PROJECT MANAGEMENT, MB206 MBA, semester II, Topic Technical Feasibility-3

5. Design, Layout & Plant & Machinery

The feasibility study should broadly specify the recommended design of the processes and plant (giving essential assumptions and design calculations). It should also present a rough layout of various facilities and list out all the major equipment's needed, with key specifications and available source(s) of supply. Moreover, it should consider, and evaluate, alternative equipment's as well and given.

The importance of thoroughness of planning at this stage of the feasibility study can hardly be overemphasized. Many delays, cost overruns, and even failures of projects can be avoided provided the design and physical formulation of the project are based on a sufficiently deep analysis and have the support of the owner at the highest level. Otherwise, the project is likely to encounter midstream changes, with untoward consequences. There is a general impression that "minor" midstream changes would not pose much of a problem. This is not so. A project is a multi-task entity with complex linkages and interrelationships between its various constituents, and even "small" changes, which may result in certain made-to-order procured equipment's being rendered unsuitable and thus throw the project schedule and costs haywire.

The aim of all the efforts at this stage is to design a viable operating entity which not only works, but works harmoniously (and with minimum costs) in relation to the stipulated inputs and local environment. Apparent as well as latent and relatively infrequent factors having a bearing on the effectiveness of the project must therefore be identified and considered. Neglect of climatic and geographical aspects (e.g. monsoons, floods, snowstorms, dust-storms, heat/cold-waves, earthquakes, typhoons, etc.) at this stage can prove quite costly later on. It is equally important to ascertain and give due consideration to local industrial and safety standards.

6.Construction Process: This needs to be tackled in. the feasibility study in terms of its five aspects, First, the methodology to be followed - viz., capital intensive or otherwise and its feasibility under prevailing conditions. Second, whether the construction or installation is to be done in-house, or on a turnkey basis, or by

farming out a number of contracts for different work packages, and their feasibility. A recommendation may also be made whether any special agency(ies) should be engaged as a part of backup or contingency arrangements for critical activity(ies). Third, the determination of such construction equipment's, materials and other essential inputs (like cement, sand, steel, stores etc.) as are to be arranged by the owner, along with their alternatives, availability, source of supply

(local/foreign), lead-times, and infra-structural requirements (like uninterrupted supply of power, clean water, gas, steam, etc). Fourthly, the recommended sequence and time schedule of different activities in the form of a bar chart/ PERT network. Lastly, assessment of the financial implications of this phase based on the latest available unit costs and with provision for inflation and contingencies.

7. Inputs: These relate to the operation phase of the project, but need to be identified at this stage of the feasibility study to examine the technical feasibility of the proposed system(s). For this, classification of the inputs into following categories will be found useful.

- raw materials,
- processed materials,
- components & sub-assemblies,
- spares and wear & tear parts,
- water & steam,
- gas, fuels and electricity.

Next, their qualitative and quantitative requirements (including buffer stocks, where applicable), availability, feasibility alternatives and reliable sources of supply should be carefully ascertained and record. The problems involved in their storage and handling should be also assessed.

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