Feasibility Considerations

1. Economic Feasibility : Economic analysis is the most frequently used method for evaluating the effectiveness of a candidate system. Most commonly known as cost and benefit analysis, the procedure is to determine the benefits and savings that are expected from a candidate system and compare them with cost. If benefits outweight costs, then the decision is made to design and implement the system. Otherwise, further justification or alternations in the proposed system will have to be made if it is to have a chance of being approved.

2. Schedule Feasibility : It involves questions such as how much time is available to build the new system, when it can be built, whether it interferes with normal business operations, type and amount of resources, required, dependencies etc. contingency and mitigation plans should also be stated here so that if the project does over run the company is ready for this eventually.

3. Cultural Feasibility : In this stage, the project's alternatives are evaluated for their impact on the local and general culture. For *e.g.,* environmental factors needs to be considered.

4. Technical Feasibility : Technical feasibility centres around the existing computer system and to what extent it can support the proposed addition. For *e.g.,* if the current computer is operating at 80 percent capacity an arbitrary ceiling then running application could overload the system or require additional hardware.

5. Marketing Feasibility : This will include analysis of single and multi-dimensional market forces that could affect the commercial, along with the company that is carrying out the feasibility, achieving more and more reputation as they have carried out safety checks which allow the system to run appropriately.

6. Behavioural Feasibility : People are inherently resistant to change and computers have been known to facilitate change. An estimate should be made of how strong a reaction the user staff is likely to have toward the development of a computer system. It is a common knowledge that computer installations have something to do with turnover, transfer, retraining and changes in the employee job status.

✓ Cost and Benefit Analysis

Data analysis is a pre-requisite to cost/benefit analysis. System investigation and data gathering lead to an assessment of current findings. Our interest is to determine how efficiently certain steps are performed, how they contribute to achieving the intended goals, and the cost of making the improvements.

In developing cost estimates for a system, we need to consider several cost elements.

(a) Facility Costs : Facility costs are expenses incurred in the preparation of the physical site where the application or the computer will be in operation.

It includes wiring, flooring, lighting and air conditioning. These costs are treated as one time costs and are incoporated into the overall cost estimate of the candidate system.

(b) Hardware Costs : Hardware costs relate to the actual purchase or lease of the computer and peripherals (For *e.g.*, printer, disk drive, tape unit). The best way to control for this cost is to treat it as an operating cost.

(c) Supply Cost : Supply cost are the variable cost that increase with the increased use of the paper, ribbons, disks and the light. They should be estimated and included in the overall cost of the system.

(d) Operating Costs : Operating costs includes all costs associated with the day to day operations of the system, the amount depends on the number of shifts, the nature of the applications, and the caliber of the operating staff.

There are various ways to cover operating costs.

(i) One way is to treat operating costs as overhead.

(ii) Another way is to charge each authorized user for the amount of processing they request from the system.

(e) Training Costs : If the computer personnel or end users have to be trained, the training courses may be charged out on a flat fee per site, a student fee or an hourly fee.

(f) Personnel Costs : Personnel costs include EDP staff salaries and benefits as well as pay for those involved in developing the system. Costs incurred during the development of a system are one time costs and are labelled developmental costs.

Design is highly creative phase in the system development, where the designer plans "how" a system should be produced in order to make it functional, reliable and reasonably easy to understand; modify and maintain. Requirement analysis tells "what" of the system while designing phase tells "how" of the system. The goal of the design phase is to take the SRS document as input and to produce the output as a final product. Understandability of a design is a major factor which is used to evaluate the goodness of a design.

Since a design that is easily understandable is also easy to maintain and change. Modular design is one of the fundamental principles of a good design. Decomposition of a problem into modules facilitates taking advantages of divide and conquer principle.

The term design describes a final system and the process by which it is developed. The major steps in design process are as follows :

(a) The first step is to determine how the output is to be produced and in which format. Samples of the output are also presented.

(b) Secondly, input data and master files (database) have to be designed to meet the requirements of the proposed output.

(c) Thirdly, the operational (processing) phases are handled through program construction and testing, included a list of programs needed to meet the system's objectievs and complete documentation.

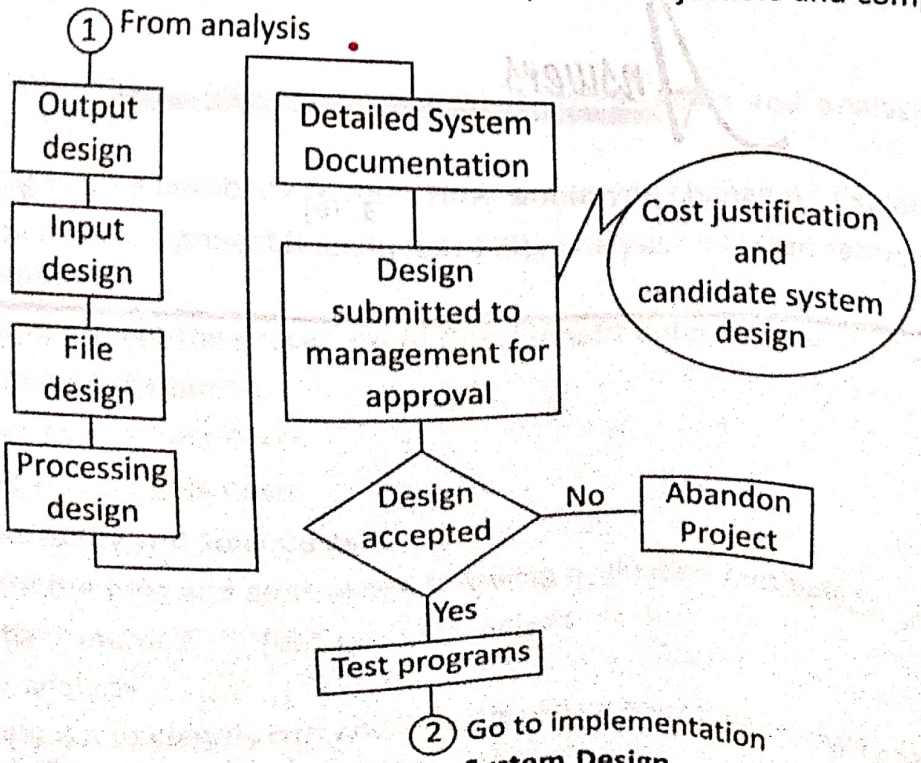

Fig. Steps in System Design

(e) To facilitate managerial planning and

✔ Local and Physical Design

System design goes through two phases of development :

(a) Logical Design

(b) Physical Design

A data flow diagram shows the logical flow fo the sysetm and defines the boundaries of the system. For a candidate system, it describes the inputs, outputs, databases and procedures, all in a formal that meets the user's requirements. When analysts prepare the logical system design, they specify the user needs at a level of detail that virtually determines the information flow into and out of the system and the required data resources.

The logical design covers the following :

(a) Reviews the current physical system.

(b) Prepares output specifications.

(c) Prepares input specifications.

(d) Prepare edit, security and control specifications.

(e) Review benefits, costs, target dates and system constraints.

(f) Specify the implementation plan.

Physical design produces the working system by defining the design specifications that tells programmers exactly what the candidate system must do. In turn, the programmer writes the necessary programmes or modifies the software package that accepts input from the user performs the necessary calculations through the existing file or database, produce the report on a hardcopy or displays it on a screen and maintains an updated database at all times. Physical system design consists of following steps.