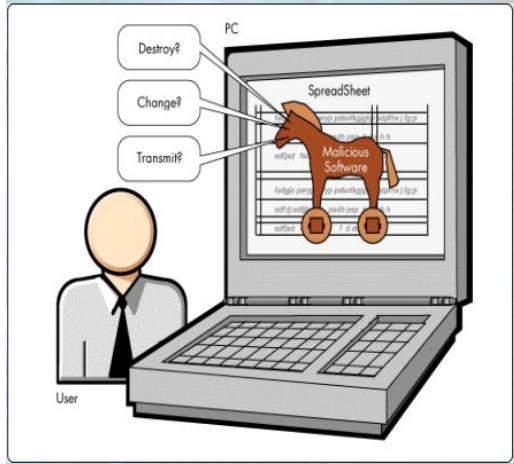
Malware can usually spread itself from one computer to another either as a virus or as a worm

# To Stop Malware

- ▶ Download an anti-malware program that also helps prevent infections.
- ▶ Do not download from unknown sources
- ▶ Activate Network Threat Protection, Firewall, Antivirus.



# Trojan Horses



- ▶ Trojan horses are email viruses that can duplicate themselves, steal information, or harm the computer system.
- ▶ These viruses are the most serious threats to computers

# How to Avoid Trojans

- ▶ Security suites, such as Avast Internet Security, will prevent you from downloading Trojan Horses.
- ▶ Do not click unknown links.



# Password Cracking

- ▶ Password attacks are attacks by hackers that are able to determine passwords or find passwords to different protected electronic areas and social network sites.



# Securing Password

Use always Strong password.  
Never use same password for  
two different sites.



# Insider attacks

- ▶ Attacks to an organization carried out by someone who is inside that organization either by himself or with connivance of an outsider.
- ▶ • Difficult to counter using technical methods as the insider may have valid credentials to access the system

# External attacks



credentials or  
of some  
n access to the  
ns

# Malicious and accidental damage



Cybersecurity is most concerned with  
Cyber attacks



Cyber-accidents – Accidental events that can cause loss or damage to an individual, business or public body.



Many of the same technologies used to protect against external attack also protect against cyber-accidents.



However, sometimes protecting against cyber attacks increases the probability of cyber-accidents.

# Analysis of Information Security Threats

- ▶ WHO
  - ▶ *98% from external agents*
  - ▶ *4% from implicated internal employees*
  - ▶ *< 1% by Business Partners &*
  - ▶ *58% of all data thefts linked to activist groups*

# Latest Trends - Information Security Threats

- ▶ Hacktivism
- ▶ *Hack + Activism = Hacktivism*
- ▶ *the use of legal and/or illegal digital tools in pursuit of a political / personal objective*
- ▶ *Tools and Attacks are used for*
  - ▶ *Web-site defacements*
  - ▶ *Redirects*
  - ▶ *Denial Of Service Attacks*
  - ▶ *Identity Theft*
  - ▶ *E-mail Bombing*
  - ▶ *Web-Site Mirroring*
  - ▶ *Doxing - To gather information using sourced on the internet*

# DEFACED!

Dear admin. My name is n3m1s. I found vuln in your site.  
and i defaced your site.  
I not delete files in your host.

Fix please.

Meets to: Xaker Name Team (Russia), and to Tesla Team (S



Defaced by Team Mosta

Algeria Hacker

I will not forget the maximum penetration of our brothers in Palestine

This is currently owned - Mozilla Firefox

File History Bookmarks Tools Help http://orange-pumpkin.com/



HACKED BY TURKISH NATIONALIST AND REPUBLICAN HACKER GROUP

We are patriot, Turkish Nationalist and republican hacker group.

This is currently owned - Mozilla Firefox

File History Bookmarks Tools Help http://orange-pumpkin.com/

HACKED



Saudi-Security-T3rror

Was Here

The FBI For Security Hacked!!!!

http://www.saudisecurity-t3rror.com

# Web Site Defacement

- ▶ *Web Site Defacements - Hacking and altering the website of a company's website.*



# Identity Fraud / Identity Theft

- ▶ *Stealing someone's identity in which someone pretends to be someone else by assuming that person's identity*





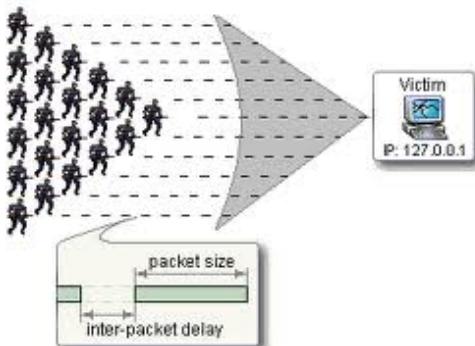
# Doxing



► *Process of Gathering  
and releasing Personally  
Identifiable information*



# Denial Of Service Attack

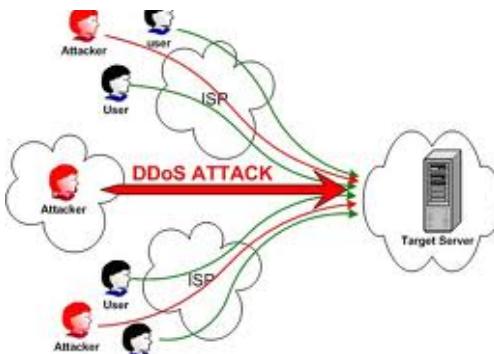


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Devices:  
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• USB Modems  
Pay My Bill  
Contact Us  
News Room  
Investor Relations

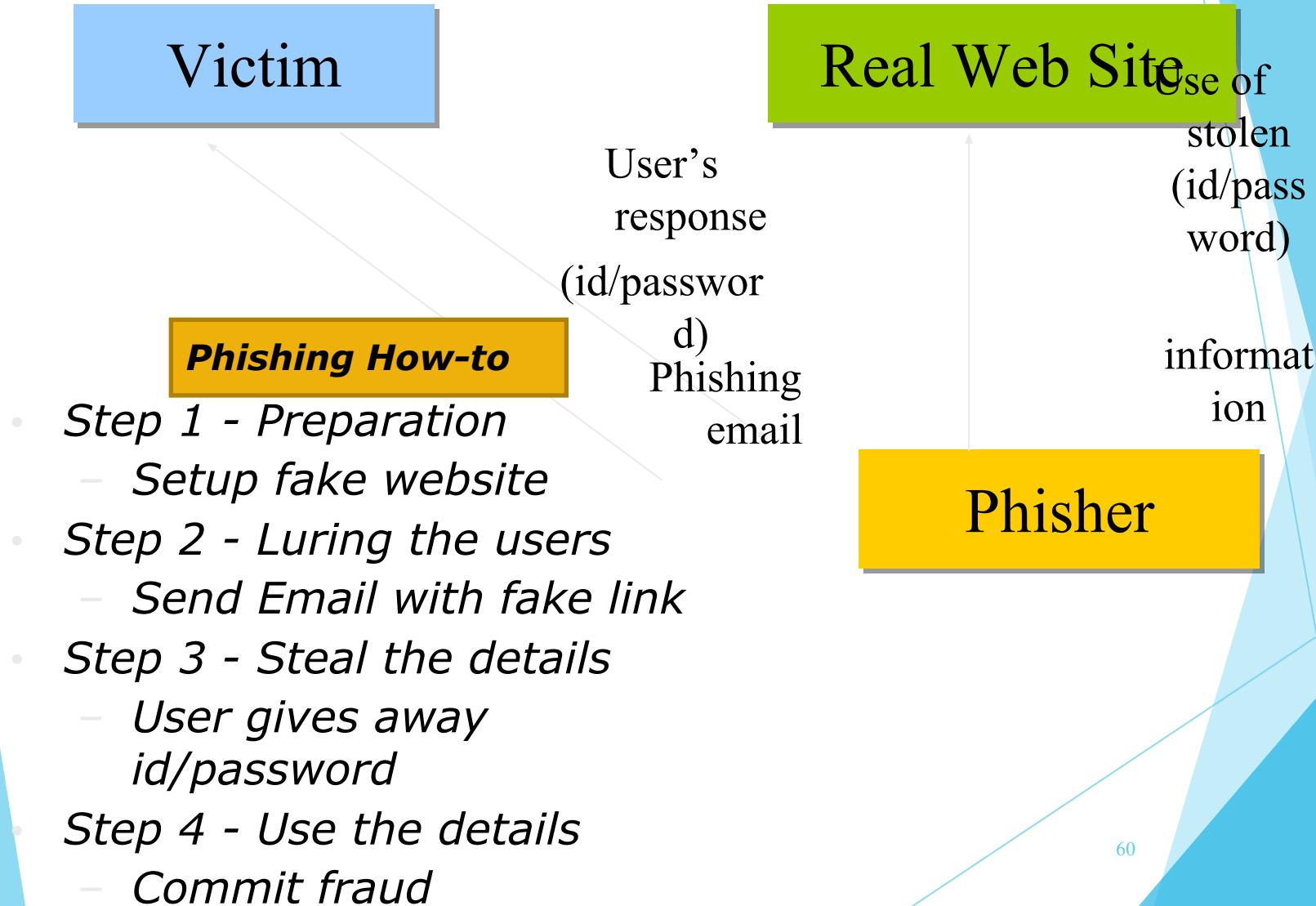


- ▶ Attempt to make a machine or network resource unavailable to its intended users
- ▶ typically target sites or services hosted on high-profile web servers such as banks, credit card payment gateways, and even root nameservers.

# Key Techniques Used

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# Key Technique Used



# Most common security mistakes

Podcasts

No security

Open ports

Network

Software

# Information Security Responsibilities

Engage Information Security teams to support the line of business, enabling secure solutions for new processes and technology

Work with Information Security teams RISO, RISI to drive line of business-specific information security metrics reporting

Support Regional Information Security teams in mitigating security risks from Internal Audit report findings

Follow business continuity plans given by bank, in case of any disaster/emergency.

Report Security Violations and security incidents

Adhere to Bank's Information Security Policy and guidelines

Maintain and update Asset register of your office/dept

Extend support to RISO during Risk Assessment and Business Impact Analysis of your office/dept





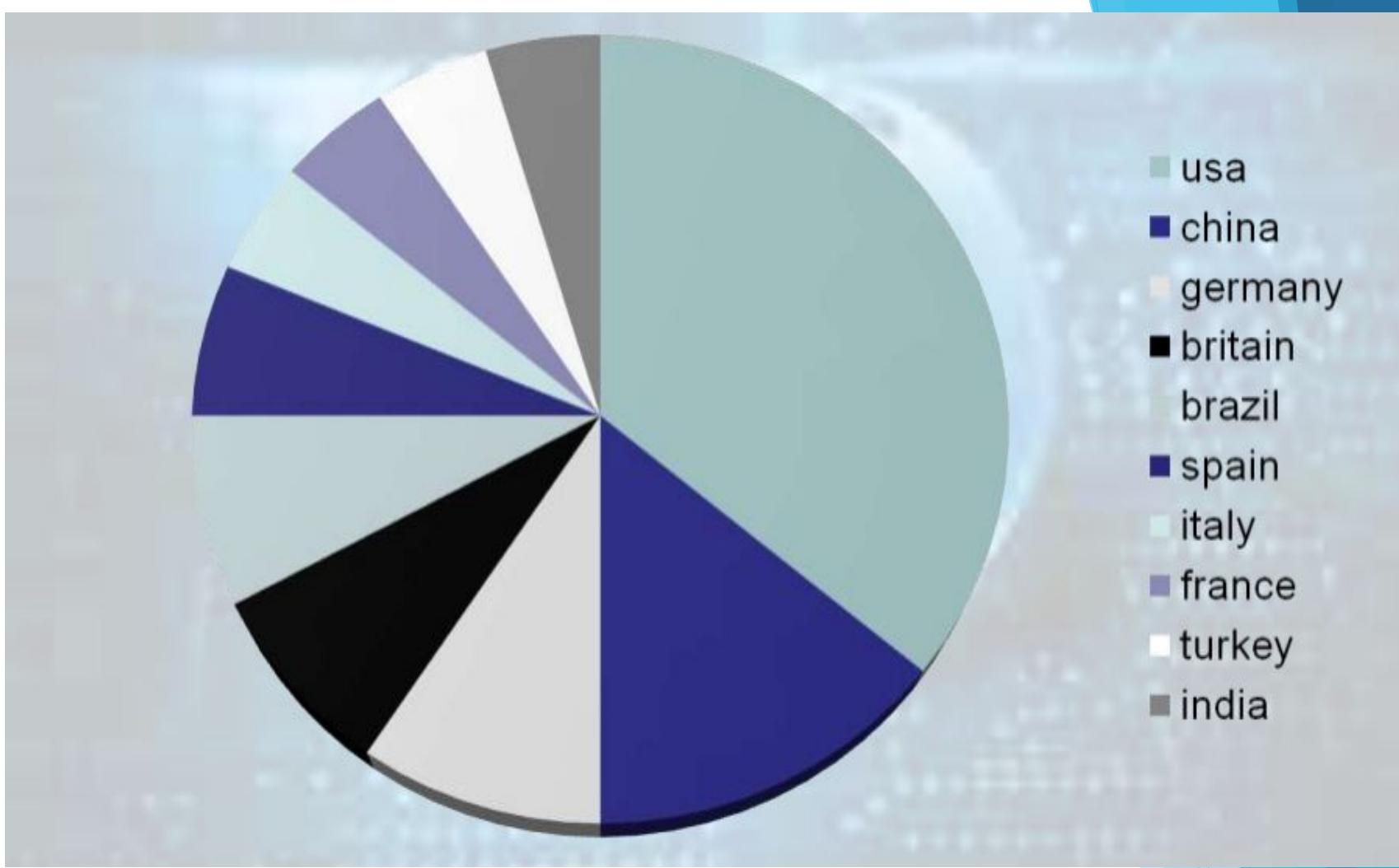
# Standards & Regulations

- ▶ *ISO 27001 (Information Security Management System)*
- ▶ *ISO 22301 (Business Continuity Management System)*
- ▶ *PCI- DSS (Payment Card Industry - Data Security Standard)*
- ▶ *IT Act 2000 & ITAA 2008 (Information Technology Act, India)*
- ▶ *RBI Guidelines (Reserve Bank of India)*



# Cyber Security Is Everyone's Responsibility

Robert Statica - Cybersecurity



India stands 10th in the  
cyber crime in the world

# THANK YOU

