

Introduction

Objective: To develop a foundational understanding of management, organization and engineering management

6 Hours

1.1 Management

Management is the process of designing and maintaining an environment in which individuals, working together in groups, efficiently accomplish selected aims.

This designing and basic definition needs to be expanded:

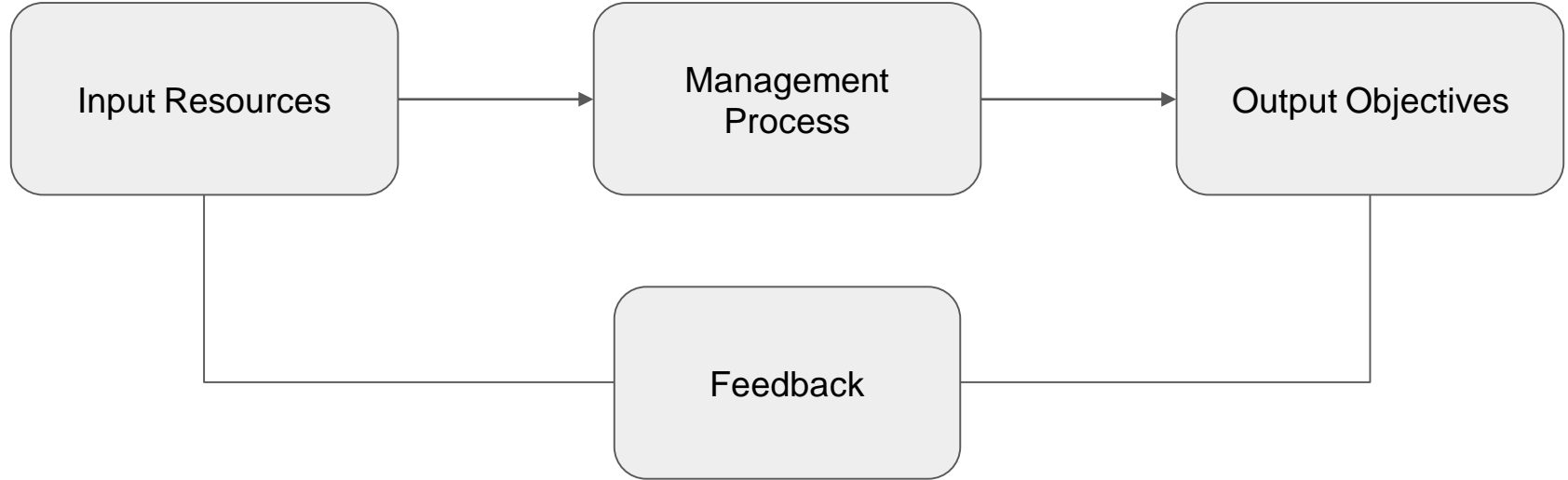
- As managers, people carry out the managerial functions of planning, organizing staffing, leading, and controlling.
- Management applies to any kind of organization.
- It applies to managers at all organizational levels.
- The aim of all managers is the same: to create a surplus. (Profit)
- Managing is concerned with productivity, which implies effectiveness and efficiency.

- Management is the process of designing a controlled environment by planning activities and events, organizing, staffing, and leading a group of individuals to accomplish selected aims and goals while increasing productivity, efficiency and surplus in the process (Swostika)

1.1.1 Functions of Management

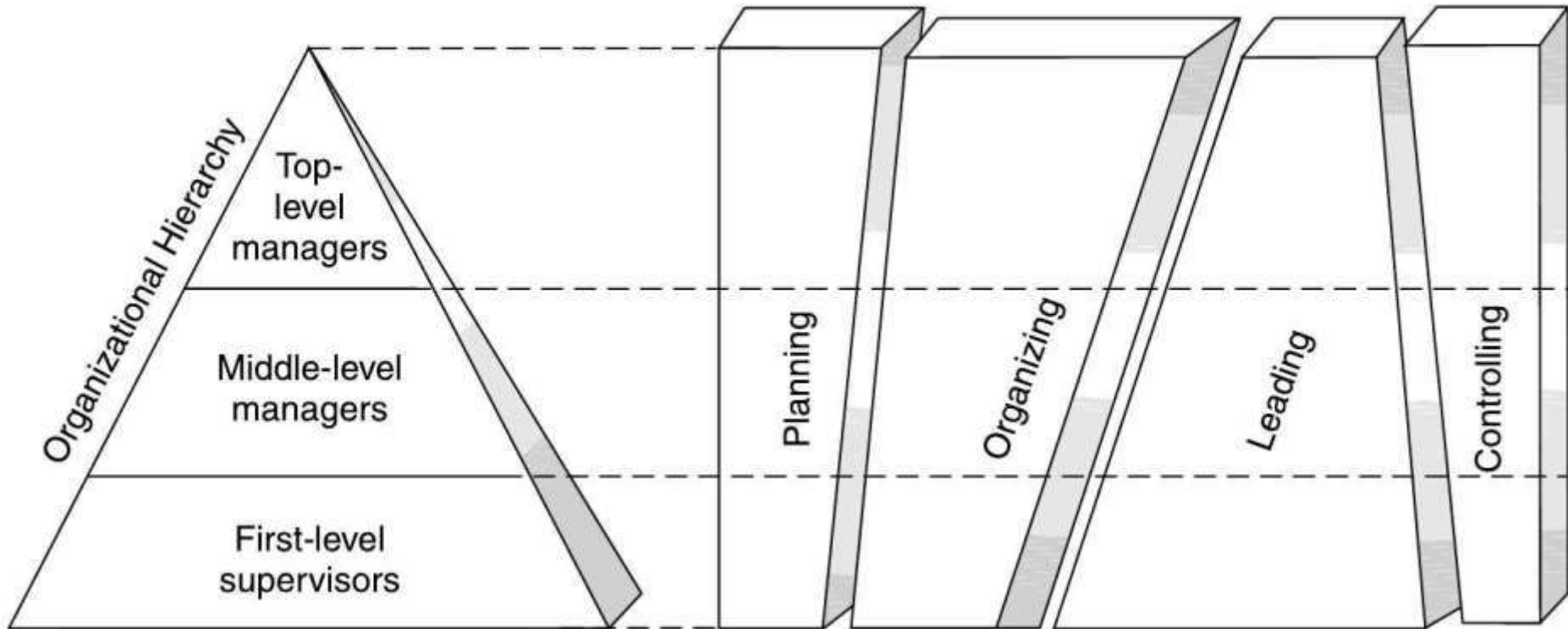
- Five managerial functions—planning, organizing, staffing, leading, and controlling—around which the knowledge that underlies those functions can be organized.
- These functions are affected by external factors such as political, economic, social, technological, ethical, legal
- There are internal factors of strength and weakness that affects management functions
- Management is an essential for any organization or enterprise

1.1.1 Functions of Management



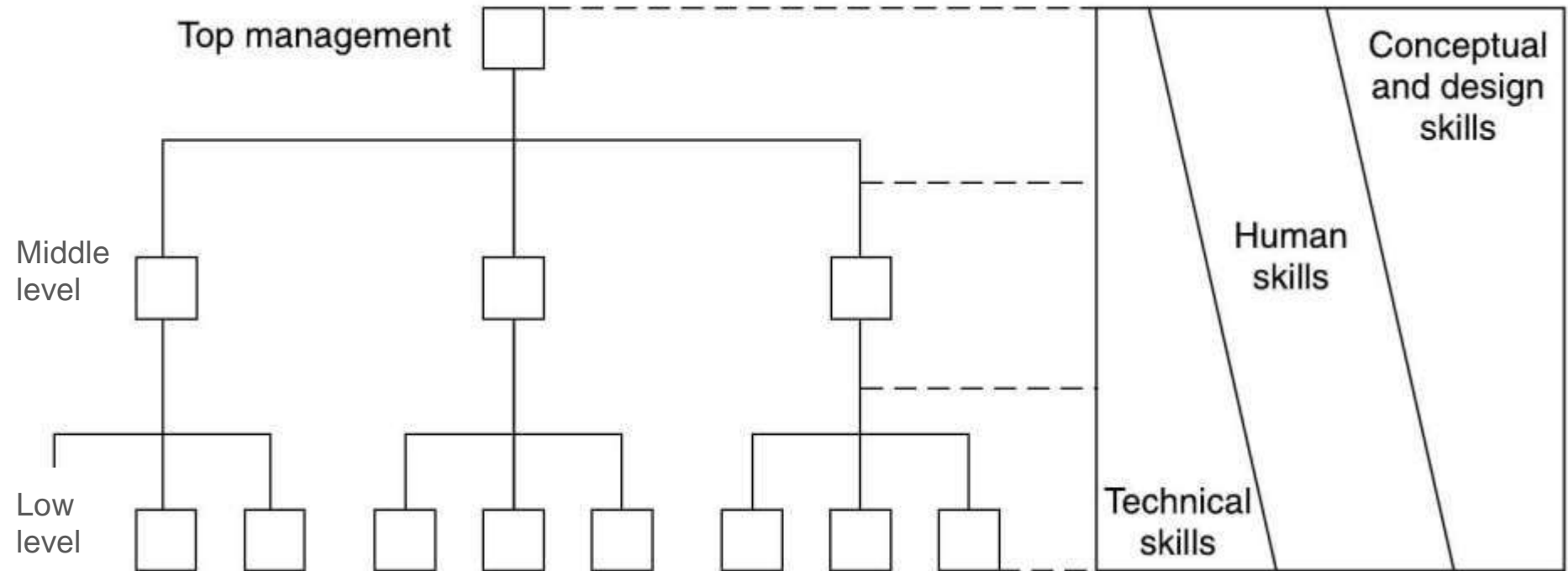
1.1.2 Level and scope of management

Time Spent in Carrying out Managerial Functions



1.1.2 Level and scope of management

Skills and Managerial Levels



1.1.3 Principles of Management

- Fundamentals truth of general guidelines with universal acceptance
- Principles are evolving so manager's need is to become adaptive
- Some of the key principles are:
- Management by Objectives
- Division of work
- Substitution of resources
- Span of control
- Unity of functions
- Unity of command
- Delegation of authority
- Management by exception
- Shortest Decision path

Evolution of Management Thought

Learning Objectives:

- Understand how management theories developed over time
- Identify major contributors and their impact
- Connect historical theories to modern engineering management practices

Classical Management Theories

1. Scientific Management
2. Modern Operational Management Theory
3. Behavioral Sciences Approach
4. Systems Theory
5. Modern Management Thinkers

Scientific Management



Frederick W. Taylor
(1856–1915)

Frederick W. Taylor

- Father of Scientific Management
- Works: Shop Management (1903), Principles of Scientific Management (1911)
- Focused on efficiency, productivity, and incentive-based pay

Henry L. Gantt:

- Developed Gantt Chart
- Emphasized worker selection, cooperation, and training

Frank & Lillian Gilbreth:

- Time-and-motion studies
- Lillian focused on psychology and human factors

Key Principles:

- Efficiency through standardization
- Clear division of labor
- Scientific approach to management decisions

Modern Operational Management Theory

Henri Fayol:

- Father of modern management theory
- Work: Administration Industrielle et Générale (1916)
- Identified 6 groups of industrial activities
 1. Technical
 2. Commercial
 3. Financial
 4. Security
 5. Accounting
 6. Managerial
- Proposed 14 principles of management

No.	Principle	Brief Description
1	Division of Work	Specialization boosts efficiency and productivity.
2	Authority	Right to give orders with accountability for outcomes.
3	Discipline	Adherence to rules and respect for agreements.
4	Unity of Command	Each worker should have only one direct supervisor.
5	Unity of Direction	One leader, one plan for activities with the same objective.
6	Subordination of Interest	Organization's interests take precedence over individual interests.
7	Remuneration	Fair and satisfactory payment for work performed.

No	Principle	Brief Description
8	Centralization	Balance authority between top and lower levels of the organization.
9	Scalar Chain	Clear line of authority from top to bottom (hierarchy).
10	Order	Right people and materials in right place at right time.
11	Equity	Fairness, kindness, and justice in treatment of employees.
12	Stability of Tenure	Long-term employment promotes efficiency and loyalty.
13	Initiative	Encourage employees to take initiative and contribute ideas.
14	Esprit de Corps	Foster morale, harmony, and team spirit among staff.

Behavioral Sciences Approach

Hugo Münsterberg:

- Applied psychology to industry and management

Walter Dill Scott:

- Applied psychology to advertising and personnel

Elton Mayo & F. J. Roethlisberger:

- Hawthorne Studies: Social relationships influence performance

Chester Barnard:

- The Functions of the Executive (1938)
- Emphasized communication and cooperation

Max Weber:

- Developed theory of bureaucracy

Vilfredo Pareto:

- Pareto Principle; sociological contributions

Systems Theory Approach

- Management as a cooperative system
 - Emphasizes relationships among subsystems
 - Focus on organization as a whole
 - Supports social systems approach to managing

Modern Management Thinkers

Peter Drucker (1974):

- Decentralization, innovation, effectiveness

W. Edwards Deming:

- Quality control, continuous improvement

Laurence Peter (1969):

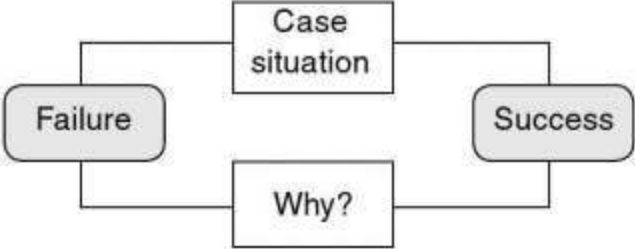
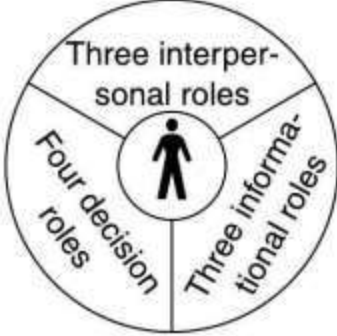
- Peter Principle (incompetence at highest position)

William Ouchi (1981):

- Theory Z (Japanese-American hybrid)

Peters & Waterman (1982):

- In Search of Excellence
- Characteristics of successful companies

Characteristics/ Contributions	Limitations	Illustration
EMPIRICAL OR CASE APPROACH		
Studies experience through cases. Identifies successes and failures.	Situations are all different. No attempt to identify principles. Limited value for developing management theory.	 <pre> graph LR CS[Case situation] --- F[Failure] CS --- S[Success] F --- W[Why?] S --- W </pre>
MANAGERIAL ROLES APPROACH		
Original study consisted of observations of five chief executives. On the basis of this study, ten managerial roles were identified and grouped into interpersonal, informational, and decision roles.	Original sample was very small. Some activities are not managerial. Many activities are evidence of planning, organizing, staffing, leading, and controlling. Some important managerial activities are left out (e.g., appraising managers).	<p>Roles of managers</p>  <p>A circular diagram with a central figure of a person. The circle is divided into three segments: 'Three interpersonal roles' at the top, 'Four decision roles' on the left, and 'Three informational roles' on the right.</p>

Interpersonal roles

1. The figurehead role (performing ceremonial and social duties as the organization's representative)
2. The leader role
3. The liaison role (particularly with outsiders)

Informational roles

4. The recipient role (receiving information about the operation of an enterprise)
5. The disseminator role (passing information to subordinates)
6. The spokesperson role (transmitting information to those outside the organization)

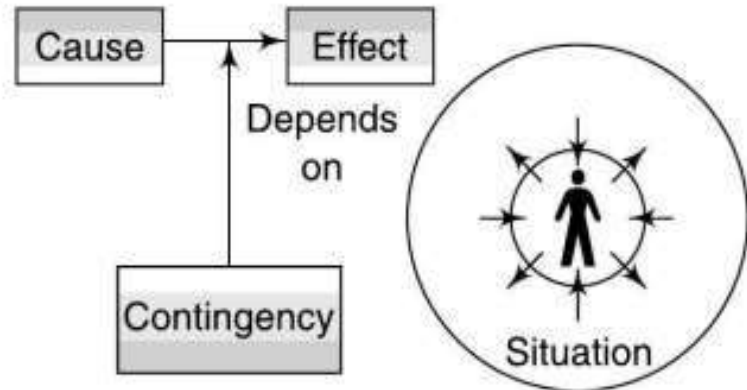
Decision roles

7. The entrepreneurial role
8. The disturbance-handler role
9. The resource-allocator role
10. The negotiator role (dealing with various persons and groups of persons)

CONTINGENCY OR SITUATIONAL APPROACH

Managerial practice depends on circumstances (i.e., a contingency or a situation). Contingency theory recognizes the influence of given solutions on organizational behavior patterns.

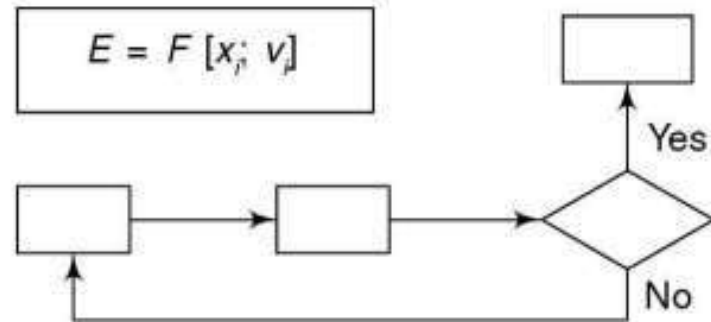
Managers have long realized that there is no one best way to do things. Difficult to determine all relevant contingency factors and to show their relationships. Can be very complex.



MATHEMATICAL OR "MANAGEMENT SCIENCE" APPROACH

Sees managing as mathematical processes, concepts, symbols, and models. Looks at management as a purely logical process, expressed in mathematical symbols and relationships.

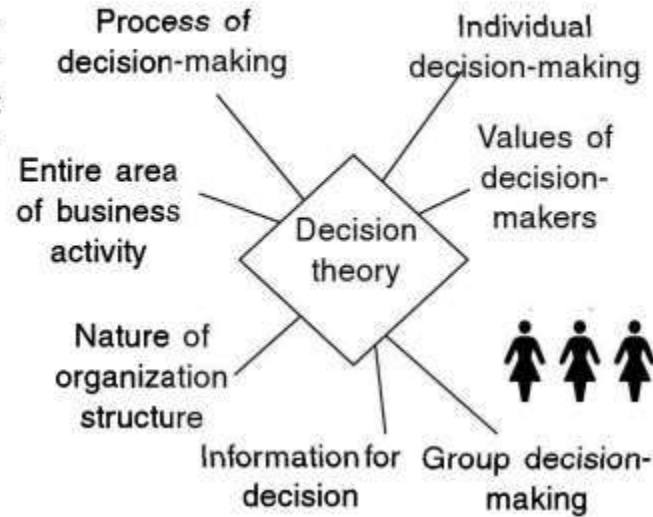
Preoccupation with mathematical models. Many aspects in managing cannot be modeled. Mathematics is a useful tool, but hardly a school or an approach to management.



DECISION THEORY APPROACH

Focuses on the making of decisions, persons or groups making decisions, and the decision-making process. Some theorists use decision-making as a springboard to study all enterprise activities. The boundaries of study are no longer clearly defined.

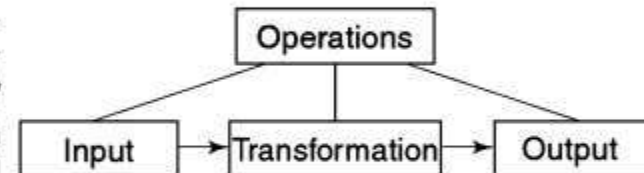
There is more to managing than making decisions. The focus is at the same time too narrow and too wide.



REENGINEERING APPROACH

Concerned with fundamental rethinking, process analysis, radical redesign, and dramatic results.

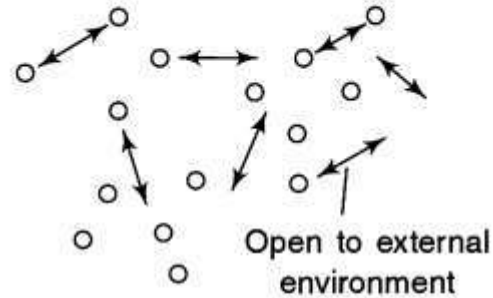
Neglects external environment. Possibly ignores customers' needs. Neglects human needs. Ignores total management system, unlike the management process, or operational approach.



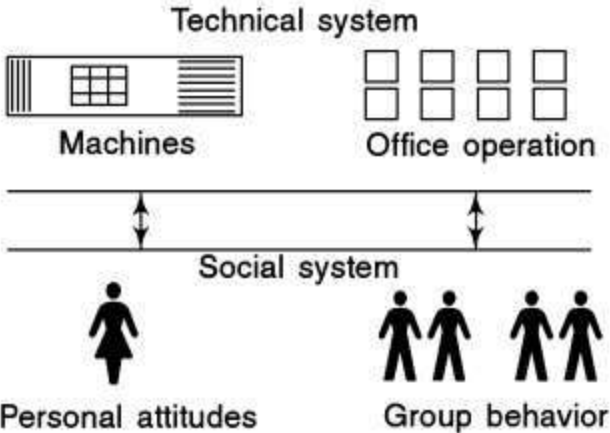
SYSTEMS APPROACH

Systems concepts have broad applicability. Systems have boundaries, but they also interact with the external environment; that means organizations are open systems. Recognizes the importance of studying interrelatedness of planning, organizing, and controlling in an organization as well as in the many subsystems.

Can hardly be considered a new approach to management, as claimed by some proponents of this approach.



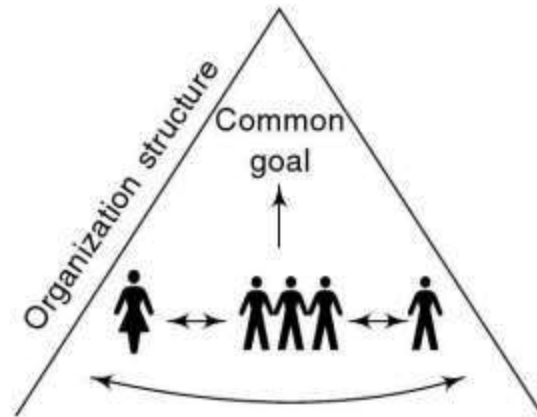
(Contd.)

Characteristics/ Contributions	Limitations	Illustration
SOCIOTECHNICAL SYSTEMS APPROACH		
<p>Technical system has a great effect on social system (personal attitudes, group behavior). Focuses on production, office operations, and other areas with close relationships between the technical system and people.</p>	<p>Emphasizes only blue-collar and lower-level office work. Ignores much of other managerial knowledge.</p>	 <p>The diagram illustrates the Sociotechnical Systems Approach. It is divided into two main horizontal sections by a double-headed vertical arrow. The top section is labeled 'Technical system' and contains two sub-components: 'Machines' (represented by a grid icon) and 'Office operation' (represented by four small squares). The bottom section is labeled 'Social system' and contains two sub-components: 'Personal attitudes' (represented by a single female stick figure) and 'Group behavior' (represented by four male stick figures). Vertical double-headed arrows connect the 'Machines' and 'Office operation' boxes to the 'Social system' line, and the 'Personal attitudes' and 'Group behavior' icons to the 'Social system' line, indicating interactions between the technical and social systems.</p>

COOPERATIVE SOCIAL SYSTEMS APPROACH

Concerned with both interpersonal and group behavioral aspects leading to a system of cooperation. Expanded concept includes any cooperative group with a clear purpose.

Too broad a field for the study of management. At the same time, it overlooks many managerial concepts, principles, and techniques.



GROUP BEHAVIOR APPROACH

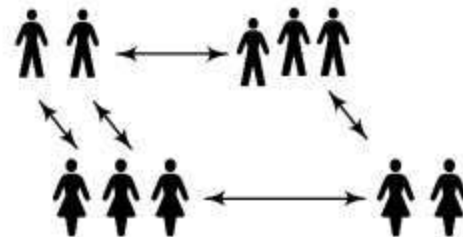
Emphasizes behavior of people in groups. Based on sociology and social psychology. Primarily studies group behavior patterns. The study of large groups is often called organizational behavior.

Often not integrated with management concepts, principles, theory, and techniques. Need for closer integration with organizational structure design, staffing, planning, and controlling.

Study of a group



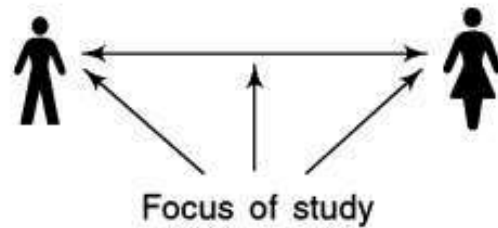
Study of groups interacting with each other



INTERPERSONAL BEHAVIOR APPROACH

Focuses on interpersonal behavior, human relations, leadership, and motivation. Based on individual psychology.

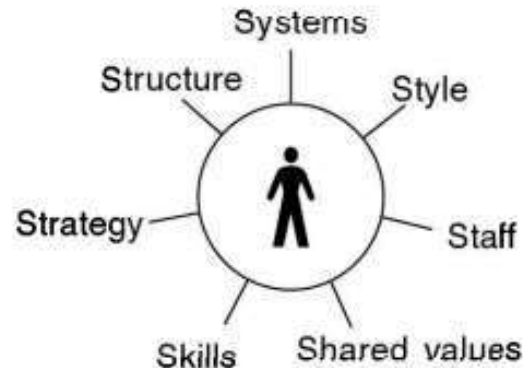
Ignores planning, organizing, and controlling. Psychological training is not enough for becoming an effective manager.



McKINSEY's 7-S FRAMEWORK

The seven S's are
(1) strategy,
(2) structure,
(3) systems, (4) style,
(5) staff, (6) shared values, and (7) skills.

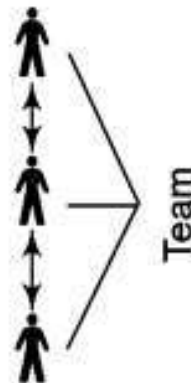
Although this experienced consulting firm uses a framework similar to that found useful by Koontz and colleagues since 1955 and confirms its practicality, the terms used are not precise and topics are not discussed in depth.



TOTAL QUALITY MANAGEMENT APPROACH

Focuses on providing dependable, satisfying products and services (Deming) or products or services that are fit for use (Juran), as well as conforming to quality requirements (Crosby). The general concepts are continuous improvement, attention to details, teamwork, and quality education.

No complete agreement on what total quality management is.

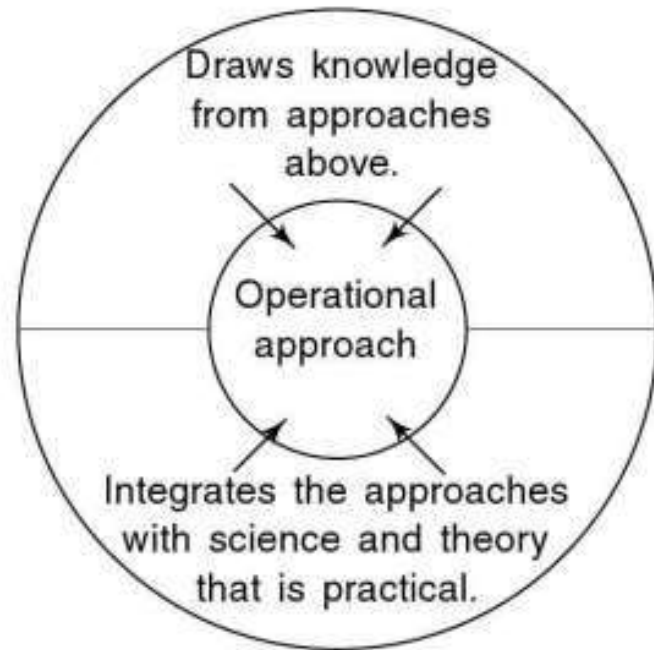


Focus:
Customer needs:
Quality Products
and Services Con-
cern for quality
and cost

MANAGEMENT PROCESS OR OPERATIONAL APPROACH

Draws together concepts, principles, techniques, and knowledge from other fields and managerial approaches. The attempt is to develop science and theory with practical application. Distinguishes between managerial and nonmanagerial knowledge. Develops a classification system built around the managerial functions of planning, organizing, staffing, leading, and controlling.

Does not, as some authors do, identify representing or coordination as a separate function. Coordination, for example, is the essence of managership and is the purpose of managing.



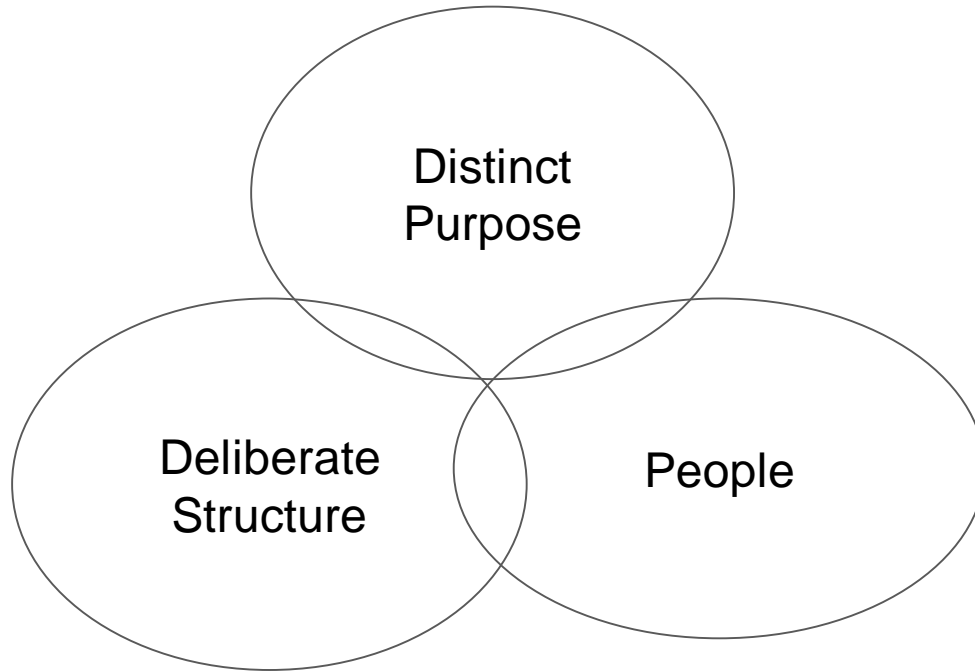
1.2 Organization

- Organization is a localized intentional structure of roles or problems
- The result of organizing is organization
- Organizing involves:
 - the identification and classification of required activities
 - the grouping of activities necessary for attaining objectives
 - the assignment of each group to a manager with the authority (delegation) necessary to supervise it
 - the provision for coordination horizontally (on the same or a similar organizational level) and vertically (e.g., between corporate headquarters, division, and department) in the organization structure

Principles of organizing

- Clarity about objectives
- Division of work
- Unity of command
- Scalar chain
- Span of control
- Departmentation
- Decentralization
- Separation of line and staff functions
- Authority and Responsibility
- Simplicity
- Flexibility

1.2.1 Characteristics of Organization

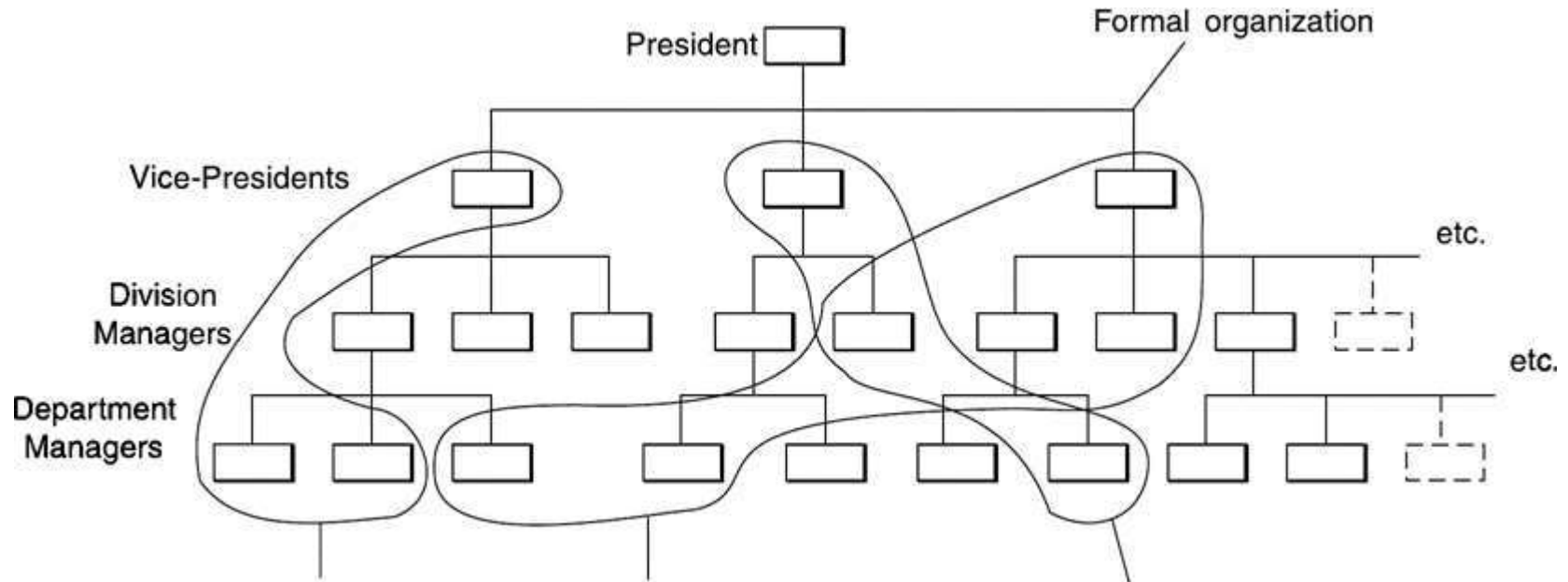


Source: Robbins

Eight characteristics of excellent enterprises

1. were oriented toward action
2. learned about the needs of their customers
3. promoted managerial autonomy and entrepreneurship
4. achieved productivity by paying close attention to the needs of their people
5. were driven by a company philosophy often based on the values of their leaders
6. focused on the business they knew best
7. had a simple organization structure with a lean staff
8. were centralized as well as decentralized, depending on appropriateness

1.2.2 Types of organization: formal and informal organizations, virtual organization



Informal Organization

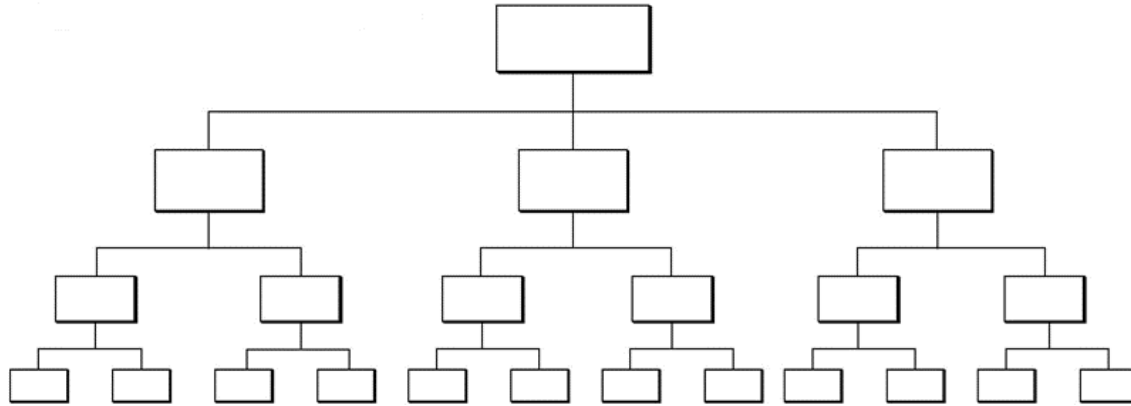
- The informal organization is a network of interpersonal relationships that arise when people associate with each other
- Thus, informal organizations relationships not appearing on an organization chart might include:
 - the machine shop group,
 - the sixth floor crowd,
 - the Friday evening bowling gang,
 - the morning coffee “regulars

Virtual Organization

- Also called network organizations
- Essence of these kinds of organization is to outsource managers business functions
- Highly centralized
- Practically no departmentalization

These organizations create a network of relationships that allow them to contract out almost all managerial functions, distribution, marketing, account-keeping, staff management and other functions

Organization with Narrow span



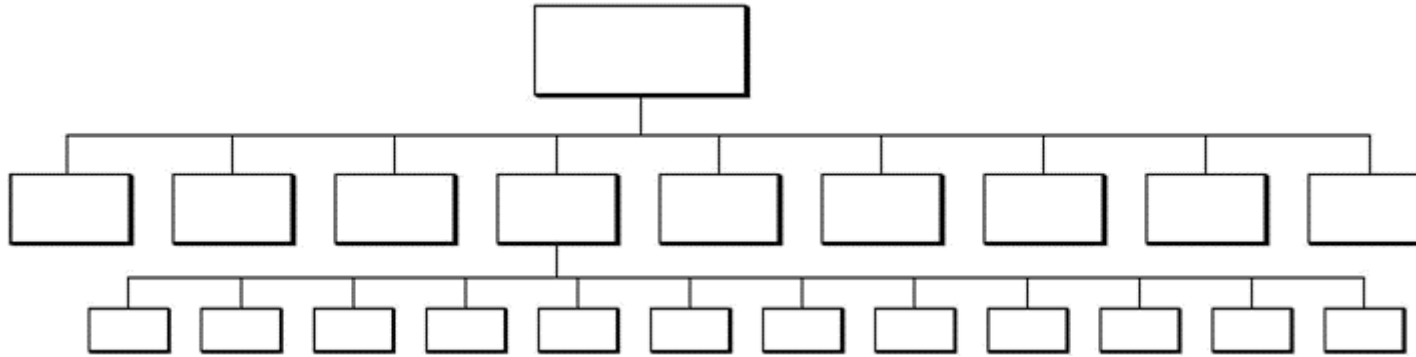
Advantages

- Close supervision
- Close control
- Fast communication between subordinates and superiors

Disadvantages

- Superiors tend to get too involved in subordinates' work
- Many levels of management
- High costs due to many levels
- Excessive distance between lowest level and top level

Organization with wide span



Advantages

Superiors are forced to delegate
Clear policies must be made
Subordinates must be carefully selected

Disadvantages

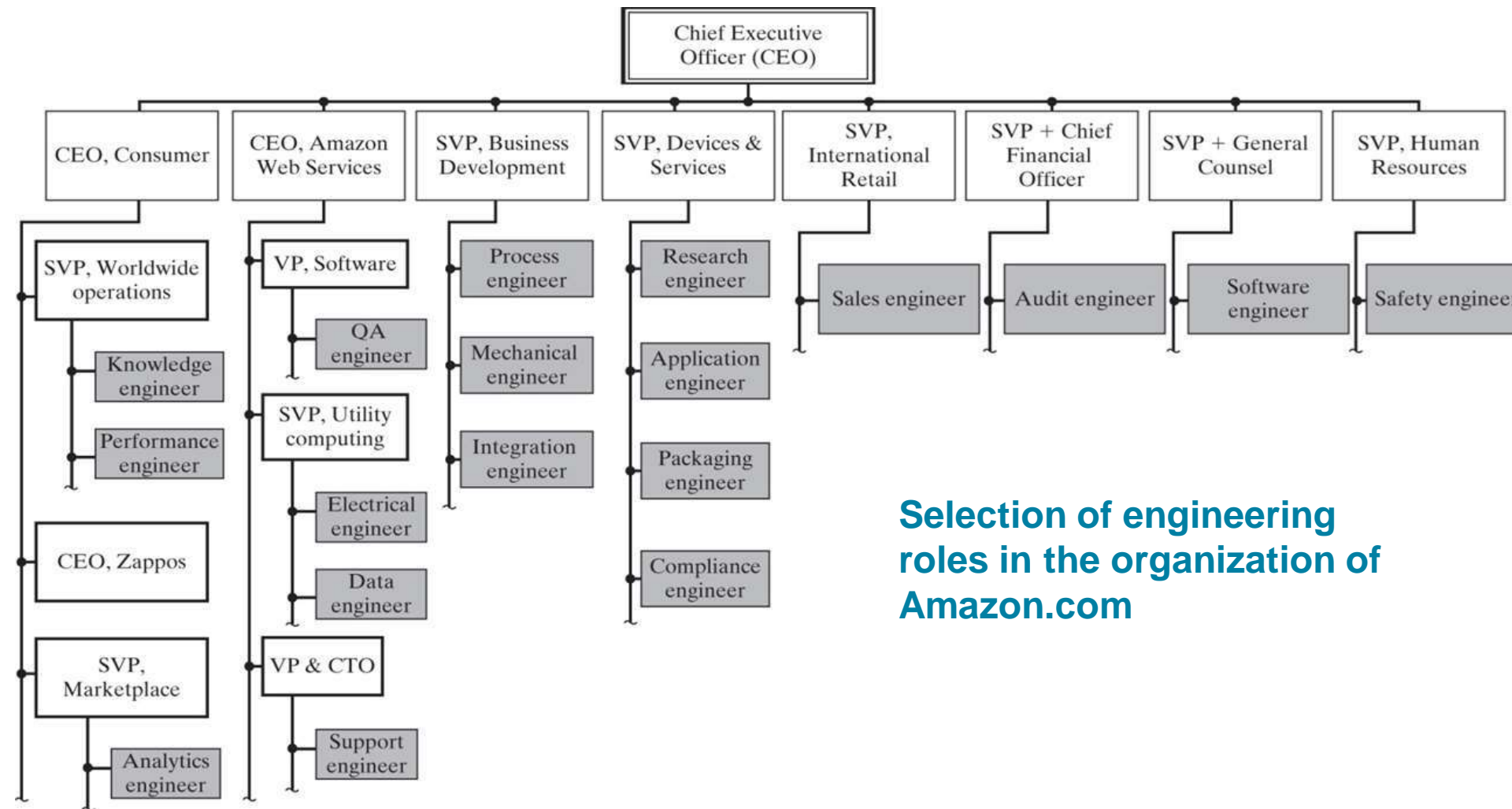
Tendency of overloaded superiors to become decision bottlenecks
Danger of superiors loss of control
Requires exceptional quality of managers

Engineering Management and its importance in technology driven environment

Aspect	Importance
Innovation & R&D	Helps in managing innovation pipelines, promoting product development, and sustaining competitive advantage.
Strategic Planning	Aligns technological capabilities with business strategies in fast-changing markets.
Efficient Resource Use	Optimizes time, talent, and budget in complex, high-tech environments.
Cross-Disciplinary Coordination	Integrates efforts of engineers, designers, marketers, and operations teams for unified execution.

Engineering Management and its importance in technology driven environment

Aspect	Importance
Change Management	Supports smooth adoption of new technologies and digital transformation initiatives.
Risk Management	Identifies and mitigates technical, operational, and market risks in tech projects.
Quality & Compliance	Ensures systems meet performance standards, safety norms, and regulatory requirements.
Leadership in Tech Teams	Develops engineering talent, fosters collaboration, and boosts productivity in technical teams.



Selection of engineering roles in the organization of Amazon.com

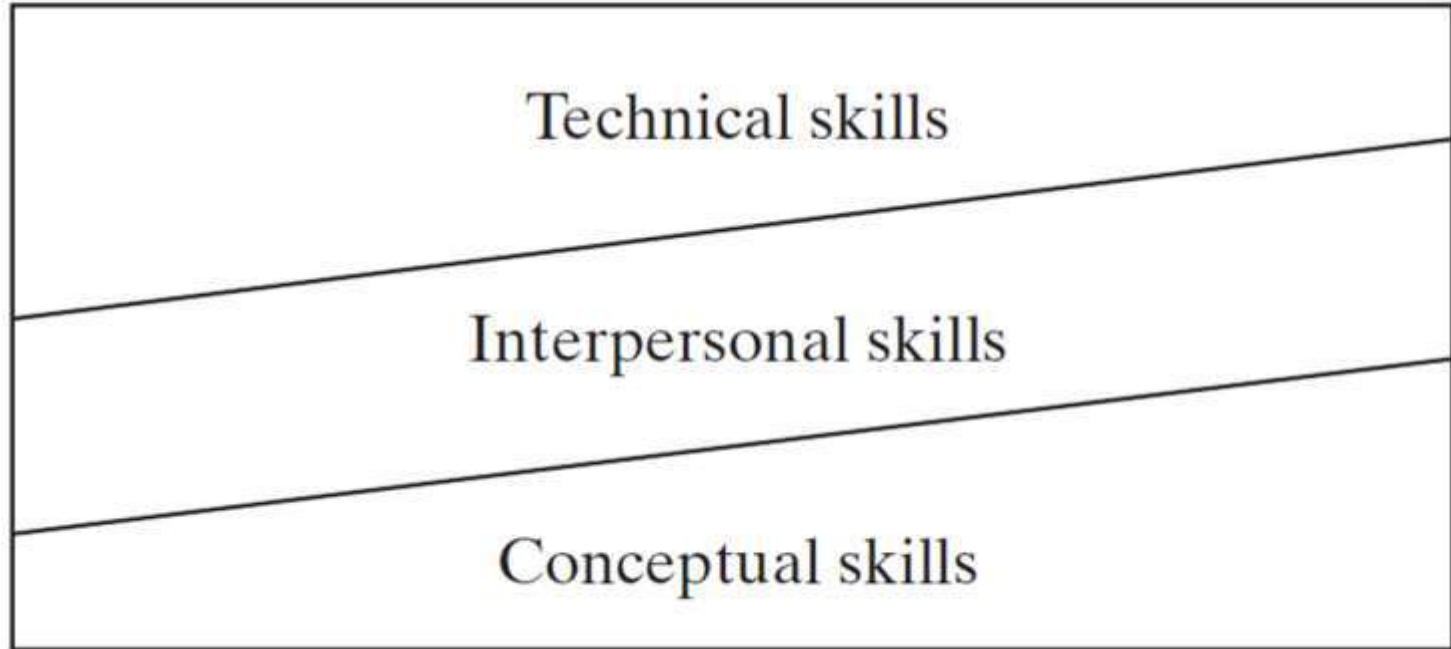
Blend of skills required at various levels

Managerial level

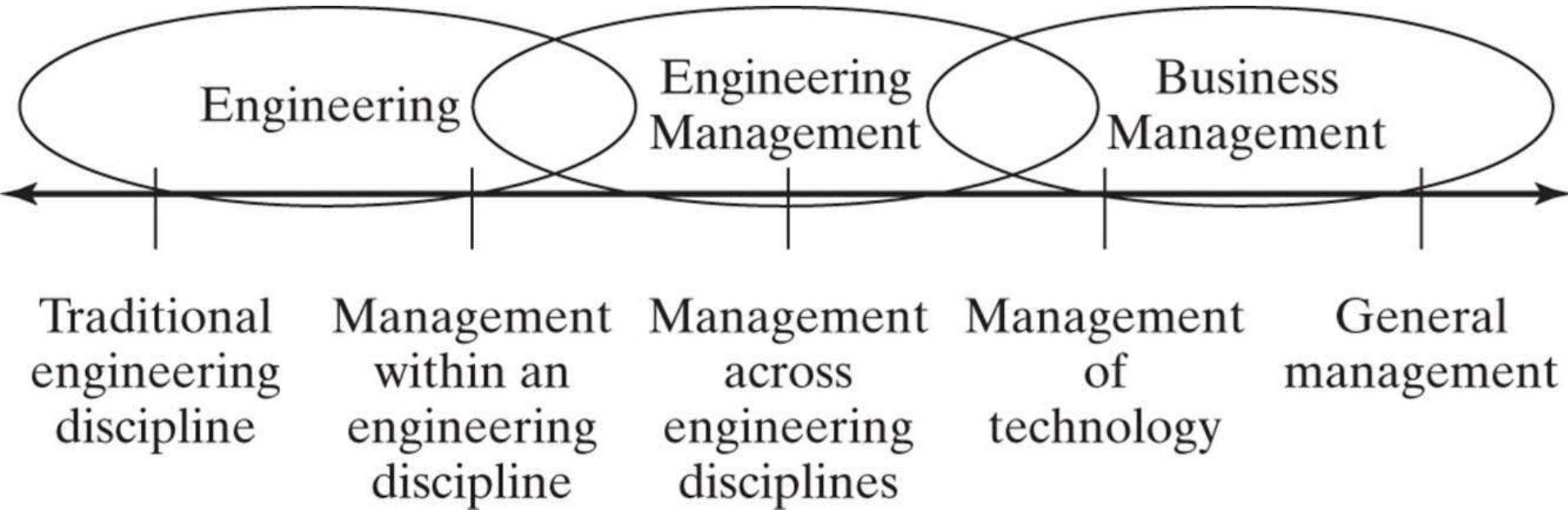
Lowest

Middle

Top



The field of Engineering Management



Managing engineering and technology

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graph TD; A[Managing engineering and technology] --> B[Management functions]; A --> C[Managing technology]; A --> D[Personal technology]; B --> B1[Leading]; B --> B2[Planning]; B --> B3[Decision making]; B --> B4[Organizing]; B --> B5[Controlling]; C --> C1[Research]; C --> C2[Design]; C --> C3[Production]; C --> C4[Quality]; C --> C5[Marketing]; C --> C6[Project management]; D --> D1[Ethics]; D --> D2[Time management]; D --> D3[Career];
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Management functions

Leading

Planning

Decision making

Organizing

Controlling

Managing technology

Research

Design

Production

Quality

Marketing

Project management

Personal technology

Ethics

Time management

Career

Engineering functions in organizations:

- Product development
- Operations
- IT systems
- Quality assurance
- Others

Roles and responsibilities of an engineering manager

1. **Leader** – Guides and motivates the engineering team toward project and organizational goals.
2. **Planner** – Develops strategic plans for product development, resources, and timelines.
3. **Coordinator** – Aligns engineering activities with other departments like marketing, design, and production.
4. **Decision Maker** – Makes informed technical and managerial decisions for problem-solving.

Roles and responsibilities of an engineering manager

- 5. **Communicator** – Acts as a bridge between technical teams and stakeholders or upper management.
- 6. **Mentor** – Coaches and develops the skills of engineers and technical staff.
- 7. **Resource Allocator** – Manages budgeting, tools, and personnel for effective project execution.
- 8. **Evaluator** – Monitors performance, conducts reviews, and ensures quality output.

Responsibilities of an Engineering Manager

Area	Responsibilities
Team Management	Hiring, training, mentoring, and performance evaluations
Project Oversight	Planning, scheduling, and delivering engineering projects
Technical Guidance	Providing technical support and reviewing solutions/architecture
Process Improvement	Implementing best practices, Agile/Scrum, and quality assurance processes

Responsibilities of an Engineering Manager

Area	Responsibilities
Budgeting	Estimating costs, controlling expenses, and optimizing resources
Stakeholder Communication	Reporting progress, handling feedback, and aligning with business goals
Risk Management	Identifying potential risks and implementing mitigation strategies
Compliance	Ensuring projects meet industry standards, laws, and safety regulations

Planning and Organizing

Objective: To familiarize students with the planning and organizing and identify their emerging issues in ICT enterprises

6 hrs

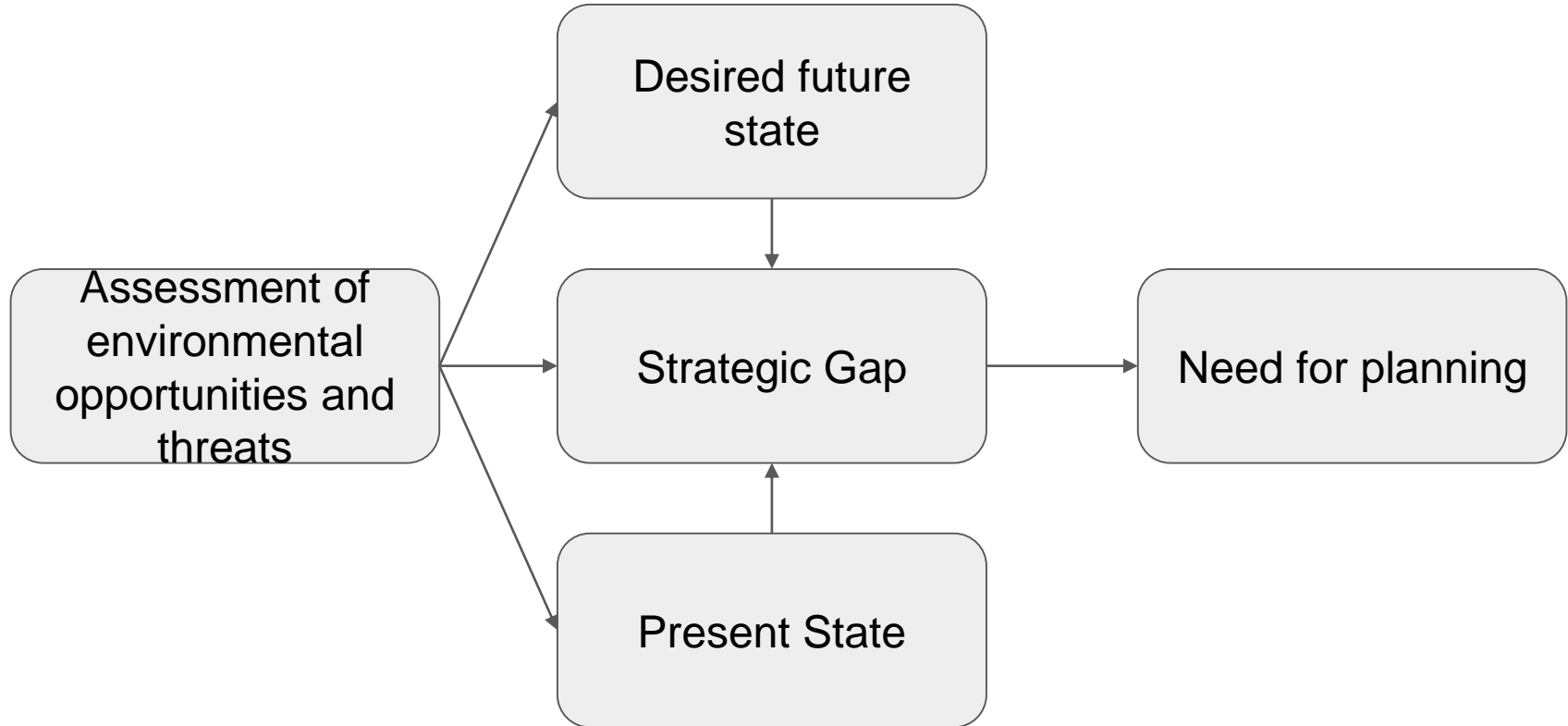
2.1 Planning

A plan is defined as “ a document stating the goals, outlining the action oriented strategies to attain these goals, and assigning organizational resources to attain them.”

Characteristics of organizational planning:

- Planning is goal oriented
- Planning is future oriented
- Planning deals with the uncertainty of upcoming future
- Planning is a thinking process
- Planning is action oriented

A Planning Model



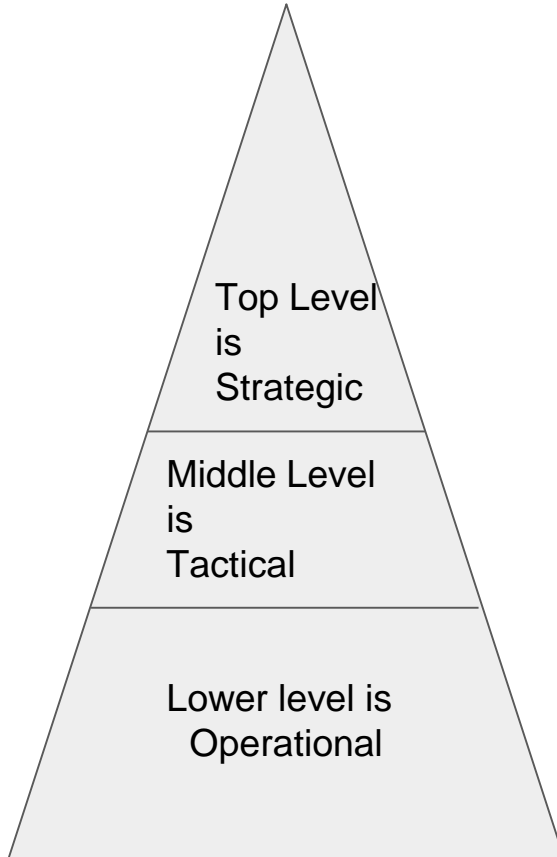
Planning System



Expected output after planning are intertwined and arranged as

- Vision (Non specified directional and motivational guidance)
- Mission (Purpose and philosophy that drives in long run)
- Goals (Goals are there to achieve mission that provides direction to the activities)
- Objectives (Specific statement to be done to achieve goals) SMART
 - Specific, Measurable, attainable, Rewarding and TImed
- Plans (Action or means to achieve the intended goals)
- Programmes, Budgets, and Priorities

2.1.1 Levels of planning: strategic, tactical and operational



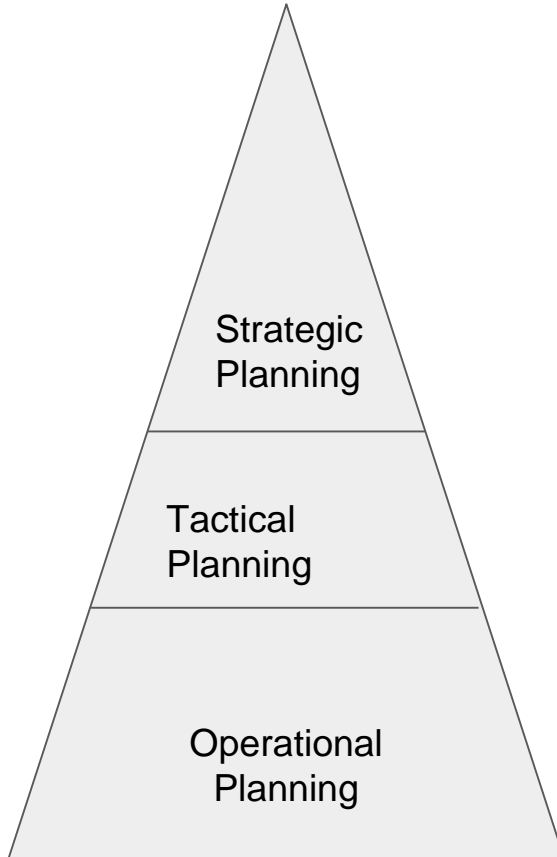
Top down planning is centralized

Bottom up planning is decentralized

Composite planning is a combination of two

Team planning is a cross functional team of experienced managers

2.1.1 Levels of planning: strategic, tactical and operational

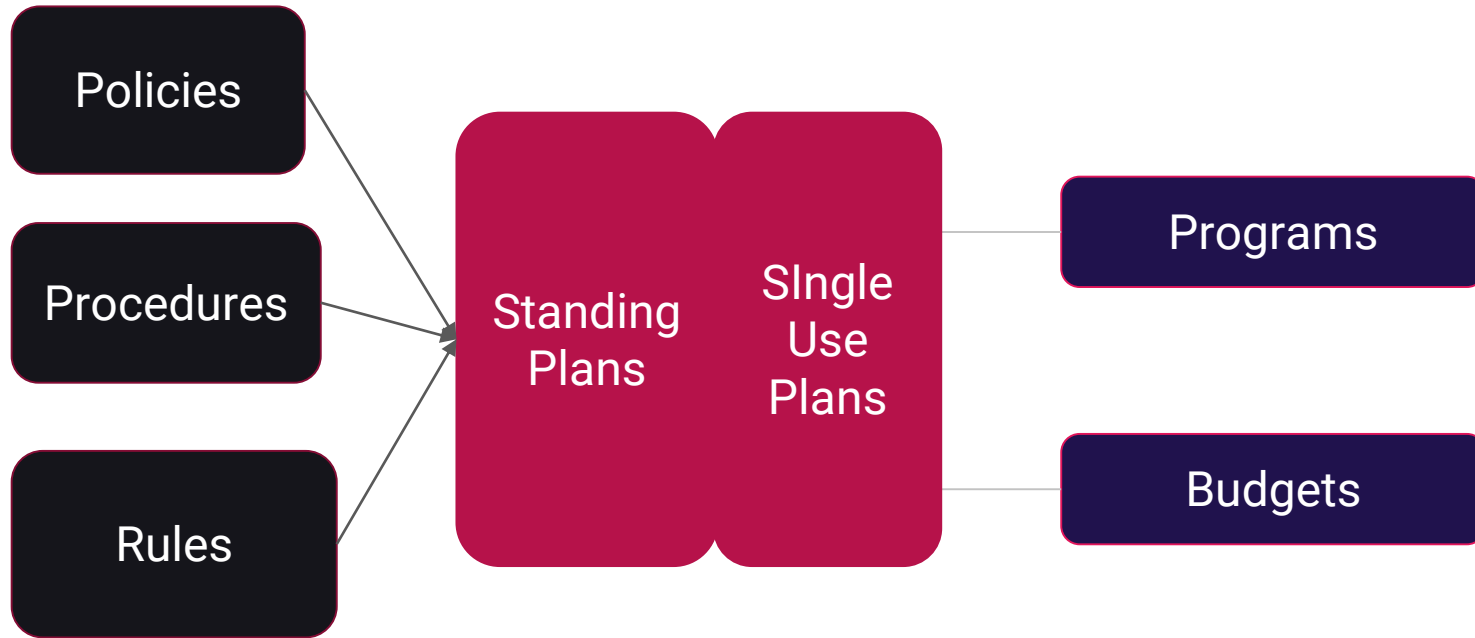


Strategic Plans are grand plans based on SWOT

Tactical planning is done to convert the broad strategic goals and plans into specific goals

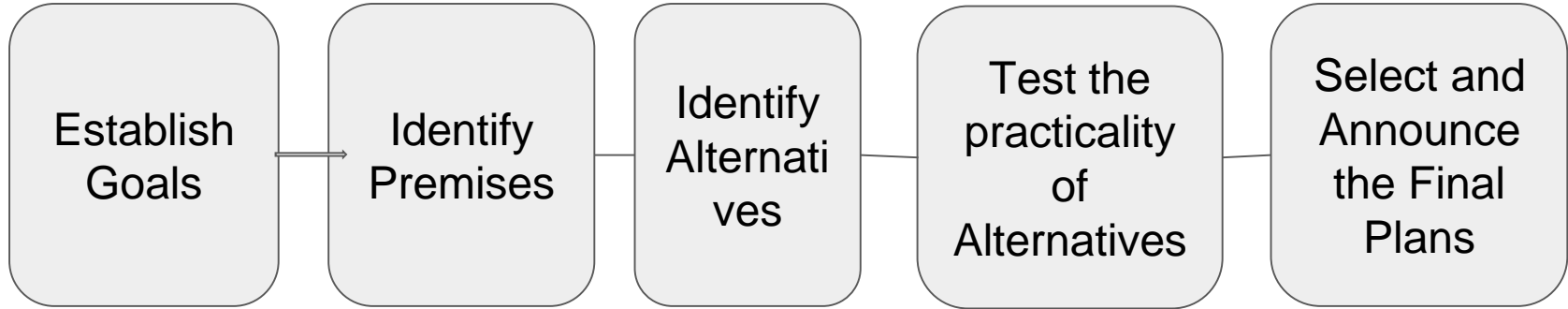
Operational planning is to identify the specific procedures and processes required at lower level

Managerial Hierarchy and the Planning System



Steps in Planning

There are five steps in planning Process



2.1.3 Tools for planning

- Tools of Planning are based on concept of strategic planning
- For developing strategic plan manager need to assess the organizational situation with the five basic questions:
 1. Where are we now? **(The situation)**
 2. How did we get there? **(Momentum)**
 3. Where are we going? **(The Direction)**
 4. Where should we be going? **(Desired Direction)**
 5. How will we get there? **(The Strategic Plan)**

Tools to aid strategic planning

1. Forecasting

a. Qualitative

- i. Informed Judgements
- ii. Scenario Analysis
- iii. Delphi Method

b. Quantitative

- i. Single Projection method
- ii. Extrapolation method
- iii. Moving Average Method
- iv. Time Series Analysis

Tools to aid strategic planning

2. Network Techniques

- a. CPM (Critical Path Method)
- b. PERT (Program Evaluation and Review Technique)

3. Flow Charts

4. Gantt Chart

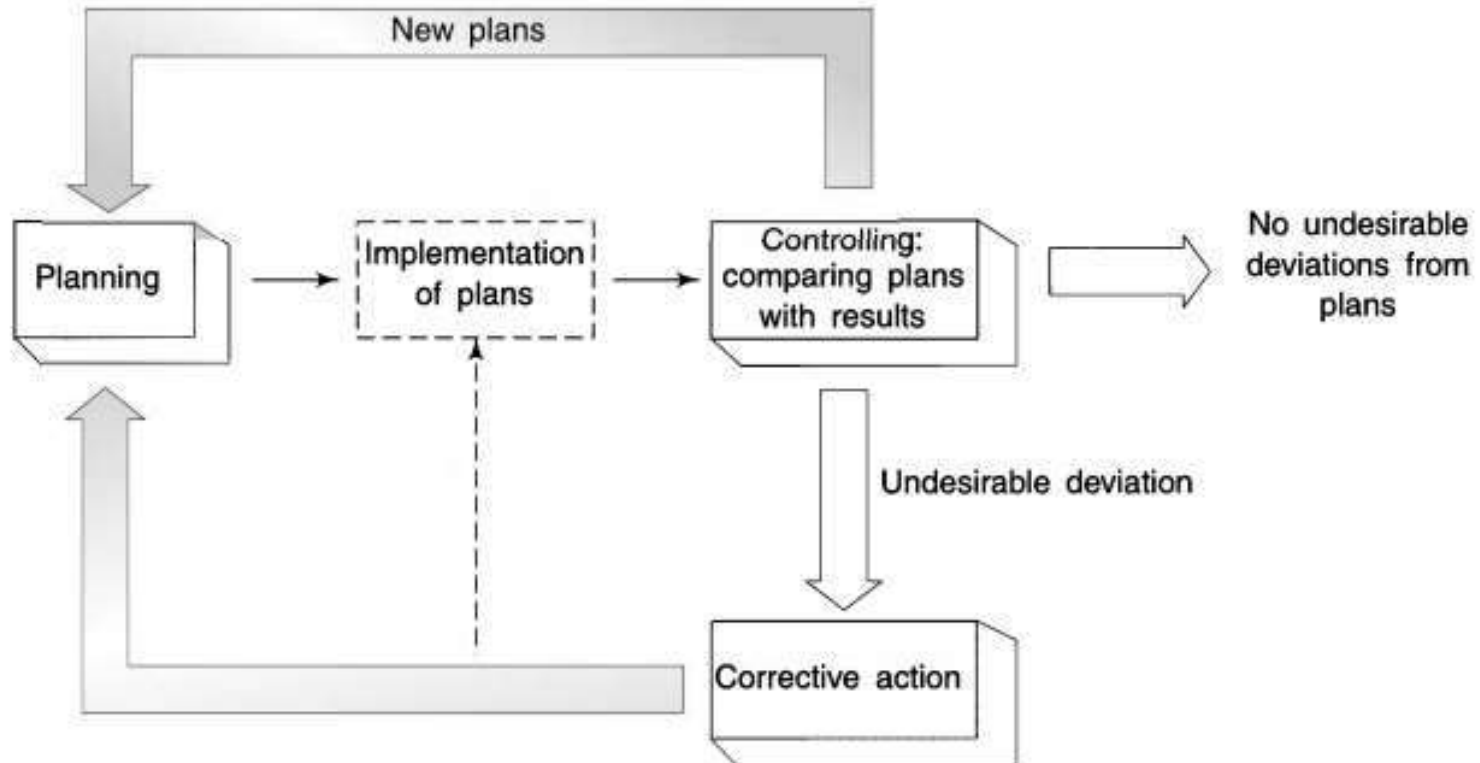
5. Break Even Analysis

$$BEP = FC / (P - VC)$$

Where, BEP = Break Even Point, FC = Fixed Cost, VC = Variable Cost, P = Price

2.1.4 Importance of planning

Close Relationship of Planning and Controlling.



2.1.4 Importance of planning

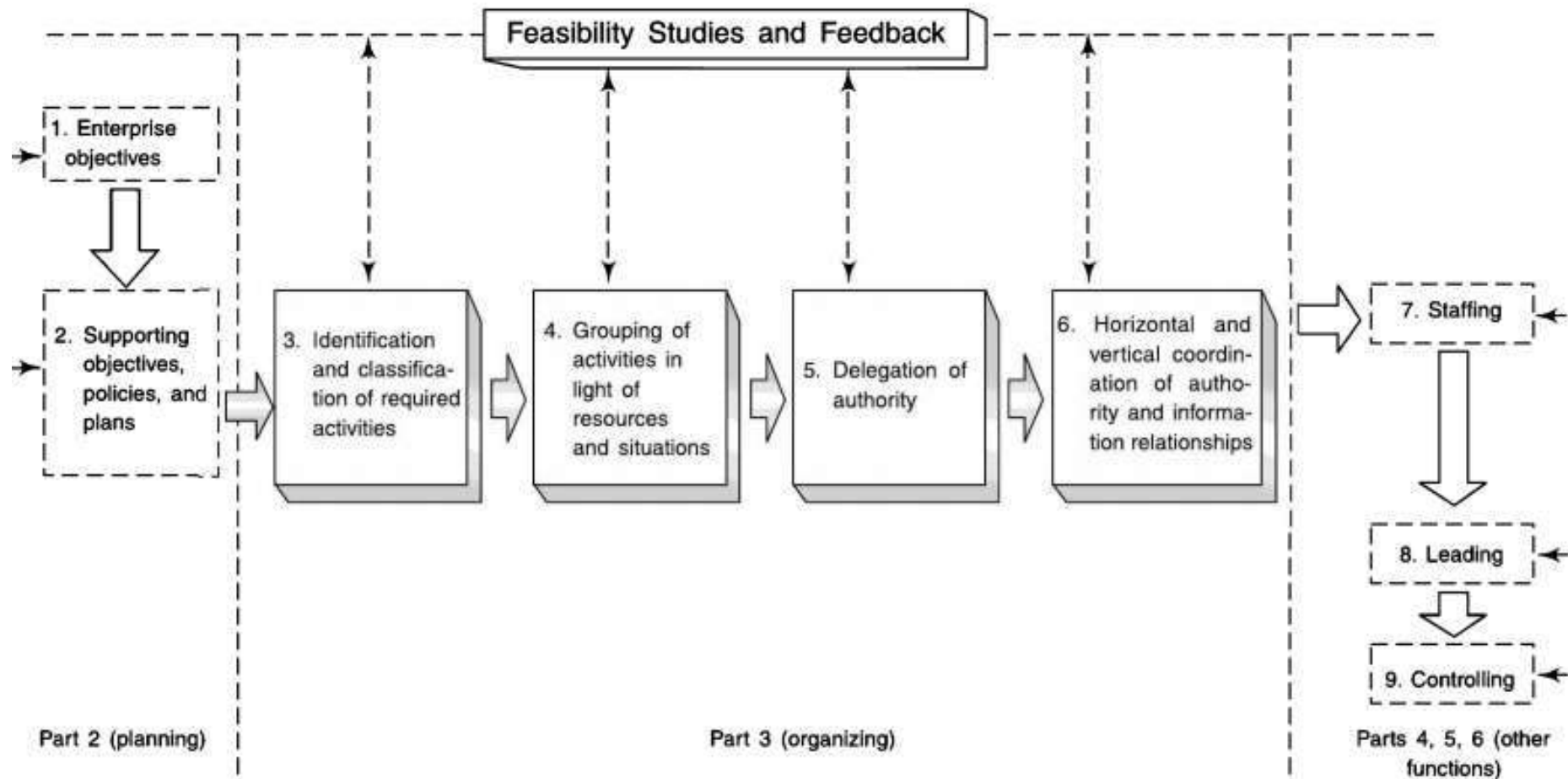
1. **Goal Clarity** – Defines clear objectives and direction for all departments and employees.
2. **Efficient Resource Use** – Ensures optimal allocation and utilization of time, money, and manpower.
3. **Risk Reduction** – Anticipates challenges and prepares strategies to minimize potential risks.
4. **Improved Decision-Making** – Provides a framework for making consistent, informed, and strategic choices.
5. **Coordination & Control** – Aligns activities across the organization and facilitates monitoring and corrective actions.

2.2 Organizing

The Logic of Organizing:

- Establishing enterprise objectives
- Formulating supporting objectives, policies, and plans
- Identifying, analyzing, and classifying the activities necessary to accomplish these objectives
- Grouping these activities in light of the human and material resources available and the best way, under the circumstances, of using them
- Delegating to the head of each group the authority necessary to perform the activities
- Tying the groups together horizontally and vertically, through authority relationships and information flows

The Organizing Process.



Some Misconceptions

1. Organizing does not imply any extreme occupational specialization
2. To say that tasks should be specific is not to say they must be limited and mechanical
3. In any organization, jobs can be defined to allow little or no personal leeway
4. One must not forget that there is no best way to organize and that the application of structural organization theory must take into account the situation

Basic Questions for Effective Organizing

1. What determines the span of management and hence the levels of organization? (answered in this chapter)
2. What determines the basic framework of departmentation, and what are the strengths and weaknesses of the basic forms? (answered in Chapter 8)
3. What kinds of authority relationships exist in organizations? (answered in Chapter 9)
4. How should authority be dispersed throughout the organization structure, and what determines the extent of this dispersion? (answered in Chapter 9)
5. How should the manager make organization theory work in practice? (answered in Chapter 10)

Six key elements in organizational design.

- Work specialization
- Departmentalization
- Chain of command
- Span of control
- Centralization/decentralization
- Formalization

2.2.2 Organization structure

Departmentalization

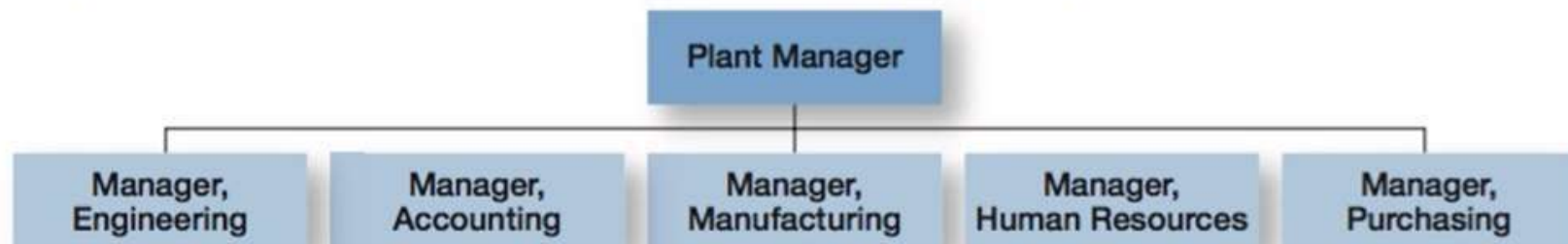
- Grouping activities in accordance with the functions of an enterprise
functional departmentation embodies what enterprises typically do
- Because all enterprises undertake the creation of something useful and desired by others, the basic enterprise functions are:
- production (creating utility or adding utility to a product or service)
- selling (finding customers, patients, clients, students, or members who will agree to accept the product or service at a price or for a cost)
- financing (raising and collecting, safeguarding, and expending the funds of the enterprise).

Departmentation

- By Enterprise Function
- By Territory or Geography
- By Customer Group
- By Product
- By Process

Assignment: Draw the organization structure of various enterprises based on the types of departmentation types and write down their advantages and disadvantages

FUNCTIONAL DEPARTMENTALIZATION—Groups Jobs According to Function



- + Efficiencies from putting together similar specialties and people with common skills, knowledge, and orientations
- + Coordination within functional area
- + In-depth specialization
- Poor communication across functional areas
- Limited view of organizational goals

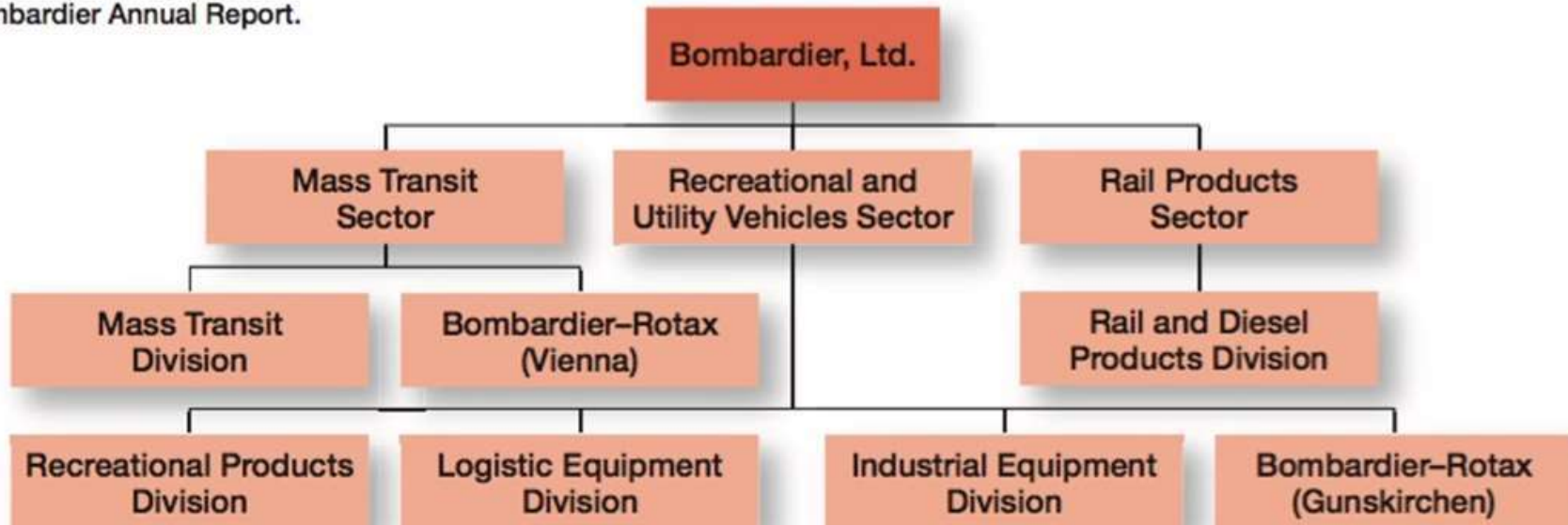
GEOGRAPHICAL DEPARTMENTALIZATION—Groups Jobs According to Geographic Region



- + More effective and efficient handling of specific regional issues that arise
- + Serve needs of unique geographic markets better
- Duplication of functions
- Can feel isolated from other organizational areas

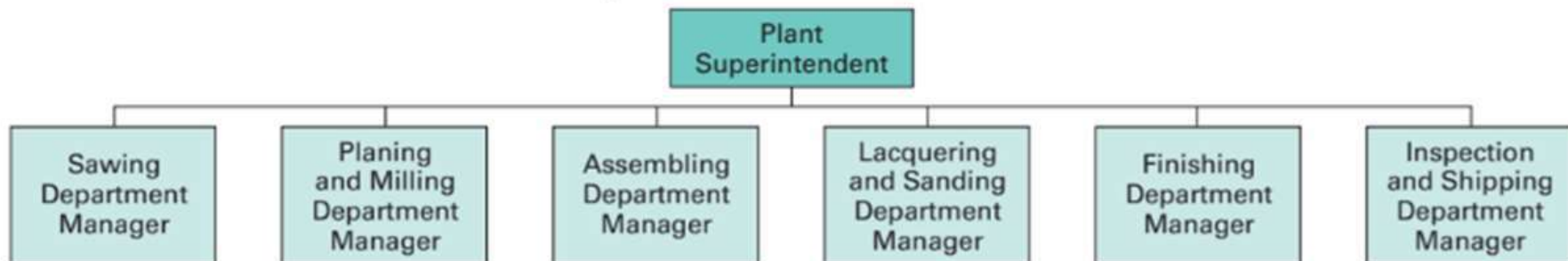
PRODUCT DEPARTMENTALIZATION—Groups Jobs by Product Line

Source: Bombardier Annual Report.



- + Allows specialization in particular products and services
- + Managers can become experts in their industry
- + Closer to customers
- Duplication of functions
- Limited view of organizational goals

PROCESS DEPARTMENTALIZATION—Groups Jobs on the Basis of Product or Customer Flow



- + More efficient flow of work activities
- Can only be used with certain types of products

CUSTOMER DEPARTMENTALIZATION—Groups Jobs on the Basis of Specific and Unique Customers Who Have Common Needs



- + Customers' needs and problems can be met by specialists
- Duplication of functions
- Limited view of organizational goals

More Centralization

Environment is stable.

Lower-level managers are not as capable or experienced at making decisions as upper-level managers.

Lower-level managers do not want a say in decisions.

Decisions are relatively minor.

Organization is facing a crisis or the risk of company failure.

Company is large.

Effective implementation of company strategies depends on managers retaining say over what happens.

More Decentralization

Environment is complex, uncertain.

Lower-level managers are capable and experienced at making decisions.

Lower-level managers want a voice in decisions.

Decisions are significant.

Corporate culture is open to allowing managers a say in what happens.

Company is geographically dispersed.

Effective implementation of company strategies depends on managers having involvement and flexibility to make decisions.

2.2.3 Types of organization structure

1. Line Structure	Simple, direct chain of command from top to bottom. Authority flows in a straight line.
2. Line and Staff Structure	Adds specialists (staff) to assist line managers in planning and decision-making.
3. Functional Structure	Groups employees based on functions (e.g., engineering, marketing, HR). Encourages specialization.
4. Divisional Structure	Organizes departments based on products, services, customers, or regions. Each division has its own resources.
5. Matrix Structure	Hybrid of functional and project structures; employees report to both functional and project managers.

2.2.3 Types of organization structure

6. Project-Based Structure	Organized around specific projects. Teams are temporary and disband after project completion.
7. Team-Based Structure	Emphasizes collaboration through cross-functional teams working together on goals.
8. Network Structure	Central organization outsources major business functions; highly flexible and adaptable.
9. Circular Structure	Leadership is at the center, with outward circles representing levels of responsibility and communication.
10. Hybrid Structure	Combines elements from various structures to meet specific organizational needs.

STRENGTHS

WEAKNESSES

- Fast
- Flexible
- Inexpensive to maintain
- Clear accountability

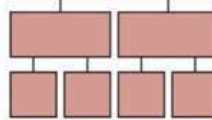
Simple Structure



- Not appropriate as organization grows
- Reliance on one person is risky

- Cost-saving advantages from specialization (economies of scale, minimal duplication of people and equipment)
- Employees are grouped with others who have similar tasks

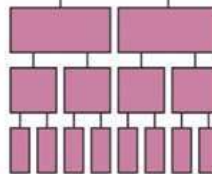
Functional Structure



- Pursuit of functional goals can cause managers to lose sight of what's best for the overall organization
- Functional specialists become insulated and have little understanding of what other units are doing

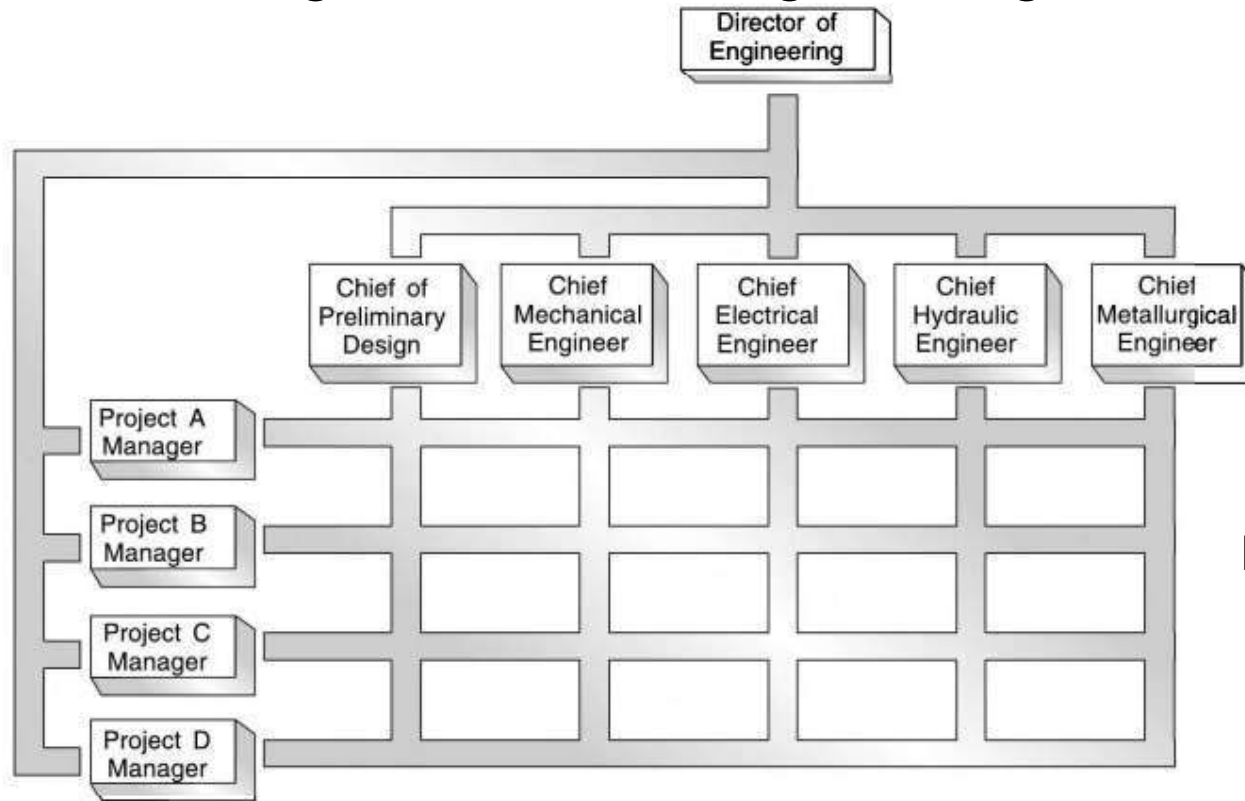
Focuses on results—division managers are responsible for what happens to their products and services.

Divisional Structure



Duplication of activities and resources increases costs and reduces efficiency.

Matrix Organization in Engineering



Advantages:

- Oriented toward end results
- Professional identification is maintained
- Pinpoints product-profit responsibility

Disadvantages:

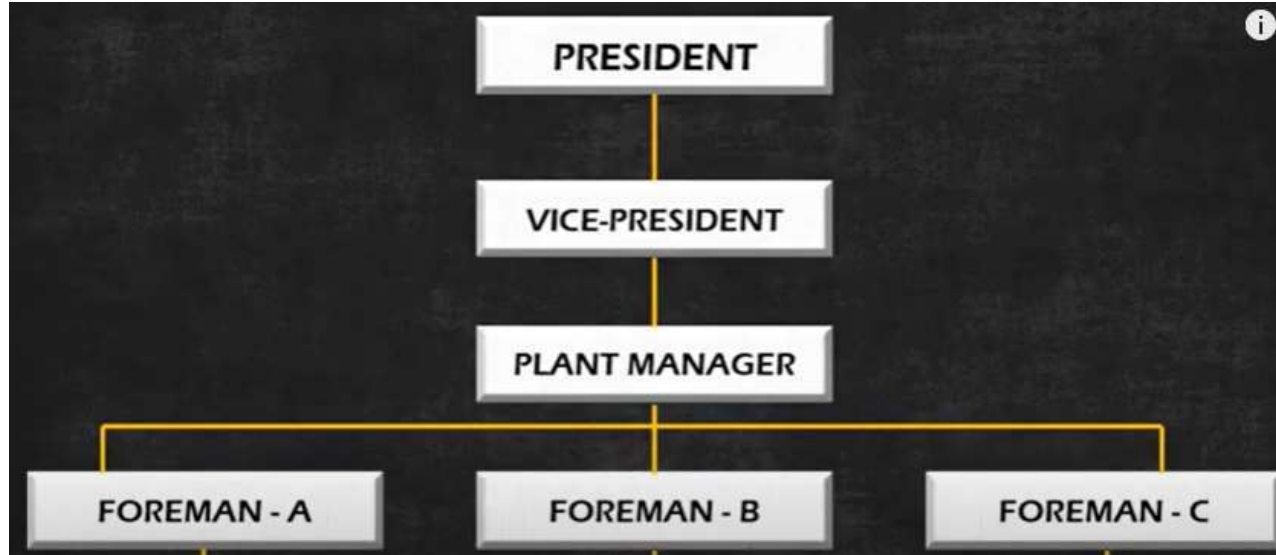
- Conflict in authority
- Possibility of disunity
- Requires manager effective in human relations

Guidelines for Making Matrix Management Effective

Matrix management can be made more effective by following these guidelines:

- Define the objectives of the project or task
- Clarify the roles, authority, and responsibilities of managers and team members
- Ensure that influence is based on knowledge and information, rather than on rank
- Balance the power of functional and project managers
- Select an experienced manager for the project who can provide leadership
- Undertake organization and team development
- Install appropriate cost, time, and quality controls that report deviations from standards in a timely manner
- Reward project managers and team members fairly

2.2.2.1 Traditional structure: line and functional



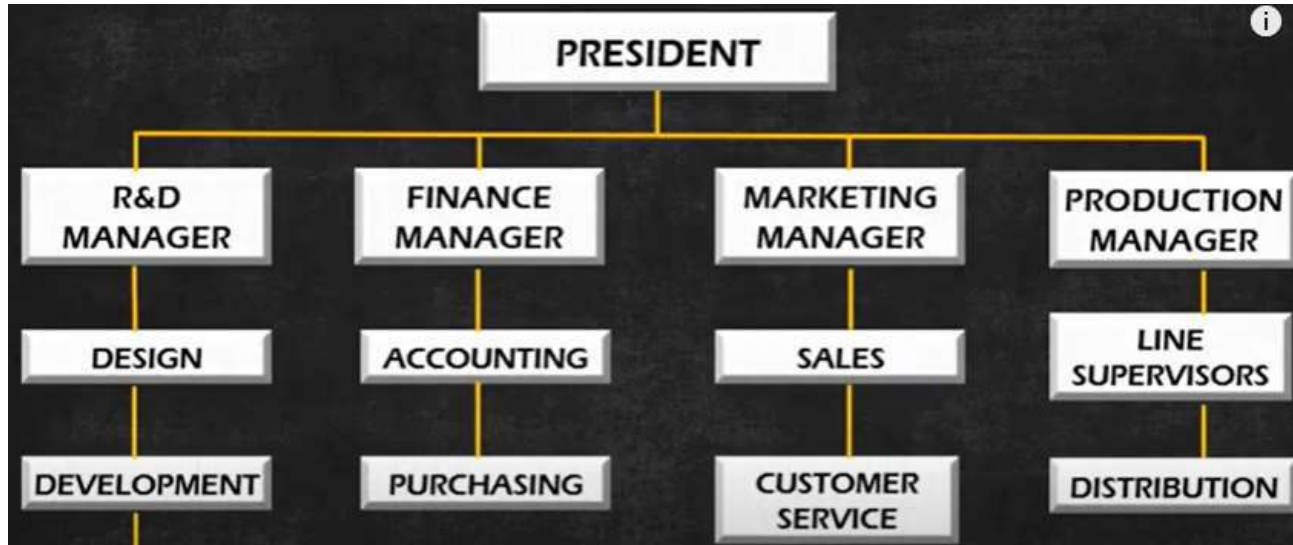
Advantages

- Direct Supervision
- Chain of Command
- Oldest and Simplest
- Unified Control
- Fixed Responsibilities
- Prompt Decision

Disadvantages

- Inadequate simplex communication
- Less effective coordination
- Misuse of authority

2.2.2.1 Traditional structure: line and functional



Disadvantages

- Poor interdepartmental communication
- Conflict of Interest
- Slow Decision Making with limited flexibility

Advantages

- Specialization
- Operational Efficiency
- Clear Hierarchy
- Career Development
- Economies of Scale
- Focused supervision
- Enhanced Performance

2.2.2.2 Modern structure: matrix, network, hybrid

Matrix: Project-heavy organizations (e.g., construction, aerospace, R&D) needing dual focus on function and projects

Network: Agile, tech-driven firms focusing on innovation, outsourcing, or partnerships (e.g., start-ups, software, consulting)

Hybrid: Large, diversified firms needing a balance between control and flexibility (e.g., multinational corporations)

2.4 Emerging planning and organizing issues for ICT enterprises

1. Rapid Technological Change

- Need for continuous **technology forecasting** and agile strategic planning.
- Constant updating of infrastructure and platforms (e.g., cloud, AI, blockchain).

2. Cybersecurity and Data Privacy

- Strategic planning must account for robust **cybersecurity frameworks**.
- Adherence to global data regulations like **GDPR, HIPAA**, etc.

2.4 Emerging planning and organizing issues for ICT enterprises

3. Talent Management & Skill Gaps

- Shortage of skilled professionals in AI, data science, cybersecurity, etc.
- Need for **continuous learning systems** and **remote talent integration**.

4. Agile and Lean Structures

- Shift from traditional hierarchies to **agile, flat, and cross-functional teams**.
- Emphasis on **DevOps** and **Scrum** practices for flexible organizing.

2.4 Emerging planning and organizing issues for ICT enterprises

5. Globalization & Virtual Workforces

- Organizing across **time zones**, **cultures**, and **legal systems**.
- Greater reliance on **remote collaboration tools** and distributed teams.

6. Sustainability and Green IT

- Planning for **eco-friendly** data centers, energy-efficient devices, and **e-waste management**.
- Growing pressure to meet **ESG (Environmental, Social, Governance)** targets.

2.4 Emerging planning and organizing issues for ICT enterprises

7. Innovation and Disruption Management

- Strategic focus on **R&D, innovation hubs, and partnership ecosystems.**
- Managing the threat of **disruptive startups** and **platform-based competitors.**

8. Regulatory Compliance & Ethics

- Need to adapt to **rapid changes in ICT-related regulations.**
- Ethical concerns around AI bias, surveillance, and automation must be planned for.

2.4 Emerging planning and organizing issues for ICT enterprises

9. Scalability and Cloud Infrastructure

- Organizing around **cloud-first** strategies and **hybrid cloud models**.
Planning for **scalable digital infrastructure** to support growth.

10. Customer-Centric Planning

- Shift towards **UX/UI design**, **customer analytics**, and **personalization**.
Integration of **customer feedback loops** into planning cycles.

Motivation and Leadership

Objective: To enable students to analyze and address key issues in motivating and leading a technical workforce

6 hrs

3.1 Motivation

3.1.1 Theories of motivation:

- ↓ Maslow's hierarchy
- ↓ Herzberg's two factor, Expectancy, Equity

3.1.2 Techniques for motivation

Concept of Motivation

- ↵ The term **motive** is derived from the latin word “movere” which means “to move”
- ↵ Motives have been classified in many ways:
 - ↪ Primary motives (Biological)
 - ↪ Secondary motives (Social)
- ↵ From organizational perspectives motives are:
 - ↪ Internal motives (*ego needs: freedom, prestige, recognition, status etc*)
 - ↪ External Motives (*Arises from the social and family influences*)

Definition of Motivation

- ↳ Motivation means inducement to act or move from inner impulse or drivers
- ↳ In an organizational setting, motivation means to make an employee act in a desired manner
- ↳ Desired manner is related to discipline, efficiency and productivity
- ↳ To motivate is to induce, persuade, stimulate, even compel an employee to act in a manner so as to achieve

The motivational Process

- ↵ Motivation is a concern of three factors
 - ↪ What energizes behavior?
 - ↪ What directs or channels behavior?
 - ↪ How this behavior is maintained and sustained?
- ↵ Motivation is a complex process
 - ↪ Motives can not be seen but can be inferred
 - ↪ Drivers of motives are instantaneous
 - ↪ Same incentives may be perceived differently
 - ↪ Some motives are diminishing (hunger, thirst and sex)
 - ↪ An individual may be unaware of his motives
 - ↪ Motivation is situational

Types of motivation

↳ Intrinsic Motivation

- ↳ Intrinsic motivation is related to skill and creative instinct (outward)

↳ Extrinsic Motivation

- ↳ This is external to the job or task (outward). Examples are: Praise, recognition, admiration, working conditions, and other facilities

Theories of Motivation

↓ Research questions.

- ← What forces within people, or within their environments, lead to motivation?
 - ↓ *This is related to content theories*
- ← What processes or mechanisms are involved in motivational behavior?
 - ↓ *This is related to process theories*

Maslow's Theory

- ✚ The best-known theory of motivation is probably Abraham Maslow's **hierarchy of needs theory**.
- ✚ Maslow was a psychologist who proposed that within every person is a hierarchy of five needs
- ✚ Maslow argued that each level in the needs hierarchy must be substantially satisfied before the next need becomes dominant
- ✚ An individual moves up the needs hierarchy from one level to the next.

Maslow's Hierarchy of Needs Theory

- **Hierarchy of needs theory:** Maslow's theory that human needs—*physiological, safety, social, esteem, and self-actualization*—form a hierarchy and that each level in the needs hierarchy must be substantially satisfied before the next need becomes dominant

Physiological needs: a person's needs for food, drink, shelter, sexual satisfaction, and other physical needs

Safety needs: a person's needs for security and protection from physical and emotional harm

Social needs: a person's needs for affection, belongingness, acceptance, and friendship

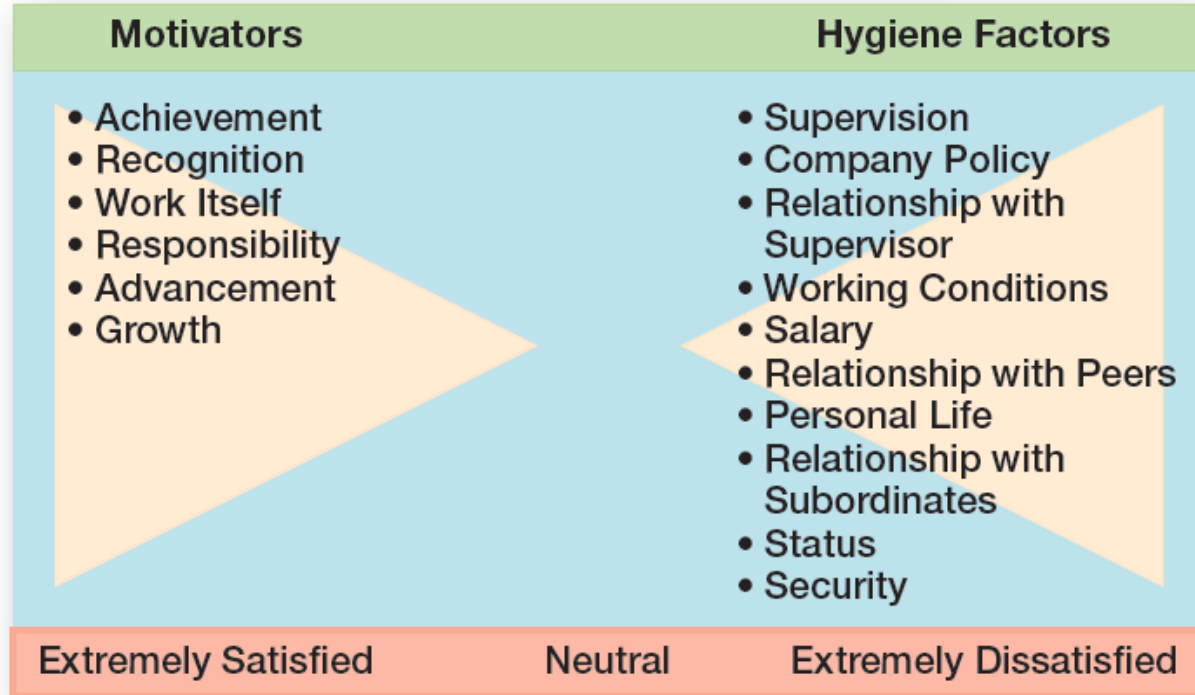
Esteem needs: a person's needs for internal factors such as self-respect, autonomy, and achievement, and external factors such as status, recognition, and attention

Self-actualization needs: a person's need to become what he or she is capable of becoming



Frederick Herzberg's two-factor theory

- Herzberg wanted to know when people felt exceptionally good (satisfied) or bad (dissatisfied) about their jobs.



Frederick Herzberg's two-factor theory

- ▶ He concluded that the replies people gave when they felt good about their jobs were significantly different from the replies they gave when they felt badly
- ▶ Certain characteristics were consistently related to job satisfaction (factors on the left side of the exhibit), and others to job dissatisfaction (factors on the right side)
- ▶ The extrinsic factors that create job dissatisfaction were called **hygiene factors**. When these factors are adequate, people won't be dissatisfied, but they won't be satisfied (or motivated) either
- ▶ To motivate people, Herzberg suggested emphasizing **motivators**, the intrinsic factors having to do with the job itself.

Herzberg's Two-Factor Theory

- ▶ **Two-factor theory (motivation-hygiene theory):** the motivation theory that intrinsic factors are related to job satisfaction and motivation, whereas extrinsic factors are associated with job dissatisfaction
- ▶ **Hygiene factors:** the extrinsic factors that remove job dissatisfaction
- ▶ **Motivators:** the intrinsic factors having to do with the job itself

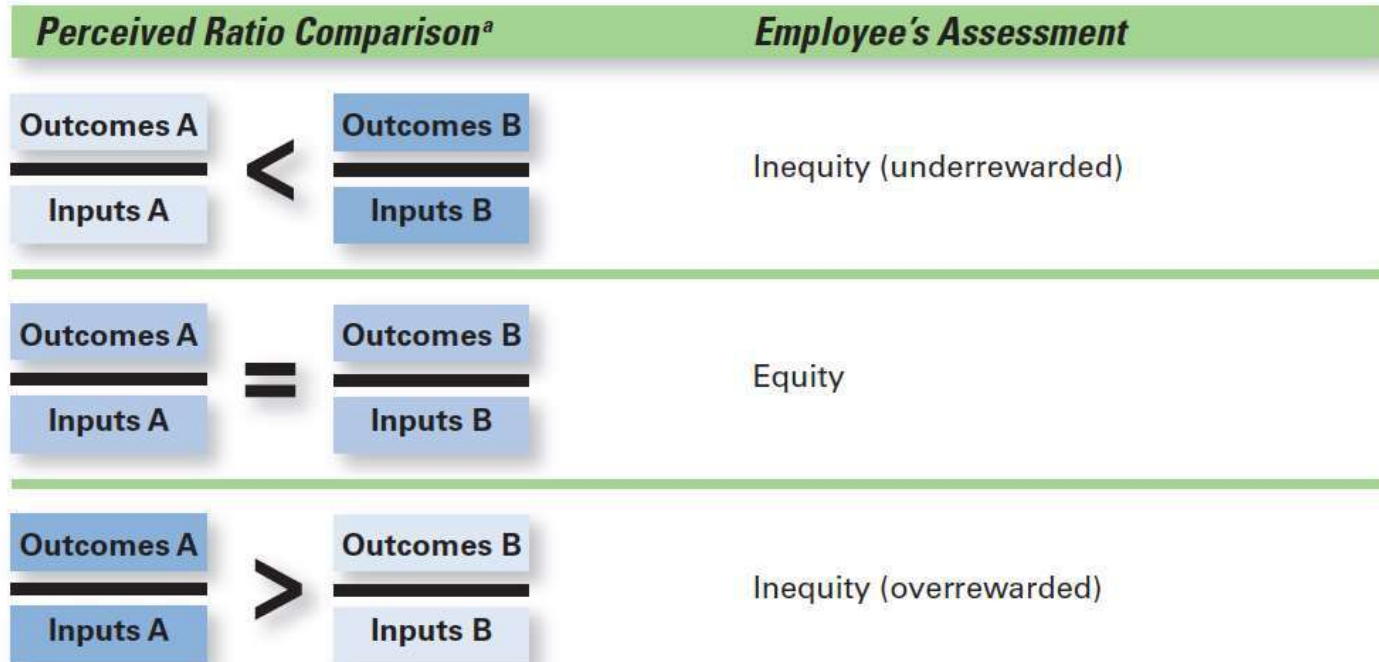
Contrasting Views of Satisfaction and Dissatisfaction



As shown in **Figure**, Herzberg proposed that a dual continuum existed: The opposite of “satisfaction” is “no satisfaction,” and the opposite of “dissatisfaction” is “no dissatisfaction.”

Equity Theory

Developed by **J. Stacey Adams**, proposes that employees compare what they get from a job (outcomes) in relation to what they put into it (inputs), and then they compare their inputs–outcomes ratio with the ratios of relevant others



Equity Theory

- ▶ **Equity theory:** The theory that an employee compares his or her job's input-outcomes ratio with that of relevant others and then corrects any inequity
 - ▶ If an employee perceives their ratio to be equitable in comparison to those of relevant others, there's no problem
 - ▶ However, if the ratio is inequitable, they view themselves as under rewarded or overrewarded

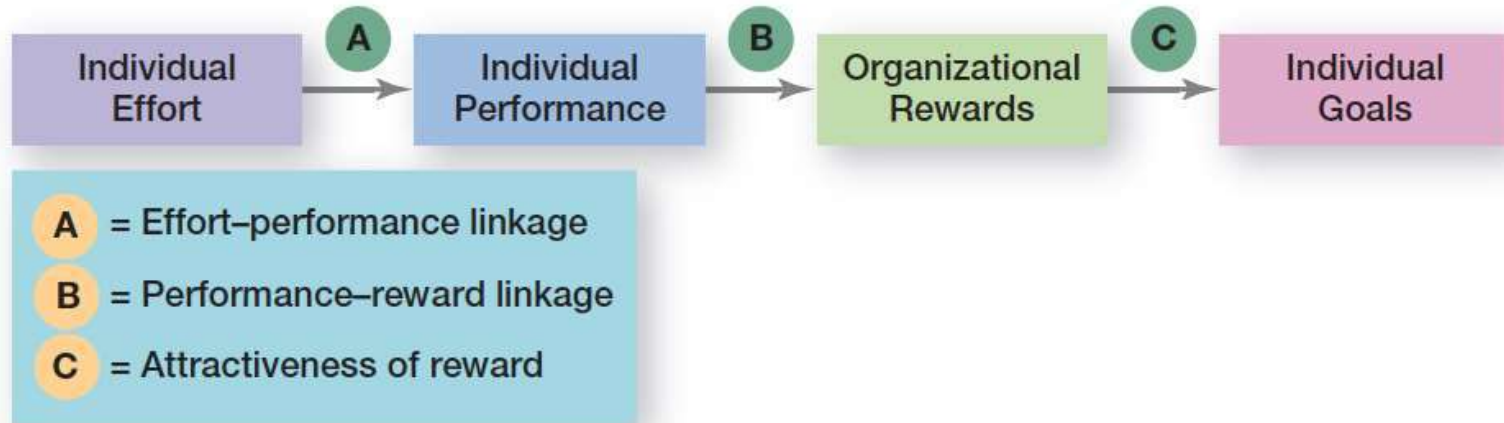
Equity Theory

- ▶ **Referents:** the persons, systems, or selves against which individuals compare themselves to assess equity
- ▶ **Distributive justice:** perceived fairness of the amount and allocation of rewards among individuals
- ▶ **Procedural justice:** perceived fairness of the process used to determine the distribution of rewards

Expectancy Theory

- ▶ The most comprehensive explanation of how employees are motivated is Victor Vroom's **expectancy theory**
- ▶ Expectancy theory states that an individual tends to act in a certain way based on the expectation that the act will be followed by a given outcome and on the attractiveness of that outcome to the individual
- ▶ It includes three variables or relationships

Figure illustrates the three relationships in the expectancy model.



Expectancy Relationships

1. ***Expectancy or effort-performance linkage*** is the probability perceived by the individual that exerting a given amount of effort will lead to a certain level of performance.
2. ***Instrumentality or performance-reward linkage*** is the degree to which the individual believes that performing at a particular level is instrumental in attaining the desired outcome.
3. ***Valence or attractiveness of reward*** is the importance an individual places on the potential outcome or reward that can be achieved on the job. Valence considers both the goals and needs of the individual.

Techniques of Motivation

- ▶ Manager needs to be sure of the following:
 - ▶ Positive reinforcement
 - ▶ Fair treatment
 - ▶ Understand and address employee's needs
 - ▶ Incentives for learning, creativity and innovation
 - ▶ Teach and remind procedure consistent with goals
 - ▶ Restructure and reorganize jobs whenever necessary
 - ▶ Have a reward system based on job performance

Reward system to motivate performance

- ▶ Extrinsic rewards
- ▶ Intrinsic rewards
- ▶ Compensation
- ▶ Incentive system
 - ▶ Employee share ownership
 - ▶ Flexible benefits
 - ▶ Merit awards
 - ▶ Knowledge or skill based pays

Effective Reward Management

- ▶ Reward must satisfy needs
- ▶ One must believe that efforts will lead to reward
- ▶ Rewards must be equitable
- ▶ Rewards must be linked with performance

Motivation through Employee Participation

▶ Quality of Work Life

- ▶ Adequate and fair compensation
- ▶ A safe and healthy environment
- ▶ Opportunity for developing human capabilities, personal growth and security

▶ Quality of Work Life

- ▶ Social Environment
- ▶ Work role with no personal time consumption
- ▶ Work with personal freedom, rights and dignity

Mechanisms to achieve QWL Quality of Work Life

- ▶ Quality Circle
- ▶ Employee's Share Ownership
- ▶ Flexible work schedules

Self Managed Work Teams

Technology and Motivation

- ▶ Constantly advancing technology is impacting how, where, and when we work, influencing motivation in several ways
- ▶ Technology can increase the pace of work, leading to workers feeling a loss of control
- ▶ With the effective integration of technology in work, companies could increase motivation by providing opportunities to provide meaningful work
- ▶ The flexibility offered by remote work could also positively impact worker motivation as they are able to better manage their lives

Managing Cross-Cultural Motivational Challenges

- ▶ In today's global business environment, managers can't assume motivational programs that work in one location will work in others.
- ▶ Most current motivation theories were developed in the United States by Americans and about Americans.

Motivating Unique Groups of Workers

- ▶ To maximize motivation among today's workforce, managers need to think in terms of flexibility
- ▶ The flexibility that motivates a worker depends on several factors including age and gender
- ▶ For example;
 - ▶ Millennials value social relationships
 - ▶ Older workers, are likely to enjoy being part of a team
 - ▶ Gen Z workers value opportunities for growth, clear responsibilities, and feedback

Motivating Professionals

- ▶ Job challenge
 - ▶ Finding solutions to problems
 - ▶ Support
 - ▶ Perception that their work is important
-
- What motivates professionals? Money and promotions typically are low on their priority list.
 - Why? They tend to be well paid and enjoy what they do.
 - In contrast, job challenge tends to be ranked high.
 - They like to tackle problems and find solutions.
 - Their chief reward is the work itself.
 - Professionals also value support.
 - They want others to think that what they are working is their central life interest, whereas nonprofessionals typically have other interests outside of work that can compensate for needs not met on the job.

Motivating Contingent Workers

- ▶ Opportunity to become a permanent employee
 - ▶ Opportunity for training
 - ▶ Equity in compensation and benefits
-
- What will motivate involuntarily temporary employees?
 - An obvious answer is the opportunity to become a permanent employee.
 - In cases in which permanent employees are selected from a pool of temps, the temps will often work hard in hopes of becoming permanent.
 - A less obvious answer is the opportunity for training.
 - The ability of a temporary employee to find a new job is largely dependent on his or her skills.

Motivating Remote Workers

- ▶ Despite the dramatic increase of remote and hybrid working following the COVID-19 pandemic, there is some uncertainty around strategies to motivate remote workers
- ▶ Our understanding of need-based theories suggests remote work may fulfill psychological needs
- ▶ Remote work gives employees control over their schedule and autonomy, allowing for intrinsic motivation

Designing Appropriate Rewards Programs

- ▶ **Open-book management:** a motivational approach in which an organization's financial statements (the "books") are shared with all employees
- ▶ **Employee recognition programs:** personal attention and expressing interest, approval, and appreciation for a job well done
- ▶ **Pay-for-performance programs:** variable compensation plans that pay employees on the basis of some performance measure

Discussion questions

1. Discuss the extent to which you believe that you have a motivation problem as a software engineer.
2. Given that you have learned in this chapter, design a plan to increase motivation of employees to provide prompt service to customers working in a software development company.
3. Design a plan to increase the motivation of system administrator even when the supervisor is not monitoring your work.

3.2 Leadership

3.2.1 Leadership styles: autocratic, democratic, servant and transformational

Learning objectives

- Define leadership and its ingredients
- Describe the trait approaches and charismatic leadership approach and their limitations
- Discuss various leadership styles based on the use of authority
- Identify the two dimensions of the managerial grid and the resulting extreme leadership styles
- Recognize that leadership can be seen as a continuum
- Explain the contingency approach to leadership
- Describe the path—goal approach to leadership effectiveness
- Distinguish between transactional and transformational leaders

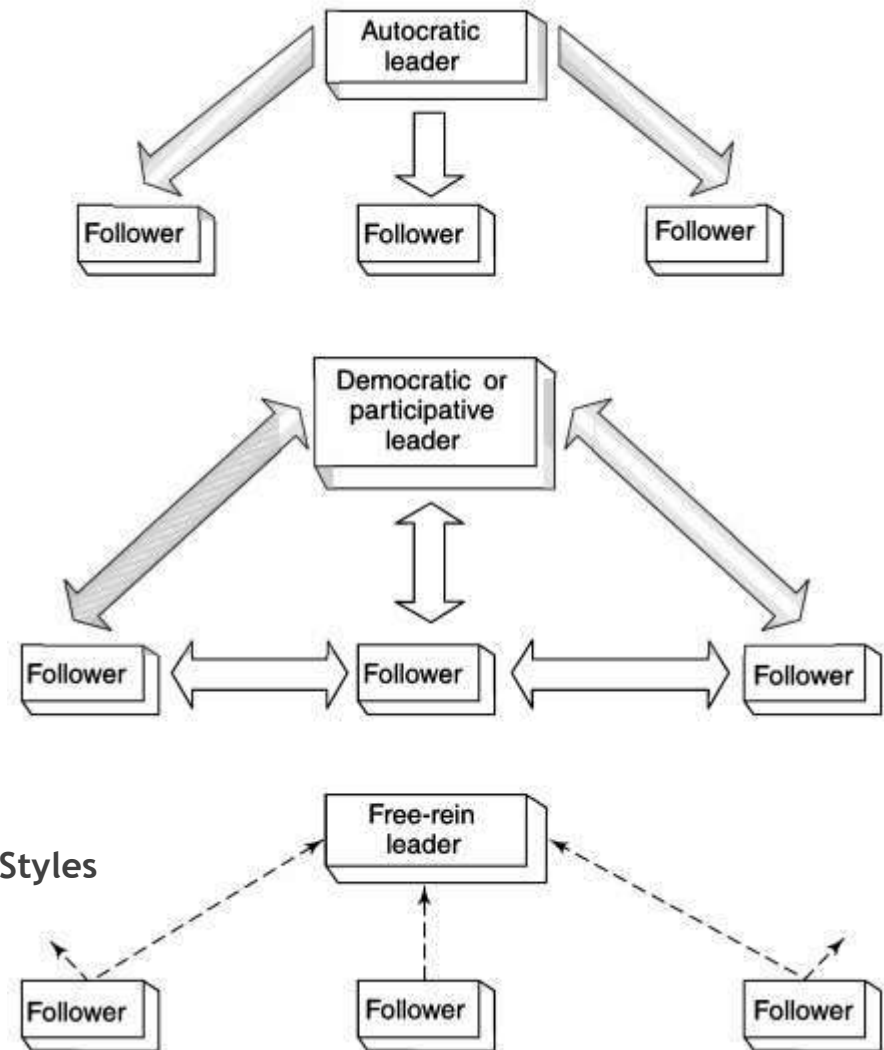
Leadership Definition

- ▶ **The** art or process of influencing people so that **they will strive** willingly and **enthusiastically toward the** achievement of group goals
- ▶ Leaders act to help a group attain objectives through the maximum application of its capabilities.
- ▶ They do not stand behind a group to push and prod; they place themselves before the group as they facilitate progress and inspire the group to accomplish organizational goals.
- ▶ A good example is an orchestra leader

Four major ingredients of Leadership

1. The ability to use power effectively and in a responsible manner
2. The ability to comprehend that human beings have different motivating forces at different times and in different situations
3. The ability to inspire
4. The ability to act in a manner that will develop a climate conducive to responding to and arousing motivations

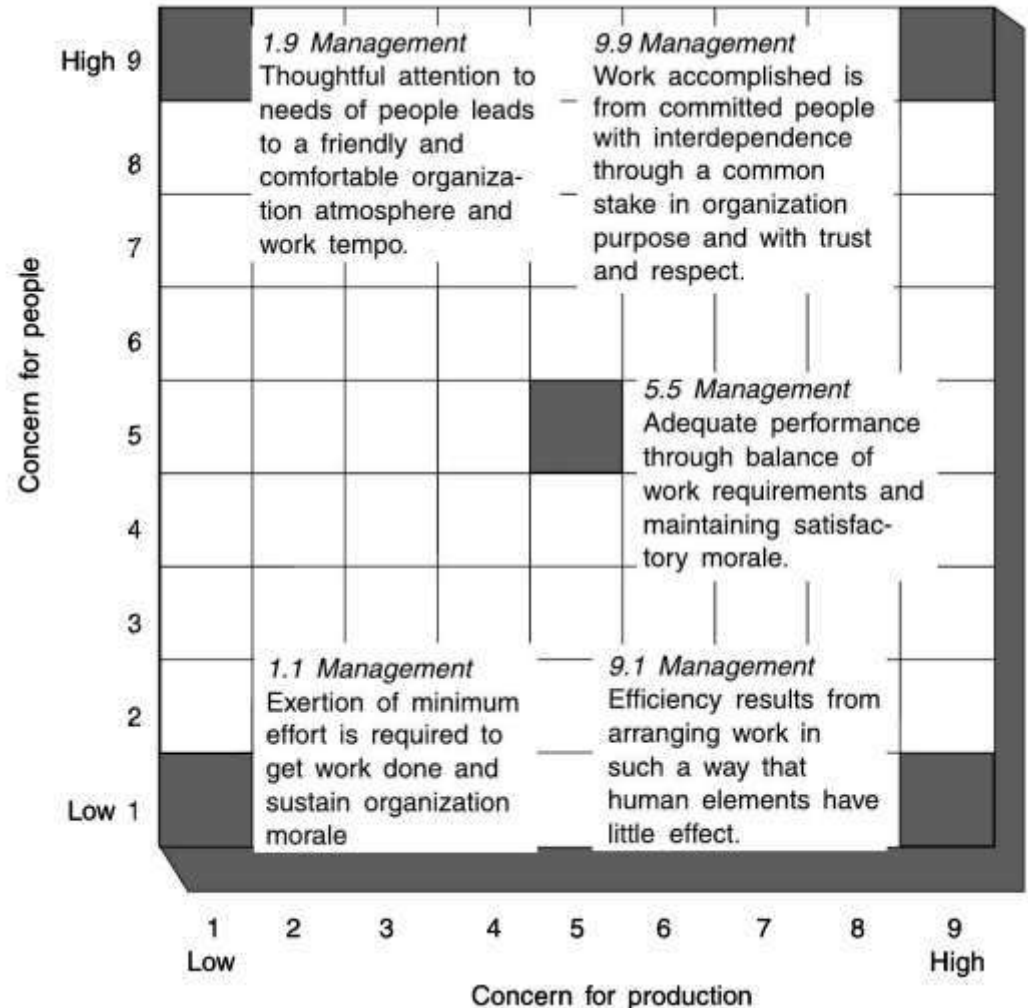
- ▶ There are several theories on leadership behavior and styles
- ▶ (1) leadership based on the use of authority,
- ▶ (2) the managerial grid, and
- ▶ (3) leadership involving a variety of styles, ranging from a maximum to a minimum use of power and influence



The Flow of Influence with Three Leadership Styles

The managerial grid

- ▶ **Concern for production** includes the attitude of a supervisor toward a wide variety of things, such as the quality of policy decisions, procedures and processes, creativeness of research, quality of service, work efficiency, and volume of output.
- ▶ **Concern for people** includes such elements as the degree of personal commitment toward goal achievement, maintenance of the self-esteem of workers, placement of responsibility on the basis of trust rather than obedience, provision of good working conditions, and maintenance of satisfying interpersonal relations.



The managerial grid

- ▶ 1.1 Style (Impoverished Management)
 - ▶ managers concern themselves very little with either people or production and have minimum involvement in their jobs; to all intents and purposes, they have abandoned their jobs and only mark time or act as messengers communicating information from superiors to subordinates
- ▶ 9.9 Style (team based style or democratic management)
 - ▶ Managers display in their actions the highest possible dedication both to people and to production

The managerial grid

- ▶ 1.9 Style (called country club management by some)
 - ▶ Managers have little or no concern for production but are concerned only for people
 - ▶ They promote an environment in which everyone is relaxed, friendly, and happy and no one is concerned about putting forth coordinated effort to accomplish enterprise goals
- ▶ 9.1 Style (sometimes referred to as autocratic task managers)
 - ▶ Managers are concerned only with developing an efficient operation, who have little or no concern for people, and who are quite autocratic in their style of leadership
- ▶ 5.5 Style (Middle of the road or compromising leadership)

Leadership styles: autocratic

- ▶ Top-down decision-making - Leaders make all key tech decisions (e.g., system architecture) with minimal input.
- ▶ Effective in crisis - Useful during outages or security breaches requiring fast, firm direction.
- ▶ Clear authority structure - Ideal for hierarchical teams (e.g., legacy software maintenance).
- ▶ Low team morale risk - May stifle creativity and autonomy in agile environments.
- ▶ Limited innovation - Reduces employee ownership and hinders innovation in long-term projects

Leadership styles: servant

- ▶ Empowers developers and engineers - Leaders focus on supporting team growth and well-being.
- ▶ Boosts collaboration - Common in DevOps or agile teams where trust and communication matter.
- ▶ Fosters innovation - Encourages experimentation and employee-led initiatives.
- ▶ Improves retention - Builds loyalty and lowers turnover among IT professionals.
- ▶ Slow in emergencies - May delay decisions in time-sensitive tech operations

Leadership styles: transformational

- ▶ Vision-driven change - Inspires teams to embrace cutting-edge tech (e.g., cloud migration, AI).
- ▶ Motivates innovation - Encourages creativity in problem-solving and R&D.
- ▶ Drives digital transformation - Leads major IT shifts in business models and architecture.
- ▶ Mentors future leaders - Focuses on personal and professional development of team members.
- ▶ Risk of burnout - High expectations and pace can overwhelm some team members

3.2.2 Characteristics of learning organization in the ICT industry

Continuous Learning Culture

- ▶ Promotes **ongoing upskilling** in fast-evolving technologies (e.g., AI, cybersecurity, cloud).
- ▶ Encourages **certifications, bootcamps, and knowledge sharing sessions**

Knowledge Management Systems

- ▶ Uses platforms to **capture, store, and share expertise** (e.g., wikis, forums, internal knowledge bases).
- ▶ Facilitates **organizational memory** across teams and locations.

3.2.2 Characteristics of learning organization in the ICT industry

Adaptability to Change

- ▶ Rapidly adapts to new tech trends, market demands, and regulatory changes.
- ▶ Embraces **agile methodologies** to enable organizational responsiveness.

Collaborative Environment

- ▶ Fosters **cross-functional teams** and **open communication** (e.g., DevOps, agile squads).
- ▶ Supports **remote and hybrid collaboration tools** like Slack, MS Teams, and Git

3.2.2 Characteristics of learning organization in the ICT industry

Innovation and Experimentation

- ▶ Encourages risk-taking and prototyping (e.g., hackathons, R&D labs).
- ▶ Accepts failure as part of the learning and innovation process.

Leadership That Supports Learning

- ▶ Leaders act as coaches and facilitators, not just decision-makers.
- ▶ Invests in learning platforms and employee development programs.

3.2.2 Characteristics of learning organization in the ICT industry

Employee Empowerment

- ▶ Gives autonomy in decision-making and **ownership of projects**.
- ▶ Builds a **growth mindset** among team members.

Employee Motivation

Company	Focus Area	Description / Contribution
Microsoft	Software, Cloud, AI	
Google (Alphabet Inc.)	Search, Cloud, AI, Mobile OS	
IBM	Enterprise IT, Cloud, AI	
Apple Inc	Consumer Electronics, Software	
Cisco Systems	Networking & Cybersecurity	

Company	Focus Area	Description / Contribution
Infosys	IT Services & Consulting	
Samsung Electronics	Consumer Electronics, Semiconductors	
Amazon Web Services (AWS)	Cloud Computing	
Huawei Technologies	Telecom Equipment, ICT Infrastructure	
Tata Consultancy Services (TCS)	IT Services & Consulting	

3.3 Challenges and strategies for motivating and leading technical workforce

► Understanding and Managing Individual Behavior

Learning Objectives

- **Identify** the focus and goals of individual behavior within organizations.
- **Explain** the role that attitudes play in job performance.
- **Describe** different personality theories.
- **Describe** perception and the factors that influence it.
- **Discuss** learning theories and their relevance in shaping behavior.

Focus and Goals of Organizational Behavior

- ▶ **Behavior:** the actions of people
- ▶ **Organizational behavior:** the study of the actions of people at work
- ▶ Managers need good people skills.
- ▶ The actions of people—**organizational behavior** is the study of the actions of people at work irrespective of their skills and roles

“Organization as an Iceberg” Metaphor

Figure shows that like an iceberg, OB has a small visible dimension and a much larger hidden portion.



Focus of Organizational Behavior

- ▶ Individual behavior
 - ▶ attitudes, personality, perception, learning, and motivation
- ▶ Group behavior
 - ▶ norms, roles, team building, leadership, and conflict
- ▶ Organizational aspects
 - ▶ structure, culture, and human resource policies and practices

Goals of Organizational Behavior

- ▶ The goals of OB are to *explain*, *predict*, and *influence* behavior
- ▶ Managers need to be able to *explain* why employees engage in some behaviors rather than others, *predict* how employees will respond to various actions and decisions, and *influence* how employees behave
- ▶ **Employee productivity:** a performance measure of both efficiency and effectiveness
- ▶ **Absenteeism:** the failure to show up for work
- ▶ **Turnover:** the voluntary and involuntary permanent withdrawal from an organization

Goals of Organizational Behavior

- ▶ **Organizational citizenship behavior (OCB):** discretionary behavior that is not part of an employee's formal job requirements, but which promotes the effective functioning of the organization
- ▶ **Job satisfaction:** an employee's general attitude toward his or her job
- ▶ **Counterproductive workplace behavior:** any intentional employee behavior that is potentially damaging to the organization or to individuals within the organization

Attitudes and Job Performance

- ▶ **Attitudes:** evaluative statements, either favorable or unfavorable, concerning objects, people, or events
- ▶ Examples of statements that reflect an attitude are:
 - ▶ “I like my job”
 - ▶ “I don’t care for my boss”

Attitude Components

- ▶ **Cognitive component:** that part of an attitude that's made up of the beliefs, opinions, knowledge, or information held by a person
- ▶ **Affective component:** that part of an attitude that's the emotional or feeling part
- ▶ **Behavioral component:** that part of an attitude that refers to an intention to behave in a certain way toward someone or something

Job Satisfaction

- ▶ High level of satisfaction = positive attitude;
Dissatisfaction = negative attitude
- ▶ Linked to:
 - ▶ Productivity
 - ▶ Absenteeism
 - ▶ Turnover
 - ▶ Customer satisfaction
 - ▶ OCB
 - ▶ Counterproductive behavior

Job Involvement and Organizational Commitment

- ▶ **Job involvement:** the degree to which an employee identifies with his or her job, actively participates in it, and considers his or her job performance to be important to self-worth
- ▶ **Organizational commitment:** the degree to which an employee identifies with a particular organization and its goals and wishes to maintain membership in that organization
- ▶ **Perceived organizational support:** employees' general belief that their organization values their contribution and cares about their well-being

Employee Engagement

- ▶ **Employee engagement:** when employees are connected to, satisfied with, and enthusiastic about their jobs. Engagement is important because:
 - ▶ Highly engaged employees are passionate about and deeply connected to their work, and
 - ▶ disengaged employees have essentially “checked out” and don’t care. They show up for work, but have no energy or passion for it.

Attitudes and Consistency

- ▶ People generally seek consistency among their attitudes and between their attitudes and behavior; they try to reconcile differing attitudes and align their attitudes and behavior, so they appear rational and consistent
- ▶ Cognitive dissonance theory introduced on the next slide sought to explain the relationship between attitudes and behavior

Cognitive Dissonance Theory

Cognitive dissonance: any incompatibility or inconsistency between attitudes or between behavior and attitudes

- ▶ The theory proposes that how hard we'll try to reduce dissonance is determined by three things:
- ▶ (1) the importance of the factors creating the dissonance,
- ▶ (2) the degree of influence the individual believes they have over those factors, and
- ▶ (3) the rewards that may be involved in dissonance

Assessing Attitudes

- ▶ **Attitude surveys:** surveys that elicit responses from employees through questions about how they feel about their jobs, work groups, supervisors, or the organization
- ▶ **Pulse survey:** a short employee attitude survey sent to employees at a regular interval, such as weekly

Sample Employee Attitude Survey

Here are some sample statements from an employee attitude survey:

- ▶ I have ample opportunities to use my skills/abilities in my job.
- ▶ My manager has a good relationship with my work group.
- ▶ My organization provides me professional development opportunities.
- ▶ I am told if I'm doing good work or not.
- ▶ I feel safe in my work environment.
- ▶ My organization is a great place to work.

Can Artificial Intelligence Help Improve Employee Attitudes?

AI can be used for the following tasks;

- ▶ Tracking employee attitudes
- ▶ Identifying opportunities to boost morale
- ▶ Identifying opportunities to improve employee attitudes by changing work processes and automating tasks that workers may deem uninteresting
- ▶ Making it easier for an employee to gather and organize information for a report

Implications for Managers

Managers should be interested in their employees' attitudes because they influence behavior and organizational performance.

For example, satisfied and committed employees:

- ▶ have lower rates of turnover and absenteeism
- ▶ perform better on the job

Personality

- ▶ **Personality:** the unique combination of emotional, thought, and behavioral patterns that affect how a person reacts to situations and interacts with others
- ▶ Someone's personality is commonly described with terms such as;
 - ▶ Quiet
 - ▶ Loud
 - ▶ Passive
 - ▶ Aggressive
 - ▶ Ambitious
 - ▶ Loyal

Additional Personality Insights (1 of 2)

- ▶ **Locus of control:** a personality attribute that measures the degree to which people believe they control their own fate
- ▶ **Self-esteem:** an individual's degree of like or dislike for himself or herself
- ▶ **Self-monitoring:** a personality trait that measures the ability to adjust behavior to external situational factors

Additional Personality Insights (2 of 2)

- ▶ **Risk-Taking:** an individual's willingness to take chances
- ▶ **Proactive personality:** a personality trait that describes individuals who are more prone to take actions to influence their environments

Personality Types in Different Cultures

- ▶ No personality type is common for a given country, yet a country's culture influences the **dominant** personality characteristics of its people
- ▶ The five personality factors studied in the Big Five Model appear in almost all cross-cultural studies

Emotions and Emotional Intelligence

- ▶ **Emotions:** intense feelings that are directed at someone or something
- ▶ **Emotional intelligence:** the ability to notice and to manage emotional cues and information

Five Dimensions of Emotional Intelligence

- ▶ Self-awareness
- ▶ Self-management
- ▶ Self-motivation
- ▶ Empathy
- ▶ Social skills

Implications for Managers: Personality

- ▶ Managers are likely to have higher-performing and more satisfied employees if consideration is given to matching personalities with jobs.
- ▶ The single best trait associated with superior job performance is conscientiousness.

Four Suggestions Related to Hiring

1. Assess vocational interests in the hiring process
2. If you're looking for a single personality trait that is likely to be associated with superior job performance, you're well advised to hire people who score high on conscientiousness
3. When filling jobs where successful social interaction is a major factor in performance, hire people with high emotional intelligence
4. Take time to carefully screen job candidates to identify and reject individuals who hold the set of Dark Triad traits.

Perception

- ▶ **Perception:** process by which we give meaning to our environment by organizing and interpreting sensory impressions
- ▶ Research on perception consistently demonstrates that individuals may look at the same thing yet perceive it differently.

Factors that Influence Perception

- ▶ A number of factors act to shape and sometimes distort perception including:
 - ▶ Perceiver
 - ▶ Target characteristics
 - ▶ Context

What Do You See?



Old woman or young woman?



A knight on a horse?

Notice how what you see changes as you look differently at each one.

Attribution Theory (1 of 2)

- ▶ **Attribution theory:** a theory used to explain how we judge people differently depending on what meaning we attribute to a given behavior
- ▶ Attribution depends on three factors:
 - ▶ Distinctiveness
 - ▶ Consensus
 - ▶ Consistency

Attribution Theory

OBSERVATION	INTERPRETATION	ATTRIBUTION OF CAUSE
Does person behave this way in other situations?	YES: Low distinctiveness NO: High distinctiveness	Internal attribution External attribution
Do other people behave the same way in similar situations?	YES: High consensus NO: Low consensus	External attribution Internal attribution
Does person behave this way consistently?	YES: High consistency NO: Low consistency	Internal attribution External attribution

Exhibit 13-6 summarizes the key elements of attribution theory

Attribution Theory (2 of 2)

- ▶ **Fundamental attribution error:** the tendency to underestimate the influence of external factors and to overestimate the influence of internal or personal factors
- ▶ **Self-serving bias:** the tendency of individuals to attribute their successes to internal factors while blaming personal failures on external factors

Shortcuts Used in Judging Others

- ▶ **Selective perception:** we make selections based on our own background, experience, interests and other factors unique to us
- ▶ **Assumed similarity:** the assumption that others are like oneself
- ▶ **Stereotyping:** judging a person based on a perception of a group to which that person belongs

Additional Shortcuts Used in Judging Others

- ▶ **Halo effect:** a general impression of an individual based on a single characteristic
- ▶ **Contrast effect:** our perception of someone or something can be influenced by the context or surroundings

Implications for Managers: Perception

- ▶ Managers need to recognize that their employees react to perceptions, not to reality
- ▶ Employees organize and interpret what they see, so the potential for perceptual distortion is always present
- ▶ Managers should pay close attention to how employees perceive both their jobs and management actions

Learning

- ▶ Learning is defined as any relatively permanent change in behavior that occurs as a result of experience
- ▶ Two learning theories help us understand individual behavior:
 - ▶ 1. Social Learning Theory
 - ▶ 2. Operant Conditioning

Social Learning

Social learning theory: a theory of learning that says people can learn through observation and direct experience

The influence on behavior is determined by four factors:

1. Attentional processes
2. Retention processes
3. Motor reproduction processes
4. Reinforcement processes

Shaping: A Managerial Tool (1 of 2)

- ▶ **Shaping behavior:** shaping is a behavior modification approach based on operant conditioning that managers can use to “mold” individuals by guiding their learning in graduated steps
- ▶ **Operant conditioning:** a theory of learning that says behavior is a function of its consequences

Shaping: A Managerial Tool (2 of 2)

There are four ways to shape behavior;

1. Positive reinforcement
2. Negative reinforcement
3. Punishment
4. Extinction

Implications for Managers: Learning

- ▶ Employees are going to learn on the job: are managers going to manage their learning through the rewards they allocate and the examples they set, or allow it to occur haphazardly?
- ▶ If marginal employees are rewarded with pay raises and promotions, they will have little reason to change their behavior
- ▶ Productive employees who see marginal performance rewarded might change their behavior

Human Resource Management and Control

Objective: To enhance students' knowledge of human resource management and control functions, emphasizing their practical application for managing ICT organization

6 hrs

4.1 Human Resource Management

- 4.1.1 Functions of human resource management
- 4.1.2 Job analysis, job specification, job description
- 4.1.3 Recruitment and selection
- 4.1.4 Human resource training (on the job and off the job)
- 4.1.5 Performance appraisal and methods
- 4.1.6 Challenges in managing people in ICT workforce

4.1.1 Functions of human resource management

HRM Function	Practical Example	Impact
Recruitment and Selection	Posting a job on LinkedIn, shortlisting candidates, conducting interviews, and hiring the best fit	Ensures skilled employees are brought into the organization
Training and Development	Organizing leadership workshops and technical skill sessions for employees	Enhances employee skills and prepares future leaders
Performance Management	Setting SMART goals, regular performance reviews, and feedback sessions	Aligns employee output with company goals and improves productivity

4.1.1 Functions of human resource management

HRM Function	Practical Example	Impact
Compensation and Benefits	Offering competitive salaries, performance bonuses, and health benefits	Attracts and retains top talent, boosting employee satisfaction
Employee Relations	Launching an employee grievance redressal platform and regular town hall meetings	Builds trust and creates a positive workplace culture
Workplace Safety and Health	Conducting workplace safety drills and providing ergonomic workstations	Protects employee health and ensures legal compliance

4.1.2 Job analysis, job specification, job description

Learning Objective: Discuss the Process of Job Analysis, Including Why It Is Important.

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What Is Job Analysis?

Job Analysis—is the procedure for determining the duties and skill requirements of a job and the kind of person who should be hired for it.

The Basics of Job Analysis

- Work activities
- Human behaviors
- Machines, tools, equipment, and work aids
- Performance standards
- Job context
- Human requirements

Uses of Job Analysis Information

- Recruitment and selection
- Equal Employment Opportunity (E E O) compliance
- Performance appraisal
- Compensation
- Training

Conducting a Job Analysis in six steps

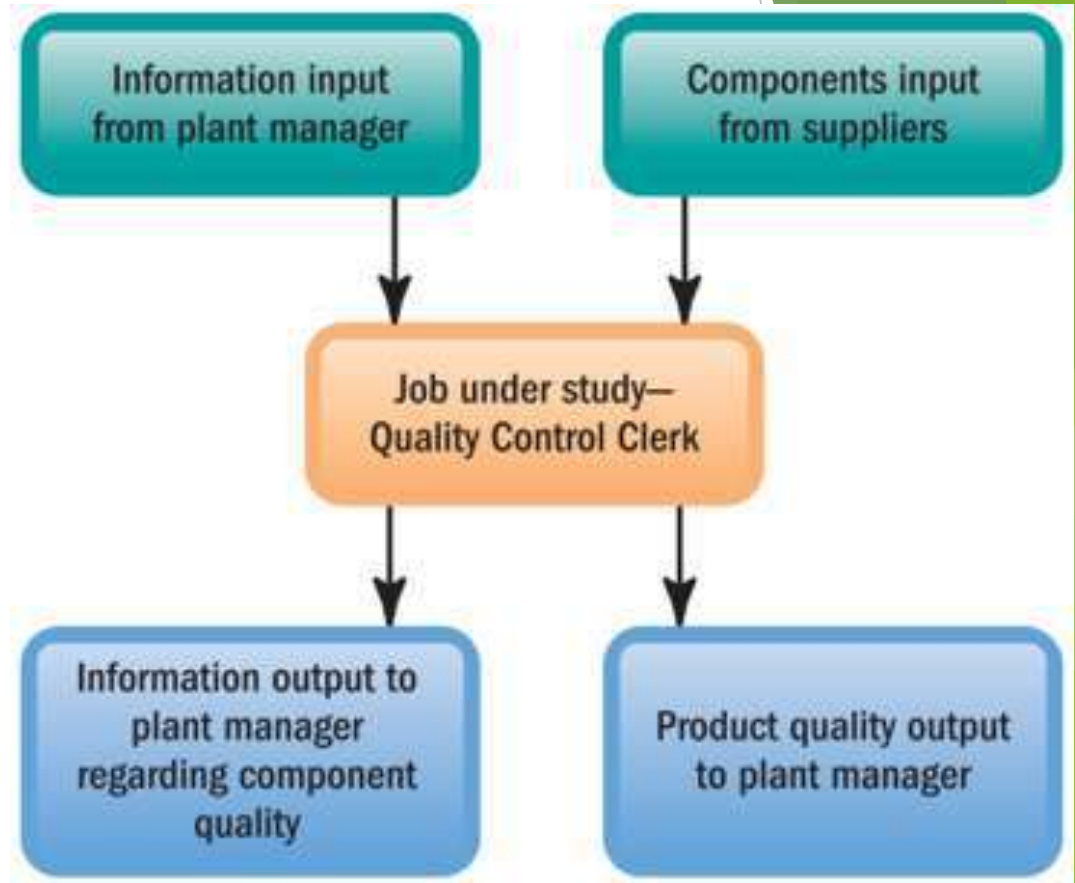
1. Identify the use to which information will be put
2. Review relevant background information
3. Select representative positions
4. Actually analyze the job
5. Verify the job analysis information
6. Develop job description and job specification

Processes Involved in Job Analysis

Workflow Analysis

Figure Process Chart
for Analyzing a Job's
Workflow

Source: Henderson, Richard I.,



Compensation Management in a Knowledge-Based

Other Processes Involved in Job Analysis

- ▶ Business process reengineering
 - ▶ Job redesign
 - ▶ Job enlargement
 - ▶ Job rotation
 - ▶ Job enrichment

HR as a Profit Center

Boosting Productivity through Work Redesign

The Atlantic American insurance company in Atlanta conducted a workflow analysis to identify inefficiencies in how it processes its insurance claims. As the firm's HR director said, "We followed the life of a claim to where it arrived in the mail and where it eventually ended up" in order to find ways to improve the process.

The workflow analysis prompted several performance-boosting redesigns of the insurance claim jobs. The firm reduced from four to one the number of people opening mail, replacing three people with a machine that does it automatically. A new date stamping machine lets staff stamp 20 pages at a time rather than one. A new software program adds bar codes to each claim automatically, rather than manually. The new system lowered costs.

Learning Objective: Explain and Use at Least Three Methods of Collecting Job Analysis Information.

- ▶ Interviews
- ▶ Questionnaires
- Observation
- ▶ Things to keep in mind
 - ▶ A joint effort
 - ▶ Clear questions and process
 - ▶ Several methods

Online Job Analysis Methods

- ▶ Standardized job analysis questionnaires
- ▶ Geographically disbursed employees
- ▶ May utilize online job experts

The Interview

1. Typical Questions
2. Structure Interviews
3. Pros and Cons
4. Interviewing Guidelines

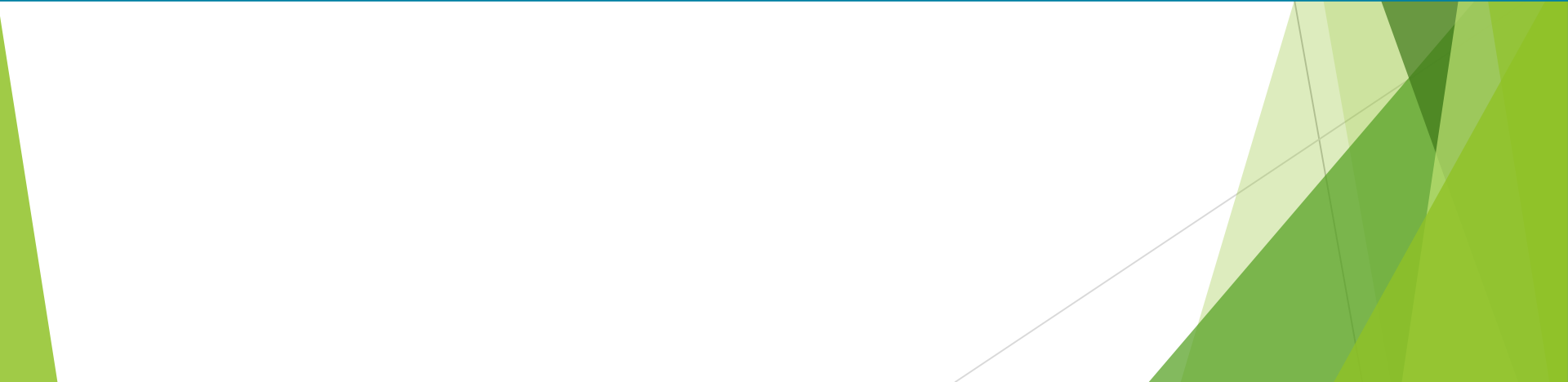
Questionnaires

1. Structured checklists
2. “Describe the major duties”
3. Pros and cons

Observations

1. Useful with observable physical activities
2. Not appropriate when the job entails a lot of mental activity
3. Reactivity

Learning Objective 4.4: Explain How You Would Write a Job Description, and What Sources You Would Use.

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Job Description Sections

- ▶ Job identification
- ▶ Job summary
- ▶ Responsibilities and duties
- ▶ Authority of incumbent
- ▶ Standards of performance
- ▶ Working conditions
- ▶ Job specification

Job Title: Telesales Representative	Job Code: 100001
Recommended Salary Grade:	Exempt/NonExempt Status: Nonexempt
Job Family: Sales	E E O C: Sales Workers
Division: Higher Education	Reports To: District Sales Manager
Department: In-House Sales	Location: Boston
Blank	Date: April 2013

Source: Reprinted and electronically reproduced by permission of Pearson Education, Inc., Upper Saddle River, New Jersey.

Job Summary

Summary (Write a brief summary of job.)

The person in this position is responsible for selling college textbooks, software, and multimedia products to professors, via incoming and outgoing telephone calls, and to carry out selling strategies to meet sales goals in assigned territories of smaller colleges and universities. In addition, the individual in this position will be responsible for generating a designated amount of editorial leads and communicating to the publishing groups product feedback and market trends observed in the assigned territory.

Relationships

- ▶ Inside and outside the organization
 - ▶ Reports to
 - ▶ Supervises
 - ▶ Works with
 - ▶ Outside the company

Responsibilities and Duties (1 of 6)

Primary Responsibilities (List in order of importance and list amount of time spent on task.)

Driving Sales (60%)

- ▶ Achieve quantitative sales goal for assigned territory of smaller colleges and universities.
- ▶ Determine sales priorities and strategies for territory and develop a plan for implementing those strategies.
- ▶ Conduct 15-20 professor interviews per day during the academic sales year that accomplishes those priorities.

Responsibilities and Duties (2 of 6)

- ▶ Conduct product presentations (including texts, software, and Web site); effectively articulate author's central vision of key titles; conduct sales interviews using the PSS model; conduct walk-through of books and technology.
- ▶ Employ telephone selling techniques and strategies.
- ▶ Sample products to appropriate faculty, making strategic use of assigned sampling budgets.
- ▶ Close class test adoptions for first edition products.
- ▶ Negotiate custom publishing and special packaging agreements within company guidelines.

Responsibilities and Duties (3 of 6)

- ▶ Initiate and conduct in-person faculty presentations and selling trips as appropriate to maximize sales with the strategic use of travel budget. Also use internal resources to support the territory sales goals.
- ▶ Plan and execute in-territory special selling events and book-fairs.
- ▶ Develop and implement in-territory promotional campaigns and targeted email campaigns.

Responsibilities and Duties (4 of 6)

Publishing (editorial/marketing) 25%

- ▶ Report, track, and sign editorial projects.
- ▶ Gather and communicate significant market feedback and information to publishing groups.

Responsibilities and Duties (5 of 6)

Territory Management 15%

- ▶ Track and report all pending and closed business in assigned database.
- ▶ Maintain records of customer sales interviews and adoption situations in assigned database.
- ▶ Manage operating budget strategically.
- ▶ Submit territory itineraries, sales plans, and sales forecasts as assigned.
- ▶ Provide superior customer service and maintain professional bookstore relations in assigned territory.

Responsibilities and Duties (6 of 6)

Decision-Making Responsibilities for This Position:

Determine the strategic use of assigned sampling budget to most effectively generate sales revenue to exceed sales goals.

Determine the priority of customer and account contacts to achieve maximum sales potential.

Determine where in-person presentations and special selling events would be most effective to generate the most sales.

4.1.3 Recruitment and selection

- **Recruitment** is the process of generating a pool of qualified candidates for a particular job.
- The firm must announce the job's availability to the market (inside and outside the organization) and attract qualified candidates to apply.



The Hiring Process



Challenges in the Hiring Process

- ▶ The hiring process is fraught with challenges
 - ▶ Determining which personal characteristics are most important to performance
 - ▶ Measuring those characteristics
 - ▶ Evaluating applicants' motivation levels
 - ▶ Deciding who should make the selection decision

Determining Characteristics Important to Performance

- ▶ Characteristics a person needs to perform a job effectively are not obvious:
 - ▶ Job itself is not static
 - ▶ Knowledge, skills, and abilities differ
 - ▶ Organization's culture may need to be taken into account
 - ▶ Different people often want different characteristics in a new hire

Measuring Characteristics That Determine Performance

- ▶ Skills needed for job performance are not always obvious in a candidate
- ▶ Often tests are best predictor of job performance

The Motivation Factor

- ▶ Motivation is critical to performance
- ▶ High ability level can yield poor job performance if combined with low motivation
- ▶ Motivation is very difficult to measure and predict

Meeting the Challenge of Effective Staffing: Recruitment

- ▶ Go where the customers are
- ▶ What do they want and what do you have to offer?
- ▶ Treat applicants like customers

Sources of Recruiting

- ▶ Current employees
- ▶ Referrals from current employees
- ▶ Former employees
- ▶ Former military
- ▶ Employment agencies
- ▶ Temporary workers
- ▶ College recruiting
- ▶ Customers
- ▶ Print and radio advertisements
- ▶ Internet advertising, career sites, and social media
- ▶ Career sites and social media

Recruitment

- ▶ Evaluating sources of recruiting
 - ▶ Nontraditional recruiting
 - ▶ External versus internal candidates
-
- ▶ Recruiting protected classes
 - ▶ Planning the recruitment effort
 - ▶ Planning your job search

Meeting the Challenge of Effective Staffing: Selection

- ▶ Reliability
 - ▶ Deficiency error
 - ▶ Contamination error
- ▶ Validity
 - ▶ Content validity
 - ▶ Empirical validity
 - ▶ Concurrent validity
 - ▶ Predictive validity

Selection Tools as Predictors of Success

- ▶ Letters of recommendation
- ▶ Application forms
- ▶ Ability tests
 - ▶ Cognitive ability test
 - ▶ Physical ability test
- ▶ Personality tests
 - ▶ Extroversion
 - ▶ Agreeableness
 - ▶ Conscientiousness
 - ▶ Emotional stability
 - ▶ Openness to experience
- ▶ Honesty tests
- ▶ Interviews
- ▶ Assessment centers
- ▶ Drug tests
- ▶ Reference checks
- ▶ Background checks
- ▶ Social media screening
- ▶ Combining predictors
- ▶ Selection and person/organization fit

Examples of Structured Interview Questions

Type	Example
Situational	You are packing things into your car and getting ready for your family vacation when you realize that you promised to meet a client this morning. You did not pencil the meeting into your calendar and it slipped your mind until just now. What do you do?
Job knowledge	What is the correct procedure for determining the appropriate oven temperature when running a new batch of steel?
Worker requirements	Some periods are extremely busy in our business. What are your feelings about working overtime?

Interviews

- ▶ Don't ask applicants if they have children
- ▶ Don't ask applicant's age
- ▶ Don't ask applicants whether they have a physical or mental disability
- ▶ Don't ask for height or weight on an application
- ▶ Don't ask a female candidate for her maiden name
- ▶ Don't ask about citizenship
- ▶ Don't ask applicants about their arrest records
- ▶ Don't ask applicants if they smoke
- ▶ Don't ask applicants if they are HIV-positive or have AIDS

Unusual Job Interview Behaviors (1 of 3)

The impression you make through your behavior at a job interview is critical to your being favorably considered for the job. No matter how stellar your résumé, inappropriate behavior during the interview can ruin your chances for a job offer. The following are some real situations that indicate how unusual (even bizarre) the behavior of some job seekers can be.

- ▶ The applicant wore headphones and said she could listen to me and the music at the same time.
- ▶ A balding candidate abruptly excused himself and returned to the office a few minutes later wearing a hairpiece.
- ▶ The applicant asked to see the interviewer's résumé to determine if the interviewer was qualified to judge his capabilities for the job.
- ▶ The interviewee announced she hadn't had lunch and proceeded to eat a hamburger and french fries in the interviewer's office—wiping the ketchup on her sleeve.

Unusual Job Interview Behaviors (2 of 3)

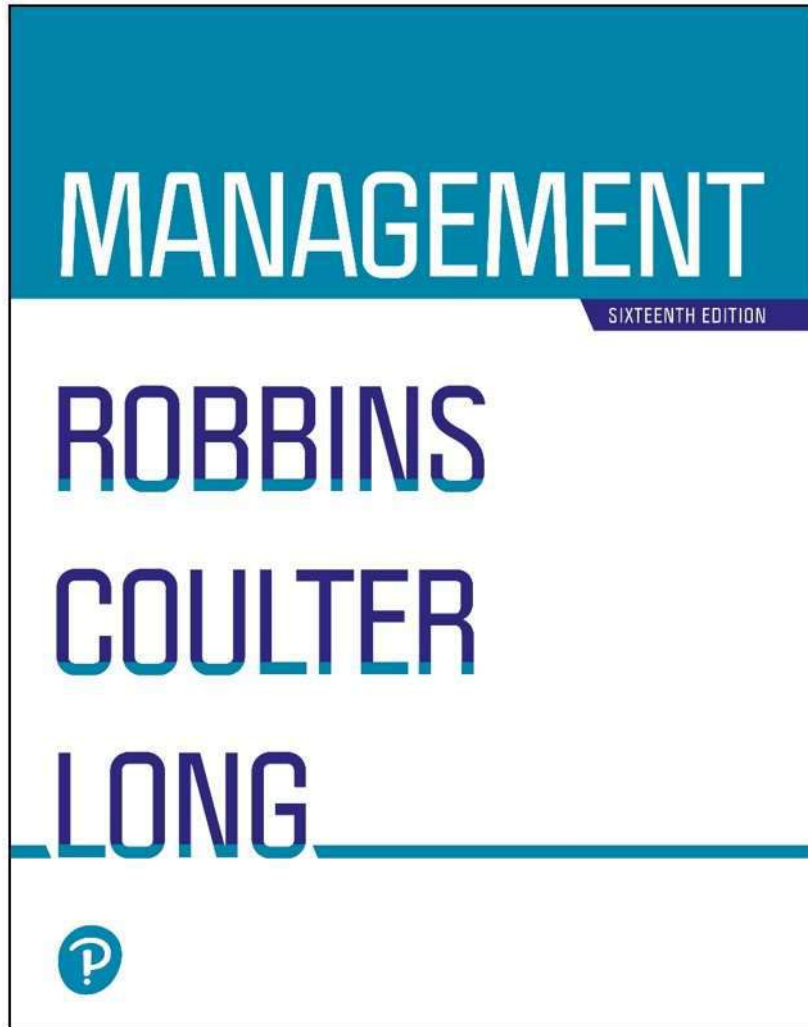
- ▶ When I asked the candidate about his hobbies, he stood up and started tap dancing around my office.
- ▶ After arriving for a morning interview, the candidate asked to use the employer's phone. She called her current employer, faked a coughing fit, and called in sick to her boss.
- ▶ In response to the interviewer's offer to answer questions, a job seeker replied, "What happens if I wake up in the morning and don't feel like going to work?"
- ▶ The applicant brought his mother to the interview.
- ▶ The applicant swore throughout the interview.

Unusual Job Interview Behaviors (3 of 3)

- ▶ A candidate interrupted a discussion of work hours and the office environment to say that he would take the job only if he could move his desk to the courtyard outside.
- ▶ Asked what he would like to do in his next position, a candidate replied, “I’ll tell you what I don’t want to be doing—sitting in boring meetings, doing grunt work, and having to be nice to people all day long.”
- ▶ Question: “Why do you want this job?” Answer: “I’ve got a big house, a big car, and a big credit card balance. Pay me and I’ll be happy.”

Management

Sixteenth Edition



Chapter 12

Managing Change and
Innovation

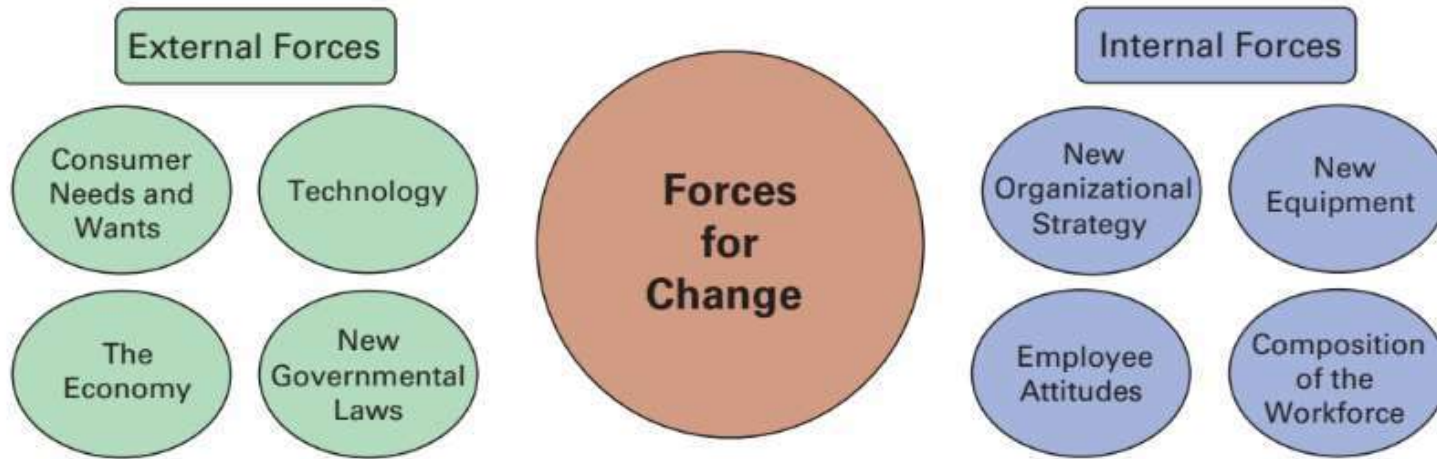
Learning Objectives

- 12.1 Describe** making the case for change.
- 12.2 Compare** and contrast views on the change process.
- 12.3 Classify** areas of organizational change.
- 12.4 Explain** how to manage change.
- 12.5 Compare** different types of innovation.
- 12.6 Describe** how managers can stimulate innovation.

The Case for Change

- **Organizational change:** any alteration of people, structure, or technology in an organization
- **Change agent:** someone who acts as a catalyst and assumes the responsibility for managing the change process
- **VUCA:** volatility, uncertainty, complexity, and ambiguity
 - In today's world, change is the only constant
 - Managers must deal with that reality

Exhibit 12-1 External and Internal Forces for Change



External Forces for Change

- Consumer needs and wants
- New governmental laws
- Technology
- The economy

Internal Forces for Change

- New organizational strategy
- Composition of workforce
- New equipment
- Employee attitudes

Calm Waters Versus White-Water Rapids Metaphors

- **Calm waters metaphor:**
 - Unfreezing the status quo
 - Changing to a new state
 - Refreezing to make the change permanent

Exhibit 12-2 The Three-Step Change Process

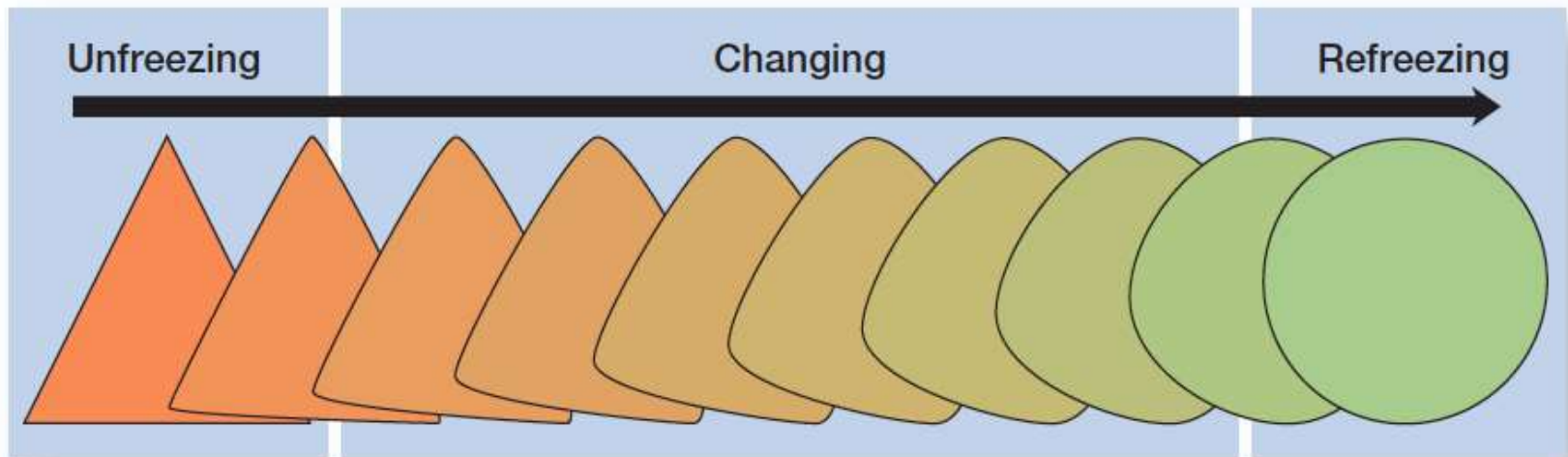


Exhibit 12-2 illustrates Kurt Lewin's three-step change process.

White-Water Rapids Metaphor

- **White-water rapids metaphor:** the lack of environmental stability and predictability requires that managers and organizations continually adapt and manage change actively to survive

Areas of Change

Managers focus on four main areas of change:

- 1. Strategy:** modifying the approach to success
- 2. Structure:** structural components and structural design
- 3. Technology:** work processes or equipment
- 4. People:** attitudes, expectations, and other individual or group beliefs or behavior
- 5. Culture:** shifting in response to internal or external factors

Exhibit 12-3 Five Types of Change

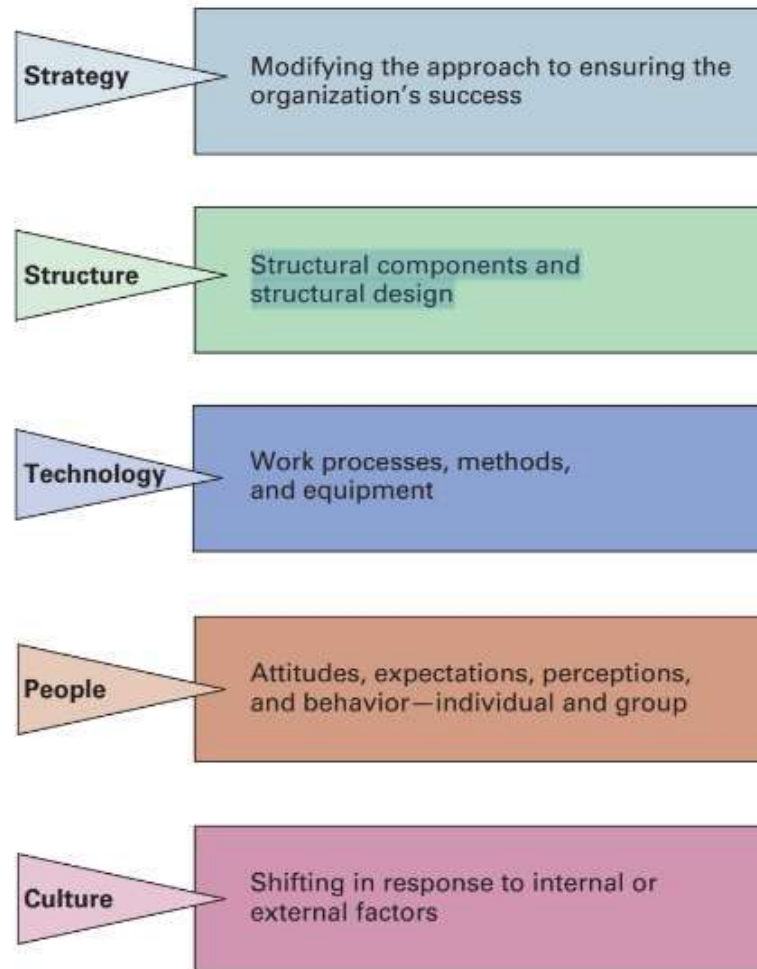


Exhibit 12-3 shows the four main areas of change managers face.

Types of Change: Strategy

- Failure to change strategy when circumstances dictate could undermine a company's success.
- Competition can dictate a change in strategy.
- Organizations that don't recognize a need to change strategy may not survive in the long run.

Types of Change: Structure

- Changing structural components
- Changing structural design

Types of Change: Culture

- An organization's culture is very difficult to change.
- Acknowledging that organizational cultures are hard to change doesn't mean that they can't be changed. They can.
- Culture is easier to change when
 - a dramatic crisis occurs
 - leadership changes hands
 - the organization is young and small
 - the culture is weak

Exhibit 12-4: Changing Culture

- Set the tone through management behavior; top managers, particularly, need to be positive role models.
- Create new stories, symbols, and rituals to replace those currently in use.
- Select, promote, and support employees who adopt the new values.
- Redesign socialization processes to align with the new values.
- To encourage acceptance of the new values, change the reward system.
- Replace unwritten norms with clearly specified expectations.
- Shake up current subcultures through job transfers, job rotation, and/or terminations.
- Work to get consensus through employee participation and creating a climate with a high level of trust.

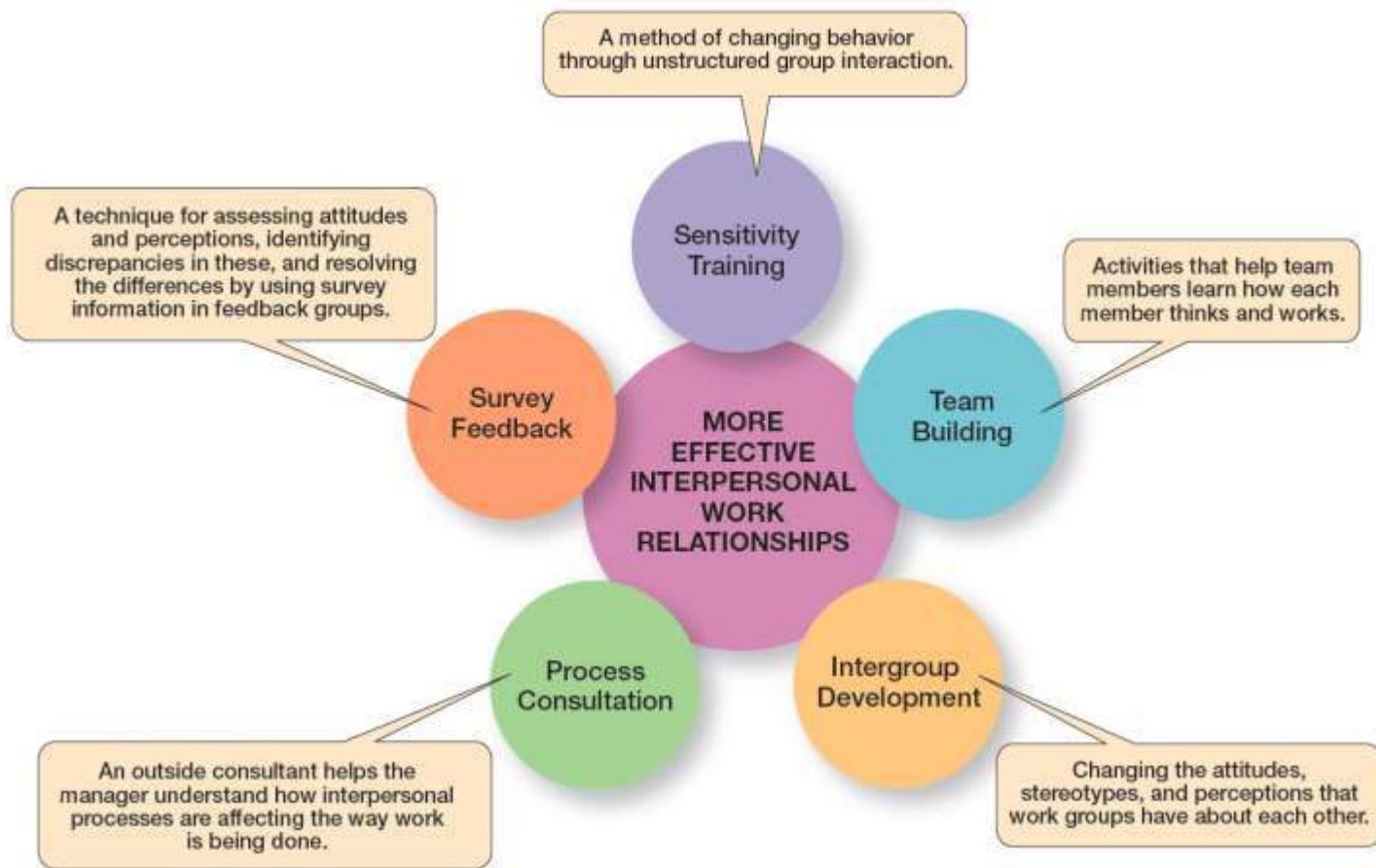
Types of Change: Technology

- New equipment, tools, or methods
- Automation
- Computerization
- The Internet of Things

Types of Change: People

- **Organizational development:** change methods that focus on people and the nature and quality of interpersonal work relationships

Exhibit 12-5 Popular OD Techniques



The most popular OD techniques are described in **Exhibit 12-5**.

Why Do People Resist Change?

- Uncertainty
- Habit
- Fear of loss
- Belief change is inconsistent with goals of organization
- **Exhibit 12-6** on the next slide shows techniques managers can use to reduce resistance to change

Exhibit 12-6 Techniques for Reducing Resistance to Change

Technique	When Used	Advantage	Disadvantage
Education and communication	When resistance is due to misinformation	Clear up misunderstandings	May not work when mutual trust and credibility are lacking
Participation	When resisters have the expertise to make a contribution	Increase involvement and acceptance	Time-consuming; has potential for a poor solution
Facilitation and support	When resisters are fearful and anxiety ridden	Can facilitate needed adjustments	Expensive; no guarantee of success
Negotiation	When resistance comes from a powerful group	Can “buy” commitment	Potentially high cost; opens doors for others to apply pressure too
Manipulation and co-optation	When a powerful group’s endorsement is needed	Inexpensive, easy way to gain support	Can backfire, causing change agent to lose credibility
Coercion	When a powerful group’s endorsement is needed	Inexpensive, easy way to gain support	May be illegal; may undermine change agent’s credibility

Creativity Versus Innovation

- **Creativity:** the ability to combine ideas in a unique way or to make unusual associations between ideas
- **Innovation:** taking creative ideas and turning them into useful products or work methods

Disruptive Innovation Definition

- **Disruptive innovation:** innovations in products, services, or processes that radically change an industry's rules of the game
- **Breakthrough innovation:** creates a market where one did not exist before
- **Sustaining innovation:** small and incremental changes in established products rather than dramatic breakthroughs

Exhibit 12-7 Examples of Past Disruptive Innovators

Established Business	Disruptor	Established Business	Disruptor
Compact disc	Apple iTunes	Traveler's checks	ATMs and Visa
Carbon paper	Xerox copy machine	Encyclopedias	Wikipedia
Canvas tennis shoes	Nike athletic shoes	Newspaper classified ads	Craigslist
Portable radio	Sony Walkman	AM/FM radio stations	Sirius XM
Sony Walkman	Apple iPod	Tax preparation services	Intuit's Turbo Tax
Typewriters	IBM PC	Yellow Pages	Google
Weekly news magazines	CNN	Paper maps	Garmin's GPS
TV networks	Cable and Netflix	Paperback books	Kindle
Local travel agencies	Expedia	Lawyers	Legal Zoom
Stockbrokers	eTrade	Taxis	Uber
		Hotels	Airbnb

Ways to Drive Innovation

Companies should be intentional about driving innovation.
Tactics include

- **Ideation:** the process of finding or creating new ideas
- **Incubation:** the process of testing and validating an idea

Stimulating and Nurturing Innovation

- An environment that stimulates innovation includes three variables: the organization's structure, culture, and human resource practices
- **Exhibit 12-8** on the next slide lists the innovation variables

Exhibit 12-8 Innovation Variables

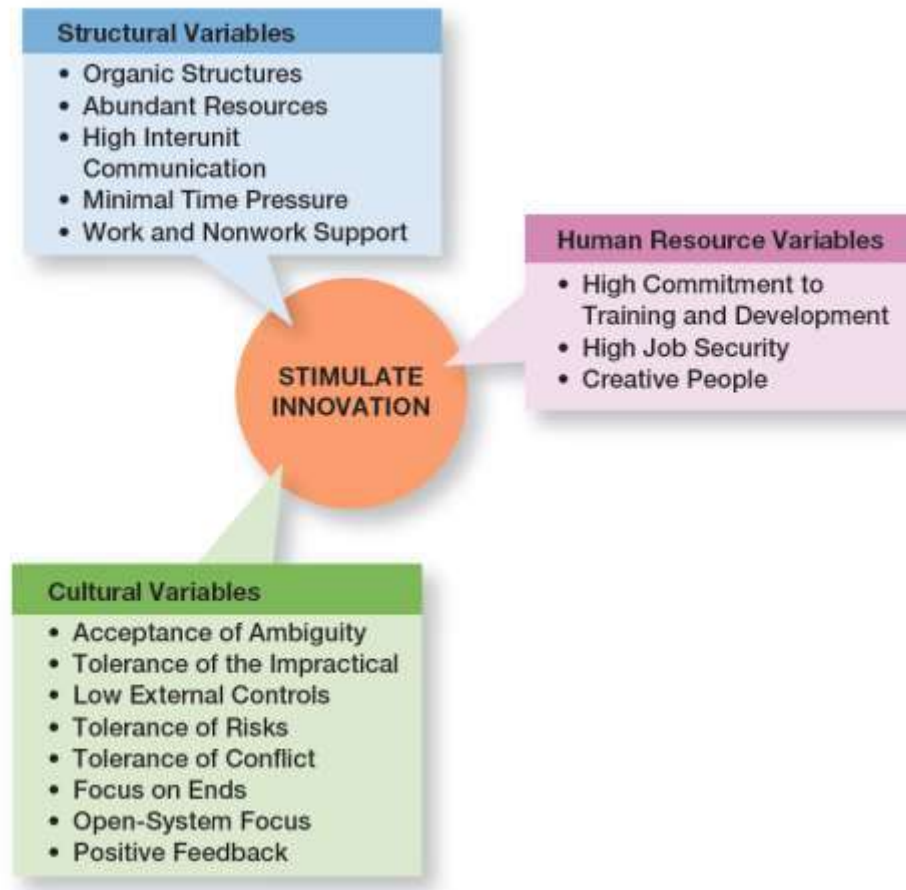


Exhibit 12-8 shows the three variables in an environment that stimulate innovation.

Structural Variables

- Organic structures
- Resources
- Communication
- Time
- Support creativity

Cultural Variables

- Acceptance of ambiguity
- Tolerate of the impractical
- Keep external controls minimal
- Tolerate risks
- Tolerate conflict
- Focus on ends rather than means
- Provide positive feedback

Human Resource Variables

Innovative organizations do the following:

- Actively promote the training and development of their members so their knowledge remains current
- Offer their employees high job security to reduce the fear of getting fired for making mistakes, and
- Encourage individuals to become idea champions
 - **Idea champion:** individual who actively and enthusiastically supports new ideas, builds support, overcomes resistance, and ensures that innovations are implemented

Ideation

Companies that manufacture products typically have a research and development department that focuses on creating new products. Three approaches to find or create new ideas are:

Design thinking: approaching management problems as designers approach design problems

Crowdsourcing: relying on a network of people outside of the organization for ideas via the internet

The use of artificial intelligence: AI tools can support creative ideation.

Four Steps of Design Thinking

1. Clarify for inspiration: The process starts with developing a clear problem statement focused on finding the best outcome and learning about the user of the solution through research, empathy, and observation.
2. Ideate: The goal at this step is divergent thinking, seeking out a lot of different ideas. A variety of methods can be used to ideate, such as brainstorming, mind mapping, or using analogies.
3. Develop: Next, an idea is selected and a prototype is developed to better understand the idea. This could be an actual prototype of a physical product or a storyboard of a service or process idea. The prototype is shared with users for feedback.
4. Implement and iterate: The idea is implemented, often as a pilot, to continue to iterate or improve the idea.

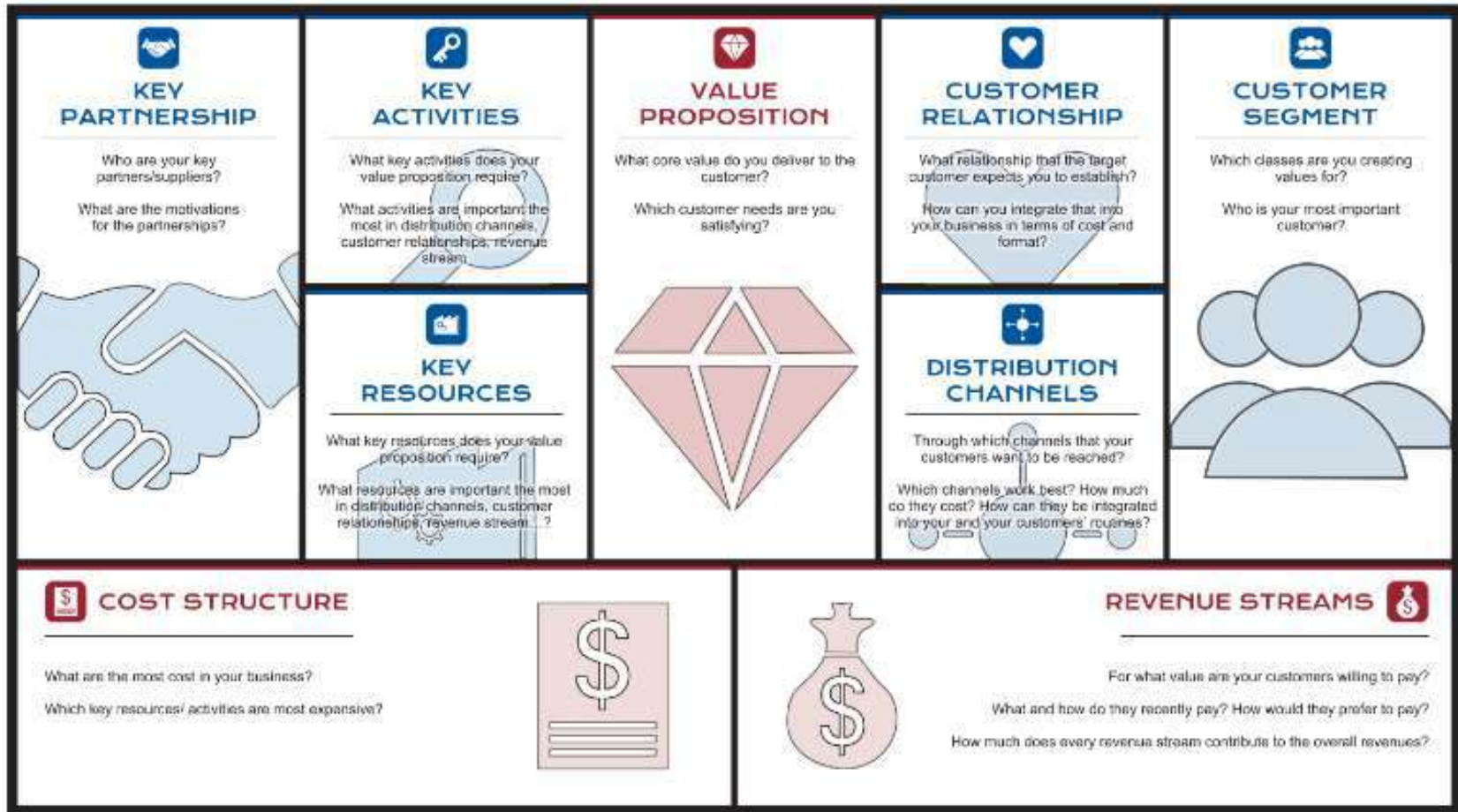
Incubation

- Incubation helps a company determine whether to make an investment in a specific idea.
- A business model canvas (BCM) can help determine whether the Idea should be pursued.
- A sample BCM is shown after the next slide on AI prompts.

Exhibit 12-9 Sample AI Prompts for Ideation

Type of Prompt	Example
What if	In the context of our product, which helps people work better by organizing tasks with our software, what if we could create a new tool for their mobile phone? What benefits could a tool provide our customer? Give ten ideas and include five characteristics the tool would need to be beneficial.
Challenge	In the context of our product, which helps people work better by organizing tasks with our software, how can we create a new tool for their mobile phone that they will download without increasing our marketing costs or staff? Give ten ideas and include five characteristics the tool would need to be beneficial.
Association	In the context of our product, which helps people work better by organizing tasks with our software, imagine that instead of software, our product is a restaurant. How can we create a new tool for our customer's mobile phone? List ten ideas that could help us achieve this goal.
Solution-Oriented	How can we reduce the number of customers we lose each month by 20 percent within the next quarter?

Business Model Canvas (BMC)



Innovators can use the business model canvas to validate new ideas by working through the building blocks to explore and describe how the idea creates value for customers.

Source: Febrizio – VectorOz/Shutterstock

Skunk Works

Skunk works: a small group within a large organization, given a high degree of autonomy and unhampered by corporate bureaucracy, whose mission is to develop a project primarily for the sake of radical innovation

Review Learning Objective 12.1

Describe making the case for change.

- Change agent
- External forces
- Internal forces

Review Learning Objective 12.2

Compare and contrast views on the change process.

- Calm waters metaphor
- White-water rapids metaphor
- Lewin's three-step model

Review Learning Objective 12.3

Classify areas of organizational change.

- Strategy
- Structure
- Technology
- People

Review Learning Objective 12.4

Explain how to manage change.

- People resist change because of uncertainty, habit, concern over personal loss, and the belief that the change is not in the organization's best interest.
- Techniques for reducing resistance to change include: education and communication, participation, facilitation, negotiation, manipulation and co-optation, and coercion.

Review Learning Objective 12.5

Compare different types of innovation.

Review Learning Objective 12.6

Describe how managers can stimulate innovation.

- Creativity
- Innovation
- Design thinking and innovation

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