Institute of Engineering
JIWAJI UNIVERSITY

Presentation On
TECHNIQUES OF DECISION MAKING
UNIT-II BE 8sem
(EL-8103) Electronics

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CONTENT

- MARGINAL ANALYSIS
- CO-EFFECTIVE ANALYSIS
- LINEAR PROGRAMMING
- OPERATION RESEARCH

MARGINAL ANALYSIS

- This technique is also known as ‘marginal costing’.
- In this technique the additional revenues,
- From additional costs are compared.

MARGINAL ANALYSIS

- The profits are considered maximum at the point
- Where marginal revenues and marginal costs are equal.
- This technique can also be used in comparing factors other than costs and revenues.

EXAMPLE

If we try to find out the optimum output of a machine, we have to vary inputs against output until the additional inputs equal the additional output. This will be the point of maximum efficiency of the machine.

EXAMPLE

Modern analysis is the ‘Break-Even Point’ (BEP) which tells the management the point of production where there is no profit and no loss.

CO-EFFECTIVENESS ANALYSIS

- This analysis may be used for choosing among alternatives
- To identify a preferred choice when objectives are far less specific
- Than those expressed by such clear quantities as sales, costs or profits.

CO-EFFECTIVENESS ANALYSIS

"Cost models may be developed do show cost estimates for each alternative and its effectiveness. Social objective may be to reduce pollution of air and water which lacks precision. Further, he has emphasized for synthesizing model i.e., combining these results, may be made to show the relationships of costs and effectiveness for each alternative."

–Koontz, O'Donnell and Weihrich

LINEAR PROGRAMMING

- It is a technique applicable in areas
- Like production planning, transportation, warehouse location
- And utilization of production and warehousing facilities
- At an overall minimum cost.

LINEAR PROGRAMMING

- It is based on the assumption that there exists a linear relationship

- Between variables and that the limits of variations can be ascertained.

LINEAR PROGRAMMING

- It is a method used for determining
- The optimum combination of limited resources,
- To achieve a given objective.

LINEAR PROGRAMMING

- It involves maximization or maximization of a linear function
- Of various primary variables known as objective function subject to a set
- Of some real or assumed restrictions known as constraints.

OPERATIONS RESEARCH

- This is a scientific method of analysis of decision problems.

- To provide the executive the needed quantitative information in making these decisions.

OPERATIONS RESEARCH

- The important purpose of this is to provide the managers
- With scientific basis for solving organizational problems
- Involving the interaction of components of the organization.

OPERATIONS RESEARCH

- To replace the process by
- An analytic, objective & quantitative basis based on information
- Supplied by the system in operation and possibly without disturbing the operation.

OPERATIONS RESEARCH

- This is widely used in modern business organizations.

- Example-

(a) Inventory models are used to control the level of inventory,

OPERATIONS RESEARCH

(b) Linear Programming for allocation of work among individuals in the organization.

OPERATIONS RESEARCH

- Further, some theories have also been propounded by eminent writers

- To analyze the problems and to take decisions.

OPERATIONS RESEARCH

- Sequencing theory helps the management,
- To determine the sequence of particular operations.
- Queuing theory, Games theory, Reliability theory and Marketing theory.

THANK YOU