

Chapter one continued.....

THE PROJECT CYCLE

➤ To perform a project *planning and management* activity *effectively & efficiently* we should know

✓ The *natural sequence* of project.

❖ Projects of all type move from *conception* to *reality* .

❑ **The main features** of this process are:

➤ Information and data gathering and analysis, and

➤ Making decision on the basis of the results of the analysis.

The project cycle concept aims to emphasis two main points:

- Project development should *pass through a series of consecutive steps* to help ensure that projects are *well planned, properly appraised, adequately resources* and *efficiently implemented*; and that
- *Lessons learned during implementation* should be *feed back* into the planning process to improve the *design and implementation* of future initiatives.

❑ **A project cycle** is a sequence of events, which a project follows.

- ❖ These **events, stages or phases** can be divided into several equally valid ways, depending on the executing agency or parties involved.
- ❖ Some of **these stages** may overlap. There are various models that deal with the project cycle.

1. Lockyer's Four Phase Model

Lockyer describes a **four** phase model of the project process:

- **Conception** - assess the feasibility of the project
- **Development** - prepare the project plan
- **Realisation** - carry out the plan
- **Termination** - close the project

2. UNIDO PROJECT CYCLE

- A. The Pre-Investment Phase: *(Opportunity Study; Pre feasibility Study; Feasibility Study; Appraisal)*
- B. Investment Phase: *(Negotiation and Contracting; Engineering Design; Construction; Pre production marketing; Recruitment and Training; etc.)*
- C. Operational/Normalization Phase: *(Expansion and Innovation; Replacement and Rehabilitation; Commissioning and Start-up)*

A. **PRE-INVESTMENT PHASE:** The pre-investment phase includes project activities such as:

- Identification of investment opportunities that normally called **opportunity study**.
- Pre-feasibility study (Preliminary project selection and definition),
- Feasibility study (Project formulation), and
- Appraisal and Decision (Evaluation and investment decision), etc.

B. INVESTMENT PHASE

The investment phase includes project activities such as:

➤ ***Project and Engineering Design***: It comprises of

- ✓ Designs of buildings and other facilities that include ***time scheduling,***
- ✓ Site prospecting and probing,
- ✓ Preparation of blue prints,
- ✓ Detailed plant engineering and
- ✓ A final selection of technology and equipment.

- ***Negotiation and Contracting***: It includes definition of
- The ***legal obligations*** in respect to project financing,
- Acquisition of technology,
- Construction of building and services, and
- Supply of machinery and equipment for the operation phase

- ***Construction:*** It includes actual construction of building, installation of machinery and manpower.
- ✓ It involves site preparation, construction of building and other civil works together with the erection and installation of equipment in accordance with proper programming and scheduling.
- ***Recruitment and Training of Workers:*** It includes local and abroad recruitment and training of workers for the smooth running of operation.
- It should proceed simultaneously with the construction stage and it may prove relevant to the rapid growth of productivity and efficiency.

Commissioning and Start up: It requires *handover of the building to project* sponsor or promoter.

✓ ***Start up (delivery stage)*** is brief but technically critical span in project development.

- Its success indicates the ***effectiveness of the planning and execution*** of the project.

C. OPERATION PHASE: The operation phase includes project activities such as *expansion and innovation*, *replacement and rehabilitation*, and ***commissioning and start-up***.

The issues in the operational phase need to be considered both from ***long and short-term*** viewpoints.

i. The short-term view point relates to:

- Application of production
- Operation of Equipment
- Labour productivity and skill, etc

ii. The long-term view point relates to :

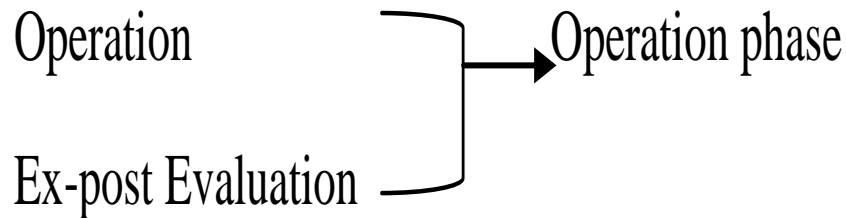
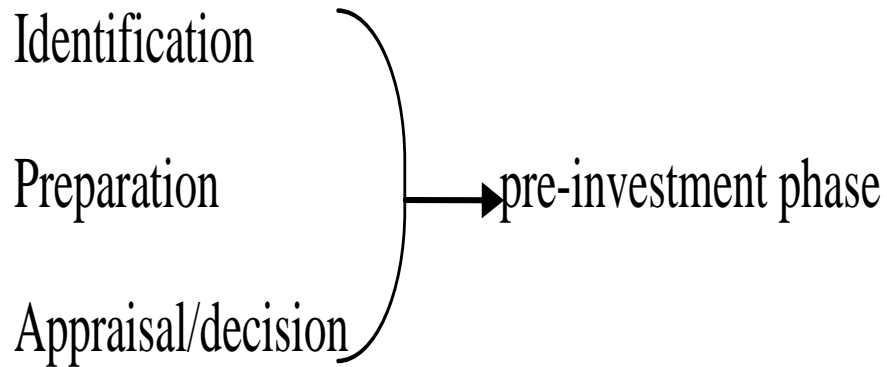
- *Production cost*
- *Income from sales, etc.*

3. **DPSA'S PROJECT CYCLE:** According to the Guidelines to Project Planning in Ethiopia (1990) of *Development Project Studies Authority (DEPSA)*, *a project cycle comprises three major phase* .

- ✓ **Pre-investment**
- ✓ **Investment and**
- ✓ **Operation**

Each of these *three phases may be divided into stages*. The guideline has divided the cycle into 6 stages.

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Baum's model of project cycle

Initiated by **W. Baum** in 1970, was improved in 1978 and has been adopted by the **World Bank** ever since, initially recognized *four main stages*. Evaluation was added in a later version in *1978*, namely:

Five phases:

1. *Identification* (finding the project)
2. *Preparation/analysis* (*Pre-feasibility and feasibility studies*) (Does it have merit?)
3. *Appraisal* (critical review, independent)
4. *Implementation* (getting it started)
5. *Evaluation* (success or failure)

❖ *Capital expenditure decision* is a complex decision process, which may be *divided into six* broad phases:

A. Identification

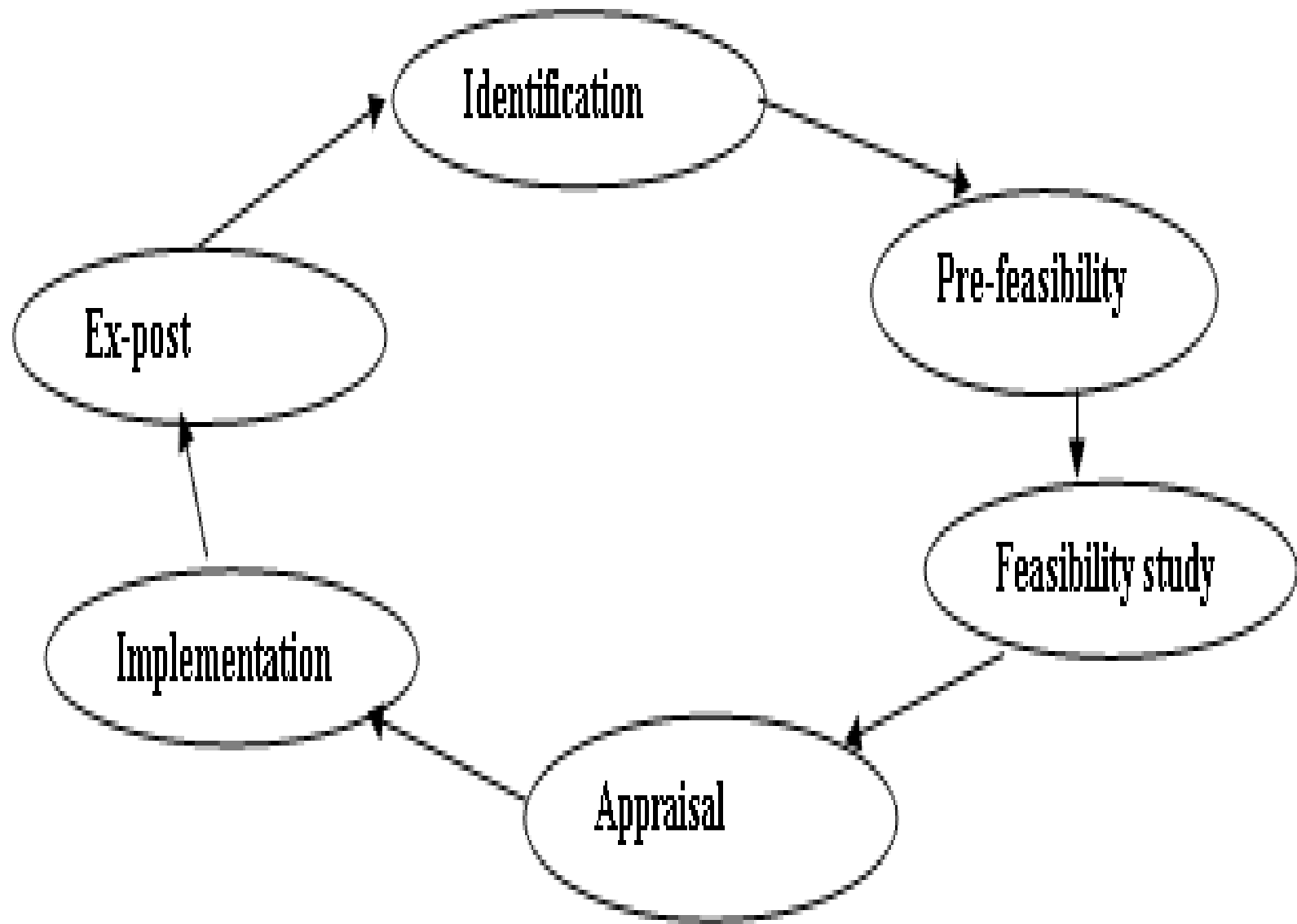
B. Pre-feasibility Study

C. Feasibility (technical, financial, economic)

D. Selection and project design - Appraisal

E. Implementation

F. Ex-post evaluation



I. Identification

- *The first stage* in the project cycle is to *find potential* projects.
- Identification of *promising investment* opportunities requires imagination, sensitivity to environmental changes, and a realistic assessment of what the firm can do.

This phase may take two forms:

- If the project is largely *a private venture* in a widely market economy context the initiating entity will define *the concept, expectation and objectives of the project.*
- The project idea can also *emanate from government agencies* in the context of government development plans.

- ❖ In the latter case *Sectoral information* (i.e. the direct and indirect demands of sectors) is an important *Source of identification*.
- ❑ *In market economy context anticipated* demand for the projects **output** is important.
- ✓ In addition assessment of appropriate technology, scale of the project, timing of the project etc. are important.
- ✓ All types of specialists' input are required at this stage.
- **The planning phase of a firm's** capital investment is concerned with
 - *The articulation of its broad investment strategy and*
 - *The generation and preliminary screening of project proposal.*

❖ **Four major sources from which ideas or suggestions** for project may come:

- ✓ *Project ideas from technical specialists*
- ✓ *Project ideas from local leaders*
- ✓ *Project ideas from entrepreneurs*
- ✓ *Project ideas from government policy and plans*

❖ **The identification of project ideas** is based on several **aspects** of **development**.

- **Need** - a need assessment survey may show the need for intervention
- **Market demand** - domestic or overseas
- **Resource availability** - opportunity to make available resources more profitable
- **Technology** - to make use of available technology
- **Natural calamity** - intervention against natural calamity such as flood or drought
- **Political** considerations

II. Project preparation and analysis phase

- Once *project ideas have been identified* the process of *project preparation and analysis starts*.
- ❖ Project preparation must cover the full range of *Market analysis, Technical analysis, institutional, financial analysis, Socio-economic analysis, Environmental analysis, Organization and management analysis*.
- ❖ *Critical element* of project preparation is identifying and comparing technical and institutional alternatives *for achieving the project's objectives*.
- ❖ *Resource endowment* (labor or capital) would have to be considered in the *preparation of projects*.

❖ Preparation thus *require feasibility studies* that identify and prepare preliminary designs of technical and institutional alternatives, compare their *costs and benefits*.

❖ *It involves generally two steps:*

➤ **Pre-feasibility studies**

➤ **Feasibility studies**

A. Pre-feasibility Study

- ❖ The *identification process* will give the background information for *defining the basic concept of the project*, which leads to the feasibility study stage.
- ❖ Once *a project proposal* is identified, it needs to be examined.
- ❖ To begin with, a preliminary project analysis is done.
- ❖ *A prelude to the full blown feasibility* study, this exercise is meant to assess
 - I. Whether the project is *prima facie worthwhile* to justify a feasibility study and
 - II. What aspects of the project are *critical to its variability and hence warrant an in-depth investigation*.

➤ *At the pre-feasibility study stage* the analyst obtains *approximate valuation* of the major components of *the projects costs and benefits*.

- Availability of adequate market
- Project growth potential
- Investment costs, operational costs and distribution costs
- Demand and supply factors; and
- Social and environmental considerations.

At pre feasibility : All possible project *alternatives* are examined.

- The project concept justifies detail study.
- All aspects are critical and need in-depth investigation.
- The project idea is viable and attractive or not

- ❖ If the *project appear viable* form this preliminary assessment the analysis will be carried to the feasibility stage.

B. Feasibility Study

- ✓ The major difference between the pre-feasibility and feasibility studies is the *amount of work required* in order to determine whether a project is likely to be *viable or not*.
- ✓ If the preliminary screening suggests that the project is *prima facie worthwhile*, a detailed analysis of the *marketing, technical, financial, economic*, and *ecological* aspects will be undertaken.

- ❖ The focus of this phase of *capital budgeting* is ***on gathering, preparing, and summarizing relevant information about various project proposals***, which are being considered for inclusion in the capital investment.
- ❖ Based on the information developed in this analysis, the stream of ***costs and benefits*** associated with the project can be defined.
- ✓ At this stage a team of specialists (Scientists, engineers, economists, sociologists) will need to work together.
- ✓ At this stage ***more accurate data need to be obtained and if the project is viable*** it should proceed to the project design stage.

The final product of this stage is a feasibility report. The feasibility report should contain the following elements:

- Market analysis
- Technical analysis
- Organizational analysis
- Financial analysis
- Economic analysis
- Social analysis, and
- Environmental analysis

The feasibility study would enable the project analyst to **select the most likely project out of several alternative projects**. Selection follows, and often overlaps, analysis.

This stage involves a systematic review of all aspects of the project in order that decision can be made as to whether to proceed. The following aspects should be covered in the appraisal process:

- **Technical**-*is the project design appropriate and will the project work as expected?*
- **Financial**- *has proper provision been made to cover the financial requirements and obligations of the project?*
- **Economic**- *is the project advantages form the point of view of the economy as a whole?*

- ***Social-*** is the project both advantageous and acceptable to the people affected by it?
- ***Institutional-*** are there suitable organizations in place to implement and manage the project. Is the legal frame work appropriate?
- ***Environmental-*** have the environmental impacts of the project been properly considered.
- ***Sustainable-*** will the project be sustainable in the long term both financially- and institutionally.

- It is considered as an **independent** stage of the pre-investment **phase**, marked by the final investment and *financing* decisions taken by the project promoters, where various parties will handle their own appraisal of the investment project in accordance with their individual objectives and evaluation of *expected risks, costs, and gain*.
- It addresses the question - **is the project worthwhile?** Wide ranges of appraisal criteria have been developed to judge the worthwhile of a project.
- They are divided into *two broad* categories, viz.,
 - ❖ Non-discounting criteria and
 - ❖ Discounting criteria.

- *To apply the various appraisal criteria* suitable cut off values (*hurdle rate(minimum acceptable rate of return), target rate, and cost of capital*) have to be specified. The level of risk pursued influences these.
- Despite a wide range of tools and techniques for **risk analysis** (*sensitivity analysis, scenario analysis, Monte carol simulation, decision tree analysis, portfolio theory, capital asset pricing model, and so on*).
- *Risk analysis* remains the most *intractable/difficult* part of the project evaluation exercise.
- This exercise also involves the undertaking of detailed engineering design; manpower and administration requirement as well as marketing procedures should be finalized.

Implementation

- After the **project design** is prepared negotiations with the funding organization starts and once source of finance is secured implementation follows.
- **Implementation** is the most important part of the *project cycle*.
- The better and more realistic the project plan is the more likely it is that the plan can be carried out and the expected benefits realized.
- At the project implementation phase **tenders are let** and **contracts** signed.
- Project implementation must be flexible since circumstances change frequently.

- Project analysts generally divide the *implementation phase into three time periods.*
- ✓ **The investment phase**, where the major investments are made. This may extend from *three to five years*.
- ✓ **Development phase**, which may also extend from *three* to five years
- ✓ **The project life**
- The implementation phase for an industrial project consists of **several stages**:
 - I. Project and engineering designs,
 - II. Negotiations and contracting,
 - III. Construction
 - IV. Training, and
 - V. Plant commissioning.

- Translating an investment proposal into *a concrete project* is a complex, time consuming and risk fraught task.
- Delays in implementation, which are common, can lead to substantial cost overrun.

2. Ex-post evaluation:

- The *final phase* of the project is the **evaluation phase**. Many usually **neglect this stage**.
- The project analyst looks *carefully at the successes and failures* in the project experience to learn how better to plan for the future.
- In this stage it is important to examine the project plan and what really happened.

➤ Performance review should be done periodically to compare actual performance with projected performance.

➤ *A feedback device is useful in several ways:*

- a. It throws light on how realistic were the assumptions underlying the project;
- b. It provides a documented log of experience that is highly valuable in future decision making;
- c. It suggests corrective action to be taken in the light of actual performance;
- d. It helps in uncovering judgment biases;
- e. It induces a desired caution among project sponsors.

- ***Weakness and strengths*** should carefully be noted so as to serve as ***important lessons for future project*** analysis undertaking.
- ***Evaluation*** is not limited only to completed projects.
- Ongoing projects could also be evaluated to rectify problems when the project is in trouble.
- The project management, the sponsoring agency, or other bodies may do the evaluation.

End!

