Chapter 4
Capital Expenditure Proposals: Screening, Appraisal and Implementation

Introduction

In the previous chapter we have made an analysis of the practices adopted and problems faced by the cooperative spinning mills in the first two phases of the capital budgeting decision. We now present a description of how the formulated proposals are screened, appraised and implemented. In other words, this chapter makes an attempt to study the screening, appraisal and implementation phases of investment decision in cooperative spinning mills. All these phases are continuation of project formulation. Each phase is important in its own way. These three phases, though different, are interrelated in to each other.

Screening of Project Proposals

The underlying aspect of screening is to assess the potential of the proposal to subserve the overall organisational goal in general and the financial objective in particular. It helps to ascertain the potentials of the project reviewed at the preliminary level. It is at this stage that a thorough scrutiny is made to see that every piece of information furnished is in order and genuine. This phase comprises certain activities which are earned out in between project formulation and the final decision making process.

Screening requires special skills on matters relating to technical, commercial, financial, economic and managerial aspects. Personnel possessing special skills and are conversant with the above aspects are to carry out this activity. An individual officer or a group of officers may carry this out. The practice is likely to vary from organisation to organisation. However, it should be
noted that it would be appropriate if the personnel involved in project preparation or in decision making body are not involved in the activity of screening.

Screening and review of capital investment proposals normally address the following issues: What is the existing organisation pattern to screen and review capital investment proposals? Is screening and review of investment proposals a specialised function or a part of some other functions? What is the extent of delegation of authority and responsibility on the part of the personnel who perform the function of screening and review of capital investment proposals?²

In some organisations screening is normally undertaken by the capital budgeting committee. The finance department performs the above function in some firms. In some other firms the development committee undertakes the job of screening and review. Thus, there is no uniformity among the Indian firms in constituting bodies for screening and review. But a separate body or a committee may be required in organisations where there are a number of proposals to be screened.

Screening Process in Selected Cooperatives

There is no separate body to screen the proposals in the selected mills, as the units have limited number of capital expenditure proposals. The reasons for the presence of a limited number of capital expenditure proposals in the study units are: i) they have been running at loss for a long time; ii) the administration is highly centralised; iii) autonomy is almost absent; iv) professional management is lacking; v) they have financial crunch; and vi) motivation to generate proposal is lacking. As a result, not many capital expenditure proposals have emerged from the study units. For instance, the number of proposals that emerged and were submitted in the case of Salem cooperative spinning mill is just five over a period of 35 years.
Any proposal submitted is screened at two levels before it is sent to the funding agencies. The preliminary screening is done at the mill itself. The administrative officer and the administrator do this. They go through the project report prepared by the accountant and other officials and make corrections wherever necessary. This is mostly done in the form of examination of arithmetical accuracy to see that the financial projections have been properly made and the assumptions are realistic. When they are satisfied with all the aspects of the projects, they formally send the projects to the Director of Handlooms and Textiles for his perusal.

The second stage of screening takes place at DHT. The technical cell of the DHT makes a thorough study of the projects from all angles. It studies if the financial projections are achievable, the assumptions are realistic, and the technical feasibilities are acceptable. Based on a detailed screening of the proposals, the DHT may seek explanations and may some times direct the spinning mills to make modifications wherever necessary. It has been noted that certain project ideas which were cleared and certain proposals, which were prepared and screened, were not recommended for further processing by DHT.

<table>
<thead>
<tr>
<th>Name of the Mill</th>
<th>No. of Proposals</th>
<th>Types of Investment Proposals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anna Cooperative Spinning Mill</td>
<td>Two</td>
<td>Expansion and reorganisation (for 16 years)</td>
</tr>
<tr>
<td>Miscoor Cooperative Spinning Mill</td>
<td>Four</td>
<td>Three expansion programmes and one revival programme (for 23 years)</td>
</tr>
<tr>
<td>Salem Cooperative Spinning Mill</td>
<td>Five</td>
<td>Two expansion programmes and three modernisation programmes (for 35 years)</td>
</tr>
</tbody>
</table>
For instance, a project on expansion programme in 1990 for 25,000 spindles with a capital outlay of Rs. 1154 lakhs went through all the phases of investment decision, but was not recommended for funds. In 1996, a total reconstruction package for the complete reorganisation of the Anna cooperative spinning mills was prepared and submitted with an outlay of Rs. 1116 lakhs, but it was not sanctioned. A modernisation programme with an outlay of Rs. 525 lakhs at Salem cooperative spinning mill was prepared and submitted in 1995 but it was also not sanctioned. A modernisation programme with an outlay of Rs. 525 lakhs at Salem cooperative spinning mill was prepared and submitted in 1995 but it was also not sanctioned. A complete reorganisation programme at Misereor cooperative spinning mill for an amount Rs. 874 lakhs was prepared in 1995, but was not recommended for funding. The reasons are: i) the climate for implementing the CBD may not have been conducive; ii) the cooperative spinning mills concerned might not have gone in for lobbying; and iii) hesitation on the part of the DHT to recommend the proposals due to the heavy debt burden of the spinning mills. All these ultimately result in wastage of time and financial resources.

Appraisal of Capital Expenditure Proposals

Project appraisal may be defined as a detailed evaluation of project to determine the technical feasibility, economic necessity, financial viability of the project and managerial competence required for its successful operation. Project appraisal is different from project evaluation. Project appraisal is analysis ex ante, although the project has not been put into operation. The costs and benefits associated with the project are appraised so as to arrive at a decision on investment. In the case of evaluation, it is an analysis ex post. Here, the costs and benefits of the project, which has already commenced, are compared with the estimated costs and benefits.
Project appraisal is an essential step in the process of decision making in respect of sanctioning of assistance by financial institutions. It is the final and crucial stage in the realm of project formulation. It is an essential tool for judicious investment decisions and project selections. The prime objective of the project appraisal is to decide whether to accept or reject the investment proposal. It is also part of the process to redesign or modify a project proposal when it does not satisfy the required conditions. It would also make recommendations as to how the project should be reformulated. The purpose of project appraisal is to ensure that the project is sound in its technical, commercial, financial, economic and managerial aspects.

Components of Appraisal

Project appraisal, a multi-disciplinary task, presupposes the availability of trained personnel to carry out the task. As stated earlier, it is an in-depth appraisal of technical, commercial, financial, economic, and managerial aspects of the project. Each of these aspects may be briefly stated.

Technical Appraisal deals with the assessment of various technical parameters related to the project. The data furnished on technical know-hows, production capacity, phasing of production, raw material requirements and availability are appraised at this stage in order to ascertain the achieveability of such parameters. Plant locational aspects are appraised with supportive aspects, namely proximity to cotton centres and to finished product centres. Plant lay-out and building requirements for factory and administrative block are studied and compared with similar projects in the industry.

The terms and conditions regarding the sources of supply of plant and machinery, their quotations, delivery schedules, payment terms and conditions are assessed with enquiries at the nodal agency (TNTC) which makes such
arrangements. Discussions are held with the officials of cooperative spinning mills concerned at the time of site inspections which helps to understand more about the project's functioning.

Commercial Appraisal is taken up to find out the demand for products and the arrangements to be made for sales. The different counts of yarn proposed to be produced and the expected sales to be effected, both in value and quantity, are appraised. Commercial appraisal attempts to ascertain if the assumptions that have been made for projecting the quantum of production of yarn, marketing of yarn, price of yarn are reasonable and achievable.

Financial Appraisal is an important dimension of the project wherein the networking result of the project is ascertained. It is primarily concerned with the assessment of funds required to implement and the sources for the same. The funds requirement is worked out by computing the break-up cost of each item of the project. The sources of funds to be mobilised for meeting the cost of the project are studied. The components of debt and equity must fulfil the norms of debt and equity ratio. Though there is no rigid norm regarding this, the permissible debt equity rate of 1:1 is considered ideal, but is relaxed up to 2:1. Promoters contribution forms part of equity capital, which is provided by the government. The government also contributes capital subsidy.

To find out the profitability of the project and its ability to service debts, the estimates of cost, revenues, cash flow and projected balance sheets are prepared for ten years. These aspects are appraised based on the information given on capacity utilisation, availability of input, quantity of production and sales, cost of production, sales expenses, depreciation and other factors. All these are prepared based on certain assumptions. The assumptions regarding financial projections and profitability should be realistic and practically
achievable. Ambitiously projected financial results would cause negative results. Normally, the cooperative spinning mills seek consultancy services from SITRA and SIMA on financial projections, at the time of project preparation. Therefore, the chances of ambitious and ambiguous financial projection are very remote.

Economic Appraisal is concerned with examining the economic benefits expected to be reaped from the project. It is related to the benefits drawn from the project to the nation and to the society at large. The benefits are: i) increased level of output of goods and services; ii) employment generation direct and indirect; iii) revenues to government exchequer in the form of taxes, levies and others; and iv) earnings from equity capital. In general it makes an appraisal of the impact of the project on economic aggregates. It is done by studying the assumptions on employment effect, financial projection, production, sales and others.

Appraisal by Funding Agencies: After scrutinising the project report at the 'technical cell' of DHT, it is formally recommended for funding. The project reports are sent to any one of the Term Lending Financial Institutions, namely IDBI, ICICI, IFCI, TIIC, and SFC. The mill in its application gives a comprehensive picture of the project including the nature and purpose of assistance, cost of the project, financing mix, market prospects for the yarn, the expected profitability and managerial and technical arrangements made for the operation of the project.

After the project proposal is received, a team of officials comprising financial, technical and managerial experts makes a preliminary appraisal of the projects. Crucial aspects of the project, namely marketing mix, production process, spindle capacity, cost of the project, means of finance, and profitability are subjected to an in-depth analysis.
Discussions are held with the applicant-mill. The assumptions made regarding production and financial projections have to be substantiated. Comparisons with similar projects, assessment of technical suitability of the engineering package, scrutiny of the terms and conditions of contractors and suppliers' quotations, verification of market assessment, inspection of the site and expert opinions are analysed in an in-depth manner. A detailed appraisal of the technical, marketing, financial, economic and management aspects is made.

These aspects are considered for ascertaining the project's viability and its acceptability for project financing. Senior executives of the term lending financial institutions make appraisals based on the available reports and comments given at the lower level. During the appraisal, clarifications on any aspect of the projects are sought and discussed with the cooperative spinning mills concerned. If everything is finalised, the results of the appraisal as done by the board are conveyed to the cooperative spinning mills. It has to be pointed out that the process of appraisal is a time consuming exercise and it takes three to six months.

When the project finance is funded by a single organisation, the method of appraisal cited above would be followed. On the other hand, if it is funded by more than one funding agency, the appraisal is done in a slightly different form. After receiving the project application, the project team of the financial institutions conducts the preliminary review on technical, financial, marketing, economic and management aspects of the proposal. It prepares a flash report on the project and circulates it among the participating institutions for their consideration. The participating institutions identify the lead institution, which makes a thorough appraisal of the proposal. Necessary clarifications are sought and modifications are made to support the proposal. A detailed appraisal report is prepared and sent to the participating institutions for consideration. Then the project is jointly appraised in an inter-institutional meeting and subsequently financial participation
is finalised. Later the lead institution informs the cooperative spinning mill about the approval of the project.

**Appraisal Techniques**

In general, the methods of appraising the capital expenditure proposals could broadly be classified into two, viz., traditional methods and time-adjusted methods. The traditional capital investment appraisal techniques consist of payback period (PBP) and Average Rate of Return (ARR). The time-adjusted methods include the Net Present Value (NPV), Internal Rate of Return (IRR) and Profitability Index (PI). A brief discussion on each method would be helpful to understand the importance and features of capital budgeting appraisal techniques.

**Pay Back Period:** It is the simplest and perhaps the most widely employed quantitative method for appraising the capital expenditure decisions. Payback period represents the number of years required for a firm to recover the original cost of investment from net cash flows. There are two methods for calculating the payback period. When the cash flow stream is uniform, the PBP is calculated by dividing the initial investment by the expected cash flow after tax. When the project's cash inflows are not uniform, the PBP is calculated easily by adding up the cash inflows until the total is equal to initial cash outlay.

Under this method, the project can be accepted or rejected, by comparing the actual payback period with the pre-determined PBP. When the former is shorter than the latter, the project proposal is accepted. If it is vice-versa the proposal can be rejected. It is always preferable to have projects with periods of quicker returns. The positive features of this method are: i) it is easy to calculate; ii) it is simple to understand; iii) it is based on cash flow analysis; iv) it lays greater emphasis on liquidity and solvency; and v) it stresses the principle of "earlier the better." Inspire of the merits, it suffers from certain
limitations. They are: i) it ignores the cash flows after the payback period;
and ii) it does not consider the time value of money.

Accounting Rate of Return: The cash inflows to be generated by any investment will vary with the size or scale of investment. Therefore, it would be necessary to measure the return in relation to the size of the investment outlay. Such measures of annual return on the outlay are referred to as 'rate of return' expressed in percentage. This is based on accounting information. The accounting rate of return is calculated by dividing the average income after tax by the average investment. The average investment would be equal to half of the original investment if it is depreciated constantly.\(^{18}\) It can be represented by

\[
\text{ARR} = \frac{\text{Average income after tax}}{\text{Average investment}} \times 100
\]

By applying this method a project would qualify to be accepted if the actual ARR is higher than the minimum rate of return pre-determined by the management.\(^{19}\)

The advantages of this method are: i) it is simple to calculate and use; ii) it stresses the profitability of the project rather than liquidity; iii) it considers the entire stream of benefits over the life of the project; and iv) it is based on accounting information which is readily available and is familiar to business men.\(^{7j}\)

However, it suffers from certain limitations such as: i) it ignores the time value of money; ii) it is based on accounting profit and not cash flow; and iii) it is incompatible with the firm's objective of maximising the market values of stocks as the share value does not depend upon accounting rates.
Discounted Cash Flow Techniques

The discounted cash flow techniques have been developed to overcome the drawbacks of traditional methods. The vital feature of DCF techniques is that they consider the time value of money. These techniques include Net Present Value (NPV), Internal Rate of Return (IRR) and Profitability Index (PI). Each method is described below.

Net Present Value (NPV) : The net present value of an investment is found out by the present value of future cash inflows, discounted at the appropriate cost of capital minus the cost of the investment.\(^{20}\) This method does not arrive at a percentage rate of return, but discounts the future cash flows at a rate which is said to be the firm's cost of capital.\(^{21}\) The acceptance rule under this approach is to accept the investment project if its NPV is positive or equal to zero, and to reject investment projects with negative NPV.\(^{22}\) The NPV criterion is popular because it recognises the time value of money and considers all cash flows over the entire life of the project in their calculations. Furthermore, it is consistent with the objective of maximising the welfare of the owners.\(^{23}\) The limitations of this technique are that: it is difficult to work out the cost of capital and to obtain the estimates of cash flows, due to uncertainty. Yet another drawback is that it assumes that the immediate cash flows are reinvested at the firm's cost of capital which is not always true.

Internal Rate of Return (IRR) : This method seeks to find out the earnings rate which equates the present value of the streams of earnings to the amount of the investment outlay. It can be defined as that rate of return which discounts all the future cash flows to exactly equal the outlay.\(^{24}\) The IRR is similar to the NPV method. Instead of a minimum acceptable rate of return being defined as an input, the rate of return is calculated which balances the cash inflows over time with the cash outflows over time.
The advantages of this method are: i) it considers the time value of money; ii) like the NPV, it takes into account the cash flows over the entire life of the project; iii) but, unlike the NPV method, the calculation of cost of capital is not required for computing IRR; iv) it measures the relative profitability of an investment on the basis of a single overall rate of return per year; and v) it is consistent with the objective of maximising the wealth of the shareholders.

The limitations of this technique are: i) it is difficult to understand the concepts and compute the IRR; and ii) it is assumed that the intermediate cash flows are reinvested at the internal rate of the project which may not always be true.

Profitability Index (PI): Profitability index is a ratio of the present value of the net cash benefits to the present value of the net cash outlay. Higher the profitability index, the greater the return. Any project with PI above one is acceptable since benefits exceed outlay but PI below one is not acceptable. Profitability index is conceptually a sound method of appraising investment since it gives due consideration to the time value of money. The only negative aspect is that it requires more computation than the traditional methods.

Appraisal Techniques used in the Selected Cooperative Spinning Mills

The cooperative spinning mills under report seem to follow only one technique of appraisal that is, the payback technique though there is a vast scope for employing the discounted cash flow techniques. Even in employing the payback technique, the cash flows have not been taken into account. The term loan proposed to be borrowed forms the basis for finding out the payback period. This may be explained in the following manner. A detailed repayment schedule is prepared for the term loan proposed to be borrowed along with the project proposal. A schedule of repayment is prepared to assess the mode of repayment,
quantum of repayment of principal and interest, and the period of repayment. A schedule of repayment is insisted on by the term lending institutions for the smooth recovery and for the fulfillment of the requirements of the regulations of funding agencies. The payback period is calculated by dividing the debt by the annual cash flow. The initial outlay is not considered for computing the payback period.

The proposals as prepared by the mills on various types of capital expenditure indicate that they contain all basic information required for calculating PBP, ARR, NPV, IRR and PI. But then, the mills have not used the information and data for calculating the above. The reasons are: i) the mills do not have personnel who are familiar with appraisal methods, especially the time adjusted-methods; ii) the financing institutions are very much interested in knowing about the recovery of loan proposed to be extended by them; and iii) the Directorate of Handlooms and Textiles does not evince any interest in using discounted cash flow technique.

Thus the appraisals are mostly based on assumptions and projections and 'how realistic the projections are'. The tool employed to appraise the worth of the project is the payback period. But it has to be noted that it is just a partial application of the payback period. Risk analysis is totally absent here. The staff of the mills, especially those dealing with finance, are totally unaware of any of the techniques of risk analysis.

Project Implementation

The appraisal of the proposal leads to a final decision on the project. The decision may invariably result in: i) acceptance of the proposal; ii) acceptance of the proposal with a lower budget; iii) acceptance subject to revision or modification; and iv) rejection of the proposal.
The accepted proposal needs to be implemented. This is a very important stage wherein the investment idea gets materialised.

Any successful implementation of the project must ensure the completion of the project on time and within the budget. To ensure the completion of the project within the definite time and resources, a project plan of action with a definite time and allocation of resources has to be prepared. This plan of action stipulates the time to be taken for the completion of each activity along with financial commitments. The plan of action for implementing the project as followed in the three categories of investment decisions is given in table 4.2.

<table>
<thead>
<tr>
<th>Project Activities</th>
<th>Establishment</th>
<th>Expansion</th>
<th>Modernisation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acquisition of land</td>
<td>7 months</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>Development of the land</td>
<td>3 months</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>Completion of civil work</td>
<td>12 months</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>Plant and machinery</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Placement of order</td>
<td>5 months</td>
<td>1 month</td>
<td>1 month</td>
</tr>
<tr>
<td>Delivery at site</td>
<td>14 months</td>
<td>1 month</td>
<td>7 months</td>
</tr>
<tr>
<td>Erection</td>
<td>14 months</td>
<td>2 months</td>
<td>6 months</td>
</tr>
<tr>
<td>Commercial production</td>
<td>2 months</td>
<td>---</td>
<td>2 months</td>
</tr>
<tr>
<td>Total time planned for commissioning the project</td>
<td>36 months</td>
<td>3 months</td>
<td>12 months</td>
</tr>
</tbody>
</table>

The plan of action for implementing the investment decision should be strictly adhered to for the timely commissioning of the project. Any defective or improper implementation of the project results in delay in the commissioning of the projects, leading to time and cost overrun which have a serious impact on the profitability of the enterprise. Instances can be drawn from the public sector undertakings for the inordinate delay in execution of the projects.
The Mysore Paper Mills proposed a newsprint and optimisation scheme at a cost of Rs.85 crores. It was commenced in 1976, as scheduled, and was estimated to be completed by June 1979. But the project was completed only in 1984 with a revised project cost of Rs. 145 crores. The Tamil Nadu Magnesite Limited had a project for producing high quality magnesite. It was approved in November 1982 at an estimated cost of Rs.26.13 crores but it was commissioned only in February 1985 with a cost of Rs 58 crores/ The delay in the execution of projects results in heavy cost overruns in the case of big dams also. For example, the original cost of construction of "Indira Sagar" of Madya Pradesh was Rs. 752.16 crores. It was upgraded to Rs. 1574 crores at the time of completion. The Omkareshwar dam also had a cost overrun of more than 100 per cent.29

In the steel sector, the colossal overruns experienced by Vizag Steel Project with a time overrun of 56 months and a cost overrun of Rs.6093 crores are the results of wrong estimates, bad fund flows, inordinate delay in civil work and equipment supplies by public sector enterprises, failure on the part of the State Government to provide water on time and many other factors.

The expansion projects of the both Bokaro and Bhilai steel plants have overrun by 8 years and 7 1/2 years respectively with cost overruns of Rs. 1251 crores and Rs. 1350 crores respectively. Non-freezing of specifications, 'go ahead' clearance without a final plan, delay in supplies by public sector enterprises and delayed dispatches by the erstwhile USSR are some of the reasons for the overrun.30

The selected cooperative spinning mills could not commence their production as per the plan of action. The time and cost overrun as experienced by the chosen mills are presented below.
The project overrun in the case of expansion was high when compared with establishment and modernisation, both in terms of time and cost. Cost overrun in the case of the establishment decision was marginal whereas in the case of expansion it was very high. In the case of modernisation, it was implemented in a phased manner over a period of two years, causing the time overrun of 12 months and the cost overrun of 6.10 per cent.

The reasons for the project overrun as attributed by the mills are: i) absence of project schedule monitoring system; ii) delay in getting approval from the DHT; iii) delay in the transportation of plant and machinery; and iv) delay in synchronising and executing the components of the project.

Project overrun in the form of time and cost is likely to affect the production operation, sales, profit, and ultimately the debt-servicing capacity of the mills.

Conclusion

We have examined how capital expenditure proposals are screened, appraised and implemented in three types of investment decisions. The scope of screening proposals is restricted as the number of proposals that emerged over a period of time is limited. Capital expenditure proposals hardly emerge from the
mills. Regarding the appraisal methods it has to be noted that the proposals are thoroughly appraised at two levels: i) the mill concerned appraise the proposals in consultation with the IT; and ii) the financing institution makes an appraisal of the project proposal.

The tool employed for appraising the proposals is a payback period in a crude form. They have just considered debt-servicing capacity of the mills. The mills do not employ other sophisticated techniques like discounted cashflow techniques, though there is vast scope for employing such techniques. For implementing the investment decision, the mills concerned have formulated a definite plan of action. But, the time frame was not strictly followed resulting in time and cost overrun. The overrun was found to be on the higher side in the case of "expansion".

References

2. Ibid., p.56
5. Mathur, B.L., (ed.), op.cit., p.4
7. Cherunilam, Francis, op.cit., p.86


13. Agarwal, J.D., op.cit, p. 18


15. Purohit, Badri Narayan, et.al., op.cit., p.25


20. Machiraju, H.R., op.cit., p.37

21. Purohit, Badri Narayan, op.cit., p.27

22. Van Home, James, op.cit, p. 115

23. Agarwal, J.D., op.cit., p.21


27. Agarwal, J.D., op.cit., p.22


30. Roy, P.K., Total Project Management: The Indian Context, New Delhi: Macmillan India Ltd., 1994, p.23