Course Outlook

Unit II: Planning and Organizing (6 Hrs.)

2.1 Planning

- **2.1.1 Levels of planning: strategic, tactical and operational**
- **2.1.2 Steps in planning**
- **2.1.3 Tools for planning**
- **2.1.4 Importance of planning**

2.2 Organizing

- **2.2.1 Process of organizing**
- **2.2.2 Organization structure**
- **2.2.3 Types of organization structure**
- **2.2.2.1 Traditional structure: line and functional**
- **2.2.2.2 Modern structure: matrix, network, hybrid**

2.4 Emerging planning and organizing issues for ICT enterprises

Planning

- Planning is the process of predetermining the objective and course of action to attain those objectives.
  - ***Planning is an intellectual process regarding choice of what to do?, When to do?, How to do? Who is responsible to do? etc.***
  - Planning is setting an organization's goals and deciding how best to achieve.

- Ricky W. Griffin

- Planning is the process of coping with uncertainty by formulating future course of action to achieve specified results.

-Richard Steers

Characteristics/Features of Planning

- Primary function
- Pervasive function
- Future oriented
- Continuous activity

- Intellectual work
- Flexible
- Efficiency and Economy
- Actionable

Levels/Types of Planning

- Levels of planning refer to the hierarchy of plans within an organization, corresponding to its different management levels.
  - It is based on the idea that the **scope**, **timeframe**, and **detail** of planning change at each managerial level.
  - It ensures that everyone in the organization, from the CEO to a front-line employee, is working towards the same overarching goals, but with a focus appropriate to their role.
- Planning occurs at three different levels within an organization, each with a different time horizon and scope.
  - ***Strategic, Tactical and Operational***

1. Strategic Planning

- A strategic plan is a **long-term, high-level** roadmap that defines the organization's vision, mission, and overarching goals.
- Top-level management (CEO, Board of Directors).
- Long-term (3-5 years or more), broad goals for the entire organization.
- define the organization's vision, mission, and overall strategy.
- It involves analyzing the external environment (opportunities and threats) and internal capabilities (strengths and weaknesses).

- **Example** *A decision by a tech company to shift from selling software licenses to a Software-as-a-Service (SaaS) model.*

2. **Tactical Planning:**

- A tactical plan **translates strategic goals into specific actions** for different departments or units.
- Middle-level management (Department Heads, Division Managers).
- Medium-term (1-2 years), specific to departments or divisions.
- implement the strategic plans.
- It involves allocating resources, setting departmental goals, and determining how to achieve strategic objectives.

- **Example** *The marketing department creating a 12-month campaign to launch a new cloud service, including budget and personnel allocation.*

3. Operational Planning:

- An operational plan outlines the **day-to-day activities and tasks** needed to execute tactical plans.
- Lower-level management (Supervisors, Team Leaders).
- Short-term (day-to-day, weekly, monthly), specific tasks and processes.
- support tactical plans through detailed action plans, schedules, and budgets for specific tasks.

Example

•*A development team lead creating a weekly sprint plan with specific tasks for each developer to build a feature for the new cloud service.*

Steps in Planning

1. **Analyzing Opportunities**
   - (Environmental Scan/Situation Analysis)
2. **Setting Objectives (Goals)**
   - (Defining desired results, usually SMART)
3. **Developing Planning Premises**
   - (Making assumptions about future conditions)
4. **Identifying Alternative Courses of Action**
   - (Listing different options)
5. **Evaluating Alternative Courses**
   (Weighing pros, cons, costs, and risks)
6. **Selecting the Best Alternative**
   (Decision-making)
7. **Formulating Supporting Plans**
   (Creating derivative plans, budgets, and policies)
8. **Implementing the Plan**
   (Putting the plan into action)
9. **Review and Follow-up**
   (Monitoring and controlling progress)

Step	Planning Action	Example
1. Analyzing Opportunities	***Spotting a market need.***	Competitors' current security software is outdated; opportunity for a **new AI-driven security suite**.
2. Setting Objectives	***Defining the target outcome.***	Achieve **10,000 paid subscriptions** within the first six months.
3. Developing Premises	***Making key assumptions.***	Assume the cost of cloud computing resources will **increase by 5%** next year.
4. Identifying Alternatives	***Listing possible strategies.***	**A:** Use internal sales team. **B:** Partner with a large telecommunications vendor. **C:** Sell exclusively through an online marketplace.
5. Evaluating Alternatives	***Weighing options.***	Alternative B offers highest volume but lowest profit margin per unit.
6. Selecting the Best Alternative	***Final decision.***	Choose **Alternative B** (Partnering) to gain rapid market penetration despite lower initial profit.
7. Formulating Supporting Plans	***Creating details.***	Establish a **$100,000 co-marketing budget**; design the legal contract templates.
8. Implementing the Plan	***Putting it into action.***	Sign the partnership agreement and launch the **joint marketing campaign**.
9. Review and Follow-up	***Monitoring and adjusting.***	Check subscription rate monthly; if below target, **increase partner incentives**.

Major Steps in Planning

1. Situation Analysis
   - ✓Scan internal & external environment (SWOT/PESTLE) to find opportunities and problems.
2. Setting Objectives
   - ✓Decide exactly what you want to achieve – make them SMART.
3. Determining Planning Premises
   - ✓Make assumptions about future (economy, technology, competition, laws).
4. Identifying & Evaluating Alternatives
   - ✓List all possible ways and compare them on cost, time, risk, feasibility.
5. Choosing the Best Course of Action
   - ✓Select the most suitable alternative after evaluation.
6. Formulating Derivative Plans & Implementation with Control
   - ✓Make budgets, policies, schedules → execute the plan → regularly monitor and correct.

Tools for Planning

- **Strategic:**
  - SWOT, PESTLE, Porter's Five Forces, BCG Matrix, Ansoff Matrix
- **Tactical:**
  - Gantt Chart, Budgets, MBO (Management by Objectives)
- **Operational:**
  - Scheduling, Critical Path Method (CPM), Program Evaluation Review Technique (PERT), Agile tools (Jira, Kanban boards)

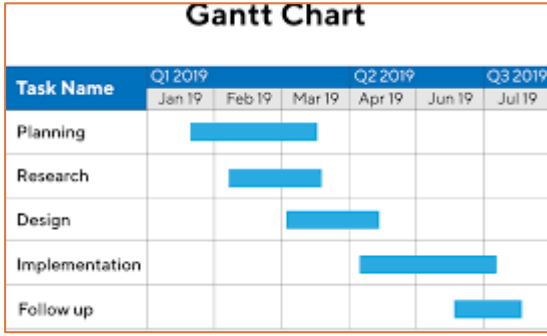
1. Project Management

- **Gantt Charts:** Visual timelines for development phases
- **PERT/CPM:** Map dependencies, identify critical paths

2. Agile Tools

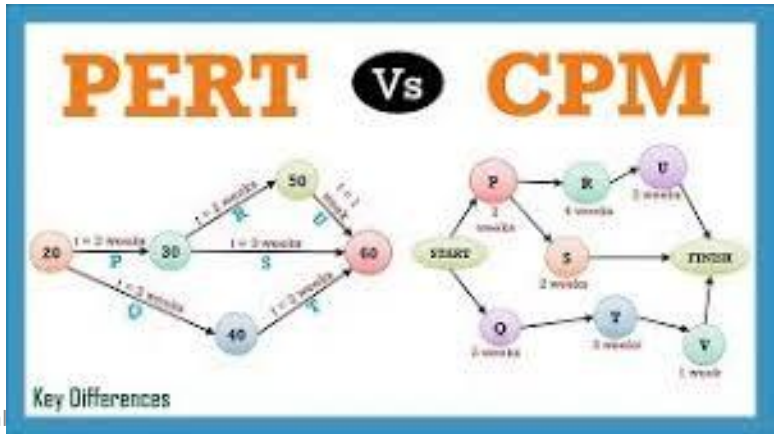
- **Sprint Planning:** Product backlogs, burndown charts
- **Kanban Boards:** Workflow visualization

1. Project Management Tools



- **Gantt Charts**
  - Visual timeline for software development phases
  - Track sprints, releases, and deployments
  - **Tools**: Microsoft Project, TeamGantt, Smartsheet

- **PERT & CPM**
  - Map dependencies in complex projects
  - Identify critical paths in system integration
  - Handle uncertainty in technical tasks
  - **Use**: Cloud migrations, system deployments



- 3. Technical Design
  - UML Diagrams: Class, sequence, use case diagrams
  - Architecture Diagrams: System components, network topology
  - Wireframes/Prototypes: UI/UX planning
  - Tools: Lucidchart, Draw.io, Figma, PlantUML

- 4. Development Planning
  - Version Control: Git branching strategies
  - API Planning: Swagger/OpenAPI, Postman
  - CI/CD Pipelines: Jenkins, GitHub Actions
  - Testing Plans: Test case management
  - Tools: Git, GitHub, GitLab

- **5. Infrastructure Planning**
  - Capacity Planning: Server, storage, network resources
  - Cloud Planning: IaC, cost estimation
  - Database Design: Schema diagrams, migration tools
  - Tools: Terraform, AWS Calculator, Liquibase
- **6. Resource Planning**
  - Resource Allocation: Developer assignment by skills
  - Team Velocity: Story points, sprint capacity
  - Forecasting: Timeline and resource estimates

7. Analysis Tools

- SWOT Analysis: Technology evaluation
- Risk Management: Risk registers, mitigation plans
- Documentation: Confluence, Notion, GitHub Wiki

8. Collaboration

- Communication: Slack, Microsoft Teams
- Digital Whiteboards: Miro, Mural
- Project Tracking: Asana, Monday.com

- **Gantt Charts**
  - Visual timeline showing tasks, duration, and dependencies
  - Useful for project scheduling and tracking progress
  - Easy to understand and communicate
  - **PERT (Program Evaluation and Review Technique)**
    - Network diagram showing task sequences and dependencies
    - Identifies critical path and time estimates
    - Helpful for complex projects with interdependent activities
    - **Critical Path Method (CPM)**
      - Identifies longest sequence of dependent tasks
      - Determines minimum project duration
      - Helps prioritize activities for time management
        - **SWOT Analysis**
          - Evaluates Strengths, Weaknesses, Opportunities, and Threats
          - Strategic planning tool for situational analysis
          - Helps in formulating strategies

- **Forecasting Techniques**
  - Quantitative methods: time series analysis, regression
  - Qualitative methods: Delphi technique, expert opinion
  - Predicts future trends and conditions
- **Budgets**
  - Financial plans allocating resources
  - Various types: operational, capital, cash flow
  - Control tool for financial planning
- **Scenarios Planning**
  - Develops multiple future scenarios
  - Prepares for various contingencies
  - Useful in uncertain environments
- **Business Model Canvas**
  - Visual framework for business planning
  - Maps value proposition, customers, resources, and finances
  - Particularly useful for startups and ICT enterprises

Importance of Planning

- **Provides Direction:**
  - Planning gives the organization a clear sense of purpose and direction. It ensures everyone is working towards the same goals.
- **Minimizes Risk and Uncertainty:**
  - By looking ahead and anticipating future problems, planning allows managers to prepare for and mitigate risks.
- **Facilitates Coordination:**
  - When plans are clear, different departments can work together more effectively, avoiding duplicated effort and conflict.
- **Improves Resource Allocation:**
  - Planning helps to allocate scarce resources (money, time, people) in the most efficient and effective way.
- **Sets Standards for Control:**
  - Plans provide the benchmarks or standards against which actual performance can be measured.

Organizing

- *Organizing is the process of defining and arranging an organization's structure, roles, and responsibilities to achieve its goals.*
- *It is the bridge between planning and execution.*
- *Organizing is the management function that involves arranging and structuring work to accomplish organizational goals.*
- *It determines who does what tasks, who reports to whom, and how resources are allocated.*

Process of Organizing

1.Identify and Define Activities:

- Determine all the tasks that need to be performed to achieve the plan.

2.Group Activities (Departmentation):

- Group related jobs together into logical units or departments (e.g., by function, product, or geography).

3.Assign Duties and Delegate Authority:

- Allocate the grouped activities to specific positions or people. Delegate the necessary authority to carry out those responsibilities.

4.Establish Reporting Relationships:

- Create a clear chain of command. Define who reports to whom to ensure accountability and communication.

5.Allocate Resources:

- Provide the necessary resources (personnel, equipment, budget) to each department and position.

Organization Structure

- The framework that defines the boundaries of the organization and the patterns of interaction, communication, authority, and responsibility among its parts.
- The **organization structure** is the formal arrangement of jobs within an organization.
- It is a system of consciously coordinated personal forces and is the framework that links all parts of the enterprise.

Key Elements:

- **Work Specialization**: Division of work into separate jobs where individuals specialize in specific tasks
- **Departmentalization**: Basis for grouping jobs together (function, product, geography, process, customer)
- **Chain of Command**: Unbroken line of authority extending from top to bottom of the organization
- **Span of Control**: Number of subordinates a manager can efficiently supervise
- **Centralization vs. Decentralization**: Degree to which decision-making is concentrated at upper levels versus distributed throughout the organization
- **Formalization**: Extent to which jobs are standardized and guided by rules and procedures

Traditional (Classical) Structures

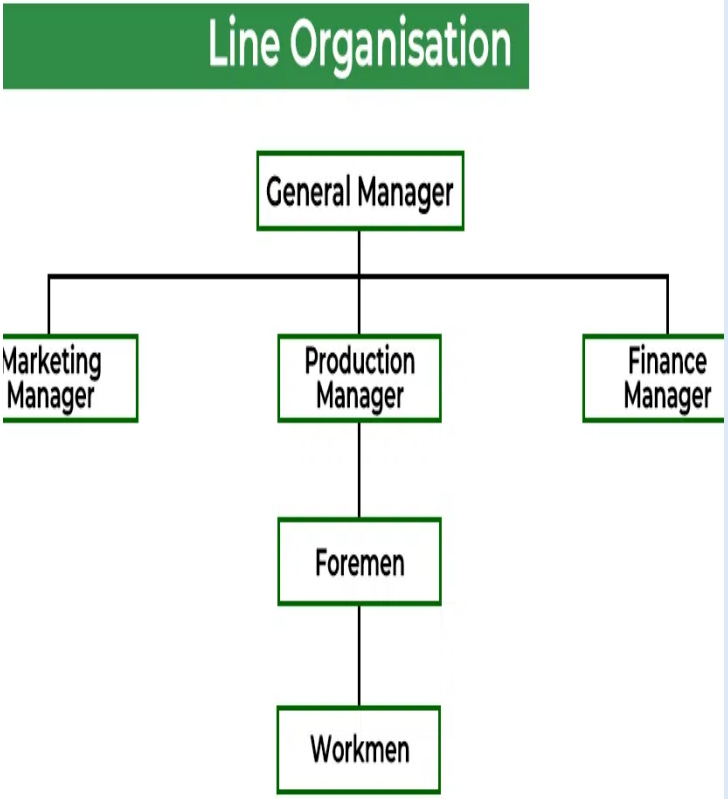
1.Line (Military) Structure

2.Functional Structure

3.Line and Staff Structure

1. Line (Military) Structure

- Oldest and simplest form
- Direct vertical relationships
- Authority flows from top to bottom in a scalar chain
- Unity of command is maintained



Advantages:

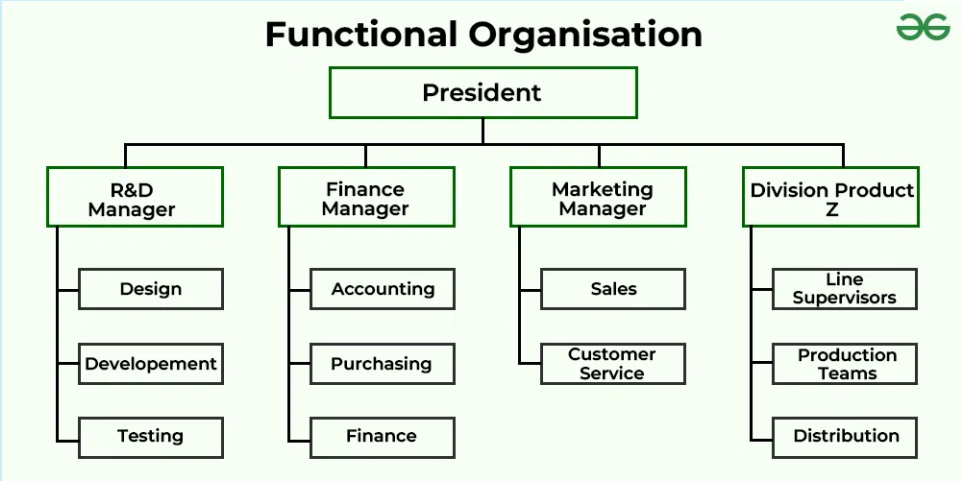
- *clear authority,*
- *quick decisions,*
- *discipline*

Disadvantages:

- *overload on top management,*
- *rigid,*
- *no specialization*

2. Functional Structure

- Work is divided according to functions (production, marketing, finance, HR)
- Specialists head each function
- Employees receive orders from several functional bosses

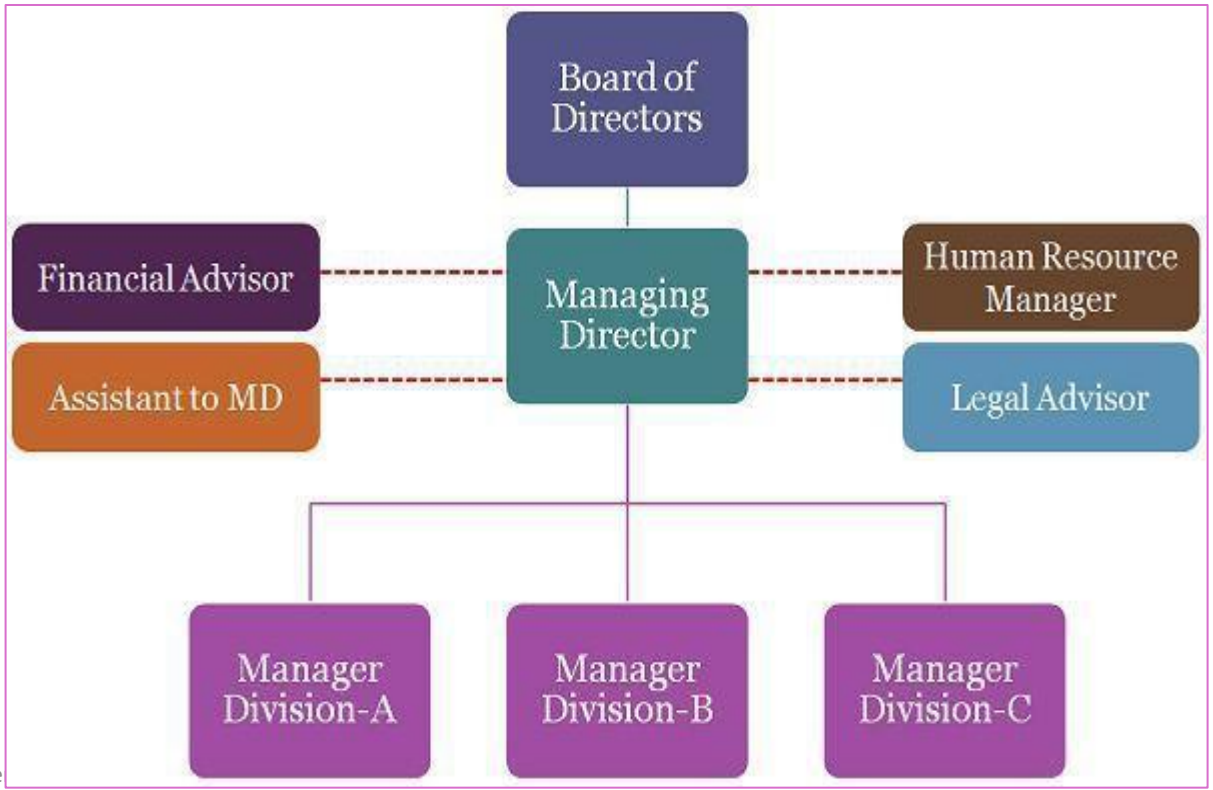


- **Advantages:**
  - *specialization,*
  - *mass production possible*
- **Disadvantages:**
  - *violates unity of command,*
  - *confusion,*
  - *conflict among functional heads*

3. Line and Staff Structure

- Combines line authority (direct command) with staff (advisory/specialist)
- Line managers have command authority
- Staff provides advice, research, legal, HR, etc.

- Advantages:
  - *specialized expertise + clear authority*
- Disadvantages:
  - *conflict between line and staff,*
  - *staff may be ignored*



Modern (Contemporary) Structures

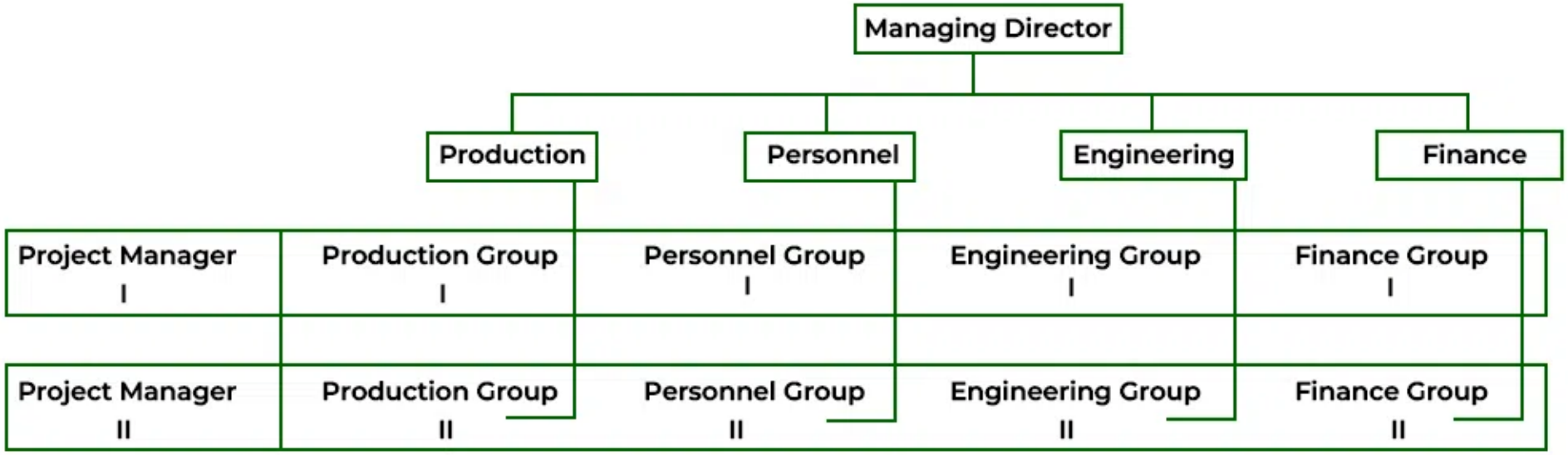
1. **Matrix Structure**
2. **Network Structure (Virtual Organization)**
3. **Hybrid Structure**

1. Matrix Structure

- Superimposes a horizontal project structure on a vertical functional structure
- Dual chain of command (functional manager + project manager)
- Common in R&D, aerospace, construction, consulting firms
- **Advantages:**
  - *efficient use of specialists,*
  - *flexibility,*
  - *project focus*

Disadvantages:

- *dual reporting,*
- *power struggles,*
- *high conflict,*
- *costly*



2. Network Structure (Virtual Organization)

- Small central hub organization outsources most functions
- Relies on contracts with independent firms/suppliers
- Enabled by ICT (internet, email, video conferencing)
  - **Advantages:**
    - *extreme flexibility, low overheads,*
    - *global reach*
  - **Disadvantages:**
    - *low control,*
    - *dependence on partners,*
    - *coordination difficulty*

3. Hybrid Structure

- Combination of two or more structural forms
- Example: some divisions functional, some product-based, some matrix
- Used by large diversified corporations
  - **Advantages:**
    - *best features of different structures*
  - **Disadvantages:**
    - *complexity,*
    - *potential conflict*

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Other modern forms

- Other modern forms mentioned by Koontz & Weihrich in later editions:
  - Team-based structure
  - Boundaryless organization
  - Learning organization
  - Cellular / Modular organization

1) Team-Based Structure

- Organization built around teams, not departments
- Teams are self-managed and cross-functional
- High flexibility and fast decision-making
- Encourages collaboration, innovation, and problem-solving
- Suitable for dynamic environments like ICT, consulting, R&D

•***Cisco Systems***: The company famously restructured from a traditional hierarchy to a team-based system using cross-functional teams to foster creativity and respond rapidly to the IT sector's changes.

2) Boundaryless Organization

Google: Google promotes a boundaryless culture through its open office layouts, informal communication channels, and policies like the former "20% time," where employees could work on projects outside their core responsibilities, encouraging cross-functional collaboration and innovation.

- Eliminates traditional boundaries (vertical, horizontal, external)
- Minimal hierarchy, more openness and collaboration
- Flexible use of virtual teams, networks, and outsourcing
- Information flows freely across units
- Adapts quickly to environmental changes

3) Learning Organization

- Focus on continuous learning and development
- Encourages experimentation, creativity, and knowledge sharing
- Strong training and employee development culture
- Uses systems thinking to solve problems
- Builds long-term adaptability and innovation capability

Netflix: The company fosters a strong culture of learning through open communication, structured feedback systems, and a data-driven approach to understanding consumer needs and adapting quickly to industry trends

4) Cellular / Modular Organization

Toyota: Toyota uses a modular approach in manufacturing, designing its vehicles in-house but relying on a network of specialized external suppliers to produce specific parts (e.g., engines, electronics) which are then assembled by Toyota

- Organization is divided into small, autonomous "cells" or modules
- Each unit operates independently but connects to the whole system
- Easy to add, remove, or modify modules
- Highly flexible, scalable, and innovative
- Common in high-tech manufacturing and digital industries

Emerging Planning and Organizing Issues for ICT Enterprises

"Emerging issues in ICT enterprises include shift from waterfall to Agile/DevOps, adoption of remote & microservices-based structures, rise of small autonomous teams (two-pizza), Zero Trust security, and use of AI for predictive planning."

- refer to new challenges created by rapid technological change, which require ICT firms to update their plans and structures frequently.
- They highlight the need for agile and flexible management, because traditional long-term planning does not fit the fast-paced digital environment.

Emerging Issues in ICT Enterprises (2024–2025)

- Shift from Waterfall to **Agile + Scrum + DevOps** as the default planning method
- Adoption of **Remote-first & Hybrid** team structures across the globe
- Rise of **Microservices architecture** leading to platform-based organizing
- **Two-Pizza / Squad Model** – small autonomous teams of 6–10 members (Amazon, Spotify model)
- Heavy dependence on **Gig & Contract talent** instead of only permanent employees
- Implementation of **Zero Trust Security** framework – no default trust inside or outside network
- **AI-driven predictive planning** and automated resource allocation
- Focus on **Green Computing & Sustainability** – carbon-neutral data centers, energy-efficient coding
- Mandatory **Data Privacy & Compliance teams** due to GDPR, DPDP Act 2023, CCPA
- Use of **OKRs (Objectives & Key Results)** at company, team and individual level instead of traditional MBO

No.	Issue	Short Explanation	Example/Tool
1	**Agile & Scrum Planning**	Traditional yearly plan → replaced by 2-week sprints	Jira, Scrum Board
2	**DevOps & CI/CD Culture**	Development + Operations merged into one team	GitHub Actions, Jenkins
3	**Remote & Hybrid Teams**	Teams across cities/countries → new coordination challenge	Slack, Zoom, Notion
4	**Microservices & Platform Teams**	Monolithic → hundreds of small independent services	Kubernetes, Docker
5	**Two-Pizza Teams (Amazon Rule)**	No team bigger than what 2 pizzas can feed (6–10 members)	Amazon's famous rule
6	**Gig Economy & Freelance Talent**	Hire experts only for 2–6 months	Upwork inside companies
7	**Zero Trust Security Model**	Trust no one by default → verify every request	Google BeyondCorp
8	**AI-Driven Planning**	Forecasting & resource allocation using Machine Learning	AWS Forecast, Google BigQuery ML
9	**Sustainability & Green Computing**	Reduce carbon footprint of data centers	Microsoft underwater DCs
10	**Data Privacy Laws (GDPR, DPDP Act)**	Privacy team reports directly to CEO	Dedicated DPO role

Factor	Traditional Companies	Modern ICT Enterprises
Planning	*Yearly plans*	*Sprint (2-week) + OKRs*
Structure	*Line / Functional*	*Matrix → Team-based → Microservices*
Team Size	*50–200 per department*	*6–10 max (Two-Pizza rule)*
Location	*One office/campus*	*Fully remote or hybrid*
Decision Making	*Top-down*	*Decentralized + Squad model (Spotify)*
Security	*Firewall at boundary*	*Zero Trust everywhere*