**Chapter Two**

 **Project Cycle**

**Learning Objectives**

At the end of this chapter, students will be able to:

* Describe what project life cycle means
* Differentiate project cycle models.
* Explain project clearance report
* Point out management approach to project cycle
1. **INTRODUCTION**

Project cycle is the way projects are prepared and carried out. Project cycle consider various stages in which each stage not only is grown out of the proceeding ones but also leads into the subsequent ones. The planning process does not contain such a strict sequence of events since all the aspects of the project have to be considered simultaneously and, if necessary, adjusted to one another. Therefore, a project cycle is a self renewing cycle in that new projects may grow out of the old ones in a continuous process and self sustaining cycle of activity. Actually, the division into stages is artificial; but it helps us to understand that project planning, though a continuous process over time, has distinct phases and stages. And therefore, throughout the project cycle, the primary pre occupation of the analyst is to consider alternatives, evaluate them and to make decisions as to which of them should .be advanced to the next stage in the planning process.

Regarding the classification of the aspects for the purpose of project analysis, there are many equally valid ways in which the project cycle may be divided and the identifiable stages may be described. There are alternative models that deal with the project cycle. However in this chapter more emphasis will be given to basic models that are widely accepted as a model of project cycle by institutions, analysts, and most dealt in academic literatures. These are; UNIDO’s Project Cycle (UNIDO Model); BAUM’s Project Cycle (BAUM’s Model, 1978); S Choudhury’s Project Life Cycle (1988).

* 1. **UNITED NATION INDUSTRIAL DEVELOPMENT (UNIDO) PROJECT CYCLE**

The UNIDO has established a project cycle comprising three distinct phases; each of these phases are divided into different stages.

* + 1. **The Pre-investment phase**

According to the UNIDO manual, the pre investment phase comprises several stages; Identification of investment opportunities (Opportunity studies), Analysis of project alternatives and preliminary project selection as well as project preparation (Pre feasibility and feasibility studies), and Project appraisal and investment decision (Specialized appraisal reports).

1. **Identification of investment opportunities and pre-feasibility study**

Industrial project development starts with the identification of project idea, idea of possibility/desire to produce specific products or to utilize specific resources. Project ideas may arise from studies of the product consumption pattern of the country, market studies, surveys of existing industrial establishment, import schedules, internal resources, geological surveys, industrial linkages, development plans, export possibilities, experience of other countries, increasing demand for manufactured inputs for different sectors, studies of technology and development literature etc. All ideas for project are valuable and may prove to the beginning of development.

The identification of project idea is followed by a preliminary selection stage. The objective at this stage is to decide whether a project idea should be studied in detail and what the scope should be of further studies. The findings at this stage are embodied in a pre feasibility study. Opportunity studies could be general or specific

General Opportunity studies (Sector approach) could be area studies designed to identify opportunities on a given area (Administrative province, backward region); industry studies to identify opportunities in delimited industrial branch; and resource based studies to reveal opportunities based on the utilization of natural, agricultural and industrial resources.

Specific project opportunity studies (enterprise approach) are seen in the form of products with potential for domestic manufacturer. A specific project opportunity study may be defined as the transformation of a project idea into a broad investment proposition. The purpose of opportunity study is to arrive at a quick and inexpensive determination of salient (significant) facts of an investment possibility.

The pre feasibility study is carried out by an investor himself or by an investment promoter. It is prepared on the basis of data that are available in published form or that can be easily collected or worked out. If the pre feasibility study indicates that the proposed project appears to be a promising one, the decision may be taken to produce further with the formulation of project.

**B.** **Formulation stage-Feasibility studies**

The function of formulation stage is to study from the technical, economic, financial and managerial aspects all the alternative ways of accomplishing the objectives of the project idea and to present the findings and supporting data in a systematic and logical order. This is done through complete techno-economic feasibility studies. The complete feasibility study is the final document in the formulation of a project proposal. On the basis of this study a decision to implement and finance the project will be taken.

The feasibility study should contain all technical and economic data that are essential for the overall economic and social evaluation of a project. The feasibility study should be so self contained that on the one hand the evaluator cannot complain of the lack of data or imperfect analysis and, on the other the decision maker cannot find anything hidden of missing. Accumulation and presentation of all technical and economic facts in a true and complete picture should be the main objective of this study.

The financial part of the study covers the scope of the investment, including the net working capital, the production and marketing cost, sales revenue , and the return on capital invested. Final estimates of investment and production costs and its subsequent calculations of financial and economic profitability are only meaningful if the scope of the project is defined unequivocally in order not to omit any essential part and its related cost.

The sensitive parameters such as the size of market, the production program, or the mechanical equipment selected should be examined more closely. A feasibility study should be carried out if the necessary financing facilities, as determined by studies, can be identified with a fair degree of accuracy. There would be little sense in a feasibility study without the reliable assurance that, in the event of positive study findings, funds could be made available. For that reason, possible project financing must be considered as early as the feasibility study stage, because financing conditions have a direct effect on total costs and thus on the financial feasibility of the project.

**C.** **Appraisal Report**

When a feasibility study is completed, the various parties will carry out their own judgment of the investment project in accordance with their individual objectives and evaluation of expected risks, costs and gains. Large investment and development finance institutions have a formalized project appraisal procedure and usually prepare appraisal reports. This is the reason why project appraisal should be considered an independent stage of the pre investment phase, marked by the final investment and financing decisions taken by the project promoters.

Project appraisal as carried out by financial institutions concentrates on the health of the company to be financed, the returns to be obtained by equity holders and protection of its creditors. The techniques applied to appraisal of project in line with these criteria center around technical, commercial, market, managerial, organizational and financial and possibly also economic aspects.

* + 1. **The investment/Implementation phase**

The investment phase can be divided into the following stages;

* Establishing the legal, financial and organizational framework.
* Evaluation of tenders and negotiations.
* Technology acquisition and transfer.
* Detailed engineering design and contract
* Acquisition of land, construction work and installation.
* Pre production marketing
* Recruitment and training of personnel.
* Plant commissioning and start up

During the stage of **tendering** and evaluation of bids, it is especially important to receive comprehensive tenders for goods and services for the project from a sufficiently large number of national and international suppliers of proven efficiency and with good delivery capacity.

Detailed **engineering design** comprises preparatory work for site preparation, the final selection of construction planning and time scheduling of factory construction, as well as the preparation of flow charts, scale drawing and wide variety of layouts.

**Negotiations and contracting** are concerned with the legal obligations arising from the acquisition of technology the construction of building, the purchase and installation of machinery and equipment and financing. This stage covers the signing of contracts between the investor or entrepreneur, on the other hand and the financing institutions, consultants, architects and suppliers of raw materials and required inputs on the other.

The **construction stage** involves site preparation, construction of buildings and other civil works, together with the erection and installation of equipment in accordance with proper programming and scheduling.

The **personnel recruitment and training stage**, which should proceed simultaneously with the construction stage, may prove very crucial for the expected growth of productivity and efficiency in plant operations.

Of particular relevance is the timely initiation of marketing arrangements to prepare the market for the new products (pre production marketing) and secure critical suppliers (supply marketing).

**Plant commissioning and startup** is usually a brief but technically critical span in project implementation. It links the proceeding construction phase and the following operational (production) phases. In general, it is to be noted that in the pre investment phase, the quality and dependability of the project are more important than the time factor, while in the investment phase, the time factor is more critical in order to keep the project within the forecast made in the feasibility study.

* + 1. **The operating phase**

The problem of operating phase needs to be considered from both a short and long term viewpoint. The short term view related to the initial after commencement of production when a number of problems may arise concerning such matters as the application of production techniques, operation of equipment, or inadequate labor productivity owing to lack of qualified staff and labor. Most of these problems have their origin in the implementation phase.

The long term view, relates to chosen strategies and associated production and marketing costs as well as sales revenues. These have a direct relationship with the projections made at the pre investment phase. If such strategies and projection prove faulty, any remedial measures will not only be difficult but may prove highly expensive.

* 1. **BAUM’s Project Cycle (BAUM’s Model, 1978)**

A project typically run through several definite sequence, which some writers and institutions have called a project cycle. In this regard, the first basic model of a project cycle developed by Warren C. Baum in 1970. It was by then adopted by the world bank as a project cycle. Initially, this model had recognized only four main staged in the project cycle namely;

1. Identification
2. Preparation
3. Appraisal and selection
4. Implementation

Later in 1978, the author has added additional two stages “Negotiation” and “Evaluation”.

Among the following project models one referred to as World Bank project cycle?

1. UNIDO
2. DEPSA
3. BAUM
4. S. CHOUDHURY
	* 1. **Identification**

The first stage in the project cycle and in planning process is to find potential projects. The sources of projects may be Resource based, Market based, Need based, Technical specialists and local leaders and Proposals to expand and/or expand existing programs and projects.

In general, most projects start as an elementary idea. Eventually, some sample ideas are elaborated into a form to which the title project can formally apply.

* + 1. **Preparation**

Once projects have been identified there begins a process of progressively more detailed preparation and analysis of project plans. At this stage, the project is being seriously considered as a definite investment action. Project preparation also called project formulation involves pre feasibility and feasibility studies and covers the establishment of commercial, technical, institutional, financial and socio economic feasibility. Decisions have to be made on the scope of the project, location and site, soil and hydrological requirements, project size etc…

Resource base investigations are undertaken and alternative forms of projects are explored. Complete technical specifications of distinct proposals accompanied by full details of financial and economic costs and benefits are the outcome of the project preparation stage. The project now exists as a set of concrete proposals. Particularly, project design and formulation is an area in which local and international consultants are very active, especially for big projects that cover larger areas and have big budgets.

* + 1. **Appraisal and selection**

After a project has been prepared, it is generally appropriate for a critical review or to conduct independent appraisal. This provides an opportunity to re examine every aspects of the project plan and determine whether the proposal is appropriate and sound or not before large sums and committed. Generally, internal government staffs only are used for this work and not consultants and project appraised both in the field and at the desk level. Appraisals should cover at least seven aspects of a project.

1. **Technical:-** the appraisers concentrate in verifying whether what is proposed will work in the way suggested or not.
2. **Financial:**- the appraisers focus on money needed by the project have been calculated properly, their sources are all identified, and responsible plans for their repayment are made where necessary.
3. **Commercial:**- The way the necessary inputs for the project are conceived to be supplied is examined and the arrangements for the disposal of products are verified.
4. **Incentive:**- the appraisers see to it whether things are arranged in such a way that all those whose participation is required will find it in their interest to take part in the project, at least to the extent envisaged in the plan.
5. **Economic:**- the appraisers here try to see whether what is proposed is good from the viewpoint of the national economic development interest, all project effects (positive as well as negative) are taken into account and check if all are correctly value.
6. **Managerial:**- this aspect of the appraisal examines if the capacity exists for operating the project and see if those responsible ones can operate is satisfactorily. Moreover, it tries to see if the responsible are given sufficient power and scope to do what is required.
7. **Organizational:**- the appraisers examine the project if it is organized internally and externally into units, contract, policy, institution etc… so as to allow the proposals to be carried out properly and to allow for change as the project develops.
	* 1. **Negotiation and financing**

Once the project to be implemented is agreed on, for donor funded projects, discussions are held on funding and associated aspects of funding such as conditions for grants, repayment period, interest rate on loan, flow of funds, contribution from stakeholders. And whether there is co financing or not. This culminates in to an agreement document for the project, which binds all the parties involved during the implementation of the project.

2.2.5. **Implementation**

In this stage, funds are actually distributed to get the project started and keep running. A major priority during this stage is to ensure that the project is carried out in the way and within the period that was planned. Problems frequently occur when the economic and financial environment at implementation differs from the situation expected during appraisal.

Frequently, original proposal are modified, through usually only with difficulty, because of the need to get agreement between the parties involved. It is during implementation that many of the real problems of a project are firs identified. Because of this, the feedback effect on the discovery and design of new project and also the deficiencies in the capabilities of the project actor can be revealed. Therefore, to allow the management to became aware of the difficulties that may arises, recording, monitoring and progress reporting are important activities during the implementation stage. Some of the aspects of implementation that are of particular relevance to project planning and analysis are:-

1. The better and the more realistic project plan is, the more likely it is that the plan can be carried out and the expected benefits realized.
2. Project implementation must be flexible. Circumstances will change and project managers must be able to respond intelligently to these changes the common one are ; technical changes (soils, water logging and nitrogen application) price changes; economic policy and environment changes; political changes etc… And these all will alter the ways in which projects should be implemented.
	* 1. **Evaluation**

Once a project has been carried out, it is often useful, (through not always done), to lack back over what took place, to compare actual progress with the plans, and to judge whether the decisions actions taken where responsible and useful. The extent to which the objectives of the project are being realized provides the primary criterion for evaluation. The analyst looks systematically at the elements of success and failure in the project experience to learn how better to plan for the future.

Evaluation is not limited only to completed projects. It is a most important managerial tool in on- going projects and rather, formalized evaluation may take place at several times in the life of a project. Evaluation may be undertaken when the project is in trouble as the first step in a re- planning effort. Careful evaluation should precede any effort to plan for new projects and it is also needed to follow up the progress of projects. And, finally, evaluation should be undertaken when a project is terminated or is well into routine operation.

Different group of units may do the evaluation of projects among others, Project management unit often continuously evaluates its experiences as implementation proceeds. The sponsoring agency, perhaps, the operating ministry, the planning agency, or an external assistance agency may undertake evaluation.

Evaluation can help not only in the management of project after the initial phase. But, also help in planning of future projects. Experience with one project can give rise to new ideas for extension of the project, repetition, the need for vertically associating projects that supply inputs to or process products for the project and other ideas which become the need to generate new project proposals.

**Evaluation is performed only when the project is completed**

* 1. **Sadhan Choudhury’s Project Life Cycle (1988)**

According to Sadhan Choudhury all projects have to pass through the following five steps. While ideally these phases should follow one in another in sequence, this rarely happens in real life. Not only do the succeeding phases overlap with the proceeding ones, it is also not too uncommon to find complete overlap of all the phases. Sometimes this overlapping is done deliberately in the interest of compressing the overall project schedule.

* + 1. **Conception phase**

This is the phase during which the project idea germinates. The idea may first come to the mind when one is seriously trying to overcome certain problems. The problems may be non utilization of either the available funds, plant capacity, expertise or simply unfulfilled aspirations. When one is seized with problems, he looks in and around to find out ways of overcoming them. It may so happen that an idea will suddenly come to his mind as he surveys the environment. It also possible that ideas will be put to him by his well wishers or those working on the problems for him. Whatever may be the case, the ideas need to be put in black and white and given some shape before they can be considered and compared with competitive ideas.

* + 1. **Definition phase**

The definition phase of the project will develop the idea generated during the conception phase and produce a document describing the project in sufficient details covering all aspects necessary for the customer and/or financial institutions to make up their minds on the project idea. The areas to be examined during this phase includes raw materials, plant size capacity, location and size, technology/process selection, project layout, plant and machinery, electrical and instrumentation works, civil engineering works, utilities, manpower and organizational pattern, financial analysis, and implementation schedule.

* + 1. **Planning and organizing phase**

This phase can effectively start only after definition phase but in practice it starts much earlier, almost immediately after the conception phase. This phase overlaps so much with the definition and also with implementation phases that no formal recognition is given to this by most organizations. Some organizations, however, prepares documents such as project execution plan to mark this phase. By and large, organizations, during this phase, deal with Project infrastructure and enabling services, System design and basic engineering package, Organization and manpower, Schedules and budgets, Licensing and government clearances, Finance, System and procedure, Identification of project manager, Design, general conditions for purchase and contract, Site preparation and investigations, Construction resource and materials and Work packaging.

Thus, this phase is involved with preparation for the project to take off smoothly. This phase is often taken as a part of the implementation phase since it does not limit itself to prepare work and thinking but many activities including field work are undertaken during this phase.

Planning, as it is often defined, is making a decision in advance. If it is not done, we will only be resolving crises after crises. It is, therefore, essential that this phase is completely gone through before the next phase, namely, the implementation phase starts. Many of the decisions and actions taken during this phase relate to project basics, and if the project jumps into the implementation phase without freezing the basics, the project is bound to falter and founder if not fail altogether.

* + 1. **Implementation phase**

This is a period of hectic activity for the project. It is during this period something starts growing in the field and people for the first time can see the project. Preparation of specifications for equipment and machinery, ordering of equipment, lining up construction contractors, issue of construction drawings, civil construction and construction of equipment foundations, equipment and machinery erection, plant electricity, piping, instrumentation, testing and checking phase, 80-85% of project work is done in this phase only.

From the following stages one is existed in all project models

1. Project clean up
2. Implementation
3. Ex – post evaluation
4. Negotiation

List the project life cycle stages that our country? [1.5]

* + 1. **Project clean up phase**

This is a transition phase in which the hardware built with the active involvement of various agencies is physically handed over for production to a different agency who was not so involved earlier. For the project personnel this phase is basically a cleanup task. Drawing, documents, files, operations and maintenance manuals are catalogued and handed over to the customer. The customer has to be satisfied with guarantee test runs. Any change required at the last minute for fulfillment of contractual obligations in respect of performance has, therefore, to be completed during this phase to the satisfaction of the customer. Project accounts are closed, materials reconciliation carried out, outstanding payments made and dues collected during this phase. The most important issue is planning of the staff workers involved in execution of the project. All project personnel cannot be suddenly asked to go. Preparation for project clean up has, therefore, to start long time before actual physical handover.

 

* 1. **Project clearance report**

A completion report required at the end of the project financing period. Given that only a small proportion of all projects are formally evaluated (ex-post), the completion report may be the last opportunity to document and comment on overall achievements against the original plan, prospects for sustainability of benefits, highlight lessons learned and make recommendations on any follow-up actions required.

* 1. **Management Approach to Project Cycle**

Project management cycle is the way in which projects are planned and carried out follows a sequence beginning with an agreed strategy, which leads to an idea for a specific action, oriented to- wards achieving a set of objectives, which then is formulated, implemented, and evaluated with a view to improve the strategy and further action. Project Cycle Management is an approach to managing projects. It determines particular phases of the Project, and outlines specific actions and approaches to be taken within these phases. The PCM approach provides for planning and review processes throughout a cycle, and allows for multiple project cycles to be supported. The project cycle also provides a structure to ensure that stakeholders are consulted and relevant information is available throughout the life of the project, so that informed decisions can be made at key stages in the life of a project. PCM model emphasizes the following:

* Use of the Logical Framework Approach to analyze problems, and work out suitable solutions through project design, and successful implementation.
* Producing good-quality key document(s) in each phase, to ensure structured and well-informed decision-making (often called the “integrated approach”).
* Consultation with and the involvement of key stakeholders as much as possible.
* Clear formulation and focus on one Project Purpose, in terms of sustainable benefits for the intended target group(s).
* Incorporation of key quality issues into the project design from the beginning.
1. **The Log Frame Approach**

The logical framework approach follows a hierarchical results oriented planning structure and methodology which focuses all project planning elements on the achievement of one project purpose. LFA can be used successfully and flexibly, or it can be applied rigidly and restrictively.

The Approach also tries to build in a close link between the external project environment and the internal project planning elements. The Project elements in LFA are recorded and presented according to a matrix format. This format is called the Project Matrix (PM), or Project Planning Matrix (PPM), and allows for a complete project to be represented in a clear and related manner. The PPM allows for ease of understanding and sets the basis for Project Cycle Management to occur.

**The Steps of Log frame**

There are seven distinct stages in the LFA planning methodology.

1. Identify the stakeholders:
2. Categories them according to their role
3. Characterize them from a social and organizational point of view, taking as well a gender perspective:
4. Analyze them with regard to expectations and relationships:
5. Characterize their sensitivity towards and respect of cross-cutting issues (gender equality, environmental protection, etc.):
6. Assess the potential, resources and capacities of the stakeholders:
7. Draw conclusions and make recommendations for the project