MODULE 4

FEASIBILITY ANALYSIS

WORKED EXAMPLES

4.1   What is the difference between main goals and sub-goals? Illustrate with an example.
Main goal is based on a primary objective and sub-goals are secondary or subsidiary which are related to the main objective.

For example, the main goal and sub-goals of an inventory control system may be as follows:

Main goal: Reduce total inventory cost by 10%
Sub-goals: (i) Find out items which are 50% above buffer level to take
                      appropriate action.
                  (ii)Find out items whose cost is 50% above average cost for closer
                        control.

4.2   Is it essential to use computers in all information systems?
No. Better systematization may sometimes be adequate to meet goals. However with the reduction in the cost of computers most organizations use computers.

4.3   Distinguish between technical, operational, and economic feasibility.
A solution is technically feasible if technology is available to implement it. It is operationally feasible if it can fit in within the existing organization with only small changes. It is economically feasible if the investment made leads to adequate returns. A solution which requires, say, a large mainframe computer available in the market is technically feasible but may not be economically feasible due to high cost of the computer relative to expected benefits. It may not be operationally feasible due to lack of trained people to program the computer.

4.4   Give an example of a solution which is technically feasible, but not operationally feasible.
It is technically feasible to computerize services in a bank by installing PCs with clerks who can be trained to operate it. It is operationally not feasible in certain banks due to agreement between management and union which do not allow use of computers for certain customer services.

4.5 Is it essential that an operationally feasible solution should be technically feasible? Discuss with examples.

No. A computerized enquiry system where enquiries are made using a telephone and answers are automatically spoken out is operationally feasible. It is not technically feasible due to non-availability of speaker independent natural speech recognition technology.

4.6 Is it essential to have tangible benefits to justify an information system? If your answer is no, justify your answer by giving an example.

No. A ticket reservation system in railways has not much tangible benefits. However, intangible benefits such as customer satisfaction, and ease of checking daily cash collection are sufficient reasons to implement the system.

4.7 A project costs Rs. 2 lakhs and the net benefits are Rs. 50,000 (1st year), Rs. 80,000 (2nd year), Rs. 90,000 (3rd year), Rs. 70,000 (4th year), Rs. 50,000 (5th year) and Rs. 30,000 (6th year). Assuming 10% interest rate, would you proceed with your project if your criterion is cost-benefit?

Year	Cost	Benefit	Current value	Cumulative benefit
0	200,000	–	–	–
1	–	50,000	45,454	45,454
2	–	80,000	66,116	111,570
3	–	90,000	67,618	179,188
4	–	70,000	47,811	226,999

As payback period is 4 years, it is decided to proceed with the project.

4.8 A manager states the following as goals of a production planning system:
1. Reduce stocks of semi-finished products.
2. Provide better information for the production planning
3. Prevent overproduction.
How would you quantify the goals? How would you obtain sub-goals and quantify them if appropriate?

(i) *Goal:* Reduce stocks of semi-finished products by 10%.
   Sub-goal: Classify semi-finished products as due to non-availability of part, non-availability of machine, non-availability of tool.
(ii) *Goal:* Give a table giving requirement of each product.
   Sub-goal: Prepare list of tools needed and when they will be needed. Prepare maintenance schedules of machines.
(ii) *Goal:* Ensure that production is not more than 5% of estimated demand of each item.

4.9 A university administrator calls a systems analyst to improve the administration of sponsored research projects. The main problems are delay in obtaining latest financial position to project co-ordinators, reconciliation of advances given to co-ordinators, prompt demands not sent to sponsors to collect promised grants and lack of information to answer following questions:

Which areas of research get maximum grants?
Which agency aids which type of projects?
What trends can be seen in the nature of grants?
Now:
  1. Classify the above problems into missing functions, unsatisfactory performance and excessive cost of operation.
  2. How would you set the goals to meet the deficiencies?
  3. How would you quantify them?

1.

  (i) *Missing Function:* Analysis of types of grants and grant-giving agencies.
 (ii) *Unsatisfactory Performance:* Delay in obtaining financial statements; non-reconciliation of advances.
(iii) *Excessive cost:* Loss due to delay in receipt of grants (loans may have to be taken to meet expenses).

2.

  (i) *Goals to improve performance*
    — Ensure financial statements are sent each month.
    — Ensure reminders on advances are sent each month.
 (ii) *Goals to reduce cost*
    — Bring to the attention of accounts officer grants overdue by 10 days.
    — Send reminder ad pre-receipt 10 days before grant is due.
(iii) *Goals to incorporate missing functions*
    — Codify research areas and granting agencies.
    — Introduce uniform formats to classify grants.
    — Create a database of all possible granting agencies and their areas of research.

3. All goals are quantified in 2.

  Sub-goals
    — Send list of periodicals received to interested readers within 2 days of arrival of periodicals.
    — Send for binding loose periodicals within 4 weeks of arrival of last issue.
 (ii) A Fully manual using cardex system.
    B Using a PC and a periodicals management information system.
    C Using the central computing in the university and a remote terminal system in the library dedicated to periodicals management.

4.10 **What operational, tactical and strategic information should be provided by the mess billing system mentioned in the text (case study)?**

The information that will be provided to management by the mess billing system is:

Operational
– Each student's bill details.
– Details of inventory held.
– Details of issues to stores.
– Details of trips to town.
– Details of expenses each day.

Tactical
– Number of days taken to despatch bills after end of month.
– Variation of daily rate from month to month.
– Bills to students unpaid for 10 days after issue.
– Bills from vendors unpaid for 5 days.
– Inventory level of an item if 10% above average
– Issues to cooks if 5% above normal.
– Nutrition values of menus.

Strategic
– Daily rate seasonal trends.
– Extras/rebates and trends to enable better inventory planning.
Information on menu preferences.