DARBHANGA COLLEGE OF ENGINEERING
DARBHANGA

PRINCIPLES OF MANAGEMENT AND INDUSTRIAL RELATIONS (SEM–VIII:EE)

Lecture 4

DECISION MAKING

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Decision Making

✓This is the process of choosing a specific procedure or course of action from among several possible alternatives.
✓Judgment is important in decision making.
✓Can be determined by non-quantitative means, such as intuition, facts, experiences, and opinions.
✓Can also be determined by quantitative means such as operations research, linear programming, simulation, PERT, etc.

Other Techniques:

•**Marginal Analysis**
-Used to figure out how much more output will result if one more variable worker is added while other factors are being held constant.

•**Financial Analysis**
-Used for estimating the profitability of an investment, calculation the payback period and analyzing cash inflows and outflows.

•**Break-Even Analysis**
- Total revenue equals total cost and there is no profit.

Decision Making (other techniques)

•**Ratio Analysis**

-An accounting tool used for the interpretation of accounting information. Basic financial ratios compare costs and revenue for a particular period:

Current assets	=	$\frac{\text{Current Assets}}{\text{Current liabilities}}$
Debt to equity	=	$\frac{\text{Total debt}}{\text{Equity}}$
Inventory turnover	=	$\frac{\text{Sale}}{\text{Inventory}}$
Net operating margin	=	$\frac{\text{Net operating profit}}{\text{Sales}}$
Return on capital	=	$\frac{\text{Net profit after taxes}}{\text{Net worth}}$

•**Operation Research Technique**

-Defined by Miller and Starr as “Applied Decision Theory”, which seeks scientific, logical, or mathematical means. Observation, analysis, hypothesis formulation, and experimentation.

1. Queuing or Waiting-Line Method

- Balancing waiting lines and services provided. When people in queues are not going to be provided quick service, they may go elsewhere.

Decision Making (other techniques)

2. Linear Programming

-Used in involving the allocation of resources or limited resources to reach a particular objective such as least cost, highest margin and so on.

3. Game Theory

-Involves selecting the best strategy, taking into consideration one's actions and the action of one's competitors. When one individual wins, the other losses.

4. Simulation

-Involves the building of a model that represents a real or an existing system in evaluating and selecting the best one.

5. Decision Tree

-Through a graphic illustration, alternative solutions can be identified

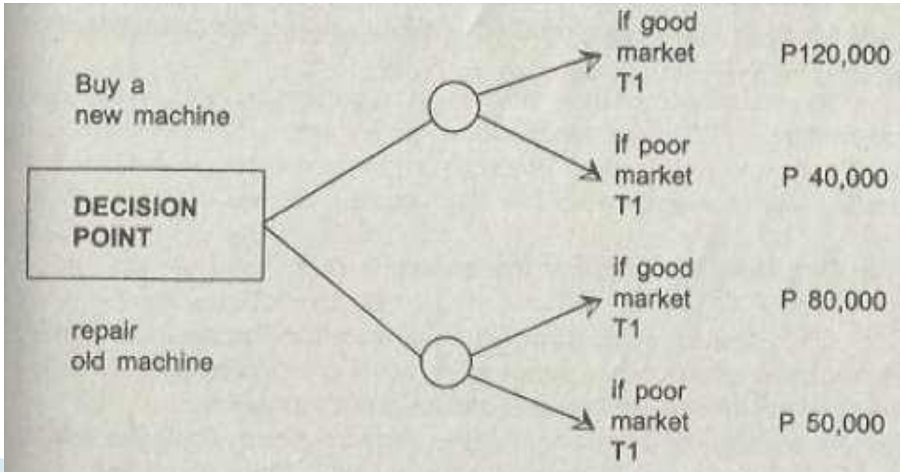


Figure 3.4 Decision Tree

The Decision Making Environment

Most companies have three levels of management:

✓ **Strategic-Level**

-Determine long-term strategies and set corporate objectives and policy consistent with these objectives.

✓ **Tactical-Level**

-Charged with the responsibility of implementing the objectives and policies set fort at the strategic level of management.

✓**Operational-Level**

-Complete specific tasks as directed by tactical-level managers.

As a rule of thumb, the higher the decision maker is in the organization, the more complex and difficult he has to make. Also, the number of people affected by the decision increases at the level of the decision maker.

The Decision Making Process

Steps in Decision Making Process:

1. Set Objectives

- Decision maker sets the objectives for the decision.

2. Identify Constraints

- Constraints in some way limit the decision maker's choices. Defined by legal, economic, or political considerations.

3. Identify Alternatives

- Making a choice between two or more alternatives. Most cases alternatives are chosen as solution to the problem.

4. Gather Appropriate Information

- Decision maker gathers information that may provide insight as to which alternative to choose.

5. Evaluate Alternatives

- Decision maker evaluates each alternative.

6.Choose the Most Acceptable Alternative

- Examines the ranking of alternatives and selects

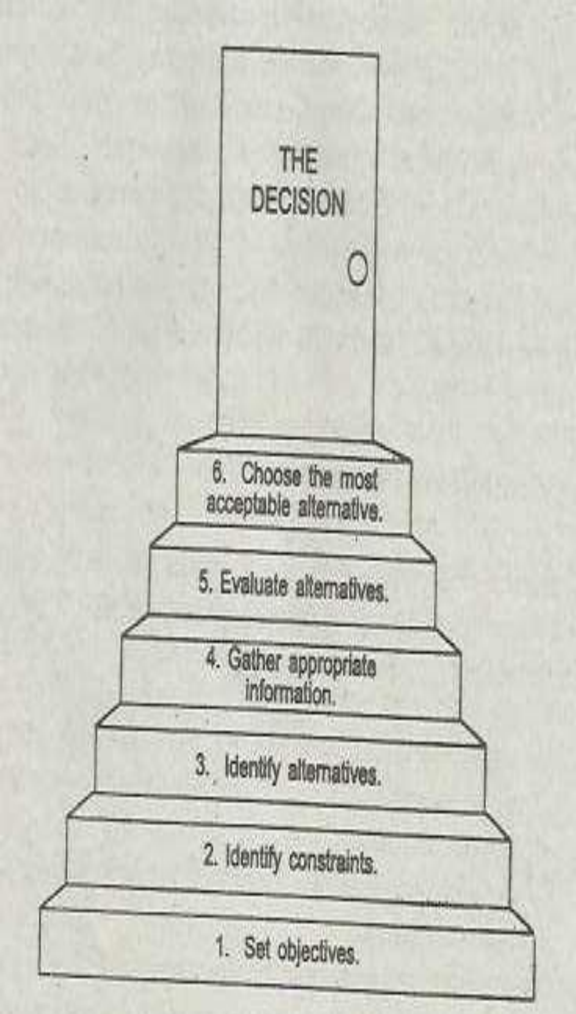


Figure 3.5 Steps in the decision making process

Planning Techniques and Tools

1. Forecasting

- An attempt to foretell or predict future trends, events or conditions from known data and to prepare for the expected changes in business or industry.
- Many decisions are based on estimates of what is likely to happen in the future.

Methods in Forecasting

- **Survey Method** – involves probing the customer or respondents through questionnaires or interviews.
- **Trent Method or Time-Series Analysis** – future predicted using past data or information.
- **Econometric Models** – Based on statistical methods of analyzing data and making predictions.

Planning Techniques and Tools

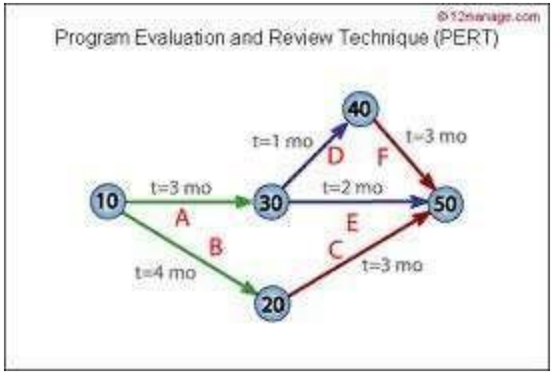
3. Scheduling

-Term used for planning time for various activities in an organization.

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

-Two basic concepts: **Events** – identifiable accomplishments that occurs at a definite point in time. **Activities** – the work required to complete the event.

-Three Types of Timing: Optimistic Time (minimum time if could take), Pessimistic Time (maximum), and the most probable time. An a v computed.



$$\text{Expected time} = \frac{4+8+6}{3} = \frac{18}{3} = 6 \text{ days}$$

$$(A) \xrightarrow{6 \text{ days}} (B)$$

4. Management by Objectives

- The boss and the subordinates function as a team in setting objectives and accomplishing those objectives through cooperation.

Why Managers Fail in Planning

1. **Lack of Real Commitment in Planning** – lack real commitment by managers from the top level down to the lowest supervisor.
2. **Interchanging Planning Studies with Plans** – nothing is planned unless it includes a decision of some kind.
3. **Failure to Develop and Implement Sound Strategies** – without sound strategy, plans go in the wrong direction. Unless implemented by action plan, it becomes only a statement of wishes and hopes.
4. **Lack of Meaningful Objectives and Goals** – clear and attainable?
5. **Tendency to Underestimate the Importance of Planning Premises** – plans and decisions should be consistent and implemented.

Why Managers Fail in Planning

6. **Failure to See the Scope of Plans** – neglecting other types of plans
7. **Failure to See Planning as a Rational Process** – requires clear goals, knowledge of alternatives, ability to analyze alternatives to come up with the best possible answer.
8. **Too Much Reliance on Experience** – what happened in the past may not likely fit a future situation.
9. **Failure to Use the Principle of Limiting Factor** – anticipating the worst, most problem situation
10. **Lack of Top Management Support** – top management does not support, believe and encourage
11. **Lack of Clear Delegation** – do not know what the jobs are, how their jobs relate to others, no clear authority to make decisions.
12. **Lack of Adequate Control Techniques and Information** – know[illegible] how well they are doing