

referencer by promoters, lenders and consultants. The other difference, you would notice, is in terms of concise, to-the-point, experiential, field and class room tested, contents, inputs and insights. Pradip Lath brings in his extensive practical experience as project consultant of over 30 years. He has tested this material in his MBA classes, also. Sat Parashar has tested this material, in Corporate and Bankers' training programs, nationally and internationally, for over 40 years. We do hope that this step-by-step guidebook will prove handy, ready-to-use referencer and assist project promoters, lenders and consultants in formulating, promoting, appraising, financing and executing successful projects. Needless to add, successful businesses, banks and economy, at large, get built up on successful projects only.

This guidebook, instead of conventional textbooks style of awareness creation through information sharing, has adopted an application-oriented style. The guidebook has nine sections, each focused on a specific dimension of project appraisal and financing. The sections have been devised on the principle of building-block approach to knowledge and skill development. Then, in each section, we attempt to list up and provide guidance on specific High Order Thinking (HOT) questions that promoters, lenders and consultants face. The HOT questions format brings focus and practical application of every word in this guidebook. Each section concludes with "Top Takeaways" and "Check Your Progress" questions.

We would thankfully acknowledge and appreciate your feedback to improve the next edition.

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SECTION

1

Projects: Concepts, Types, Unique Challenges and Opportunities

Intended Learning Objectives

After completing this Section, readers would be able to:

- ☞ Define the term “project”
- ☞ Differentiate projects from day-to-day operations of a business
- ☞ List up challenges and opportunities in project formulation and financing

Head Points Covered

- 1.1 *Introduction*
- 1.2 *Distinguishing Characteristics and Features*
- 1.3 *Types and Categories*
- 1.4 *Distinct Benefits*
- 1.5 *Top Takeaways*
- 1.6 *Check Your Progress*
- 1.7 *HOT Questions*

1.1 Introduction ◆

1.1.1 Project, in the mind of an individual, indicates some sort of a large activity planned particularly dealing with industrial or infrastructure, indicating large use of resources, funds and that, which would go on for a long duration. However, the word project in our life connotes a wider meaning, which includes quantifiable and non-quantifiable events and activities. Each project requires variety of resources, which may or may not be measurable in monetary terms. However, for this reference, we are to consider the projects, which are measurable in monetary terms and ignore the others.

Now, if we divide the functions of “Financial Management” in two broad heads, we have “Capital Budgeting” (Application of funds over a long period) on one side and “Capital Structuring” (raising of long-term funds) on the other. In regards with the project, it directly or indirectly relates to capital budgeting and investment decision, which implies the importance of financial management in project formulation, financing and execution.

Capital investment can be looked into with different perspectives. First, from the promoter’s viewpoint, who are investing their ideas. Secondly, from the viewpoint of the financial institution or the lender bank, which are financiers to the project and in most cases their share of investment (finance) is greater than the promoters.

Thus, an investment decision is to be viewed from different angles and additionally financing would be either by long-term or short-term source, jointly or severally. Each funding pattern would give a different result and has to be considered from the viewpoint of the party concerned. The questions that arise in regards to any project are:

- (i) How long would the project take to start (time frame)?
- (ii) From what time (cut off) period, will the activity be considered to have started? Is it the start of commercial production, start of selling goods or just the trial production run?
- (iii) What are the types of resources involved in the project and the monetary amount involved for each category?
- (iv) What will be the revenue generated and the operating costs?
- (v) What happens if the project does not take off?

There will be many such questions, which will come to ones mind and the measurement is again a cumbersome process, but we shall try to present a simplified approach.

1.1.2 All projects whether big or small will generally have some amount of capital expenditure, and as per generally accepted accounting principles followed, all expenditures, capital as well as revenue, which are relevant up to the date of cut off should also be capitalised. The date of “cut off” is the date when the unit is ready for commercial production. However, in practice the terminology is usually applied when the unit starts commercial production and the said period should be in congruency with the records maintained by the company. The company cannot afford to have different period for Income Tax, GST, Industrial/Trade reporting or any other authorities for that matter. The benefits from the project generally follow after the cut off period. Thus, one

can then compute the benefits *vis-à-vis* the capital expenditure and find out the return/cash flows on the project and ascertain its feasibility.

1.2 Distinguishing Characteristics and Features ◆

Having understood the basic of what project means, it is vital to consider the characteristics projects have.

1.2.1 Purpose

Each project has a particular purpose to fulfil for the undertaking enterprise and the same is desirable to be in consistence with the corporate objectives. The project is generally one shot activity with a particular purpose in mind. It may be a Greenfield project or Brownfield project or a simple addition of a product line in the existing factory or a Replacement project, like replacement of a machine; whatever the project is; the purpose of the project is finally to achieve positive cash flows and wealth maximisation in consistency with the shareholders' perspective.

1.2.2 Time Frame

A project has a particular time frame or target time, i.e., there is a schedule within which the project is to be set up and has to start functioning. Furthermore, the operating period has to be estimated to know the benefits which will accrue over the period of time. The time frame for any project ends when the project is ready for commercial production/use. This date is considered as the date of cut off. Until that date the relevant expenditure indirectly related to the construction work are capitalised; i.e., added on to the basic cost of fixed assets, thus forming part of the fixed assets. The time frame envisaged is broken up into different activities of the construction period and a PERT/CPM model is relevant to adhere to the project implementation period.

1.2.3 Varied Resources

A project entails use of varied resources in the form of capital, manpower, etc., which may be substantial. The amount of money involved is generally large, blocked for the whole duration and usually is like a sunk cost. The capital expenditure incurred is generally irreversible, i.e., once investment is done; reversal of the decision may mean scrapping the capital equipment and other capital expenditure. The Tata's Singur project could be an example of sunk capital or blocked capital. It would be difficult for the company to get back the amount unless the capital investment done in fixed assets, like land acquisition is sold out to recover its investment. Thus, the decision on hand in the start is very important and strategic. There are many examples wherein, it has been noticed that a wrong capital investment decision has turned profit making companies go into red.

1.2.4 Enduring Benefits

One of the core tests of capital expenditure is, whether the expenditure will create long-term benefits. The consequences of capital expenditure decision extend far into the future giving the company long-term benefits. Another viewpoint of the enduring benefits is whether there is increase in the enduring benefits due to some expenses or reduction in the operating costs due to the expenditure incurred. For example, if a machine (or a part of it) is replaced and the new machine improves the efficiency of the process, leading to higher production or reduction in the

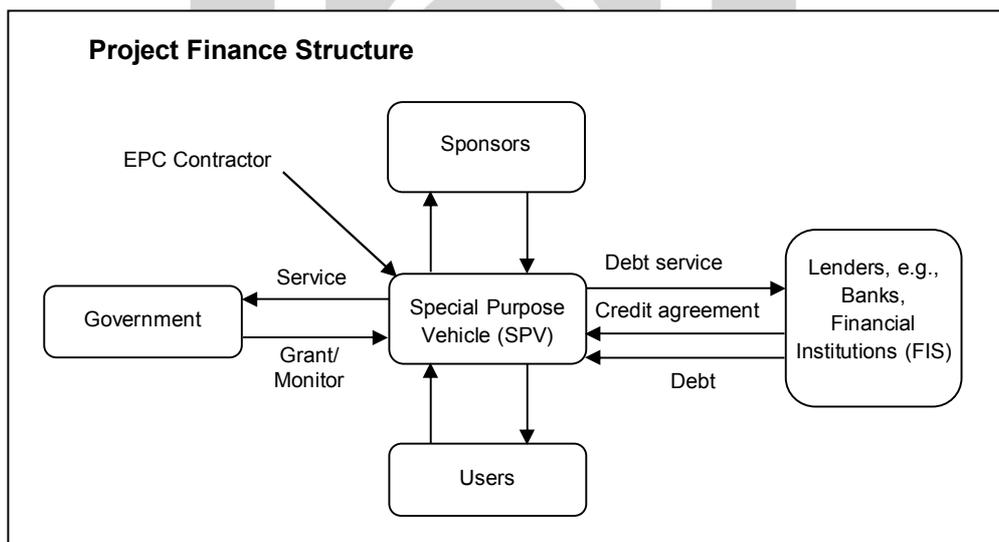
costs, it satisfies the test of capital expenditure. Thus, the test of “efficiency” is judged to understand the nature of expenditure whether capital or revenue.

1.2.5. Involvement of Other Parties

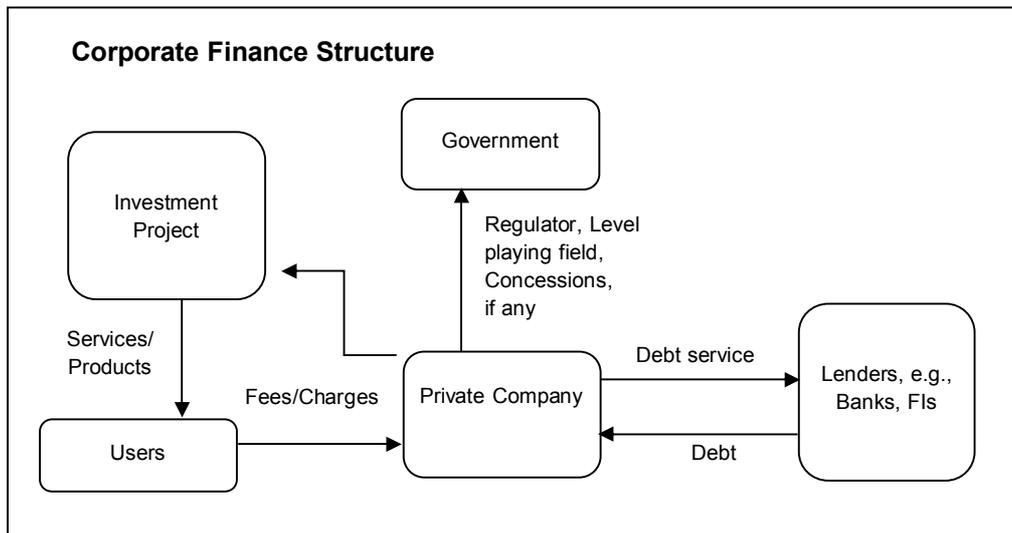
A project usually has the involvement of other parties who are also influenced by it. It may have many parties associated – particularly in case of large projects. The large projects are generally classified as “Project Finance” which usually has a Special Purpose Vehicle (SPV). The SPV is usually created by the sponsor(s) who are the major owners of the SPV. The other parties may include the following:

- (i) Lender(s) to the project, providing finance to the project both long-term and short-term.
- (ii) Government who is responsible to award the contract and extend a level playing field.
- (iii) Users of the project who are the beneficiaries and also pay for the products or services providing the benefits’ part.
- (iv) Project Contractor or Consultant who is associated with the setting up of the project. There may be an EPC contractor who is solely responsible for setting up the project and there may be a separate O&M contractor taking up the responsibility of maintenance of the project in the long run.

A diagrammatic representation of the parties in case of project finance is given below:



The structure in the case of “Corporate Finance” slightly differs, wherein the corporate entity itself is the company responsible for the project and a different SPV is not present. Please see the model below:



1.2.6 Other Features

- (i) **High Leverage/Debt Equity Ratio:** Whenever there are large projects it calls for high amount of debts, which are to be repaid over the finite life. Generally speaking higher the amount of debt, higher is the EPS, unless the returns earned are lower than the cost of debt. Therefore, higher gearing ratio results in higher EPS, the equity investors in the project would seek higher debt. An illustration showing higher return on equity with more leverage is shown in 1.4.1 (i).
- (ii) **Security:** Each project financed has some security whether it is the contract receipts or the assets financed. For example, if a company is seeking long-term finance for investment in capital assets, the primary security will be the capital assets financed by way of the long-term finance. Over and above the primary security, the lender may ask for some other security termed as collateral. When the lender/bank is not comfortable due to various reasons, like the critical success factors, past experience of NPAs and inadequacy of primary security; it does resort to collateral. Over and above the primary security or collateral, corporate or personal guarantee may also be taken by the lending bank/institution, depending on a case to case basis.
- (iii) **Repayment of Debt:** The debt amount taken as long-term finance is to be repaid over a finite period. Depending upon the cash flows and other prudential norms the repayment period is finalised and the cash flows are forecasted up to the repayment of the long-term debt. The short-term debts (like finance for working capital) may continue till the currency of the concern and thus, the forecasts are done assuming that the short-term debts shall continue to be availed from the lender.

1.3 Types and Categories ◆

- (i) **Manufacturing Projects:** New, Expansion (Diversification - Conglomerate or Concentric), Integration (Forward or Backward), Divestment, Replacement or Modernisation, Mergers or Acquisition or Business Combination.

- (ii) Service Projects.
- (iii) Real Estate (including housing), Construction and Engineering Projects.
- (iv) Retail Projects (includes distribution, retailing and small businesses and the likes)
- (v) Research and Development Projects

1.4 Distinct Benefits ◆

The benefits flow to all the parties associated with the project along with the investors who are risk-takers of the project.

1.4.1 Benefits to Investors

- (i) **Lower Cost of Funds due to Leverage:** It is usually noticed that the cost of debt is cheaper compared to equity mainly due to two factors;
 - (a) The interest rate is usually less than the return expected by the equity investor and,
 - (b) The interest on debt funds is tax deductible, and thus the benefit of taxation accrues to the investors.

Considering the advantage of low cost of debt funds, the investors gain in projects which are more leveraged. Considering different proportion of debt one can easily determine the EPS or return on equity to know the benefits resulting from 'Project Finance' of high leverage. The example below illustrates the advantage the equity investors gain due to leverage.

Effect of Leverage on Return on Equity			
No.	Particulars	Low Leverage	High Leverage
(a)	Capital Required	20,000	20,000
(b)	Debt (Interest @ 11%)	5,000	15,000
(c)	Equity	15,000	5,000
(d)	Profit before Interest and Taxes (PBIT)	4500	4500
(e)	Interest	550	1650
(f)	Profit before Tax	3950	2850
(g)	Taxes @ 30%	1185	855
(h)	Profit after Tax	2765	1995
(i)	Return on Equity	18.43%	39.9%

It is evident from the above, that the higher the leverage, the higher is the EPS. Caution is however, required in cases wherein the return on investment is less than the interest rate; wherein high leverage would lead to decrease in the EPS. In the above example, the point of indifference is when PBIT is 2200 calculated @ the interest rate on debt.

- (ii) **Long Tenure of Debt Funds:** The proportion of debt funds in case of project finance is usually for a long tenure, which is adequate for the investor to get back its funds and achieve its minimum rate of return. The tenure may vary on a case to case basis depending on the returns arising from the project. Many such projects are, also, funded

by soft loans which are still better as its cost is lower than the normal debt funds raised from the market. Further, the soft loans are given for a long period of around 20 to 30 years. The debt funds are utilised towards investment in the capital expenditure and the project should be able to recover the cost of the project in the long-term. In an inflationary scenario the debt funds are better *vis-a-vis* equity as a source of fund for the project as the risk of loss of purchasing power is borne by the lenders. The bullet train being one of the major capital expenditure being proposed by the Government of India is by way of majority funds coming in from long tenure of debt and insignificant interest rate from Japan.

- (iii) **Better Credit Risk Rating:** Each project to be financed has to undergo credit risk rating. Higher expected returns and financial results; help in attaining better credit risk rating. However, higher leverage may result in lower credit risk rating and thereon affect the cost of creating leverage on the balance sheet. A trade-off of the cost benefit analysis by applying financial modelling with different proportions of debt has to be done to find the optimum amount of debt funds. However, the company's future credit rating is likely to be better if its risks on project investments are limited through a project finance/ SPV structure.

1.4.2 Benefits to Third Parties

- (i) **Better Competitiveness:** A project with higher leverage would result in higher gains for the equity shareholders given that the return from the project is higher than the cost of debt funds. But, with higher leverage the company would be classified under higher risk, and thus the equity investors would seek higher return from their investments. But, high leverage does not imply high risk which is evident from the illustration below, wherein the return on equity is considered at 18 per cent and interest rate at 9 per cent and 12 per cent in cases of low and high leverage respectively.

Effect of Leverage			
No.	Particulars	Low Leverage	High Leverage
(a)	Project Cost	10,000	10,000
(b)	Debt	2500	7500
(c)	Equity	7500	2500
(d)	Return on Equity (c × 18%)	1350	450
(e)	Interest rate on debt (p.a.)	9%	12%
(f)	Interest Payable (b × e)	225	900
(g)	Revenue required (d + f)	1575	1350

The table above shows that 1575 is required in case of low leverage and only 1350 required in case of high leverage. Thus, the company has to earn less if it has more leverage to reduce its pricing for the end users, and thus is in a better position to price its products/service aggressively.

- (ii) **Risk Sharing:** With the public private partnership in vogue for the project finance cases the risk is also being borne by the private parties who are the investors in the project.

Thus, besides project cost overruns the risk of the cash flows of the projects are, also, shared by the private sector.

- (iii) **Garnering Additional Resources:** Private parties joining hands with public sector brings in additional resources for investment in large infrastructure projects which were limited due to the participation of only the public sector.
- (iv) **Accountability:** The persons in charge of the setting up of the project are directly responsible and have to maintain transparency on the progress of the project on all fronts at all times.
- (v) **Lower Cost of Project:** Private finance is now being deployed for large projects which earlier were in the domain of the government/public sector. With more funds being brought in from the private sector in all fields of infrastructure, the project cost has relatively come down. This is mainly due to the tendency of the private sector to keep the costs under better control and also, adequate control over the funds and speedier implementation of the project.

1.5 Top Takeaways ◆

- ❖ Project essentially means a set of activities, in Work Breakdown Structure (WBS); leading to desired outcome; with a clear start and an end; involving commitment of large sums of money; with a gestation period and relatively long economic life; practically irreversible.
- ❖ Being practically irreversible makes projects more risky than operational decisions like the level of inventory to carry.
- ❖ Projects, particularly innovative, breakthrough and disruptor, provide opportunity for substantially high returns.
- ❖ Projects involve multiple parties. It requires great teamwork, planning and control.
- ❖ Successful projects create immense goodwill and reputation.
- ❖ Time overrun and cost overrun are the worst enemy of any project.
- ❖ There is a whole variety of projects undertaken, industrial and commercial, infrastructure, service, expansion, replacement, debottlenecking, domestic and international are some of the varieties.
- ❖ The specific challenges of a project differ depending on its type and nature.

1.6 Check Your Progress ◆

1.	Have you handled a project?
2.	If so, what challenges and opportunities did you face?
3.	If not, please get in touch with someone who has been associated with project formulation, financing, implementation, evaluation, auditing and ask Q 1 and 2 above to him/her.
4.	If you are wondering, where will you get such persons? You got to look up for promoters, lenders, consultants, contractors, and others.

1.7 HOT Questions

1. What do you mean by a project?
2. What are the distinguishing characteristics of a project?
3. What are the different types of projects?
4. How do project financing decisions, from corporate management's perspective, differ from other corporate financial decisions?
5. How do project financing decisions, from lender's perspective, differ from other financing decisions?
6. What is the significance of the Date of Commencement of Commercial Operations (DCCO)?

HPH

