Planning and controlling

Dr/ Gamal Mohamed Shehata
Cairo University
Faculty of Commerce

Course Objectives

- **Know what do we mean by objectives? The main types of objectives? The importance of objectives setting? How can we develop the organizational objectives?**

- **Understanding planning? Its meaning, nature and importance for the organization as well as for people serving in the organization.**

Course Objectives Cont'd

- **The steps of the planning process.**
- **The principles of effective planning.**
- **The interrelationship between planning and controlling.**
- **The different types of control.**
- **The requirements of effective control.**
- **Barriers to effective control.**
- **Tools and techniques to be used in planning and controlling.**

Chapter 1: Basic Concept of Planning

Learning Objectives:

1. **Know** what we mean by planning.
2. **Be familiar** with the nature of planning.
3. **Know the necessity** and importance of planning.
4. **Understand** and determine the main factors that affect the planning effectiveness level.
5. **Distinguish** and figure out the main steps to be followed in planning.
6. **Acknowledge** the planning subsystems.
7. **Figure out** the different types of plans.

Introduction

- **Planning and control** are critical management activities regardless of the type of organization being managed.

- Modern managers face the challenge of sound planning and control in small and relatively simple organizations as well as in large, more complex ones, and in nonprofit organizations.

Definition of Planning

Among the most common definitions for this term are:

- **Planning is the process by which an individual or organization decides in advance on some future course of action.**

- **Planning is the process of determining how the organization can get where it wants to go.**

- **Planning involves selecting from among alternative future courses of actions for the organization as a whole and for every department or section within it.**

The Nature of Planning

- The essential nature of planning can be highlighted by the four major aspects of planning: <u>contribution to purpose and objective</u>, <u>primacy of planning</u>, <u>pervasiveness of planning</u>, and <u>efficiency of plans</u>.

A- Contribution to Purpose and Objectives:

- The purpose of every plan and all derivative plans is to facilitate the accomplishment of enterprise purpose and objectives. This principle derives from the nature of organized enterprise, which exists for the accomplishment of group purpose through deliberate cooperation.

B- Primacy of Planning:

- Planning is the primary management function, the one that precedes and is the basis for the organizing, influencing, staffing, leading and controlling functions of managers. This can be shown in Figure 1.1 below.
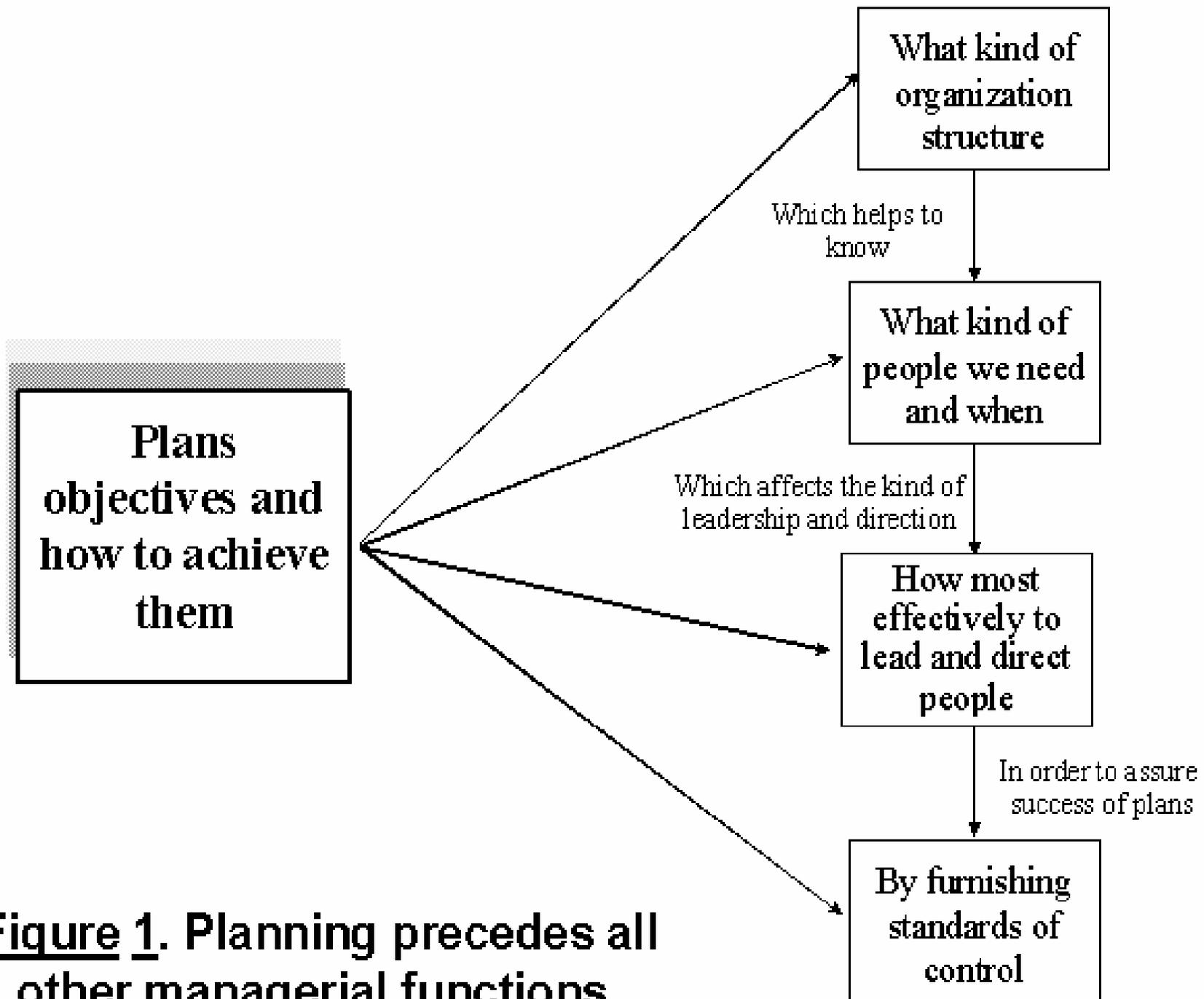
What kind of organization structure

Which helps to know

What kind of people we need and when

Which affects the kind of leadership and direction

How most effectively to lead and direct people

In order to assure success of plans

By furnishing standards of control

Plans objectives and how to achieve them

<u>Figure 1</u>. Planning precedes all other managerial functions.

C-**Pervasiveness of Planning:**

- Planning is a function of all managers, although the character and breadth of planning will vary with their authority and with the nature of policies and plans outlined by their superiors.

- The supervisor of a factory crew plans in a limited area under fairly strict rules and procedures. Interestingly, in studies of work satisfactions, a principal factor found to account for the success of supervisors at the lowest organization level has been their ability to plan.

D-**Efficiency of Plans:**

- **The efficiency of a plan is measured by the amount it contributes to purpose and objectives as offset by the costs and other unsought consequences required to formulate and operate it. A plan can contribute to the attainment of objectives, but at too high or unnecessarily high costs.**

The Importance of Planning

The planning function has four important goals:

A. To offset uncertainty and change.

B. To focus attention on objectives,

C. To gain economical operation, and

D. To facilitate control.

a) To Offset Uncertainty and Change

- Organizational planning has two purposes: protective and affirmative. **The protective purpose** of planning is to minimize risk by reducing the uncertainties surrounding business conditions and clarifying the consequences of related management actions.

- **The affirmative purpose** is to increase the degree of organizational success.

b) To Focus Attention on Objectives

- Because all planning is directed toward achieving enterprise objectives, the very act of planning focuses attention on these objectives. Considered overall plans unify interdepartmental activities. Managers, being typically immersed in immediate problems, are forced through planning to consider the future and even consider the periodic need to revise and extend plans in the interest of achieving their objectives.

c) To Gain Economical Operation

- Planning minimizes costs because of the emphasis on efficient operation and consistency. It substitutes joint directed effort for uncoordinated piecemeal activity, even flow of work for uneven flow, and deliberate decisions for snap judgments.

d) To Facilitate Control

- Managers can not check on their subordinate accomplishments without having planned goals against which to measure. There is no way to measure control without plans to use as standards.

Factors that may Make Planning Effective

- The research data indicate that under most circumstances planning is a positive force for organizational goal attainment.

- It is also true that a great many chief executives of large corporations view it as important. However, there are many factors that may make planning effective, among them:

A- **Effectively done**,

- planning can contribute to reduced role ambiguity and role conflict. When policy planning has been carried out, and clear role prescriptions have resulted, individuals are more likely to know what they are supposed to do and the probability that conflicting forces will push them in two directions at once is considerably reduced.

B- **Closely allied to the first point,**

- **effective planning tends to limit arbitrary actions by individuals and superiors.**

C- Because role prescriptions

- are the ultimate result, planning leads to a reduction of uncertainty within the organization.

D- Planning produces a greater capacity

- to deal with uncertainty in the environment external to a company, as well as internal uncertainty. Effective planning makes it much less likely that a company will be caught off guard and suffers accordingly.

E- **The very process of planning tends**

- to lead to decision making that deals with more factors and takes more considerations into account. Systematic planning requires a look at a long list of variables which might influence events.

- Without such a systematic consideration of influences and alternatives, the likelihood that something of importance will be overlooked is very high.

F- Planning is important

- in that it contributes to the performance of other management functions. Typically the tie between planning and control has been emphasized, as shown in Figure 1.2.
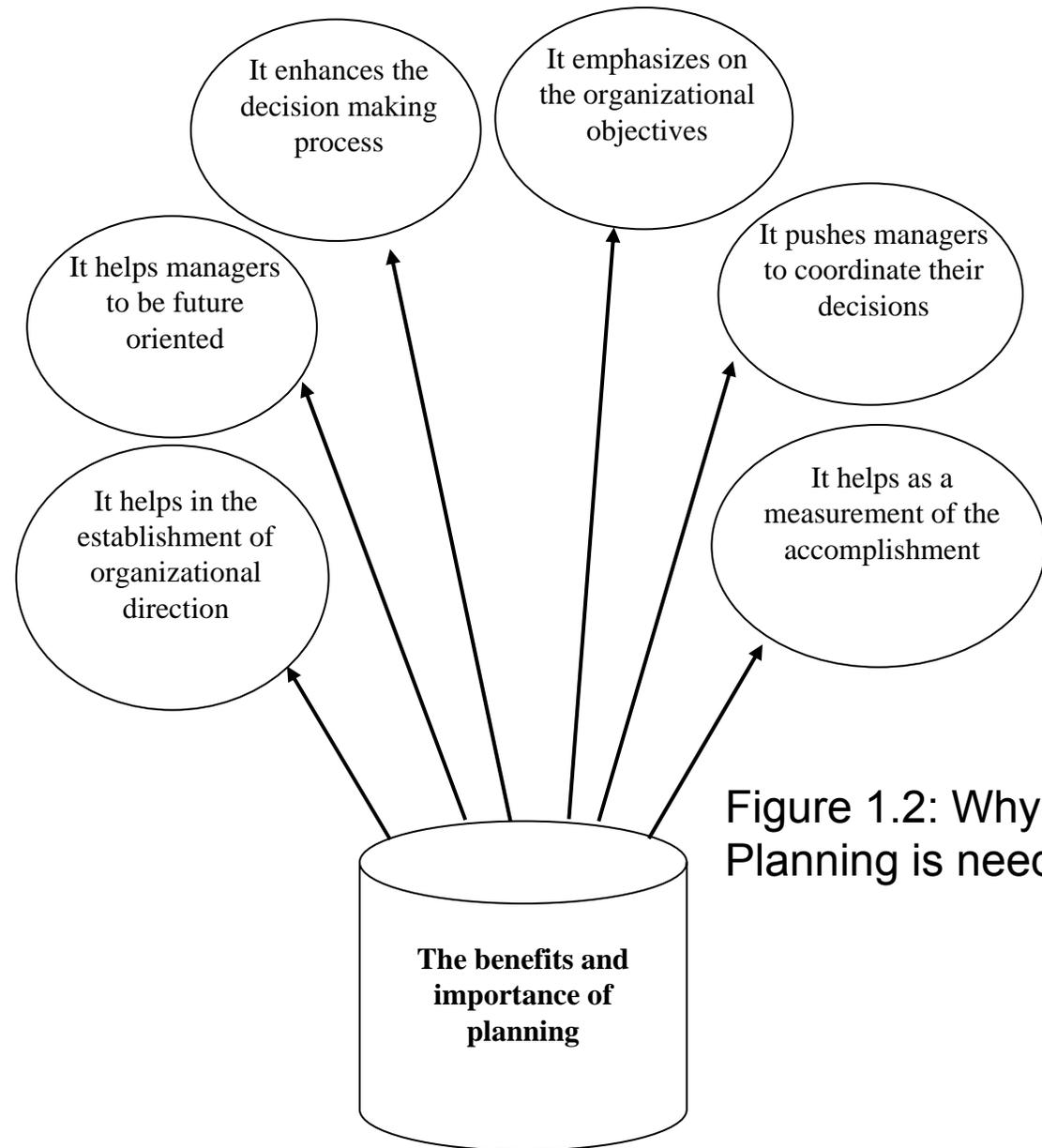
It enhances the decision making process

It emphasizes on the organizational objectives

It pushes managers to coordinate their decisions

It helps managers to be future oriented

It helps in the establishment of organizational direction

It helps as a measurement of the accomplishment

The benefits and importance of planning

Figure 1.2: Why Planning is needed

The Planning Process

- **How to set a plan? (Steps in planning process): The planning process consists of the following steps that can be shown in Figure 1.3.**
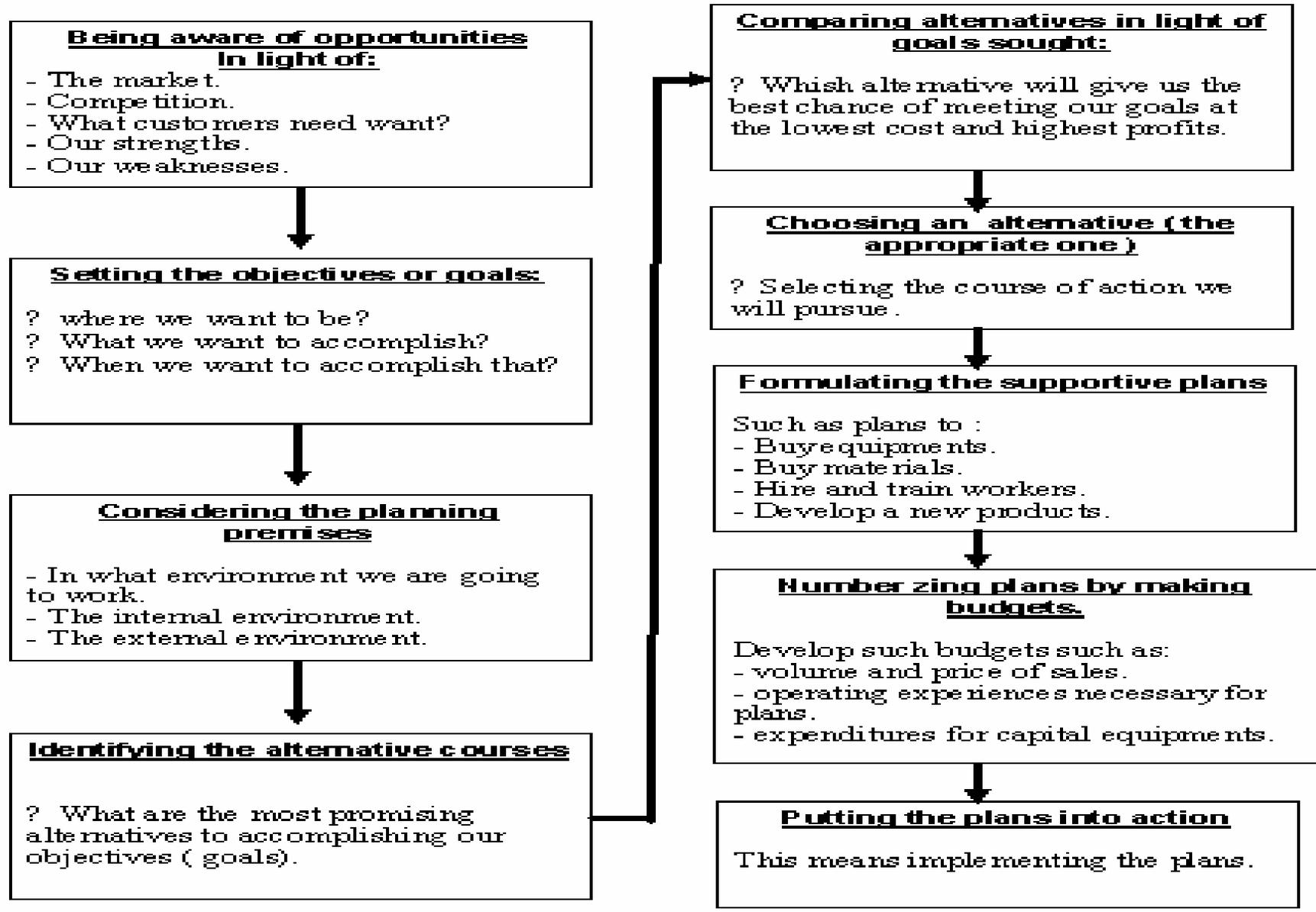
Being aware of opportunities
In light of:
- The market.
- Competition.
- What customers need want?
- Our strengths.
- Our weaknesses.

Setting the objectives or goals:

? where we want to be?
? What we want to accomplish?
? When we want to accomplish that?

Considering the planning premises

- In what environment we are going to work.
- The internal environment.
- The external environment.

Identifying the alternative courses

? What are the most promising alternatives to accomplishing our objectives (goals).

Comparing alternatives in light of goals sought:

? Whish alternative will give us the best chance of meeting our goals at the lowest cost and highest profits.

Choosing an alternative (the appropriate one)

? Selecting the course of action we will pursue.

Formulating the supportive plans

Such as plans to :
- Buy equipments.
- Buy materials.
- Hire and train workers.
- Develop a new products.

Number zing plans by making budgets.

Develop such budgets such as:
- volume and price of sales.
- operating experiences necessary for plans.
- expenditures for capital equipments.

Putting the plans into action

This means implementing the plans.

Figure 3. The steps in the Planning process.

Step 1: Being Aware of Opportunity

- It includes a preliminary look at possible future opportunities and the ability to see them clearly and completely, knowledge of where we stand in the light of our strengths and weaknesses, an understanding of why we wish to solve uncertainties, and a vision of what we expect to gain.

Step 2: Establishing Objectives

- **The first step in planning itself is to establish objectives** for the entire enterprise and then for each subordinate unit.

- Objectives specifying the results expected indicate the end points of what is to be done, where the primary emphasis is to be placed, and what is to be accomplished by the network of strategies, policies, procedures, rules, budgets and programs.

benefits that result from the statement of objectives

- **Objectives provide direction**
- **Objectives serve as motivators**
- **Objectives contribute to the management process**
- **Objectives are the basis for management philosophy**
- Objectives serve as a guide for organizational consistency

Step 3: Considering the Planning Premises

- **These are forecast data of a factual nature, applicable basic policies, and existing company plans. Premises, then, are planning assumptions – in other words, the expected environment of plans in operation. This step leads to one of the major _principles_ of planning.**

- *The more individuals charged with planning understand and agree to utilize consistent planning premises, the more coordinated enterprise planning will be.*

Forecasting is important in premising; for example,

- **What kind of markets will there be?**
- **What quantity of sales?**
- **What are the products and its prices?**
- **What are the technical developments required?**
- **What are the costs?**
- **What are the required policies?**
- **How will expansion be financed?**
- **What is the expected nature of political and social environment?**

Step 4: Determining and Identifying the Alternative Courses

■ **The focus of this step** is to search for and examine alternative courses of action, especially those not immediately apparent. There is seldom a plan for which reasonable alternatives do not exist, and quite often an alternative that is not obvious proves to be the best.

Step 5: Evaluating these Alternative Courses

- **Having sought out alternative courses and examined their strong and weak points, the following step is to evaluate them by weighing the various factors in the light of premises and goals.** One course may appear to be the most profitable but require a large cash outlay and a slow payback; another may be less profitable but involve less risk; still another may better suit the company in long–range objectives.

Step 6: **Selecting the Appropriate Course of Action**

- **An evaluation of alternatives must include an evaluation of the premises on which the alternatives are based.**

- **A manager usually finds that some premises are unreasonable and can therefore be excluded from further consideration. This elimination process helps the manager determine which alternative would best accomplish organizational objectives.**

Step7: Developing Plans to Pursue the Chosen Alternative

- After the appropriate alternative has been chosen, a manager begins to develop **strategic (long range)** and **tactical (short–range)** plans.

Step 8: Numberizing Plans by Budgeting

- **After decisions are made and plans are set, the final step to give them meaning is to numberize them by converting them to budgets.**

- **The overall budgets of an enterprise represent the sum total of income and expenses with resultant profit or surplus and budgets of major balance–sheet items such as cash and capital expenditures.**

- **If this process is done well, budgets become a means of adding together the various plans and also important standards against which planning progress can be measured.**

Step 9: Putting the Plans into Action

- Once plans that furnish the organization with both long-range and short-range direction have been developed, they must be implemented.

- Obviously, the organization can not directly benefit from planning process until this step is performed.

The planning subsystem:

- We can illustrate the planning subsystems in Figure 1.4.

Inputs

A portion of the organizations
(1) People
(2) Money
(3) Raw material
(4) Machines

Process

Planning Process

(1) Stating organizational objectives
(2) Listing alternative ways of reaching objectives
(3) Developing premises upon which each alternative is based
(4) Choosing best alternative for reaching objectives

Organizational Plans

Figure 1.4: The planning subsystems

The Main Types of Plans and Applications

- Before illustrating the main types of plans and applications, let us present the major dimensions of plans in Figure 1.5.

Figure 5

A-**Repetitiveness dimension of a plan**

■ refers to the extent to which the plan is used over and over again. Some plans are specially designed for one situation that is relatively short-term in nature. Other plans are designed to be used time after time for long-term recurring situations.

B-The time dimension

- *refers to the length of time the plan covers.* **Strategic planning was defined as long- term in nature, while tactical planning was defined as short- termed.**

C-**The scope dimension**

- *refers to the proportion of the total management system at which the plan is aimed.* ***Some plans are designed to cover the*** **entire open management system. This plan is often referred to as a master plan. Other plans are developed to cover only a portion of management system.**

D-**The level dimension**

- *refers to the level of the organization at which the plan is aimed.* **Top level plans are those designed for the organization's top management, whereas middle and lower level plans are designed for middle and lower management.**

Based on the previous discussion about the plan's dimensions; we can summarize the most common types of plans according to the repetitiveness dimension in Figure 1.6.

The Standing Plans

- **Those include plans that are used over and over again because they focus on organizational situations that occur repeatedly.** Examples are:

1. **The policy:** *is a standing plan that furnishes broad guidelines for action, consistent with reaching organizational objectives.*

2. **Procedures:** *are standing plans that outline a series of related actions that must be taken to accomplish a particular task.*

3. **Rules:** *are standing plans that are designate specific required action.* **A rule indicates what an organization member should or should not do and allows no room for interpretation.**

The Single Used Plans

- Single used plans such as:

1. **Program: is a single use plan designed to carry out a specific project within an organization.** The project itself is not intended to remain in existence over the entire life of the organization. Rather, it exists to achieve some purpose. That if accomplished, will contribute to the organization's long- term success.

2. **Budget: is a single use financial plan that covers a specified length of time.** *It is a statement that expresses the expected results in numerical terms. It may be referred to as "a numberized program".*

Also, we can brief the most common types of plans according to the time dimension in the following;

a) Strategies:

- **The strategy is the process of achieving a fit between an organization's capabilities and its evolving environment to achieve a favorable position within the competitive marketplace.**

- Strategies pertain to those destiny-shaping decisions concerning:

- The choice of technologies on which products are based

- The development and release of new products

- The processes for producing products and services

- The way they are marketed, distributed, and priced

- The way the firm responds to rivals

b) Tactical or Operational Plan

- **This is concerned primarily with establishing short- term goals and action programs.** Organizations usually carry out formal operational plans on a regular yearly basis however, **there are some differences between the strategic and the tactical plans, and we can show these differences in Table 1.1.**

Table 1.1: Major differences between strategic and tactical planning

Area of difference	Strategic Planning	Tactical Planning
• Individuals involved	• developed mainly by upper-level management	• Developed mainly by lower-level management.
• Facts on which to base planning	• are relatively difficult to gather	• are relatively easy to gather.
• Amount of detail in plans	• Plans contain relatively little amount of details	• Plans contain substantial amount of details.
• Length of time plans cover	• Plans cover long period of time	• Plans cover short period of time

How we can develop a strategic plan?

- **Step one:** Determine the current domain of the enterprise in terms of the scope (i.e., determining the products and services it offers and to whom).

- **Step two:** What are the political, social, and economic trends we have to consider? What product and/or technological changes we anticipate will affect our organization?

- **Step three:** Determine the current strengths and weaknesses. This means that management must analyze the organizations operational, financial, and managerial strengths and weaknesses.

- **Step four:** Decide what target domain (or business) we want to be in and the best strategy for being there. This means, that management must develop alternatives and analyze each in light of the organization's strengths and weaknesses as well as the opportunities and threats it will face.

- **Step five:** Set specific objectives. Once you have developed a new strategic plan, it should be quantified in terms of goals.

What are the main principles for having effective planning?

- *There are many, among the most important of them:*

1. *Develop accurate forecasts*
2. *Gain acceptance for the plan*
3. *Make sure the plan is sound*
4. *Assign responsibility for planning*
5. *Be objective*
6. *Keep the plan flexible*
7. *Revise your long- term plan every year*
8. *Make sure that the plan fits the situation*

Why plans fail?

1. *Corporate planning is not integrated into the total management system,*
2. *There is a lack of understanding of the different steps of planning process,*
3. *Management at different levels in the organization has not properly engaged in or contributed to planning activities,*
4. *Responsibility for planning is wrongly vested solely in the planning department,*
5. *Management expects that plans developed will be realized with little effort,*
6. *In starting formal planning, too much is attempted at once,*
7. *Management fails to operate by the plan,*
8. *Management fails to grasp the overall planning process,*
9. *Financial projections are confused with planning,*
10. *Inadequate inputs are used in planning.*

Chapter 2: Planning and Time
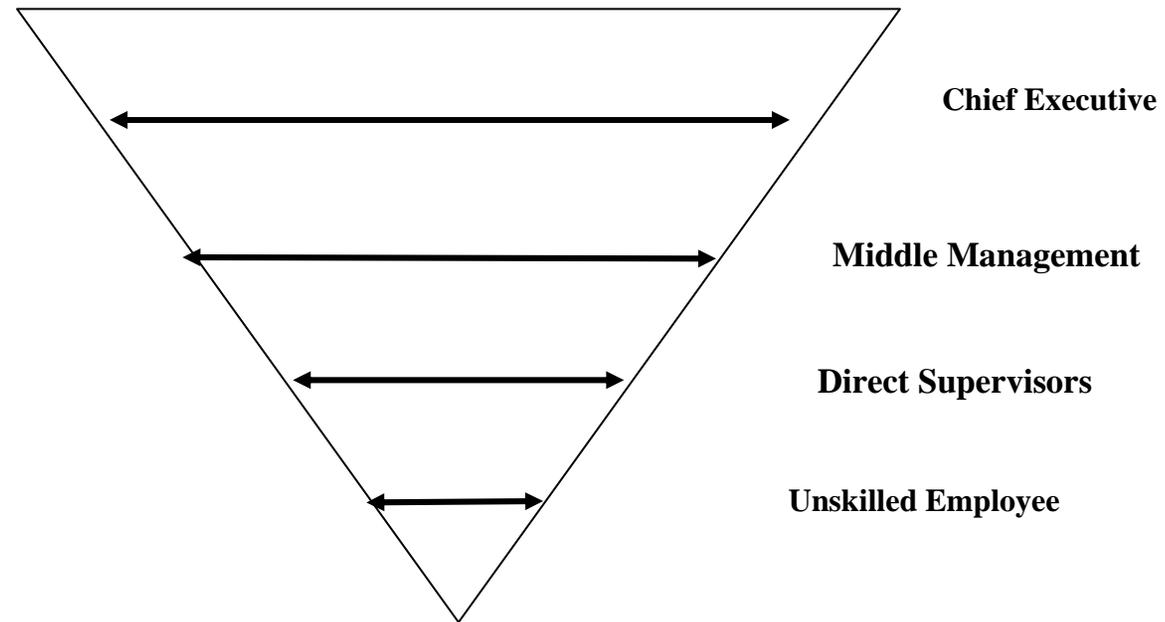
■ **The chapter learning objectives**

By reading this chapter, you should be able to understand:

1. The key factors which should be considered in determining how far into the future an organization should try to plan.

2. Why the length of plans within organizations should vary depending on the job level of the person planning.

3. The role of planning tools such as GANTT and PERT charts in aiding short-term planning.

How far ahead should we plan?

- There are **a number of factors that should be considered carefully during the process of deciding the time span to be covered.** Among the most important are:

1. **The expected degree of organizational permanency**
2. **The size and complexity of the organization**
3. **The nature of the products or services offered**
4. **The resources needed to implement the plan**

The relationship between the job level and the timing of planning

Chief Executive

Middle Management

Direct Supervisors

Unskilled Employee

Methods / Techniques for Short-Term Job Planning

- Among the most common are:
1. Gantt charts.
2. PERT system/charts.

Gantt Charts

- *Gantt charts are very helpful where there is little or no relationship between successive activities or where the times to complete a task have been established.* Unfortunately, such ideal conditions do not always exist.

Gantt Charts

- **Gantt chart is essentially a bar graph with time on the horizontal axis and the resources to be scheduled on the vertical axis. It is used for scheduling resources, including management system inputs such as human resources and machines.** We can illustrate this in Figure 2.2.

Gantt Charts

Resources	Monday	Tuesday	Wednesday	Thursday	Friday
Ahmed	(10) 6	(10) 8	(10) 9	(10) 12	(10) 5
Ali	(10) 7	(10) 12	(10) 11	(10) 10	(10) 5

Gantt Charts

( ) = planned units of production for period,

ڤ = actual units of production for period.

⌐ = when work is to begin.

¬ = when work is to end.

-- = percentage of work actually completed during a time period.

Gantt Chart

Features: Although simple in concept and appearance, the Gantt chart has many valuable managerial uses, these are:

First: managers can use it as a summary overview of how organizational resources are being employed.

Second: from it, you can detect such facts as which resources are consistently contributing to productivity and which are hindering it.

Third: managers can use the Gantt chart to help coordinate organizational resources. The chart can show which resources are not being used during specific periods, thereby allowing managers to schedule those resources for work on other production efforts.

Fourth: the chart can be used to establish realistic worker output standards.

PERT (Program Evaluation and Review Technique)

- The main weakness of Gantt chart is that it does not contain any information about the interrelationship of tasks to be performed. Although all tasks to be performed are listed on the chart, there is no way of telling if one task must be performed before another can be started.

- The program evaluation and review technique (PERT), a technique that evolved partly from the Gantt chart, is a scheduling tool that does emphasize the interrelationship of tasks.

But, what do we mean by PERT?

- **PERT is a network of project activities showing both the estimates of time necessary to complete each activity and the sequence of activities that must be followed to complete the project.**

- **The PERT network contains two primary elements, activities, and events. Activities are specified sets of behavior within a project, and events are the completions of major project tasks.** Within the PERT network, each event is assigned corresponding activities that must be performed before the event can materialize.

Steps in designing a PERT network

When designing a PERT network, managers should follow four primary steps:

Step (1): List all the activities / events that must be accomplished for the project and the sequence in which these activities / events should be performed.
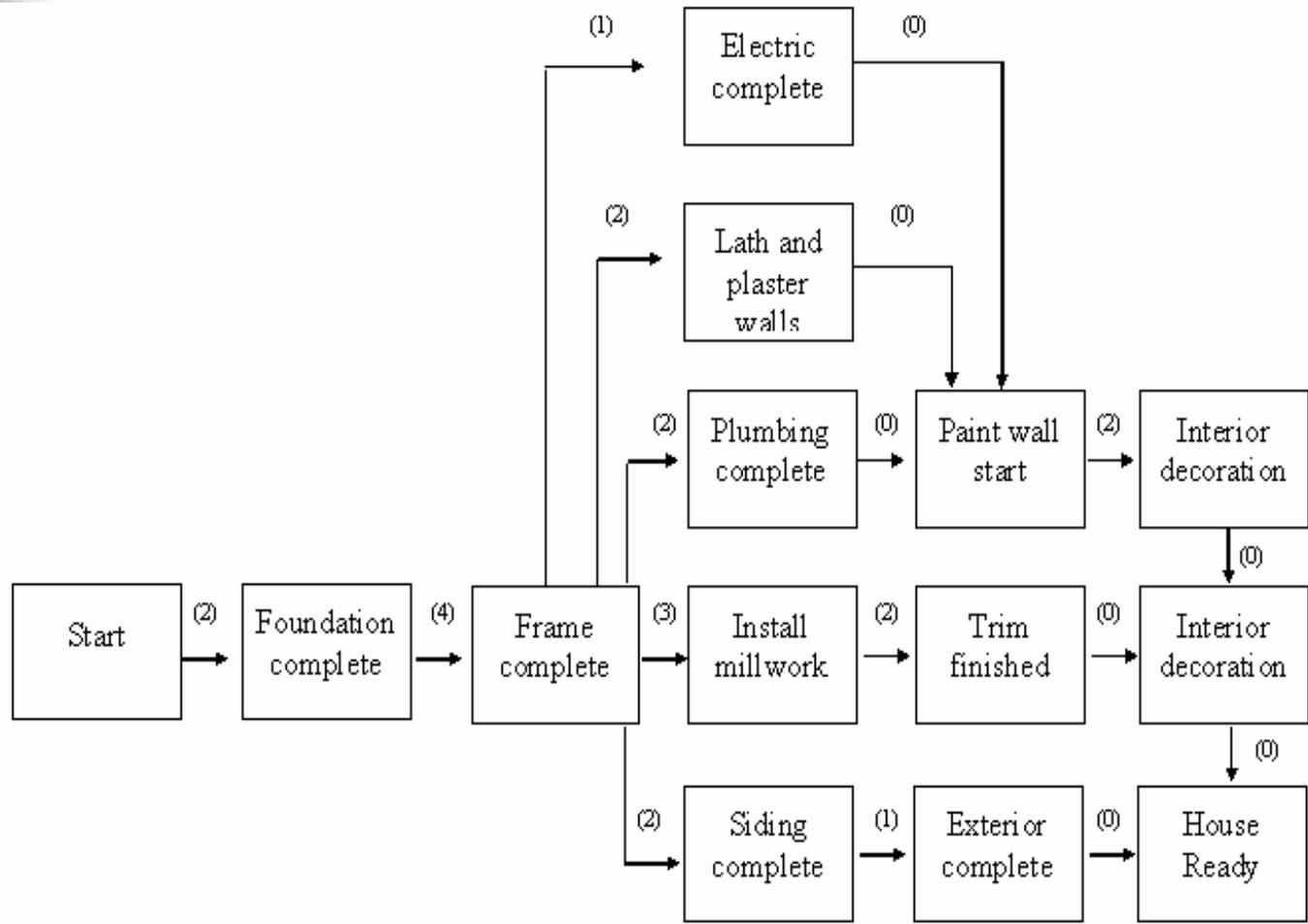
Step (2): Determine how much time will be needed to complete each activity / event.

Step (3): Design a PERT network that reflects all of the information contained in step (1) and (2).

Step (4): Identify the critical path. We can show this in Figure 2.3 that represents a PERT network designed for building a house.

Figure 2.3: PERT network design for building a house

Remember

- **However, managers need to pay close attention to the critical path of PERT network – the sequence of events and activities requiring the longest period of time to complete.**

- **This path is called critical because a delay in completing this sequence results in a delay in completing the entire project.**

Chapter 3: Controlling Process

The learning objectives

When you study and understand this chapter, you we will be able to:

1. **Understand** the meaning (definition) of control
2. **Understand** the controlling subsystem
3. **Know** the main steps to be followed in order to develop an accurate and effective control
4. **Distinguish** between the different types of control
5. **Know** the various potential barriers that must be overcome to implement successful control
6. **Know** the different methods and techniques for accomplishing an effective and efficient control
7. **Understand** the relationship between the planning and controlling functions (processes)
8. **Get familiar** with some areas of control

What is control? (Meaning and nature)

- among the most **common definitions** are:
- **Control is making sure that something happen the way it was planned to happen. As implied in this definition, planning and controlling are virtually inseparable functions.**
- **Control is the task of ensuring that the activities are providing the desired results.**
- Based on this, control involves:
1. **Setting a target (criteria),**
2. **Measuring the actual performance. and**
3. **Taking the corrective actions.**

Why control is important (its necessity)?

- If you could be sure that every task you assigned would be perfectly executed, you really would not need to control.

- **But things rarely go this smoothly. Most plans are executed by people, and people vary widely in their abilities, motivation, and honesty.**

- Furthermore, plans themselves become outdated and require revision. For these reasons and more, control is an important management function.

- Control applies to controlling every task - whether it was large or small - you delegate. Thus, for every task you delegate, you should establish a control mechanism, and the way of ensuring that performance is in line with plans.
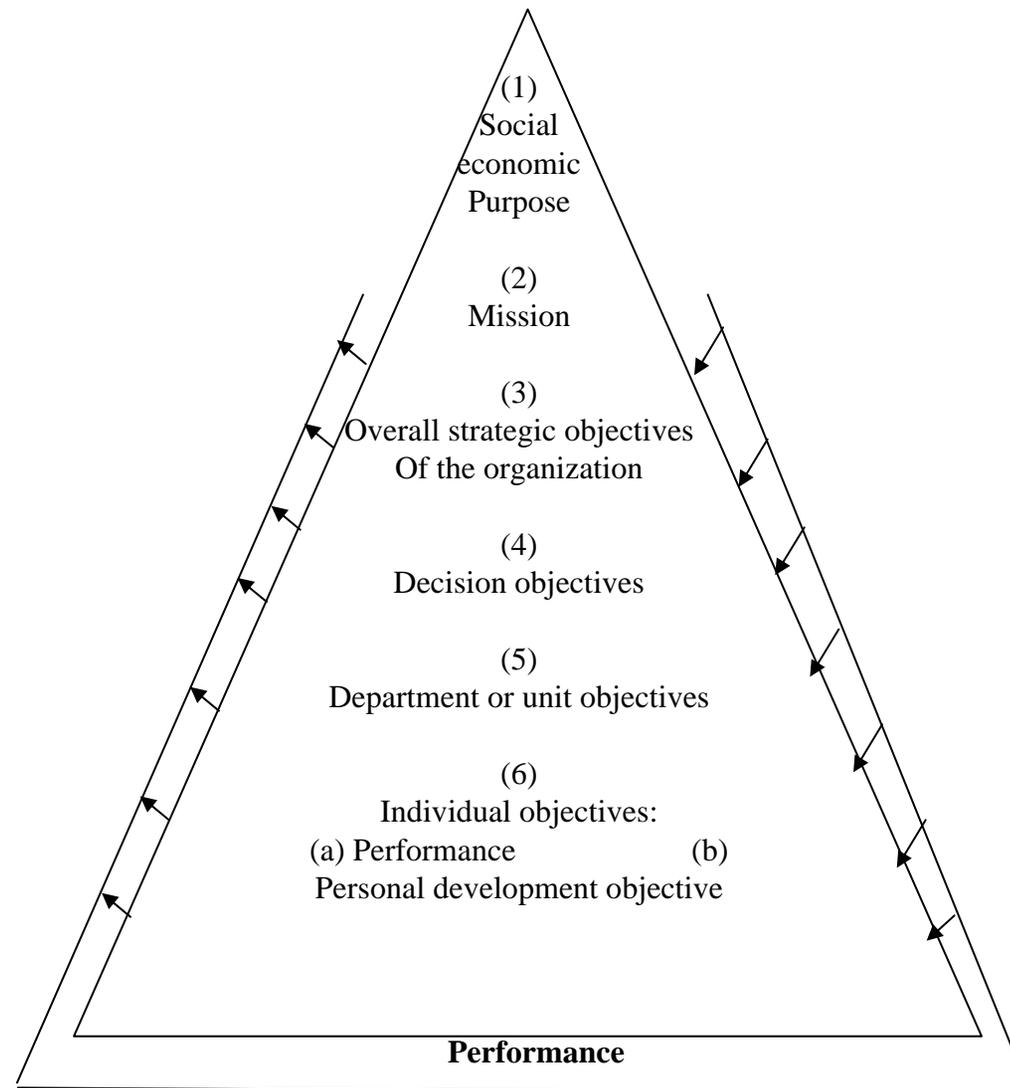
Prerequisites of the Control System

■ **Two major prerequisites** must exist before any manager can devise or maintain a system of control. **These prerequisites are:**

Control Requires Plans

- It is obvious that before a control technique can be used or a system devised, control must be based on plans, and that the clearer, more complete, and more integrated plans are, the more effective controls can be. It is simple as this:

- **There is no way that managers can determine whether their organizational unit is accomplishing what is desired and expected unless they first know what is expected.**

- This simple truth means several things in practice:

First: All meaningful control techniques are, in the first instance, planning techniques.

Second: It is fruitless to try to design control without first taking into account plans and how well they are made.

Figure 3.1: Relationship between planning and controlling

(1)
Social
economic
Purpose

(2)
Mission

(3)
Overall strategic objectives
Of the organization

(4)
Decision objectives

(5)
Department or unit objectives

(6)
Individual objectives:
(a) Performance   (b)
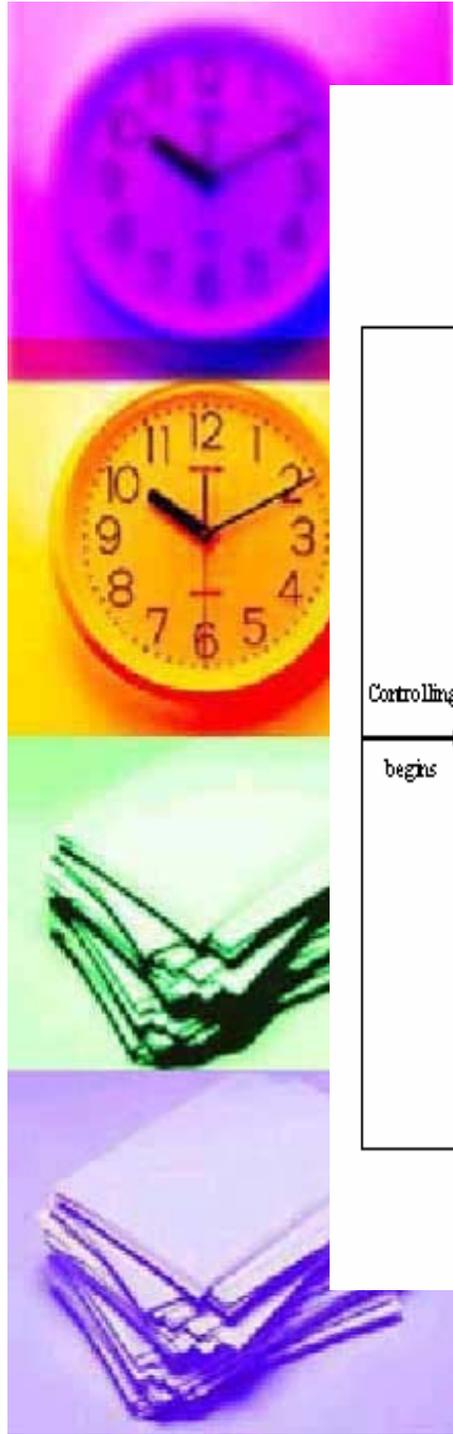Personal development objective

Performance

Controls Require Organization Structure

- **Control of activities operates through people.** But we can not know where the responsibility for deviations and needs action are, unless organizational responsibility is clear and definite.

- Therefore, **a major prerequisite of control is the existence of an organization structure.** The clearer, more complete, and more integrated this structure is, the more effective control action can be.
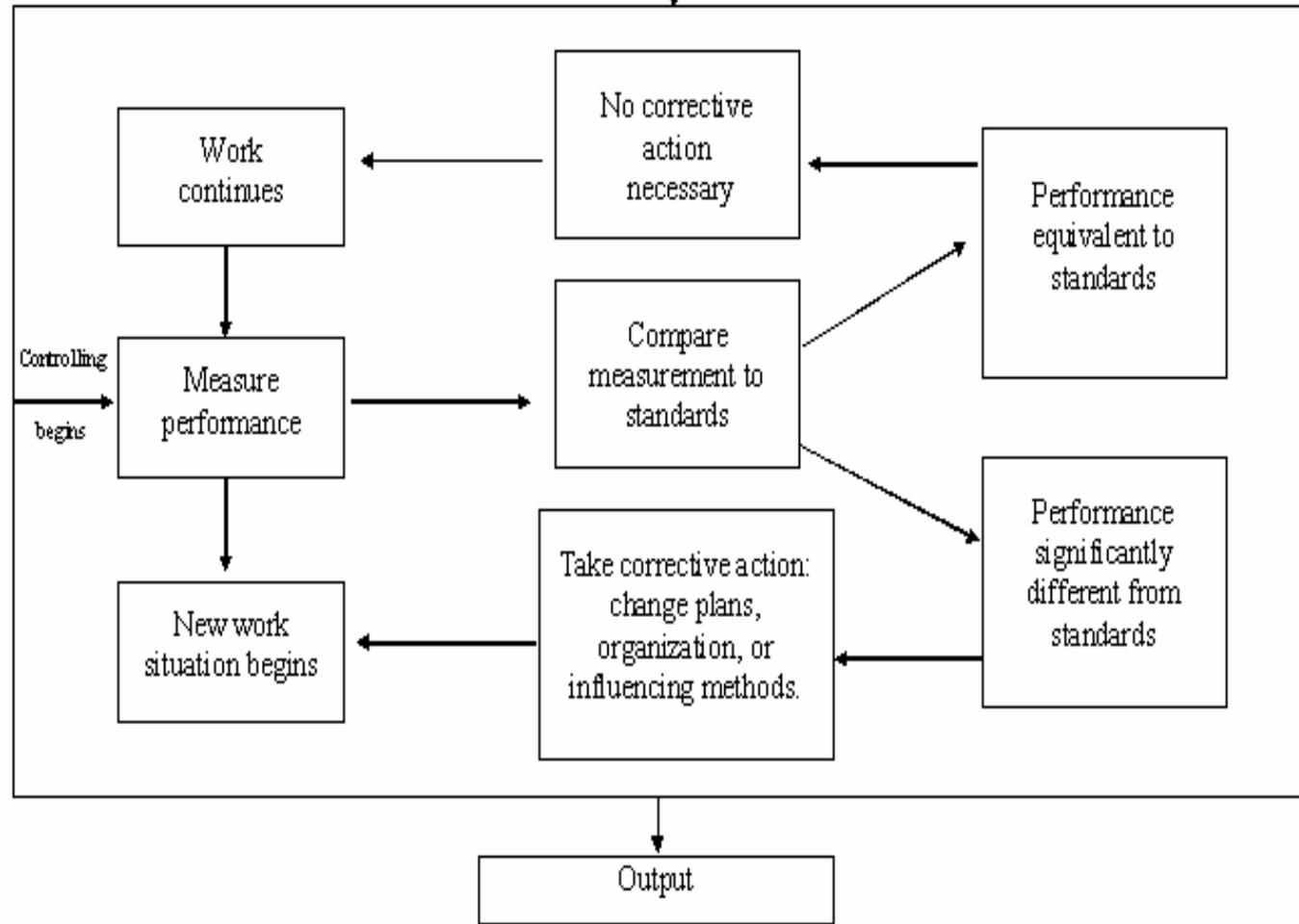
The Basic Control Processes

- Control techniques and systems are essential for every thing done. **The basic control process involves mainly these steps as shown in Figure 3.2.**

Figure 3.2: Controlling process and subsystem

A portion of the organizational
1- People
2- Money
3- Raw materials
4- Machines

Work continues

No corrective action necessary

Performance equivalent to standards

Controlling begins

Measure performance

Compare measurement to standards

Performance significantly different from standards

New work situation begins

Take corrective action: change plans, organization, or influencing methods.

Output

The establishment of standards

- **Plans can be considered as the criterion or the standards against which we compare the actual performance in order to figure out the deviations.**

- **Standards are by definition simple criteria of performance.**

- **They are the selected points in an entire planning program where measures of performance are made so as to give managers signals as to how things are going without having to watch every step in the execution of plans.**

Examples for the standards

a) **Profitability standards:** In general, these standards indicate how much the company would like to make as profit over a given time period- that is, its return on investment.

b) **Market position standards:** These standards indicate the share of total sales in a particular market that the company would like to have relative to its competitors.

c) **Productivity standards:** How much that various segments of the organization should produce is the focus of these standards.

d) **Product leadership standards:** These indicate what must be done to attain such a position.

e) **Employee attitude standards:** These standards indicate what types of attitudes the company managers should strive to indicate in the company's employees.

f) **Social responsibility standards:** Such as making contribution to the society.

g) **Standards reflecting the relative balance between short and long range goals.**

The Measurement of Performance

- The measurement of performance against standards should be on a forward looking basis so that deviations may be detected in advance by appropriate actions.

Comparing Measured Performance to Stated Standards

- When managers have taken a measure of organizational performance, their next step in controlling is to compare this measure against some standard.

- **A standard is the level of activity established to serve as a model for evaluating organizational performance.**

- The performance evaluated can be for the organization as a whole or for some individuals working within the organization.

- **In essence, standards are the yardsticks that determine whether organizational performance is adequate or inadequate.**

Taking Corrective Actions

- **Corrective action is managerial activity aimed at bringing organizational performance up to the level of performance standards.**

- **In other words, corrective action focuses on correcting organizational mistakes that hinder organizational performance.**

What are the main types of control?

- There are mainly **three types of control**, these are:

Pre control

- **Pre control: control that takes place before work is performed is called pre control, or feed-forward control.**

- **Managers using this type of control create policies, procedures, and rules aimed at eliminating behavior that will cause undesirable work results.**

- **pre control focuses on eliminating predicted problems.**

Concurrent control

- refers to **the control that takes place as work is being performed.**

- It relates not only to employees performance but also to such nonhuman areas as equipment performance and department appearance.

Feedback Control

- this refers to **the control that concentrates on the post organizational performance.**

- Managers exercising this type of control are attempting to take corrective action by looking at organizational history over a specified time period.

What are the requirements for adequate controls?

a) **Control should be tailored to plans and positions.**

b) **Control must be tailored to individual managers and their responsibilities.**

c) **Control should point up exceptions as critical points.**

d) **Control should be objective.**

e) **Control should be flexible.**

f) **Control should be economical.**

g) **Control should lead to corrective actions.**

What are the main barriers to successful controlling?

1) *Control activities **can create an undesirable overemphasis** on short-term production as opposed to long- term production.*

2) *Control activities **can increase employees' frustration** with their jobs and thereby reduce morale. This reaction tends to occur primarily where management exerts too much control.*

3) *Control activities **can encourage the falsification** of reports.*

4) *Control activities can **cause the perspectives of organization** members to be too narrow for the good of the organization.*

5) *Control activities **can be perceived as the goals of the control process** rather than the means by which corrective action is taken.*

Most Common Methods and Techniques for Controlling

- **What are the most common methods and techniques for controlling?**

The Traditional Control Devices (the Budget)

- **A widely used device for managerial control is the budget.**

- **Budgeting is the formulation of plans for a given future period in numerical terms.**

- **Thus budgets are statements of anticipated results, in financial terms - as in revenue and expense and capital budgets - or in no financial terms - as in budgets of direct- labor hours, materials, physical sales volume or units of production.**

There are many types of budgets such as:

a) **Revenue and expense budgets**

b) **Time, space, material, and product budgets**

c) **Capital expenditure budgets**

d) **Cash budgets**

e) **Balance sheet budgets**

f) **Budget summaries**

g) **Zero- base budgeting**

The Traditional no Budgetary Control Devices

- Among the most important of these are:

- statistical data, special reports and analysis,

- analysis of break- even points,

- the operational audit,

- and the personal observation.

The Advanced and Quantitative Techniques and Devices:

a) **Program Evaluation and Review Technique (PERT)**

b) **b) Control Through Return-on Investment (ROI)**

c) **c) Just-In-Time Inventory Control (JIT)**

d) **Ratio Analysis**

e) **Management by Objective and Appraisal by Results (MBO)**

f) **Decision Tree Analysis**

g) **Computer-Aided Design (CAD)**

h) **Computer-Aided Manufacturing (CAM)**

i) **Total Quality Management (TQM)**

Thank You