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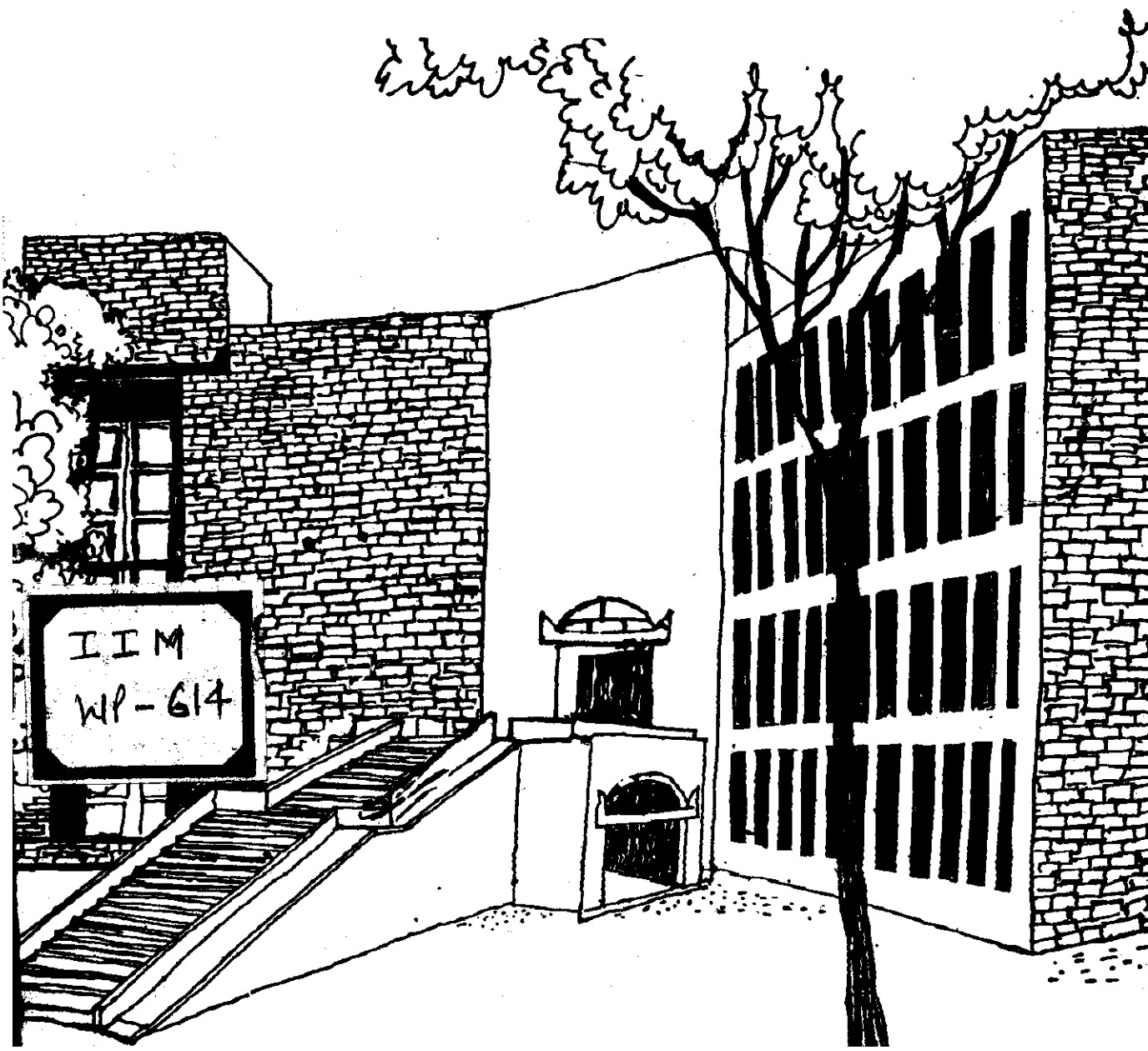

CAPITAL EXPENDITURE PLANNING AND CONTROL: A SURVEY OF INDIAN PRACTICE

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ABSTRACT

The purpose of the study was to find out the policy and practice of Indian companies regarding various phases of the capital expenditure planning and control, and to ascertain corporate executives' opinion on the linkage between the capital budgeting and the corporate strategy. Detailed questionnaires were sent to fourteen companies which had agreed to participate in the study.

The study reveals the following: (i) The definition and classification of capital expenditures is guided a lot by accounting convention and tax regulations. (ii) A very large number of project ideas are generated at the plant level. Thus the investment idea generation is a bottom-up process. (iii) The authority to progress and approve investment proposals and to spend money for approved expenditures is rigidly concentrated in the hands of a few top management officials. (iv) A large number of business executives lack conceptual clarity in estimating cash flows. (v) Almost all companies use payback as the evaluation criterion. About three-fourth companies use NPV or IRR; but none of the companies uses any of the sophisticated criteria without payback. (vi) Selling price, product demand, technological changes and government policies contribute investment risk. Sensitivity analysis is the most popular method of handling investment risk. (vii) Companies hardly face capital shortage. No company uses mathematical model to select project under capital rationing. (viii) It is a common practice in India to reappraise approved projects. The power

to review reappraisals is concentrated at the top. (ix) In practice, strategic considerations (as well as a number of qualitative factors) are considered to be very important in the investment planning.

On the basis of the findings of the study and experiences of other countries, a descriptive model for the capital expenditure planning and control is developed.

CAPITAL EXPENDITURE PLANNING AND CONTROL: A SURVEY OF INDIAN PRACTICE

Capital expenditure planning and control is a process of facilitating decisions covering expenditures for long-term assets. Capital expenditures can be thought of as those investments on asset items that provide future savings potential. Since a company's profitability, nay its survival, is perceived to hinge on capital expenditures, particularly the large ones, the importance of capital expenditure planning and control is pervasive.

It is significant to note that in the theoretical literature on the capital expenditure planning and control, the evaluation phase has been accorded the maximum emphasis. Also the adoption of the discounted cash flow (DCF) techniques has been advocated. One can think of two reasons for this emphasis on the evaluation phase. First, this phase is easily amenable for a structured analysis than other aspects of the capital expenditure planning and control. Second, the evaluation phase is considered to be the most important aspect of the capital budgeting process by academicians. It may be noted, however, that no empirical verification of this contention exists. Practitioners, on the other hand, consider other phases of the capital budgeting process as more important than the evaluation phase. An American businessman has, for example, identified nine steps in the investment decision-making process where evaluation of the project's net benefits is one of the steps [7]. He stated:

> "In general, most academicians and many practitioners have over-estimated the importance of [evaluation]....., and academic work over the last two decades has concentrated on improving the techniques that "measure net benefits". Actually, measuring net benefits is one of the least important steps, but at the same time, it is one of the easiest areas for which to recommend and implement changes. [Emphasis added]

In fact, a good capital expenditure planning and control would be more than just evaluate and select individual projects. It should encompass the entire aspects of an investment programme and spending as well as must tie into the firm's long-range planning and corporate strategy.

The researchers in their empirical studies have identified various distinct phases of the capital budgeting process. In an earlier U.S. study in 1962, Haynes and Solomon [8] noted five activities of the capital budgeting process: (i) searching for investment opportunities, (ii) forecasting the supply and cost of funds, (iii) estimating cash flows and other benefits, (iv) ranking and choosing among projects, and (v) post-auditing. In a subsequent study by Ackerman [1] in 1970, three phases of the capital budgeting process were identified: (i) definition, where investment projects were identified that will correct discrepancies or develop business opportunities, (ii) impetus, or the force that moves a project toward funding, and (iii) authorisation, or the securing of funding. In a comprehensive survey of the investment practices of the British companies, Rockley [14] assumed five steps of the capital budgeting process: (i) origination of investment proposals, (ii) capital

expenditure authorisation, (iii) proposal evaluation, (iv) expenditure control and (v) decision appraisal (post-audit). In the Indian context, Porwal [14] in his study in 1969-70 identified four stages of the capital budgeting process: (i) initiation, (ii) evaluation, (iii) approval and (iv) control.

While many different phases have been identified, one may conveniently categorise the capital expenditure planning and control into five general phases: (i) identification or origination of investment opportunities, (ii) development of forecasts of benefits and costs for various alternatives to take advantage of investment opportunity identified, (iii) evaluation of net benefits for selecting capital projects, (iv) authorisation for progressing and spending capital expenditures, and (v) control of capital projects. Past surveys in India or abroad have not focused adequately on all phases of the capital expenditure planning and control. Since phases other than evaluation are important, research on those phases of capital budgeting is needed. It is in this light that the present exploratory study was undertaken.

The objectives of the study are:

(1) to find out the policies and practices of Indian companies regarding the various phases of the capital expenditure planning and control, and

(2) to test the opinion of the business executives on the need of linking corporate strategy and investment decision-making.

Two detailed questionnaires were sent to the companies which had agreed to participate in the study: One regarding the investment evaluation practices and another regarding other phases of capital expenditure planning and control. Fourteen companies replied the first questionnaire, while thirteen companies responded to the second questionnaire. Twelve companies were common. The profiles of the companies which participated in the study is given in Table 1. It is clear from the table that these companies belong to different businesses and have different characteristics in terms of size (sales and number of employees), capital intensity (net tangible fixed assets), volume of spending (capital expenditure incurred), and level of technology. Thus they represent variety.

DEFINITION AND CLASSIFICATION

In principle, capital expenditure includes all such expenditure which is expected to produce benefit to the firm over a period longer than the accounting period of one year. This definition is quite broad, and encompasses both tangible as well as intangible assets created by the incurrence of capital expenditure. Thus money spent on R&D is as much a capital expenditure as money spent in acquiring a plant. It was thus thought vital to find out the way capital expenditures were actually defined by Indian companies and to determine the types of expenditures which they subjected to capital budgeting procedures, whatsoever, in force.

Most sample companies provided traditional definition of capital expenditure: Expenditure incurred on fixed assets was

Table 1 : PROFILE OF SURVEY COMPANIES

Name of Company (alphabatical order)	Nature of Business	No.of Employees	Sales (Rs.million)	Net fixed assets (Rs.million)	Capital expenditure (Rs.million)	Level of Technology
Blow Plast Limited	Plastic Products	3,500	354	83	28	Medium
Central Machine Tool Institute	Research and development	441	11	40	53	High
Cibatul Limited	Sulpha drugs and chemicals	579	176	65	19	Medium
Colour-chem Limited	Dyes and chemicals	1,650	448	173	12	Medium
Greaves Cotton Company Limited	Trading and manufacturing	1,880	1,045	27	9	High
Hindustan Cables Limited	Cables and wires	5,500	938	255	75	High
Hindustan Ciba-Geigy Limited	Pharmaceuticals, consumer products, dyestuff	3,000	876	203	65	High
Petrofils Co-operatives Limited	Polyester filament yarn	1,500	400	410	85	High
Rane Barke Lining Limited	Auto Ancillary	500	85	26	6	High
Richardson Hindustan Limited	Pharmaceuticals	705	204	30	7	High/Medium
Thermax Private Limited	Boilers, water treatment plants etc.	1,800	405	78	41	High
Tube Investment of India Limited	Industrial raw materials	4,100	700	160	40	Medium
Voltas Limited	Marketing and Manufacturer of airconditioners, refrigerators, forklift trucks etc.	8,500	3,560	150	24	High
Warner Hindustan Limited	Pharmaceuticals, chemicals etc.	1,000	240	20	7	Medium

Note: Data relate for the year 1982/1983

included in the definition. One company - a very large multi-national in the private sector - did not bind itself within the one-year accounting period. It defined capital expenditure as "any expenditure that results in the creation of a tangible asset with a life of more than three years". [Emphasis added] It was the practice of some of the companies to exclude expenditure upto a certain amount (say Rs.5,000 or Rs.10,000) from the definition of capital expenditure. In case of quite a few companies, the scope of capital expenditure was influenced by the regulations, particularly relating to taxation and tax incentives and the management's interpretations of those regulations. Thus several companies were found to exclude large sums spent on advertisements, R&D, employees' training etc. These expenditures were expensed as revenue items for tax purposes. One exception was a pharmaceutical company which would capitalise all fixed assets including R&D irrespective of value. Few companies also reported that they did not capitalise replacement of spare parts, know-how and fees and pollution control equipment. It is thus obvious that the influence of tax accounting in defining capital expenditure is very strong. Also, expenditures creating intangible assets are not classified as capital expenditure by many firms in practice.

For planning and control purposes, management literature recognizes several levels of decision-making. In the literature, for example, three levels of decision-making have been identified: (i) operating, (ii) administrative, and (iii) strategic. [5]. The capital budgeting decision-making could also be categorised into these three levels. The operating capital budgeting may include

minor expenditures such as office equipment, and may be easily handled by lower level management. On the other extreme, the strategic capital budgeting expenditure involving large investments, such as acquisition of a new business, would be unstructured in nature and would be generally handled by top management. In between these two levels, comes the administrative capital budgeting expenditures of medium size, semi-structured in nature and to be handled by middle management. Keeping in view the different levels of decision-making, capital expenditures could be classified in a way which would reflect the appropriate managerial efforts to be placed in planning and controlling them. One useful classification could be: (i) strategic projects, (ii) general replacement projects, (iii) expansion in the existing line of business, (iv) expansion in the new line of business, and (v) statutorily required and welfare projects. Further, each of these categories could be sub-classified according to funds required by projects. The 71 per cent companies surveyed classified capital expenditures by asset category. Land and building, plant and machinery, furniture and fixtures and electric installation are the most common asset-wise classification of the capital projects. Such classification is hardly of much use in planning and controlling capital expenditure. Three companies, however, were found to deviate from the asset-wise classification and made classification useful for decision-making purpose. A toys and plastic product manufacturing company, having sales of Rs.350 million and employing 3,500 employees, made the following classification: (i) replacement for cost reduction and mechanisation, (ii) replacement of worn-out equipment, (iii) plant capacity expansion, (iv) new project line, (v) welfare activity, (vi) statutory requirement, and (vii) strategic. Yet a pharmaceutical company, sales being

Rs.876 million and number of employees being 3,000, had the following categories of capital projects: (i) project under implementation, (ii) new projects, (iii) expansion of existing equipment, and (iv) replacement of existing equipment. One more company with 4,100 employees and a sales of Rs.700 million categorised its capital expenditure as follows: (i) replacement, (ii) modernisation, (iii) expansion, (iv) research and development, (v) new project, (vi) diversification, and (vii) cost reduction schemes.

It is significant to note that these three manufacturing companies are quite large in terms of sales, number of employees and average annual capital expenditure incurred.

ORIGINATION

The capital expenditure planning implies allocation of limited resources. It also implies a number of investment opportunities or at least the need for them. But such investment opportunities have to be identified or created: They do not occur automatically. Identification of investment opportunities is the first necessary step in a successful capital budgeting planning. For example, King [9] noted the following from his case studies:

> "Except for the repetitive and the trivial it is apparent from both my case studies and those reported in the literature that capital projects do not begin life in a filing cabinet awaiting only the tidious collection of the information necessary for their evaluation. They must be <u>created</u>".

Similarly, Haynes and Solomon [8] stated:

> "Our case studies state that the highest priority should be assigned to the search for alternatives, the search for information, and the correct processing of the available data before ranking formals are applied".

Thus in this study, it was thought to be of prime importance to find out where the investment ideas came from and what procedures were in operation for the purpose of stimulating capital expenditure proposals. Our survey showed that the sources of capital expenditure proposals were not widely spread throughout each company. A narrow group of employees provided the majority of investment ideas as indicated below:

Table 2 : SOURCES OF INVESTMENT IDEAS

Percent of Ideas Originated	Percent of Companies				
	Board	Divisions	Plant	Marketing department	Other
0 - 5	15	8	8	23	0
6 - 20	54	15	8	15	31
21 - 50	8	23	23	8	0
51 - 75	8	15	38	0	0
Above 75	0	0	8	0	0

In case of about 46 per cent of the companies, more than 50 per cent of the investment ideas were generated at the plant level. The contribution of board in idea generation was relatively insignificant (except in the case of two companies, one of them being a government company), although about two-third of companies depended on board upto 20 per cent of the investment ideas. Two companies also reported that they depended on the research centres for about 10 to 20 per cent of the investment ideas. These findings may give

an impression that investment decision-making process is largely a bottom-up process in India. It is really dangerous to make this kind of a generalisation since a distinction needs to be made between types of investment ideas generated at various levels. The majority of the ideas generated at plant level may relate to routine replacements or improvements, while the ideas generated at board level may be the major, strategic projects influencing the profitability and direction of the company in a substantial way. The small percentage of ideas generated at the top management level might, in fact, be investment proposals requiring heavy capital expenditure.

What procedures form basis for generating investment ideas? A majority of companies (78 per cent) depended on management sponsored studies for project identification. Formal suggestion scheme and consultancy advice were also used respectively by 54 per cent and 46 per cent companies. Except about one-third of the companies, which either used formal suggestion scheme or management sponsored studies, all other companies used combination of methods for originating investment ideas. Financial incentive, except in case of one company, was hardly used in practice for generating investment proposals. Companies also reported other efforts for searching investment projects: (a) review of researches done in the country or abroad; (b) conducting market surveys; (c) deputing executives to international trade fares etc. for identifying new technology/products.

What practices are followed by companies regarding submission of investment proposals once they have been identified? The annual

exercises play an important role in the emergence of capital expenditure proposals. This fact may result in a restriction on the power to make investment proposal to certain times in the year. Except in case of 31 per cent companies, all other companies did not have any restriction in terms of the timing of submission of the investment proposals. The practice of submitting proposals any time during the year has the advantage of availing the benefits of investment opportunities continuously. The companies which restricted the submission of proposals had the following practices:

(i) The submission of proposals should coincide with the plan period.

(ii) Proposal should be submitted 3 months before the financial year begins.

(iii) In case of a large multi-national company, 70 per cent of the proposals were submitted during August-September and 30 per cent could be submitted any time.

(iv) Another company had restriction of submitting proposals during May and June.

DEVELOPMENT

Development of alternative courses of action available to he firm is the next step once investment opportunities have been identified. The most important part of the development process involves the forecasting and determination of cash flow information. The cash flow estimates have at least three distinct components: (i) initial cost of investment, (ii) annual operating cash flows, and (iii) terminal cash flows. In principle, cash flows should be prepared on incremental basis. The initial cost of project would

generally consist of the cost of project (plant, equipment and other facilities) plus installation cost plus net working capital required minus net funds realised from the sale of replaced assets (in case of replacement decisions). If tax incentives, such as investment allowance tax shield, are available, they should also be adjusted in the initial cost of the project. The initial cost may be spread over a number of years. The annual operating cash flows would be equal to incremental cash revenues minus incremental cash outflows, including tax. The terminal cash flow of a project would include net funds realised from the sale of the asset plus the working capital released.

In the present study, there was a complete unanimity amongst all companies to include the asset's price as quoted by suppliers and installation costs in the original cost of the project. The capital tied up in any project is not just the expenditure on 'fixed' assets, but additional expenditure is required to 'work' the fixed assets. This working capital should be provided for while estimating the initial cost of the project. Only 43 per cent companies included working capital in the initial cost. A few companies also mentioned that they would also include custom duty, sales-tax and insurance in the initial cost of the project. A company was also found to include interest cost in the initial investment. Sometimes, allowance for contingency was also made. Survey companies were equally divided in the treatment of the proceeds from the sale of existing assets. Half of them stated that they reduced the initial cost of the initial proposal by the proceeds. Although 50 per cent of the companies did not adjust for the sale proceeds of the existing assets,

yet all companies did have some basis for valuing them. The 57 per cent companies found depreciated value, while remaining 43 per cent found current value for the existing assets. It is significant to note that those companies which adjusted sale proceeds of the existing assets used their current value. All companies, except a government company, determined income and expenditure for calculating the profitability of a proposal in terms of after-tax cash flows. Expenditures of most of the companies included material cost, labour cost and overheads. A number of companies also stated that they adjusted interest cost in the calculation of operating cash flows. Most of the companies calculated their income and expenditures on incremental basis.

In the development of cash flows, estimate of the life of the project is very important since it directly affects the profitability computation. Theoretically, the economic life of the project should be estimated and cash flows should be forecast over that period. Our survey showed that 43 per cent companies prepared forecasts for 5 years and the equal number of companies for 10 years. The remaining companies divided their projects into two categories for preparing cash forecasts. One company estimated cash flows for 5-7 years for small projects and 8-10 years for large projects. Another company estimated cash flows for 3-10 years in case of small projects and for longer duration, which differed from project to project, for large projects. One of the companies had a unique way of determining project's life for computing income and expenditure. It stated:

> "We calculate the payback period on a particular rate of interest and hence expenses have to be projected for as many years as the payback period. Alternatively, when we use the DCF method, the cash flows are taken for the number of years of the life of the asset based on technical studies, obsolescence rate etc."

It was hypothesised that perhaps the forecasts of income and expenditure might be influenced by the type of capital investment. Therefore, the survey companies were asked to indicate the influence of type of capital investment for forecasts and project life. It seemed that a number of companies could not understand the question. Therefore, the answers were not very meaningful. However, some of the companies did mention that the estimates of the life of projects and cash flow determination was affected by factors such as cost of the project. Some of them also mentioned that if it was a normal replacement or if the projects were required legally or for welfare, they would not go into the details of preparing forecasts; the evaluation of qualitative factors was enough.

EVALUATION

As stated earlier, evaluation and selection phase has been accorded disproportionately very high emphasis in theoretical and empirical literature. We aimed to find out if the capital expenditures were subjected to formal financial evaluation, whatever it might mean to companies. More importantly, we also intended to determine the extent to which sophisticated techniques were being used by companies in evaluating their investment projects.

The following table gives an idea of the formal financial evaluation of capital expenditures done by the companies:

Table 3 : EXTENT OF FORMAL EVALUATION

Percent of projects formally evaluated	Percentage of companies
0 - 25	8
26 - 50	15
51 - 75	31
76 - 100	46

It can be seen that 46 per cent of companies prepared a formal financial evaluation for more than three-fourth of their capital projects. About three-fourth of the companies subjected more than 50 per cent of the project to some kind of formal financial evaluation. It is significant to note that as many as 85 per cent of the companies also stated that they had some types of projects which were not formally evaluated. The following projects were not subjected to formal evaluation: replacement of worn-out equipment, welfare proposals, statutorily required projects, replacement of assets of immediate requirements, capital expenditure below certain limit, small value items like furniture, office equipment, etc.

Methods of Evaluation

In the theoretical literature on capital budgeting, four techniques of evaluation are very widely discussed, i.e. net present value (NPV), internal rate of return (IRR), payback and accounting rate of

return (ARR). A number of variations of these techniques also exists. The first two techniques use the concept of cash flow and time value and are considered to be "sophisticated" techniques. The remaining two techniques do not use time value concept and are therefore considered "naive" techniques. Empirical studies in the U.S.A. have shown that the use of DCF techniques is increasing. But these studies have also shown that unsophisticated techniques like payback are also popular, and their importance is not declining. Our investigation has also shown a similar pattern as indicated below:

Table 4 : COMBINATION OF EVALUATION METHODS USED BY COMPANIES

Payback	IRR	NPV	ARR	Percentage of companies using each combination of criteria
x	x	x	x	7
x	x	x		14
x	x		x	7
x		x	x	7
x	x			36
x		x		7
x			x	7

All survey companies, except one, in our study used payback. With payback and/or other techniques, 64 per cent companies also used IRR and 43 per cent companies NPV. One-third of the companies were also found using ARR. A government-owned service organisation reported not to use any of the methods: It simply considered project's ability to earn incomes from services and response of industries (perhaps qualitatively). The popularity of naive techniques - payback and ARR -

in combination with NPV or IRR or both is obvious from the table. It may be underscored that one-third of companies used both payback and IRR. IRR was found to be second most popular method.

If there was a variation in the use of evaluation methods, one might be interested in finding out if it was on account of type of investment. The 57 per cent of the survey companies replied in negative. Those companies which thought that the type of investment influenced choice of evaluation methods gave the following explanations: (i) The main reason is the cost of investment project. Low investment value projects (upto Rs.2 lakhs) are evaluated by payback, and DCF techniques are used for large, long-duration project. (ii) R&D expenditures are evaluated qualitatively. For projects involving fast changing technology, payback is used. (iii) For single equipment, payback is used and for major projects, DCF techniques are used. (iv) A company defined high value capital expenditure items as those which involved amount over Rs.2.5 million. Such expenditures are subjected to NPV evaluation.

It may be emphasised that companies were using combination of evaluation methods. One might therefore like to know whether any one method could become more important than others over the years. The answer to this question was not clear-cut. Companies again reported combination of methods being popular, although it is significant to note that payback was stated to be popular by all. The reasons for the popularity of payback in order of importance were found to be

its simplicity to use and understand, its emphasis on the early recovery of investment and handling of risk. (See Table 5)

Table 5 : REASONS FOR POPULARITY OF PAYBACK

Rank	Total Ranks		
	Easy to understand and calculate	Protects against risk	Emphasis on early recovery of capital
1	5	1	4
2	5	4	4
3	4	4	1

If payback is a popular method, a question arises: Do companies insist for a payback standard for all of their projects? It was found that one-third of the companies insisted on computation of payback for all projects, one-third for majority of projects, and one-third for some of the projects. In case of about 60 per cent of companies, standard payback period ranged between 3-5 years.

What could be the reason for relatively less use and secondary role of DCF techniques in India? The main reason which has been singled out was difficulty to understand and use DCF techniques. The other factors were lack of technical people and unwillingness of top management to use the DCF techniques. One large manufacturing-cum-marketing organisation mentioned that conditions of its business were such that the use of DCF techniques was not needed. By conditions of business the company perhaps meant its dominantly marketing nature and its products being in seller's markets. Yet another company stated that

replacement projects were very frequent in the company, and it was not necessary to use DCF techniques for such projects.

Minimum Rate of Return

In the implementation of a formal capital expenditure planning and control system, the use of a minimum required rate of return is necessary. About two-third of the companies specified the minimum acceptable rate of return. The following are the magnitudes of minimum rates of return used by the survey companies:

Table 6 : MINIMUM RATES USED BY COMPANIES

Minimum rate of return (%)	Percentage of companies
10	14
15	21
18	7
25-30	21
Not specified	36

It seems that these minimum rates were used either as discount rates in NPV or cut-off rates in IRR or ARR. To further elicit companies' understanding about discount rate, they were required to specify and define discount rates used in the computation of NPV. Their responses are summarised below:

Table 7 : TYPES OF DISCOUNT RATES

Discount rate	Percentage of companies
WACC	29
Borrowing rate	21
Specific cost	7
Management determined	7
Not specified	36

Thus 29 per cent companies were computing the weighted average cost of capital (WACC) as discount rate. The following definitions of WACC were provided by those companies:

(i) After-tax of debt x weight + After-tax cost of equity x weight. Cost of equity equals 25 per cent and weights are in proportion of the sources of capital used by specific project.

(ii) (Net of taxes cost of borrowings x Borrowings + Normal dividend rate x Equity) ÷ Total capital employed.

(iii) (Expected dividend rate x Net worth + After-tax interest rate x Debt) ÷ Capital employed.

It is clear that business executives are becoming aware of the cost of capital, yet they have wrong notion about the concept, and use incorrect methods for its computation. Arbitrary judgement of management also seems to play a role in the assessment of the cost of capital. The fallacious tendency of equating borrowing rate with minimum rate of return persists.

Role of Qualitative Factors and Judgement

In theory, the use of sophisticated techniques is emphasised since they maximise value to shareholders. In practice, however, companies although tending to shift to the formal methods of evaluation, yet give lot of importance to the qualitative factors. Our survey indicated that almost all companies were guided, one time or the other, by three qualitative factors: urgency, strategy, and environment. All companies stated that urgency is the most important consideration while more than three-fourth companies thought that strategy played signi-

ficant role in the evaluation of projects. One-third of the companies also found intuitions, security and social considerations as important qualitative factors.

Because of the significance of qualitative factors, judgement seems to play considerable role in the capital budgeting decision-making. To empirically verify the significance attached to judgement, the survey companies were required to indicate its role in investment decisions. Except one company which did not give any response, all companies felt judgement to be an important factor.. Some typical statements are quoted below:

> "Vision of judgement of future plays important role. Factors like market potential, possibility of technology change, trend of government policies etc., which are judgemental, play important role".
>
> "The opportunities and constraints of selecting a project, its evaluation of qualitative and quantitative factors, and the weightage on every bit of pros and corns, cost-benefit analysis etc. are essential elements of judgement. Thus it is inevitable for any management decision
>
> "Judgement and intuition should definitely be used when a decision of choice has to be made between two or more closely beneficial projects, or when it involves changing long-term strategy of the company. For routine matters, liquidity and profits should be preferred over judgement".
>
> "It plays a very important role in determining the reliability of figures with the help of qualitative methods as well as other known financial matters affecting the projects".

We feel that what businessmen call intuition or (simply) judgement is in fact <u>informed judgement</u> based on experience. A firm

growing in a favourable economic environment will be able to identify profitable opportunities without making NPV or IRR computation. Businessmen often act intelligencly than they talk.

Recognition of Risk

One important aspect of capital budgeting planning and control is the assessment of risk. Our discussions with business executives often reveal that they are too much worried about the very uncertain business environment in India. We were therefore interested in finding out what factors led to risk in capital budgeting evaluation and how businessmen incorporated it in the formal evaluation. About 80 per cent of the companies stated that they considered risk and uncertainty while evaluating their investment proposals. To trace the most important factors which could lead to risk, survey companies were required to tick any of the following factors applicable to them: price of raw material, price of inputs other than raw material, selling price of product, demand for the product, government policies, technological changes, life of project, and any other. Four factors which emerged to be most important contributors of investment risk were: selling price, demand for the product, technical changes, and government policies. The following table indicates the significance of the combination of factors:

Table 8 : COMBINATION OF FACTORS LEADING TO INVESTMENT RISK

Demand of the product	Technological changes	Selling Price	Government risk	Percentage of companies
x	x	x		14
x	x		x	21
x		x	x	7
x		x		29
	x	x		14
	x		x	14
			x	7

It is significant to note that besides economic changes, the government intervention and frequent changes in its policies contribute to the investment risk in a developing country like India.

If risk is an important consideration in the project evaluation, companies should have some formal ways of handling it. In theoretical literature, two methods which are generally suggested for incorporating risk in investment decision are risk-adjusted discount rate and uncertainty equivalent. Since our informal discussions revealed that these terms were not known to a large number of business executives, we asked them whether they would prepare conservative forecasts or increase discount rates to recognise risk in investment decisions. We also wanted to know whether other techniques like shorter payback, sensitivity analysis or probability analysis were used for handling risk. Two equally most important techniques which have gained popularity in Indian companies as risk techniques were sensitivity analysis and conservative forecasts. The 86 per cent companies reported to use one or both these techniques to handle risky investments. About one-third of the companies also used shorter payback and one-fourth companies increased discount rates. Only one company stated that it used probability concepts for handling risk.

Shortage of Funds

A great deal of literature exists on investment decisions under capital rationing. Number of involved mathematical models have been suggested to choose amongst capital expenditure proposals under shortage of funds. A necessary point of inquiry, therefore, is: Do companies really face the problem of shortage of funds? Further: Do they

reject projects on account of shortage of capital? How do they select amongst projects if capital is limited? Except two companies, no other company rejected its projects on account of capital shortage. One company stated that if there was shortage of funds, it postponed the project. Although most companies did not reject projects on account of capital shortage, yet they admitted that they could face fund shortage problem. They revealed that the shortage might arise mainly on account of reluctance to raise capital from outside. For some companies, capital shortage might arise because capital expenditures may be limited to internally generated funds. The 86 per cent companies stated that they did not use any mathematical approach to select projects under capital rationing. Those companies which stated that they used mathematical approach failed to indicate the nature of approach. One of them stated that twin objectives were satisfied to allocate limited funds: profitability and strategic considerations. If the capital shortage situation was faced, companies reported that they would make selections on any of the following bases: (i) profitability, (ii) priority set by management, or (iii) experience.

AUTHORISATION

Capital expenditures determine the corporate future. These expenditures may be incurred with the aim of staying in business, or extending sales, or improving market share. Would the business executives be allowed to engage in any kind of capital spending? It may be hypothesised that in practice the power of the business executives to propose and approve capital spending will be restricted because of the control role of capital expenditure decisions in a firm's survival. It was therefore purported in the study to find out the extent of

decentralisation of the managerial power in progressing and approving capital spending.

It is found that the power to commit a company to specific capital expenditure was limited to a narrow band of corporate officials. The control of power was found to lie mainly with the senior executives (for example, Chairman, Managing Director, President, General Manager, Divisional Heads), or the committees consisting of senior executives. In the case of a government-owned service company, the authority for detailed examination of proposals remained with a high powered technical committee. The power to examine the proposals was also concentrated in the hands of top management officials. It was also clear that the examining committee in most companies did not have much powers to authorise expenditure. The authorising power for spending mostly vested with very senior officials of the company like Board, Chairman, Managing Director or President. The duties of progressing the examination and evaluation of a proposal was so what spread throughout the corporate management staff. But in large number of companies, this work was also performed by members of the top management team. It is obvious that the extensive importance is attached to the senior management of companies to tightly control capital investment spending.

The means of control were not limited to the setting of financial limits, budgetary controls were also exercised rigidly. The expected capital expenditure proposals became a part of the capital budget in all companies. The capital budget of all companies, except one, covered a period of one year. A multi-national company's capital budget covered a period of three years. The preparation of capital

budget is an important step in capital expenditure planning and control. It gives a list of anticipated capital expenditures which may be broken down by division, plant and product line. The approval of capital budget does not automatically imply authority to spend. Authority to spend has to be sought within the overall limits approved bn the budget. Such procedure helps to tighton control at the cost of loss of flexibility.

About 79 per cent survey companies also had formal long-range plans covering a period of 3 to 5 years. Out of these, 61 per cent companies felt that long-range plans had an influence on the capital expenditure proposals.

Different procedures were reported to be followed by companies to set approved projects into motion. Following are some of the typical examples: (i) Originator prepares capital expenditures intent; it is authorised by senior vice-president which goes for the approval of the finance department and after such approval, the materials department comes into the picture for procurement. (ii) Detailed engineering is carried out to get the realistic estimates, quotations are sought from suppliers and after having selected the suppliers, orders are placed. (iii) Progressing is achieved through the task force headed by the general manager of the unit and the progress is monitored by the corporate planning cell. (iv) After the project is approved, the concerned division head and project monitor places the order. Time schedule is drawned for completion of project and project monitor ensures timely completion. (v) Once approved operating divisions intent, contract, overseas, and complete within the financial sanction.

CONTROL

Control is the last but most important phase of capital expenditure planning and control. It provides feedback to the company in that it indicates whether the investment programmes were carried out as planned. Our survey indicated that control of capital expenditure was widely practised through the use of regular project reports. The 46 per cent companies made quarterly reporting, 31 per cent monthly, 8 per cent half-yearly and 8 per cent on a continuous basis. Most of the companies (78-86 per cent) reported that evaluation reports included information on expenditure to date, stage of physical completion and approved and revised total cost. A few companies also provided additional information, such as expected date of completion, commitment made and areas where actions were needed, in the reports. The 69 per cent companies mentioned that they took adequate actions after the reappraisal of projects. The actions included: (i) revision of the aims and size of the project, (ii) re-designing and re-scheduling, (iii) financial revision to provide for cost escalation etc. A few companies also opined that they would cancel the projects if it became uneconomical. One exception was a private limited company which stated that it did not normally cancel the on-going projects.

The practice of the concentrated control seems to be a notable feature of capital expenditure planning and control of Indian companies. This was also reflected in the reappraisal (post-audits) of investment proposals. The power of review was vested with the top executives of the companies. In 50 per cent cases, this power was retained by board/

chairman/managing director/president, while in remaining cases by executive vice-president/general managers/divisional heads/financial controllers.

Most of companies reported that in reappraising investment proposals, they considered comparison between actual and forecast capital costs, savings and rate of return. Companies pointed out a number of advantages of reappraisals: (i) it improves overall profitability by positioning the product as per original plans and determining product mix and volumes; (ii) it helps to pinpoint errors in estimations/planning which can be avoided in future; (iii) experience gained from reappraisal helps in guiding future evaluation of projects; (iv) it generates cost consciousness among the project team.

STRATEGIC LINKAGE

The theory of capital expenditure decisions has become quite sophisticated. However, practitioners are not convinced that it can help them in improving the quality of decision-making. It has made them more confused and disillusioned in the face of increasing complexity of operations and environment. For example, Hastie [7] argues:

> "We have erred too long by exaggerating the "improvement in decision-making" that might result from the adoption of DCF or other refined evaluation techniques. What is needed are approximate answers to the precise problems rather than precise answers to the approximate problems. There is little value in refining an analysis that does not consider the most appropriate alternative and does not utilise sound assumptions. Management should spend its time improving the quality of assumptions and assuring that all the strategic questions have been asked, rather than implementing and using more refined evaluation techniques. [Emphasis added]

Recently, a lot of emphasis has been placed on the view that a business firm facing complex and changing environment will benefit immensely in terms of improved quality of decision-making if capital budgeting decisions are taken in the context of its overall strategy. [3, 11] This approach provides decision maker with a central theme or a big picture to keep in mind at all times as a guideline for effectively allocating corporate financial resources. As is argued by a chief financial officer [6]

> "Allocating resources to investments without a sound concept of divisional and corporate strategy is a lot like throwing darts in a dark room".

In fact, a close linkage between capital expenditures, at least major ones, and strategic positioning exists. The existance of this close linkage has led some researchers to conclude that the set of problems companies refer to as capital budgeting is a task for general management rather than financial analysts. [2] Some recent empirical works amply support practitioners' concern for strategic consideration in the capital expenditure structure planning and control [4] It is therefore a myopic point of view to ignore strategic dimensions or to assume that they are separable from the problem of efficient resource allocations addressed by the capital budgeting theory.

With the above background in mind, we aimed in this survey to find out the opinion of Indian executives on the importance of strategic considerations in the investment decision-making. As referred in an earlier section, the 75 per cent companies considered strategy as an important factor in investment evaluation. To ascertain the seriousness

ness attached to strategy, companies were asked to state their corporate strategy and cite instances where projects were accepted or rejected for strategic considerations. Six companies defined their corporate strategy as quoted below:

(i) To remain market leader by highest quality and remunerative prices.

(ii) To have moderate growth for saving taxes and to set up plants for forward and backward integration.

(iii) Our strategy is to grow, diversify and expand in related fields of technology only. Any project which is within the strategy and satisfies profitability yardsticks is accepted.

(iv) Strategy involves analysis of company's present position, nature of its relationship with the environmental forces, company's business philosophy and evaluation of company's strong and weak points.

(v) To take up new projects for expansion in the fields which are closer to present projects/technology.

(vi) To stay in industrial intermediate and capital goods line, and in the process to achieve threefold profits in real terms over 5-year period.

Four of these companies also gave instances of investment decisions which were primarily governed by the strategic considerations. These instances were as discussed below:

(i) The company which defined its strategy as to remain market leader undertook the production of a new range of product, which was not very profitable, for competitive reasons.

(ii) The company, which said to grow in related fields of technology, found recovery of methyl chloride from effluents acceptable since it came within its stated strategy.

(iii) The company which would like to remain closer to its present technology, rejected a profitable project of deep sea fishing and ship building while accepted a marginally profitable project of aint systems since it was very close to its current heat transfer technology.

(iv) The company, which stated to stay in industrial intermediate and capital goods line, rejected the profitable project of manufacturing mopeds since it was a consumer durable and accepted a marginal project of cold formed structured purlins.

Two more companies, which did not define their corporate strategy, also cited examples of investment decisions guided by strategic considerations. One of the companies implied that it looked for projects in high technology, priority sector, and that explained the undertaking of a number of projects by it in the past. This company even sold one of its profitable non-priority sector division to a sister concern to maintain its high-tech, priority sector profile. Another company reported to reject a project to manufacture razor blades because it feared increased threat of competition.

The implications of these instance should be clearly understood. In countries of today's complexity, and specially in developing countries like India, which have 'mixed' economic system, companies derive raison d'être of their existence by satisfying multiplicy of objectives. The strategic management has emerged as a systematic approach in properly positioning companies in the complex environment by balancing multiple objectives. In practice, therefore, a comprehensive capital expenditure planning and control system will not simply focus on profitability, as maintained by the modern finance

theory, but also on growth, competition, balance of products, risk diversification, and managerial capability. A company may undertake an unprofitable or marginally profitable project to avoid competitive threat in order to protect its market share or to maintain its leadership. On the other hand, another company may reject a profitable project if it threatens to increase competition. Yet another company may like to choose only those projects/products which fit its current technological capabilities. Similarly, a high profitable project may be rejected if management lacks managerial capability and organizational skills to manage it. There are umpteen examples in the developing countries like India where unprofitable ventures are not divested (a negative investment decision), even by the private sector companies, because of their desirability from the point of view of consumers and employees in particular and society in general. Such considerations are not at all less important than profitability since the ultimate legitimation and survival of companies (and certainly that of management) hinges on them. One must appreciate the dynamics of complex forces influencing resource allocation in practice; it is not simply the use of the most refined DCF techniques.

COMPARISONS AND CONCLUSIONS

On the basis of earlier surveys and case studies in India, U.S.A. and U.K. and our own interaction with business executives, we considered the capital expenditure planning and control system to have five distinct phases: (i) origination, (ii) development, (iii) evaluation, (iv) authorisation, and (v) control. Yet another aspect of resource allocation becoming evident from recent inter-disciplinary researches is the close linkage between the capital budgeting and the corporate

strategy. We therefore purported to find out the policy and practice of companies in India in regard to the various phases of the capital expenditure planning and control, and to ascertain corporate executives' opinion on the linkage between the capital budgeting and the corporate strategy.

Before we present our conclusions and contrast them with studies in U.S.A. and U.K., we would like to state that to make sure that we have covered all aspects of a comprehensive capital expenditure planning and control, the survey companies were asked an open-ended question as to comment on <u>any</u> aspect of the capital expenditure planning and control which they considered relevant. Their responses are summarised below:

> "Apart from profitability of the project, other features like its (project's) critical utility in the production of the main product, strategic importance of capturing the new product first, adopting to the changing market environments have a definite bearing on investment decisions".
>
> (High tech company, employees 1,880, sales Rs.1,045 million, tangible fixed assets Rs.27 million)

> "Technological developments play critical role in guiding investment decisions. Government policies and the concessions also have a bearing on these".
>
> (High tech company, employees 8,500, sales Rs.3,560 million)

> "Investments in production equipment is given top priority among the existing products and the new project. Capital investment for expansion in existing lines where market potential is proved is given first priority. Capital investment in new projects is given the next priority. Capital investment for buildings, furniture, cars, office equipments etc. is done on the basis of availability of funds and immediate needs".
>
> (High tech company, employees 1,600, sales Rs.405 million, tangible fixed asset Rs.78 million).

"One of the most important considerations in any investment evaluation should be the labour deployment on the new equipments. Two things need to be considered: (i) The manning from the very beginning should be kept at the minimum. Therefore, equipment selection from this angle is very important. As far as possible there should be no recruitment. Also, right from the beginning, efforts must be made to have high outputs. If there is a slack in the beginning it will become very difficult to change the pattern later. (ii) There must be an overall deployment and utilisation plan for labour, at least for the next 5 years. The capital expenditure plan also must be in line with the long-term manpower plan. Ad-hoc investments may create a problem on the labour front".

(High/medium tech company, employees 705, sales Rs.204 million, tangible fixed assets Rs.30 million)

It should be realised that some of the above statements are typical of developing economies. Company executives' concern about technological changes, government policy changes, or labour deployment and productivity are real, complex issues requiring managers' special attention in allocating resources in developing countries like India. These statements reinforce need for a strategic framework for problem solving under complexities and the relevance of strategic considerations in the investment planning. It is also implied that resource allocation is not simply choosing most profitable (in terms of NPV, IRR or any other measure) new projects and discarding marginally profitable on-going projects/divisions. Companies may have to allocate resources to not-very-attractive existing divisions if it is required for balancing the multiple objectives and the long-term overall vitality of the firm.

Our survey shows that the definition and classification of capital expenditure in India is guided a lot by the accounting conventions and tax regulations. Large expenditures on items such as R&D,

advertisement, or employees' training, which tend to create valuable intangible assets, are not generally included in the definition of capital expenditure. Most of these expenditures can be expensed in the year in which they were incurred for tax purposes. Large number of companies, following the accounting convention, prepare asset-wise classification of capital expenditures which is hardly of any use in the decision-making. We recommend that companies should include all expenditures that create long-term assets (intangible or tangible) with future savings potential, and subject them to the capital budgeting procedures. Also, capital expenditures should be classified according to the nature of investments so that required planning and control efforts are put by the appropriate level of management.

Origination or identification of investment opportunities is the first and most important phase of the capital expenditure planning and control. A very large number of project ideas in India are generated at the plant level. Thus the investment idea generation is a bottom-up process in India. An earlier Indian study in 1969-70, on the other hand, had concluded that the capital budgeting is a top-down process. Rockley's survey indicates that both bottom-up as well as top-down processes for origination of proposals exist in U.K. [15]. Indian practice in our survey, however, coincides with that in U.S.A. Petty and Scott's study shows that project initiation is a bottom-up process in U.S.A., with about 82 per cent of investment proposals coming from divisional management and plant personnel [12]. A note of caution may be sounded, however. The small number of ideas generated at the top may represent a high percentage of investment value, so

what looks to be entirely bottom-up process, may not be actually so. Although a large number of ideas originate at the plant level in India, yet the authority to progress and approve investment proposals and to spend money for approved expenditures is rigidly concentrated in the hands of a few top management officials. This phenomenon also prevails in U.K. and to a large extent in U.S.A. Indian practice of highly centralised control of capital expenditure authorisation has remained unchanged since 1969-70 when Porwal had conducted the first survey. Thus, although the practice of idea origination apparently gives an impression of a bottom-up process, yet expenditure authorisation is a top-down process. Ideally, the process of capital expenditure planning and control should have both the elements. Operating (routine) and administrative capital budgeting decisions should be processed and approved at the lower and middle management level while strategic capital budgeting decisions should be processed and controlled at the senior/top management level.

Development of cash flows for various alternatives is the next phase of the capital expenditure planning and control. It is surprising to find that business executives lack clarity in estimating cash flows. Our survey shows that half of the companies do not consider additional working capital in estimating investment project's cash flows. A number of companies also mix up financial flows. Although survey companies claim to estimate cash flows on incremental basis, yet half of them do not treat net proceeds from the sale of existing assets in computing project's initial cost. Such conceptual confusion also prevails in the mind of executives of the developed countries. In

U.K., half of the companies were found to treat depreciation as a cash flow [15]. In India, as in U.K., most companies choose an arbitrary period for forecasting cash flows. Majority of the companies have a forecasting period of 5 or 10 years. This may so because companies in India largely depend on the government-controlled financial institutions for financing their projects, and those institutions require 10-year forecasts of the project's cash flows. It is recommended that cash flows should be correctly determined as this information is of vital importance in managing the profitability and liquidity of a firm. Care should be taken in treating depreciation, working capital, interest cost and salvage value, net of tax, of assets. Forecasting of cash flows is the most difficult, at the same time, most crucial part of the development phase. As far as possible, expected economic life of the project should be determined and cash flows should be forecasted over that period.

As regards the use of evaluation criteria, Indian practice almost resembles that of companies in U.S.A. and U.K. In India, 93 per cent of survey companies use payback with other methods while only 79 per cent use NPV or IRR with other methods. It is interesting to note that despite its alleged theoretical short-comings, IRR is more popular than NPV - 64 per cent companies use IRR with other methods while only 36 per cent companies use NPV with other methods. It is significant to note that none of the companies uses DCF technique without using payback. In U.S.A., a recent study by Schall, Sundem and Geijsbeek shows that whereas 86 per cent of the firms used either the internal rate of return or net present value models, only 16 per cent used such

discounting techniques without also using the payback period or average rate of return methods [16]. The tendency to use naive techniques as supplementary tools has also been reported by Petty, Scott and Bird [13] and Petty and Scott [12] However,, firms in U.S.A. have come increasingly to depend on DCF techniques, particularly IRR. The survey of British companies also shows that business managers use both DCF technique and return on capital, sometimes in combination and sometimes solely, in their investment evaluation; the use of payback is widespread. [15] One significant difference between Indian and U.S.A. practice in regard to evaluation criteria is that payback still seems to be a "primary" method and IRR or NPV as "secondary" method in India rather than the opposite as in U.S.A. Indian managers feel that payback is the method of communication, and it best protects the recovery of capital - a scarce commodity in the developing countries. Companies should realise that NPV or IRR is a complete measure of profitability rather than payback.

The four most important contributors of investment risk in India are: selling price, product demand, technological changes and government policies. India is no more seller's market as competition is intensifying in a large number of products; hence uncertainty of selling price and product demand are being realised now as important factors of investment risk. Uncertain government policies, of course, are a continuous source of investment risk in developing countries. Sensitivity analysis and conservative forecasts are two equally important and widely used methods of handling investment risk in India. Each of these techniques is used by 64 per cent companies with other

methods while 86 per cent companies use either sensitivity analysis or conservative forecasts with other methods. Shorter payback and increased discount rates are used by a few companies. In U.S.A., study by Schall, Sundem and Geijsbeek reveals that risk-adjusted discount rate is used by 90 per cent companies while only 0 per cent companies each use payback and sensitivity analysis [16]. A more recent study in U.S.A. also confirms these results [12]. In Rockley's survey of the British companies, only one firm out of the 69 used sensitivity analysis [15]. The contrasts in the practices of risk evaluation in India and in U.S.A. and U.K. are sharp and significant. Given the complex nature of risk factors in developing countries, risk evaluation cannot be handled through a single number, such as NPV calculation based on conservative forecasts or risk-adjusted discount rate. Managers must know impact on the project profitability of the full range of critical variables. Hastie, an American businessman strongly advocates the use of sensitivity analysis for risk analysis, and casts doubt on the survey results in U.S.A. He [7] states that "there appears to be more corporations using sensitivity analysis than surveys indicate. In some cases firms may not know that what they are undertaking is called "sensitivity analysis"....."

The cost of capital and the minimum rate of return concepts assume great importance when DCF evaluation techniques are used. The results of our study reveal that 64 per cent companies specify the minimum rate of return. The 29 per cent firms define minimum rate of return in terms of the weighted average cost of capital (WACC) while others define it either as borrowing rate, or specific cost of source used to finance project, or it is determined by management. The basis for

computing WACC was theoretically unsound in all cases. These results corroborate with the author's earlier study [10]. Recent studies in U.S.A. indicate that a little less than 50 per cent companies use weighted average cost of capital [12]. In U.K., only 14 per cent firms are found to attempt any calculation of the cost of capital [15]. Like in India, both in U.S.A. and U.K., companies have tendancy to equate the minimum rate with interest rate or cost of specific source of finance. The phenomenon of depending on management judgement for the assessment of the cost of capital is also prevalent in both developed (e.g., U.S.A. and U.K.) and developing (e.g., India) countries.

It is a significant finding of the present study that Indian companies, by and large, do not have to reject profitable investment opportunities for lack of funds, despite the capital markets not being so well developed. This may be due to the existence of the government-owned financial institutions which are always ready to finance profitable projects. The earlier study by Porwal also indicates that capital rationing is not a problem for Indian companies [14]. Indian companies do not use any mathematical technique to allocate resource under capital shortage which may sometimes arise on account of internally imposed restrictions or management's reluctance to raise capital from outside. Priorities for allocating resources are determined by management based on need for and profitability of projects.

Qualitative factors and judgement play very important role in the investment planning in India. Three most important factors are: urgency, strategy and environment. Qualitative factors like employees' morale and safety, investor and customer image or legal matters are considered in U.S.A. [14]. We would argue that what business people call

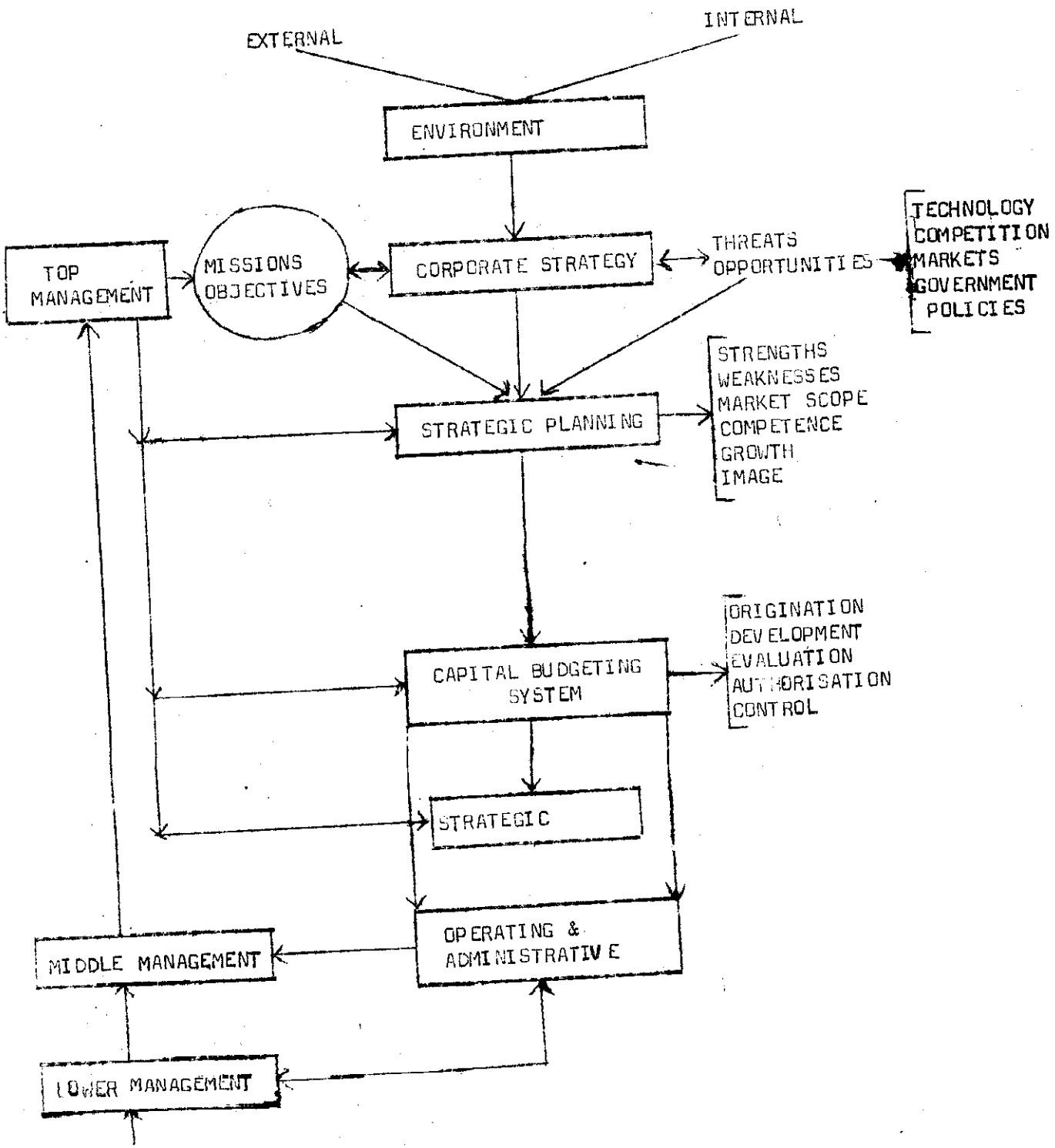
judgement is not entirely based on intuition or gut-feel but mostly it is an informed judgement based on experience.

It hardly needs emphasis to say that control through reappraisal or post-audit is a necessary aspect of the capital budgeting system. It is common practice in India to reappraise approved projects. However, like in U.K. [15] the power to review reappraisals is concentrated at the top. Indian companies see a number of advantages of reappraisal particular in terms of improvement in future investment decision-making. What is not clear from the survey is the understanding of technique used or to be used for reappraisal (post-audit), and the extent to which outcome of reappraisal is actually exploited.

The finding of great significance is the admittance by the 79 per cent companies that strategy is of utmost importance in the capital expenditure planning and control. The 43 per cent companies cited examples where strategic considerations played primary role in the investment decisions. It should be appreciated that in a developing country like India, the business complexities are much more than in the developed countries, and therefore, there is imminent need for a strategic approach, which, in the last, decade has emerged as a systematic and global approach to the problem of guiding a company in its structural interrelation with the environment through its external and internal posture. One should not get the impression that DCF techniques will be discarded or deemphasised if the strategic framework is used for allocating resources. What is being stressed is that the strategic framework provides a higher level screening and an integrating perspective to the whole system of capital expenditure planning and control. Once strategic questions have been answered, the investment proposals may be subjected to DCF evaluation.

The model for a comprehensive capital expenditure planning and control, which emerges from our survey of Indian companies and experiences in other countries, may be summarised as follows: Corporate strategy provides the focal point for the firm's long-run, strategic planning. The capital budgeting system, particularly for large, strategic projects, is determined in context of the strategic planning, and thus, it is a top-down process. Corporate strategy and strategic planning play the most crucial role at the identification and evaluation phases of the capital expenditure planning and control. Operating and administrative capital budgeting decisions can be decided at lower/middle level of management within the overall strategic framework and the guidelines from top management. The capital budgeting system at lower/middle level will largely be a bottom-up process. It may be noted that environment, external and internal provides a context to the company to establish and review its missions, concerns and multiple objectives, which, in turn, shape its corporate strategy. Figure 1 provides a schematic view of the capital expenditure planning and control model.

FIGURE 1: THE CAPITAL EXPENDITURE PLANNING AND CONTROL MODEL



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