Management Support System

Management Role in Decision Making Process

Course Code: CIS 414

Course Leader: Minhaj Hosen

What is management?

- Every organization needs to be managed by highly knowledgeable and experienced managers. Management is a process by which an organization can achieve its goals by using its resources.
- So, what are the resources of management?

Role of management

Lets

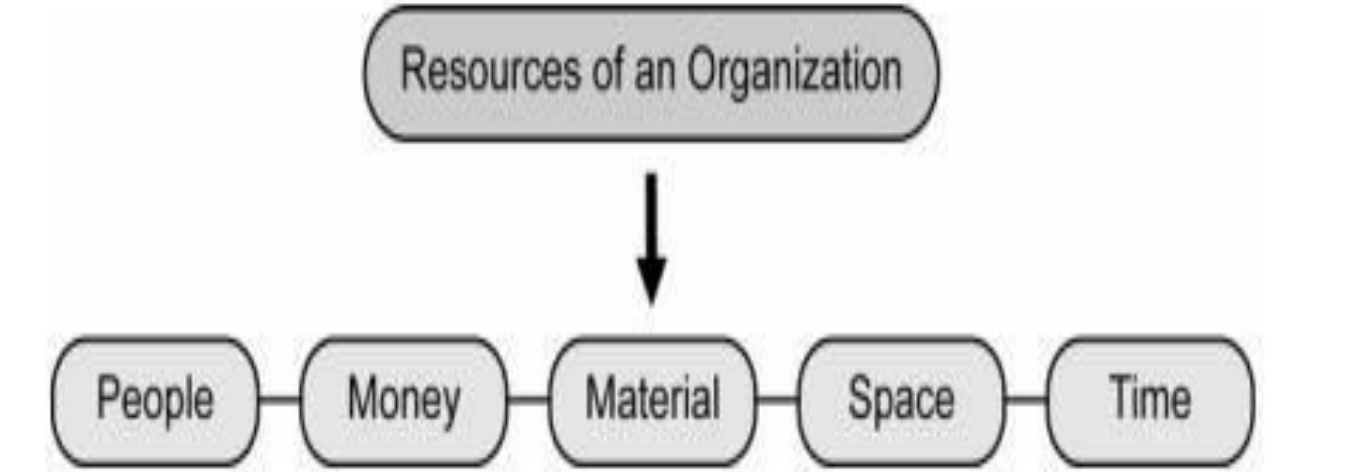

Figure 10.1: Resources of Management

Productivity measurement of manager

- A manager's success is measured by an increase in the productivity. Productivity is normally measured as the ratio between input, the resources available to the manager and output, that is, the attainment of the goals.

We can put simply say,

Productivity=Output/Input

In order to enhance a manager's productivity, a number of information technology support systems have been developed. One of them is Management Support System.

Role of a manager

Role of a manager in an organisation depends on his position in the organisation, the size of the organisation and the policy of the organisation.

In general, three basic roles of a manager are:

1. **Interpersonal:** To lead the organisation;

2. **Informational:** To monitor and to disseminate information about the organisation;

3. **Decisional:** To decide issues related to the organisation.

Role of a manager

Henry Mintzberg has subdivided the three roles into 10

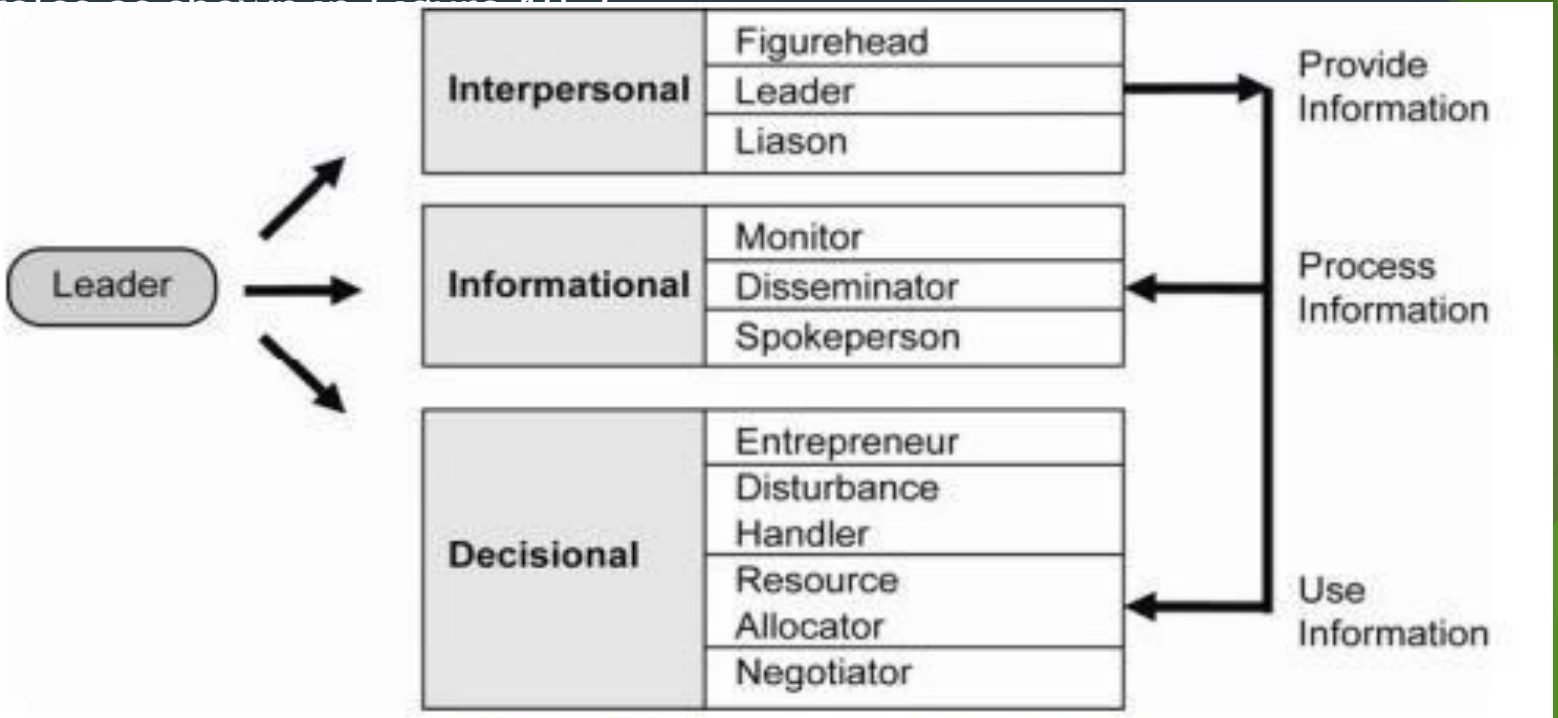

Figure 10.2: Ten roles according to Henry Mintzberg

Success of a manager

- From the previous slide,

we can say that a manager has to make decisions all the time.

The success of an organisation depends on the ability of the manager to make the **right** decision at the right time.

Decision tree

- In general, a decisions involves making a choice between two or more alternatives. Decision making process is done by going through the decision tree as shown in Figure 10.3.

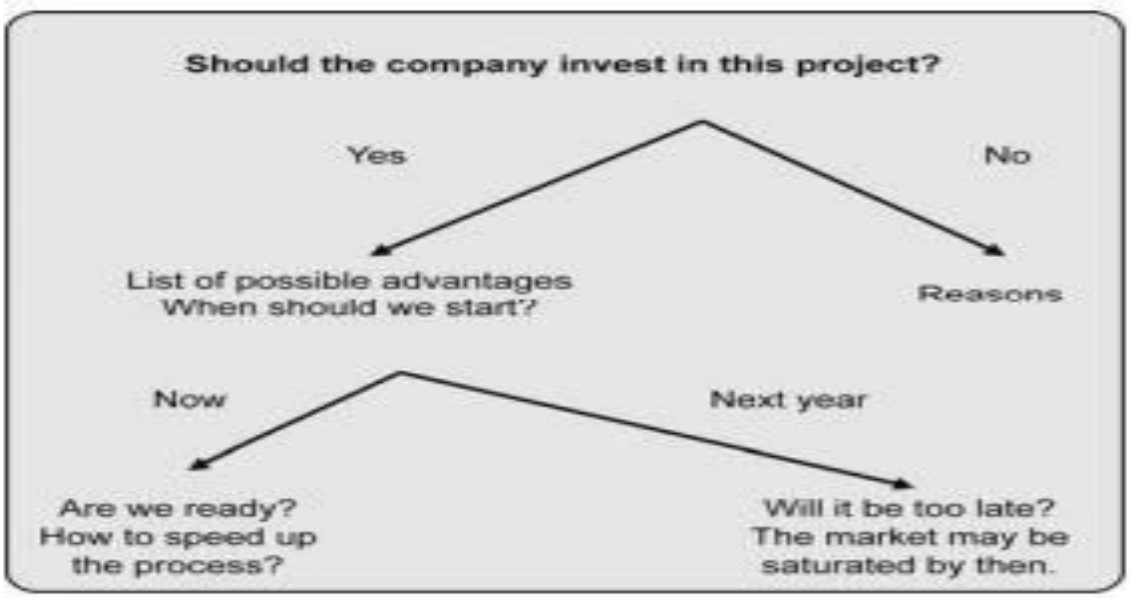

Figure 10.3: Decision Tree

Decision tree

- Decision tree provides a very convenient method for decision making.
- In fact, by giving certain values, the decision making process can be automated.
  This is the approach that is used in making decision in games.

Decision tree

- Consider for example a game of nim. This game involves two players in which players take turns
  removing objects from distinct heaps. On each turn, a player must remove at least one object, and may remove any number of objects
  provided they all come from the same heap. For example, consider a game withthree heaps A, B and C.

Decision tree

Sizes of heaps A B C	Moves
3 4 5	Player1 take 2 from A
1 4 5	Player2 take 3 from C
1 4 2	Player1 take 1 from B
1 3 2	Player2 take 1 from B
1 2 2	Player1 take entire A heap leaving two 2's.
0 2 2	Player2 take 1 from B
0 1 2	Player1 take 1 from C leaving two 1's.
0 1 1	Player2 take 1 from B
0 0 1	Player1 take entire C heap and win.

Decision tree

This game can be represented by using a decision tree (or normally called a game
tree). By using appropriate evaluation function at each node of the tree, a winning strategy can be formulated.

However, in real life problem, there are a lot of problems that cannot be resolved
by using decision tree.

Problems in Decision tree

Some of the problems are:

- A large number of choices: For example, to select a new employee from100 applicants.
- No clear guidelines in making the selection. In most cases, managers have to use their own discretion. For example, to select the cover for a magazine from five choices.

Problems in Decision tree

Some of the problems are:

- A large number of choices: For example, to select a new employee from100 applicants.
- No clear guidelines in making the selection. In most cases, managers have to use their own discretion. For example, to select the cover for a magazine from five choices.

Decision making process

A more appropriate model for decision making process was proposed by Simon.
In his model, the process of decision making involves FOUR phases:

(a) Examine the situation to identify and define the problem to be solved.
(b)Construct a model to simplify the problem;
(c) Based on the model constructed, a decision is made; and
(d) Implement the decision.

Decision making process

The most important part in decision making process is to construct the right model.

The aim of the model is to simplify the problem so that decision can be made. To do this:

- Make assumptions about the problem
- Identifying relevant variables involved
- Express relationship between these variables
- Validated to ensure that it does accurately represent the problem to be solved.

Decision making process

All models are composed of **Three** basic components: decision variables, uncontrollable variables and results as shown in Figure 10.4.

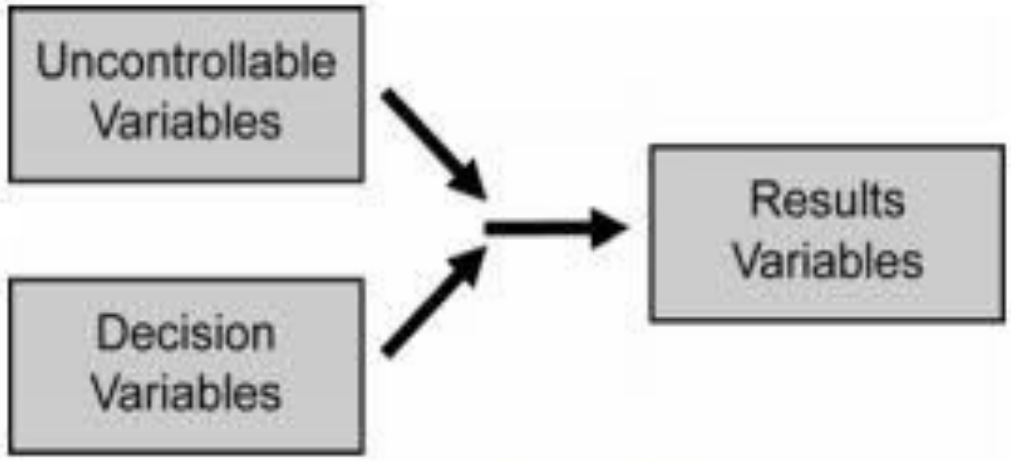

Figure 10.4: Variables in Modelling

Variables in modeling

- Decision variables allow decision makers to consider various alternatives.
- The result of selecting a particular alternative will be reflected in the result variables.
- The aim of the model is to enable decision makers to find the best values for these variables.

In any decision making situation that affect the result variables but not within the control of decision makers. **For example**, the price of utilities and tax regulation.

Reasons of using model

- The use of a model allows us to do simulation in order to see the effect of changing the value of certain variables.
- This type of simulation is called **“what-if analysis”**.
- The aim of **“what-if analysis”** is to find out what will happen if the value of certain variables are changed.