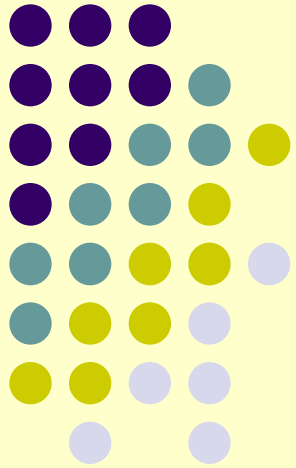
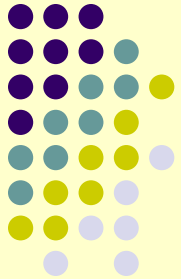
Internal variables

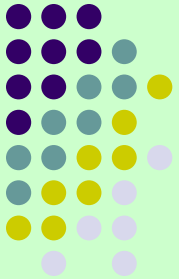


Internal variables



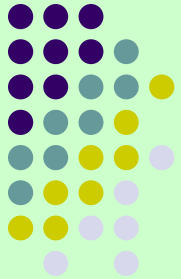
- Internal variables
- Internal variables are situational factors within the organization.
- The major variables within the organization that management must consider are
  - objectives,
  - structure,
  - tasks,
  - technology,
  - people.

Objectives



- An organization is a group of people with conscious, common objectives. Expressed another way, an organization may be viewed as a goal-attaining vehicle that enables people to do collectively what they could not do individually.
- Objectives are the specific end states or desired results the group wishes to attain by working together

Objectives



- **Management develops objectives through the planning process and communicates them to members of the organization**. This process is a powerful mechanism of coordination because it lets members of the organization know what they should be trying to accomplish.

Objectives

- There is **great diversity of objectives** among organizations, especially those of radically different types. Business organizations are primarily concerned with providing a particular good or service within specific cost and profit constraints. This concern is reflected in objectives for such areas as profitability and productivity.

Objectives

- Organizations such as governmental agencies, educational institutions, and nonprofit hospitals are **not primarily concerned with profits**, but they are concerned with **costs**. This concern is reflected in a set of objectives revolving around providing a specific service within specific budget limits.

SMART rule


S
M
A
R
T
Specific
Measurable
Attainable
Relevant
Time Based

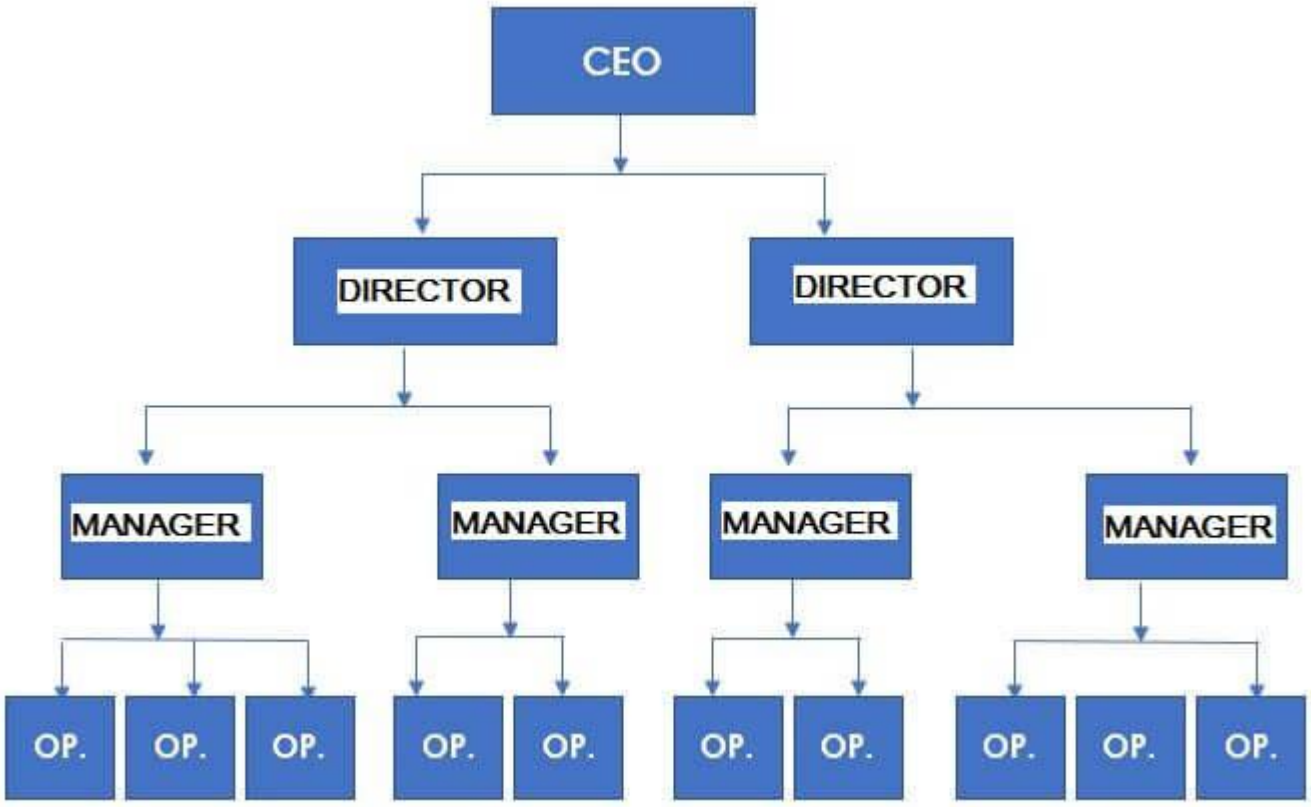
SMART rule

Specific	Measurable	Attainable	Relevant	Time-Bound
Make sure your goals are focused and identify a tangible outcome. Without the specifics, your goal runs the risk of being too vague to achieve. Being more specific helps you identify what you want to achieve. You should also identify what resources you are going to leverage to achieve success.	You should have some clear definition of success. This will help you to evaluate achievement and also progress. This component often answers how much or how many and highlights how you'll know you achieved your goal.	Your goal should be challenging, but still reasonable to achieve. Reflecting on this component can reveal any potential barriers that you may need to overcome to realize success. Outline the steps you're planning to take to achieve your goal.	This is about getting real with yourself and ensuring what you're trying to achieve is worthwhile to you. Determining if this is aligned to your values and if it is a priority focus for you. This helps you answer the why.	Every goal needs a target date, something that motivates you to really apply the focus and discipline necessary to achieve it. This answers when. It's important to set a realistic time frame to achieve your goal to ensure you don't get discouraged.

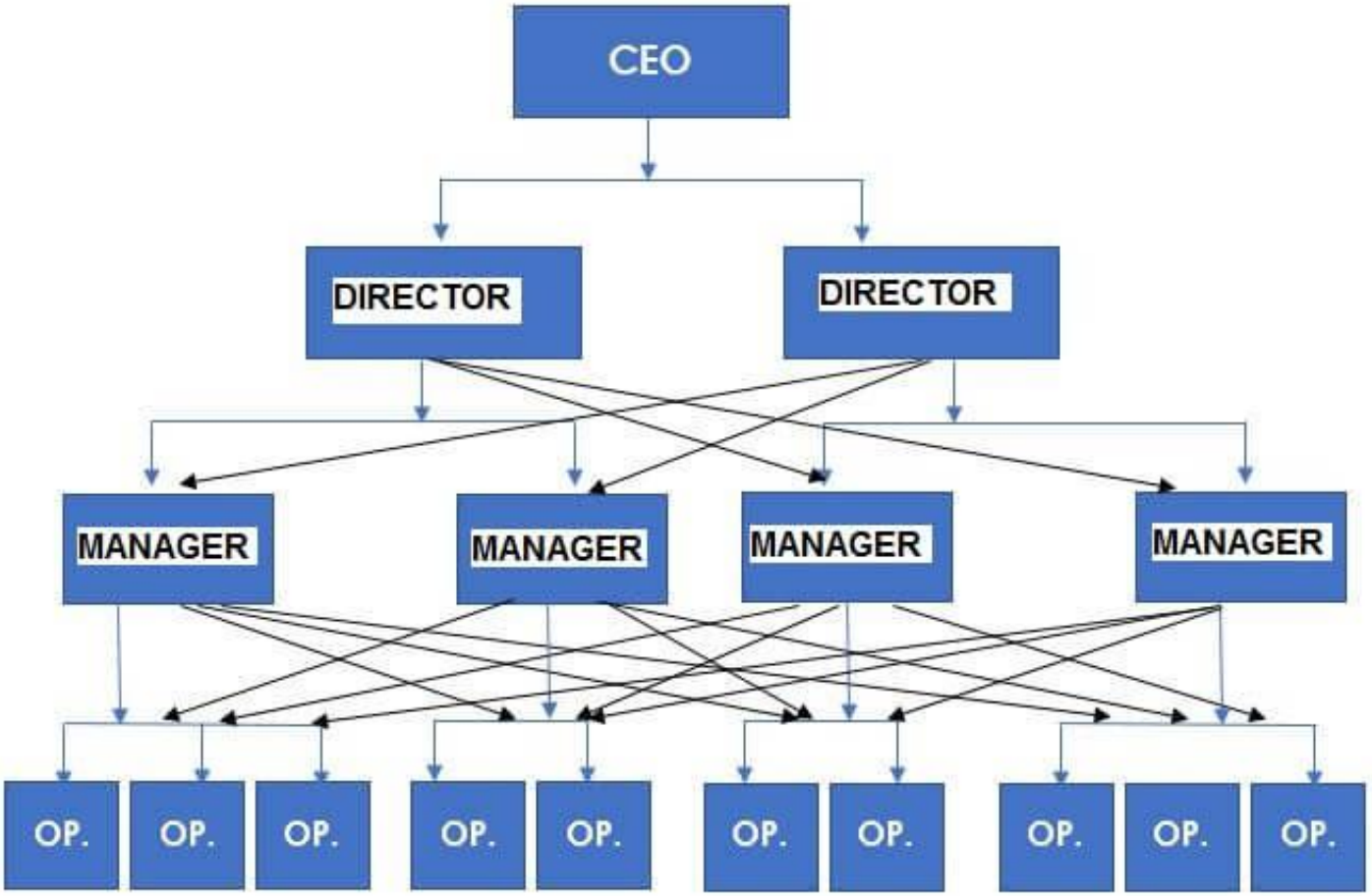
Structure

- organizations are comprised of several levels of management and several subunits. Another term for these subunits is functional areas, not to be confused with the functions of management. Functional area refers to the work the unit performs for the organization as a whole, such as marketing, producing, personnel training, or financial planning.
- **The structure of an organization is the logical relationship of management levels and functional areas arranged in such a way as to permit the effective attainment of objectives**

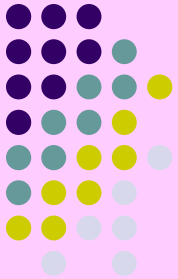
line structure



functional structure

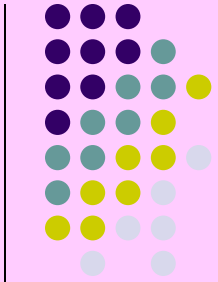


Tasks



- An outgrowth of division of labor is the creation of tasks. A task is an assigned job, series of jobs, or piece of work that is to be completed in a specified manner within a specified period of time. Technically, tasks are assigned not to people but to positions. if every task is performed as and when it should be, the organization will succeed.

Tasks: **Characteristics**

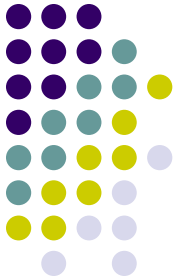


- Organizational tasks are traditionally classified within three categories. These are working with people, working with things (machines, raw materials, or tools), or working with information. For example, in a typical factory assembly line employees' tasks involve things. The supervisory manager's tasks primarily involve people. The corporate treasurer's tasks involve information.

Technology

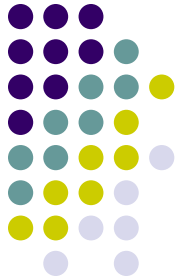
- Technology, the fourth important internal variable, has a much broader meaning than commonly believed. Most people think of it as associated exclusively with inventions and machines such as semiconductors and computers. However,
- Technology is a transforming raw materials—people, information, or physical materials—into desirable goods and services.

Technology



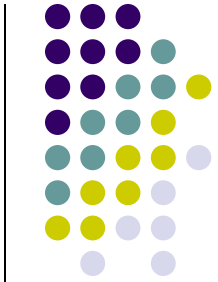
- Technology includes the combination of:
  - skills,
  - equipment,
  - facilities,
  - tools,
  - relevant technical knowledge
- needed to bring about desired transformations in materials, information, or people

Technology



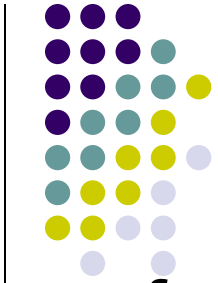
- Machines, equipment, and supplies, of course, can all be viewed as components of technology, but the most important component by far is the process whereby raw materials are transformed into the desired outputs. Technology basically is a technique which enables this transformation.

Technology



- The impact of this variable on management was strongly affected by three major technological breakthroughs of the Industrial Revolution:
  - standardization,
  - mechanization,
  - the moving assembly line.

Technology: Standardization and Mechanization

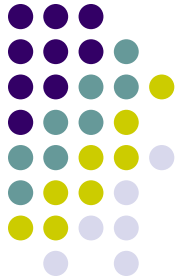


- The first application of standardization, the use of uniform, interchangeable components in manufacturing, is attributed to Eli Whitney, inventor of the cotton gin. He came up with the idea of standardization while working on a contract to produce army muskets, which until then had been individually handcrafted. Using standardized parts drastically reduced both the initial cost and the cost of repair. Because the parts of a Whitney musket were interchangeable with others of the same type, a gun could easily be repaired in the field by simply replacing the defective part.

Technology: Standardization and Mechanization

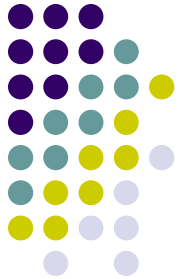
- **The concept of standardization stimulated a high degree of specialization by opening up new avenues for the use of unskilled or minimally skilled labor. On it is based the mass production of goods and services characteristic of our society. Few products today are not standardized to some degree. Even custom automobiles use many standardized components.**
- **Standardization and mechanization, the use of machines in place of people, are now widespread even outside of manufacturing. *Low-cost fast food, for example, is based on McDonald's application of such practices to making hamburgers*.**

Technology:
The Moving Assembly Line.



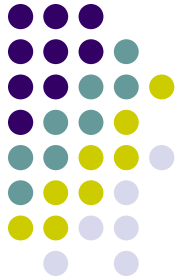
- Standardization and mechanization were already widespread when the automobile industry began at the turn of previous century. In its first years workers followed each auto through production, changing work stations whenever it was time to add a major new component.

Technology:
The Moving Assembly Line.



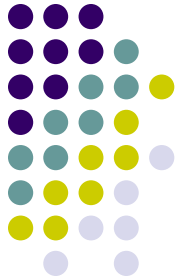
- Then, in August 1913, Henry Ford introduced the idea of moving the cars by a conveyor belt and having the workers remain stationary. Because workers no longer lost time changing work stations, the time required to build a Model T car was greatly reduced. To comprehend what this meant, you should know that before Ford used the conveyor belt the average auto wholesaled for $2100. Ford's Model T retailed for $290 in 1918.

Technology:
The Moving Assembly Line.



- Today the moving assembly line is used almost universally in manufacturing complex products of all kinds. To take full advantage of it, tasks performed by workers have become increasingly narrow. Some assembly-line jobs are now so specialized that a worker might do nothing more than tighten a few screws on the same component day in and day out.

Technology



- Standardization, mechanization, and the moving assembly line had a profound effect not only on the design of tasks but on all of management. As a result of these and later innovations, technology and tasks can strongly affect organizational effectiveness.
- The classification of technologies by Joan Woodward and James Thompson reflects the interrelationship between tasks and technology.

Woodward's Technology Categories.

She found, through a study of manufacturing firms, that the technologies of production firms all fit within one of three categories:

- **1. <u>Unit, small-batch, or custom processing</u>** is a technology in which only one unit or a small quantity of units is produced at one time. Often the item is custom-made to the buyer's specifications or is a prototype. Boeing commercial and military jet aircraft, and space vehicles are produced by unit processing. So, too, are all custom-made products, such as custom surfboards, boats, furniture, and clothing.

Woodward's Technology Categories.

She found, through a study of manufacturing firms, that the technologies of production firms all fit within one of three categories:

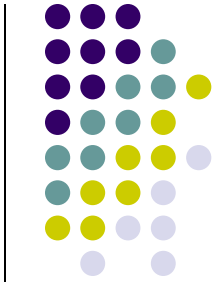
- 2. **Mass or large-batch production** is used to make large quantities of items that are identical or similar. This type of production makes heavy use of mechanization, standardized parts, and assembly-line techniques. Almost all consumer goods are built with mass-production technology.

Woodward's Technology Categories.

She found, through a study of manufacturing firms, that the technologies of production firms all fit within one of three categories:

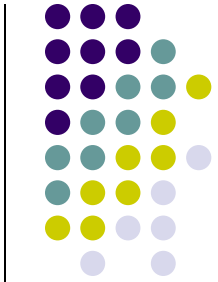
- **3. <u>Process production</u>** uses automated equipment, usually around the clock, to produce continuously large volumes of an identical product. Examples of process production operations are gasoline refining, steel and copper smelting, and operating of electric utilities.

Thompson's Technology Categories. He developed a different, but not contradictory, system of classifying technologies. According to him, technologies can be described by the following three categories:



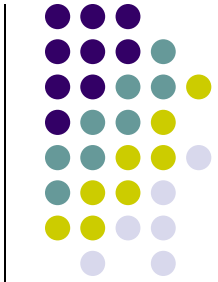
- 1. Long-linked technology is characterized by a series of interdependent tasks that must be performed in sequence. A mass-production assembly line is a typical example. Each task in the assembly of an automobile must be performed in a specific order. The engine, for instance, cannot be mounted before the frame is built.

Thompson's Technology Categories. He developed a different, but not contradictory, system of classifying technologies. According to him, technologies can be described by the following three categories:



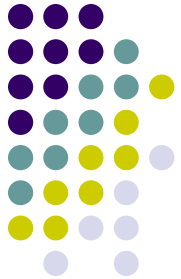
- **2. <u>Mediating technology</u>** is characterized by the meeting of groups, such as clients or customers, who are or wish to be interdependent. For example, banking is a mediating technology that links depositors and borrowers. Telephone companies mediate between people who wish to make calls and those who wish to receive them. Employment agencies link suppliers of labor with buyers of labor.

Thompson's Technology Categories. He developed a different, but not contradictory, system of classifying technologies. According to him, technologies can be described by the following three categories:



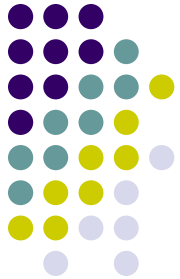
- **3. <u>Intensive technology</u>** is characterized by the application of specific techniques, skills, or services to make a specific change in a specific input. Editing a film would be an example of intensive technology.

Link between Thompson and Woodward Categories



- The categories proposed by Thompson are not inconsistent with those of Woodward. Long-linked technology is essentially equivalent to mass production and some forms of process production. Intensive technology is equivalent to custom technology. Its intent is to maximize flexibility. Mediating technologies fall between custom processing and mass production in many respects. They are used primarily when some standardization is possible and efficient, but output cannot be wholly uniform. A mediating technology enables the organization to deal with variations in the needs of the parties linked to some degree.

No type of technology is "best."



- Each has advantages and is most suitable for performing certain tasks or attaining certain objectives. To give an obvious example, a custom-built Ferrari racing car is mechanically superior in every respect to a mass-produced car. However, the mass-produced car also has advantages. It costs much less to make and is perfectly adequate for an average driver on average roads.

People

No technology is useful and no task can be performed without the cooperation of people, the fifth internal variable

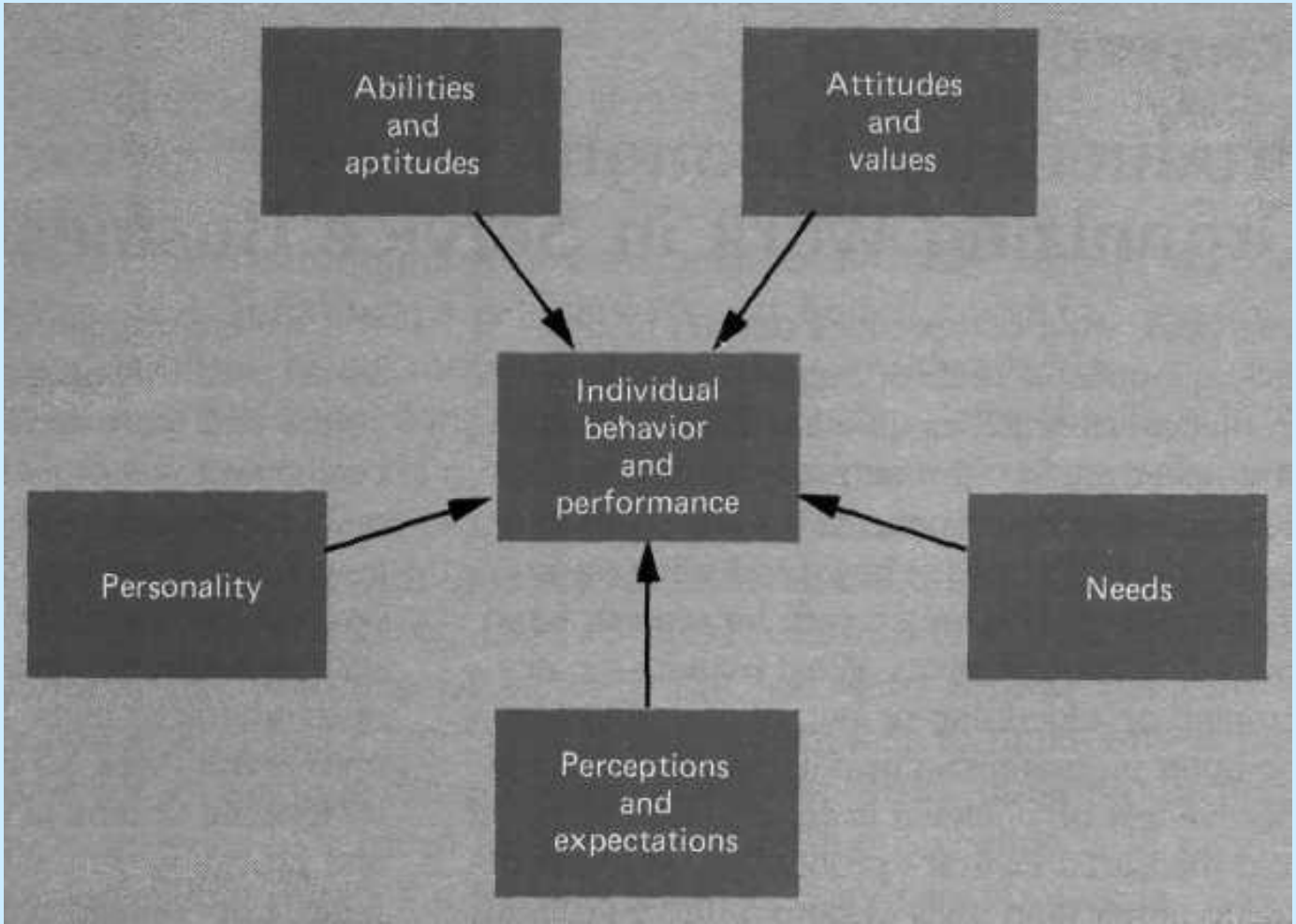
- In our course we often speak of organizations doing this, management doing that. But it is important to remain aware that "management," the "organization," and "subordinates" are groups of people. When a plant closes, some individual, not an abstract management, made the decision. When output is of low quality, it is not "workers" but several individuals who have not been motivated or taught to do the work correctly.

People

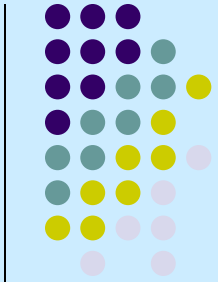
- If management—individual managers—fails to recognize that each employee is an individual with unique feelings and needs, the organization's ability to attain objectives will be seriously impaired. Management, after all, attains objectives through other people. People, therefore, are a central factor in any model of management.

Person characteristics

How a person behaves in general and at work results from a complex combination of individual and environmental characteristics . In no two people do these characteristics take the identical form.

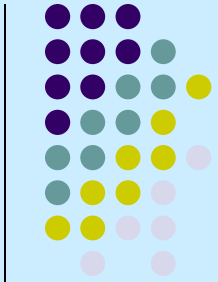


Person characteristics: Abilities



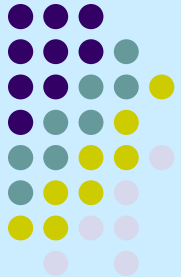
- Perhaps the most obvious way in which people differ is in ability, **the capability to perform a specific activity**. Some people have more ability than others to perform such tasks as typing, computer programming, conducting meetings, preparing written reports, supervising others, planning or just about any other type of work the organization needs performed to attain its objectives.
- **These differences in ability are partly the result of inherited characteristics such as intelligence and physical stature. But usually, especially at work, ability is learned.**

Person characteristics: Usage of Abilities



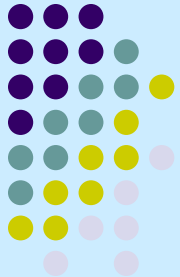
- Organizations almost always attempt to take advantage of differences in ability when deciding who is to perform a task. Selecting the person best able to perform a job is a logical means of increasing the potential gains of specialization. One would assume that the person with the greatest ability should perform a given task most effectively. However, in practice it is common for other factors that influence behavior to cause a person not to perform in accordance with his or her true ability.

Person characteristics: Changing of Abilities



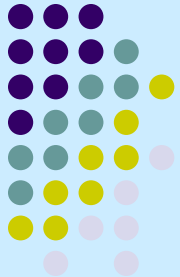
- This is one reason why many organizations prefer to increase a person's ability to perform a specific task through training whenever possible, if that person's other characteristics seem well suited to the new work. Ability is perhaps the easiest individual characteristic to change.

Person characteristics: Aptitude



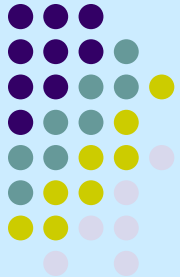
- **Aptitude is a person's potential capacity to do something**. The result of either or both inborn qualities and learned experience, aptitude can be thought of as latent talent in a specific area. The influence of aptitude is often most apparent in areas such as music and sports. *For example, outstanding athletes often can play a new sport well almost immediately*.

Person characteristics: Aptitude



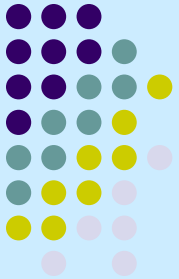
An aptitude in a specific area usually facilitates acquiring an ability to perform effectively in that area. Aptitudes become important to management when selecting people for training. Unless the manager correctly assesses a person's aptitude for the work, the time and expense of training may be wasted.

Person characteristics: Needs



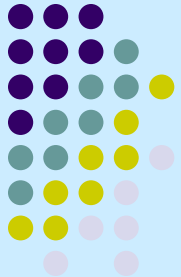
- A need is an internal state of psychological or physiological deficiency.
- The most basic needs are physiological (food, water, and shelter) and the psychological need for affiliation (the companionship of other people). Many people also seem to have needs for power and achievement, but these may not surface until more basic ones are met. **When an active need is not satisfied, a person will behave in a way that will lead to satisfaction**, even though the individual may not even be consciously aware of the need.

Person characteristics: Expectations



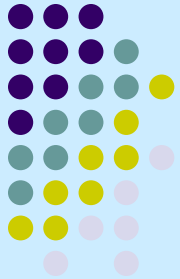
- **Based on past experience and an assessment of the present situation, people form expectations about the probable outcome of a given behavior. Consciously or unconsciously, they decide how likely or unlikely it is that something will occur. These expectations exert a strong effect on present behavior.**

Person characteristics: Expectations (***example)***



- *For example, if a salesperson expects that making nine more sales calls a week will increase sales by 15 percent and thereby lead to a bonus, he or she will probably make those calls. However, if the salesperson believes that the product is so good or bad that a sales call will not change the outcome, or if there is no reward associated with higher sales, this expectation may lead to the behavior of taking the afternoon off*

Person characteristics: Perceptions

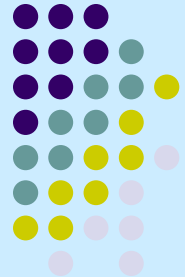


- Perception is the mental awareness of a stimulus received by the senses. Perception is critical because it determines "reality" for the individual. **People respond not to what actually is occurring in their environment, but to what they perceive to be occurring**.
- **No two people perceive anything in exactly the same way.**

Person characteristics: Perceptions

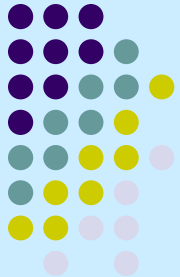
- Perception determines whether a person senses a need and what his or her expectations are in a given situation. What is "really" happening affects behavior only to the degree it is perceived. Thus, if management wants people to behave in ways that will lead to attainment of objectives, it cannot just create an environment encouraging this. Management must also communicate effectively to people that this environment exists and that desired behavior will in fact lead to satisfaction of individual needs. Unless workers perceive and believe in the "reality" management creates, they will not behave accordingly

Person characteristics: **Attitudes**



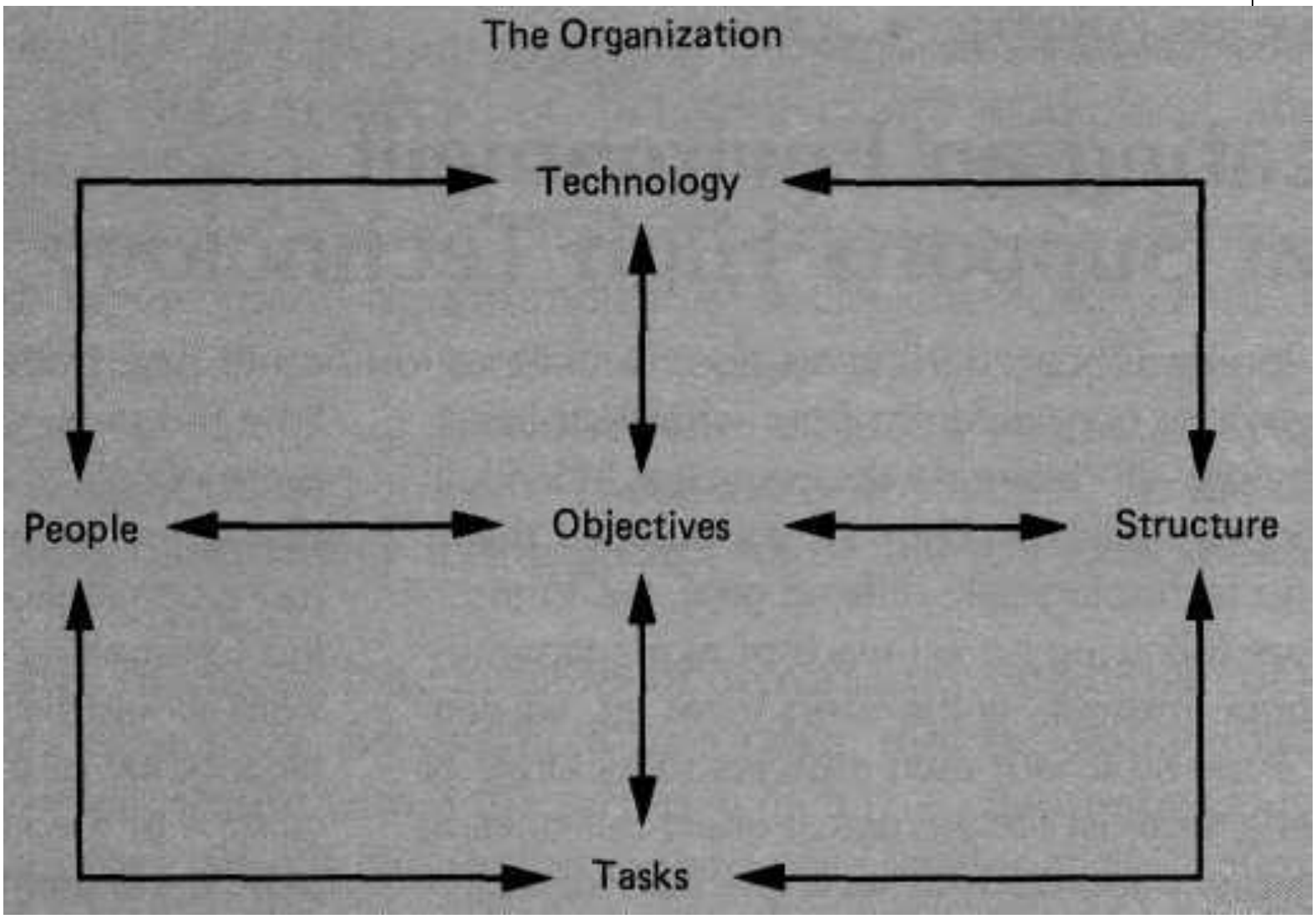
Daryl Bern defines attitudes as "likes and dislikes . . . our aversions toward and affinities to objects, persons, groups, or any other identifiable aspect of our environment."

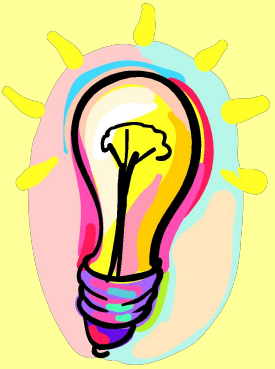
Person characteristics: **Values**



- Values are general beliefs about what is good, bad, or neutral in life. Values, like many individual characteristics, are learned. They are taught in schools and religious institutions and by parents and are reinforced by other social contacts and even by entertainment media.

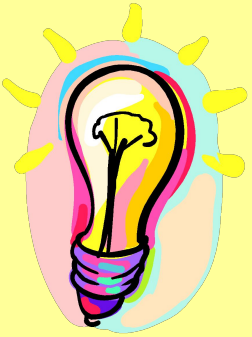
Interrelatedness of internal variables





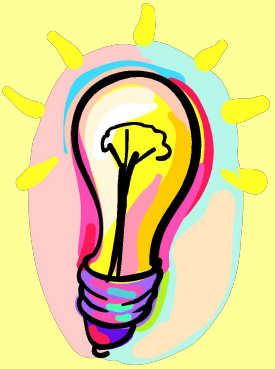
SUMMARY

- 1.The major variables of the internal environment are structure, objectives, tasks, technology, and people.
- 2. All but the smallest organizations are divided horizontally into specialized functional areas and vertically to create levels of management. The structure of an organization is the logical relationship of functional areas and management levels used to attain objectives effectively.



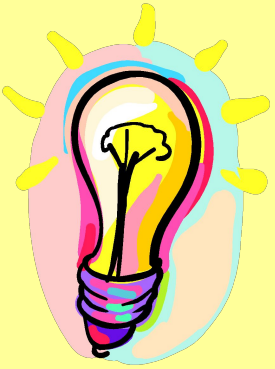
SUMMARY

- 3. Objectives are specific end states or desired results the members of the organization wish to attain by working together. Establishing and communicating objectives is a powerful device for coordinating work divided among specialized groups, provided the objectives of subunits are coordinated with those of the organization as a whole.
- 4. A task is a job or piece of work assigned to be completed in a specified manner within a specified time period. Tasks may be classified as working with things, with people, or with information.



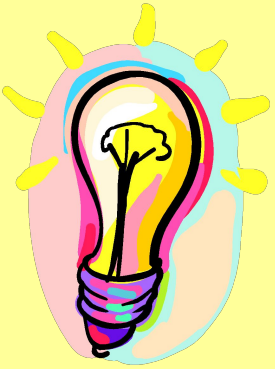
SUMMARY

- 5. Technology is any means by which inputs are converted to outputs, including machinery, tools, skills, and knowledge. The potential productivity of specialized division of labor was greatly increased by the technological innovations of standardization and the moving assembly line.



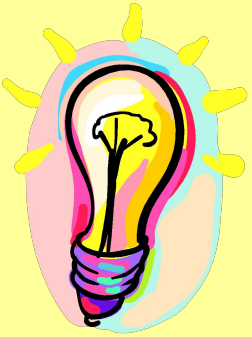
SUMMARY

- 6. According to Woodward, small-batch or unit technology is custom production. In mass-production technology a large quantity of essentially identical products is made. Process production uses automated equipment to produce large quantities of identical output.



SUMMARY

- 7. According to Thompson, long-linked technology is characterized by a series of interdependent tasks that must be performed in sequence. Mediating technology involves a process that brings together groups that wish to be interdependent. Intensive technology applies specific skills, techniques, or services to make a specific change in a specific input.



SUMMARY

- 8. Managers are concerned with the behavior of people as individuals, in groups, and as leaders. The aspects of individual behavior most significant to managing are abilities, aptitudes, attitudes, needs, values, expectations, and perception.
- 9. All the internal variables are interrelated. A change in one therefore affects all others to some degree. Improving one variable, such as technology, may not improve productivity if the change has a negative effect on another variable, such as people.