CHAPTER - 5

Non-Financial Factors Affecting Success of Capital Budgeting Proposals

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5.1: Introduction

The decision-making process for investments is complex and goes beyond the financial aspects. Many of the project's goals tend to be qualitative and not easily measurable, apart from being long term goals and not immediately verifiable. Nonetheless, innumerable research studies surveying usage of financial appraisal methods [*Pike, (1996); Arnold & Hatzopolous, (2000); Graham and Harvey, (2001)*]give an impression that *capital budgeting* is purely based on *financial justification* alone. Contrary to this understanding, very recent studies point to the fact that financial importance comes much later after the other important factors like corporate strategy, emerging technology, product quality and competition are considered. Moutinho Nuno, et al. (2011) from their studies of Portuguese firms observe that financial factors come only in third order of importance, after strategic and technical aspects. It points that undertaking a study on non-financial aspects of capital budgeting is essentially important academic exercise.

In fact, many of the project's goals tend to be qualitative and not easily measurable in monetary terms (Kaplan and Atkinson, 2000; Pike and Neale, 2001). Therefore, if appraisal of capital projects is done purely on the basis of financial factors alone, many of the attributes of a project will be left outside the process of formal project appraisal. It demands that appraisal mechanism so adopted should be comprehensive enough so that the impacts of non-financial and financial factors are rightly assessed with due weights. Andreou et al. (1989) note that a project generates externalities, in terms of costs and benefits that are not taken into account in financial forecasts. In the context of their observations, they argue that financial techniques may be used only as a guide to indicate desirability of the project; other factors such as organizational, social and political, etc. constitute the greatest source of uncertainty that must be taken into consideration before selecting a project for financing.

Adler (2000) points out that evaluation of qualitative aspects cannot be included in cash flow for strategic decision-making. Chen (1995) identifies strategy, quality, flexibility, potential future growth, market tendency, ethical and social considerations, prestige and legal issues as the non-financial aspects in project evaluation. Lopes & Flavell (1998) draw the attention to the need for studying non-financial areas like strategic, technical, political, social, environmental, organizational and management while making capital investment decisions. Datta and Mukherjee (2001) observe that a project to be successful, it must examine the social, political, technical and financial implications.

Though non-financial project aspects such as political, environmental, legal and social factors are proved to be important, yet, in the prevalent practice of corporate investment appraisal, these factors have been not been formally incorporated into normal appraisal process (Mohamed and Mc Cowan, 2001). While dozens of models are there for assessment of the impacts of financial factors, no model exists there to account for the impacts of financial factors. Numerous authors like Skitmoreet. al. (1989), Chen (1995), Lopes & Flavell (1998), Adler (2000), Meredith and Mantel (2000), , Love et al. (2002) point to the need for taking care of both financial and non-financial factors into account at the time of making appraisal of large capital outlays.

Even if the financial conditions are extremely favorable, neglect of these factors can cause failure of the project in spite of strong financial. This is evident from some recent events taking place in Indian corporate sector. One of them is Tata Motor's Singur Project, formulated for assembly of world's cheapest car Nano, which the company had to abandon for improper evaluation of political and social risk. [See the Vendanta Aluminum and Tata Motors]

Chris Carr, Kolehmainen, K and Mitchell, F (2010) draw the attention to trend that firms identified as market makers, value creators, re-focusers and restructurers have different contextual frameworks for strategic decision-making. Thus actual decision-making process for investments in a competitive market environment is complex and goes beyond the routine financial evaluation.

Moutinho Nuno (2010) in their study of Portuguese firms showed that the most important areas considered in project appraisal and capital budgeting decision making processes are strategic and technical. The financial factors considered only after the

strategic and technical analysis. Social and political analysis was given less relevance. However, less than 50% of companies surveyed by them consider political and social issues in their project appraisal. It is suggested that even though the monetary aspects of the project might be very sound, the qualitative traits need to be explored in detail for the complete sustainability of the project.

Table 5.1: Types of Analysis and Corresponding Weights

Types of Analysis	Weights / Importance
Strategic Analysis	97.8%
Technical analysis	79.6%
Financial Analysis	76.3%
Political Analysis	16.1%
Social Analysis	15.1%

Source: MoutinhoNuno (2010)

In the light of discussions presented above, this chapter proposes to present the findings of the study undertaken in this research study to assess the role non-financial factors in capital budgeting decision-making of Indian corporate houses. As google search engine provides no evidence of similar work undertaken in India, studying role of non-financial factors in capital budgeting, according to the knowledge, this work may be treated as the first work done in India.

Research questions that are to be answered in this chapter are as below:

i) Are the Indian companies aware of the importance of non-financial factors of project risk?

ii) What are most important non-financial factors in the order of importance?

iii) What is the relative importance of non-financial factors vis-à-vis financial factors?

5.2: What are the Non-financial Factors?

Table 5.1 given above broadly shows the types of analyses required to be undertaken for a successful capital budgeting program. Intuitively under each kind of analysis come numbers of variables. Meredith and Mantel provides the lists of variables that come

under each category. See Table 5.A in the appendix of this chapter: The following paragraphs have been dedicated to narrate the importance of some of the non-financial factors

5.2.1: Environment

Government of India has expressed her concern for protecting the environment from its present trend of degradation. In addition to legal enactments, lots of legal and administrative steps have been taken in the form of creation of Pollution Control Board, Green Tribunal, etc. Corporate houses draw resources from environment for producing goods and services. As a responsible stakeholder, the corporate houses have the social responsibility of keeping environment free from pollution and undertake measures for protecting the environment, as stipulated by the Pollution Control Board. While choosing a long-term investment in the forms of building factory or equipment, industries are required to obtain Environmental Clearances [certificates] from pollution control board. They cannot launch a project, which has net negative environmental consequence and restricted for environmental reasons.

Therefore, while capital budgeting is done, adequate attention should be given to environmental factors; finally, a project with negative environmental effect should not be chosen for consideration. Very recently government has adopted measures to promote green technology; corporate houses and households adopting green technology are getting financial incentives. In short, besides economic considerations, environment is an important determinant in the selection of a project proposal. In social cost-benefit analysis, there is a convention of incorporating environmental costs into the analysis of investment alternatives, then pollution prevention technologies may appear more attractive than end-of-pipe oriented investments; *Martin A Spitzer et.al. (1993.)*

Table 5.2.1: Importance of Environment in Capital Budgeting

Importance of Environment	Number of Companies
Extremely Important	17
Important	10
Not Important	3
Total	**30**

Table 5.2.1 given above reveals that 'environment is a dominant variable in project selection'. Seventeen of the thirty companies consider technology as extremely important, ten companies consider it important and remain three companies consider environment as not an important factor.

The Central Pollution Control Board has identified 17 highly polluting industries, the majority of which are manufacturing industries.

Table: 5.2.1A. List of 17 Highly Polluting Industries

Sl. No	Industry Category	Complying	Defaulting	Closed	Total
1.	Aluminium	8	-	-	8
2.	Cement	175	22	80	277
3.	Choir-Alkali	27	1	4	32
4.	Copper	5	-	-	5
5.	Distillery	176	29	34	239
6.	Dyes and Intermediates	62	3	30	95
7.	Fertilizers	79	7	35	121
8.	Iron and Steel	56	3	10	69
9.	Oil & Refineries	19	-	3	22
10.	Pesticides	61	18	26	105
11.	Petrochemicals	44	1	11	56
12.	Pharmaceuticals	291	32	75	398
13.	Pulp & Paper	104	33	47	184
14.	Sugar	377	69	66	512
15.	Tannery	103	8	38	149
16.	Power Plant	198	27	19	244
17.	Zinc	6	-	-	6
	TOTAL	1791	253	478	2522

Source: Report of the Working Group on "Effectively Integrating Industrial Growth and Environment Sustainability'', Twelfth Five Year Plan (2012-2017), Planning Commission, Govt. of India.

The table above shows that non-compliance of environmental norms results in closure of the unit. Owing to this fact, besides financial risks, the corporate houses should consider potential environmental risks associated with the projects under considerations

5.2.2: Technological Factors

Technology is an obvious requirement to every industrial establishment to stay in market. It improves quality of the product, reduces consumption of input, minimizes throughput time and reduces cost of production. It imparts competitive advantage to the concerns. Thus, choosing projects with high technology component has gathered momentum. As per Pike (2001), since majority of costs and benefits of new technology investments are of non-financial nature, the principles prescribed for selection of new technology investments are thoroughly different from the conventional principles of normative financial appraisal that predominantly use DCF.

Technological risks arise due to obsolescence, appointment of unskilled and untrained workforce on the equipment, etc. This is not always certain that new technology will bring success; in some cases, before the prototype is successfully market, the bugs in the technology gets manifested.

While the survey was conducted the CFOs and directors have been asked to assign score to technology on the basis of the assessment of importance of technology in their project appraisal. The result of the survey has been presented in the table below:

Table 5.2.2: Importance of Technology in Capital Budgeting

Importance of Technology	Number of Companies
Extremely Important	6
Important	24
Not Important	0
Total	**30**

Table 5.2.2 given above reveals that 'technology is a dominant variable in project selection'. Six of the thirty companies consider technology as extremely important and remaining 24 companies consider it important.

5.2.3: Strategic Factors

Firms generally accept those projects that can contribute to their strategic perspectives. 'For long-term projects, profit maximization is not the sole objective of the firms; rather, they focus on diminishing their weakness, while short-term projects mainly focus on profit' (Kenny 2003). If a project does not fit into the organizational strategy, then the project gets rejected straightway in spite of the attractiveness of the project in financial terms. While investing in long-term projects, firms basically aim at acquiring market share or look for market opportunities, assume more risks in projects and try to improve firm's competitive advantage.

Shapiro Allan (1993) presents examples of American Home Products that earned remarkable return on shareholders' equity during the decade (1974-1983) of deepest economic decline. Even in turbulent market in India, ITC is working nicely. While many industries face a downturn, home products record a steady rise, pharmaceuticals shine. It indicates that industry analysis and economy analysis should be an integral part of capital budgeting. It is not true that all strategies work under a given situation. Identifying the right strategy at the right time is the mastery of winning the competition. All companies do not make value addition; companies choosing right strategy do it, while others adopting wrong strategy make a whole in shareholders' net worth. Market share, core competence, growth, differentiation, brand equity, etc. are popular vocabularies in the contemporary industrial world. Corporate houses use portfolio models such BCG matrix, GE matrix to identify the investment proposals. No investment analysis without making use of strategic analysis can be a sound method of investment appraisal.

While the survey was conducted the CFOs and directors have been asked to assign score to corporate strategy on the basis of the assessment of importance of strategy in their project appraisal. The result of the survey has been presented in the table below:

Table 5.2.3: Importance of Strategy in Capital Budgeting

Importance of Strategy	Number of Companies
Extremely Important	16
Important	12
Not Important	2
Total	**30**

The result of the study reveals that strategy is more dominant variable in project selection compared to profitability. Seven of the thirty companies surveyed report that profit is not an objective or goal of their companies, whereas almost 28 companies indicate that they give top priority to strategy and competition at the time of considering a project proposal. The success of a project tends to be greater when firms attribute more importance to any of the strategic aspects analysed. (MoutinhoNuno 2010)

5.2.4: Political Factors

Impact of political factor on a project can be noticeably measured at the time of presenting union budget of the Government of India. A great degree of volatility is noticed in the indices of share market. Some industries get political patronage, while others lose.

Lopes and Flavell (1998) pointed out investment subsidies and the government's environmental policy are the two most relevant political aspects in capital investment project decision. MoutinhoNuno(2010) also observes the above two political factors as the most important aspect in Political Analysis.

So far as the political risk factors are concerned in capital projects, the most important perceived risk factors are bureaucracy and financing possibilities. With a view to minimize the political risks Lopes and Flavell (1998) and MoutinhoNuno(2010) suggest some ways like the development of trust with local decision-makers, acknowledgement of political implications of the decisions and industry lobbying.

5.2.5: Organizational Factors

Organizational Structure and Culture have a significant role in defining and accepting a capital budgeting plan. Bower Joseph (1970) first discuss the role of team personnel in an organization in capital budgeting. First, people in organizations have differences in interests resulting from functional, hierarchical, professional, and personal factors. Second, people in organizations try to influence the outcomes of decisions, so that their own interests will be served, and they do so by using a variety of political techniques. To study whether a division of authority is there in organizations in respect of Capital

budgeting decision-making, a survey has been made to see which of the organizational authority centers are playing active role in defining and implementing capital budgeting.

5.3: Organization and Authority of Decision-making: A Survey

Questions were asked about the process of originating and implementation of capital investment decision making. It is observed that majority of the decisions were originated at the board level,which accounts for 66.67% of responding companies; in 26.67% of companies decisions were originated by Head of the Division and Strategy Department & Managing Director jointly **(Table-5.3)**. Finance Executives, Research & Development Dept. and Head of Marketing also play an important role in initiating capital investment as substantiated in Table-5.3.

Table 5.3 : Capital Investment Decision initiating authority

Capital Investment Decision initiating authority	No. of Companies	Percentage
Board	20	66.67
Finance Executive	3	10.00
R & D Deptt.	2	6.67
Workers	0	0
Head of the Division	8	26.67
Head of Marketing	1	3.33
Consultant	0	0
Other (Strategy Deptt. & MD, MD jointly	8	26.67

Who is initiating the investment suggestion? Out of 30 respondent companies, in 83.33% cases investment suggestions were initiated by Divisional Heads of companies, 6.67%by Strategy Department & Managing Director and 10%by Operating Mangers.

Thus in most of the cases investment suggestions were originated by the Divisional Heads. The final investment decision responsibility was entrusted to the Board of Directors, Chairman and Managing Directors. It was revealed that the final decision making power for capital investments rest with the top management.

Regarding the process of implementation of capital investment projects, we have included one question as to the authority that plays key role in capital investment decision. Out of 30 responding companies, Board of Directors play a key role in 26 companies that accounts for in 86.67% of companies. Managing Directors also plays a very crucial role in 56.67% of sample companies. It is also found that Finance Executives are also engaged in playing key role in 10% of the sample companies.

Table- 5.3A: Capital Investment Suggestion Initiating Authority

Capital Investment suggestion initiating authority	No. of Companies	Percentage
Worker	0	0
Operations Manager	2	6.67
Divisional Head	25	83.33
Strategy Dept. & MD	2	6.67
MD	3	10.00

Table 5.3B: Final Investment Decision-making authority

Final Investment Decision-making authority	No. of Companies	Percentage
Board of Directors ,CMD,CEO,CFO	27	90.00
Divisional Head	2	6.67
Project Head	1	3.33
Total	30	100.00

The purpose of making capital investment may be classified as Expansion (expansion of existing products and market), Replacement, New Product and Infrastructure investments. In practice for a New Product, the proposal usually originates in the Marketing Department or by the Head of Marketing. Proposal for replacement of existing equipment and buildings usually arise from the Production Department or by the Operational Manager. (Van Horne, 1995).

5.4: Relative Importance of Non-Financial Factors

Doing a study with such a large number of variables may be unmanageable. To obtain a set of 11 variables has been selected. The CFOs and Directors of responding companies were asked what importance they assign to each of the variables. The variables assessed have been enlisted below:

1. Investment risk
2. Expected return
3. Gestation Period
4. Technology
5. Product Cost
6. Competition
7. Environmental Pollution
8. Strategy
9. Organization Structure

Responses received from the responding firms have been compiled in table below:

The results obtained from the responses of CFOs regarding importance and non-importance of factors have been presented in the table given below

Table 5.4: Importance of Financial and Non-financial Factors: Survey of CFO Opinions

Sl. No.	Factors	Extremely important	Important	Unimportant	Very unimportant	Total number of companies
1	Investment Risk	21	6	3	0	30
2	Projects' expected return	22	8	0	0	30
3	Gestation period	3	24	3		30
4	Technology up gradation	10	20	0	0	30
5	Product cost	13	17	0	0	30
6	Competition	13	9	7	1	30
7	Environmental Pollution	17	10	2	1	30
8	Strategy	16	10	4	0	30
9	Organization Structure	2	17	8	3	30

Looking at the summary of survey findings, it seemed reasonable to check if the corporate houses maintain significant bias in looking at the importance of various non-financial and financial factors. The result of ANOVA obtained from SPSS is given below. Definitely the Null Hypothesis associated with the test is of no significant difference bias in assigning importance on financial and non-financial factors. The result shows that computed value of F is very low compared to critical value 2.85 for (6, 14) degrees of freedom at 5% level of significance. It means that there is no significant difference in pattern of preference given to various financial and non-financial factors.

ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Between Factors	225.000	6	37.500	.785	.596
Within Factors	669.000	14	47.786		
Total	894.000	20			

The result suggests that the allegation that corporate houses emphasize too much on financial factors, is not true. The fact is that they care for the non-financial factors and financial factor almost with equal weights. The most important point is that there is no formal methodology for incorporating non-financial factors into the analysis. Secondly, exact measure of the relative weight that a firm should assign on non-financial factors has not been duly devised. Though firms in developed countries have devised their own methods for handling non-financial risk, yet in India the exact picture is not clear.

Taking clue from the result of the above study, it seemed reasonable to continue the search process with a better methodology to explore inter-relationship between the variables that stand as proxies for listed financial and non-financial factors. This experiment has been done in the sixth chapter of this work.

5.5: Conclusion

Many of the project benefits and costs are of non-financial nature. Therefore, analyzing non-financial factors for capital budgeting decisions is essentially an important step. Analysis of data [ANOVA] reveals that

non-financial factors are nothing less important to financial factors. Corporate houses today, in practice to fight competition in the imperfectly competitive market, depend more on the strategic moves. Due to this emerging dimension, in non-financial analysis the highest importance has been given on the strategy. Indeed, if a project does not fit into the organizational strategy, then the project should be rejected straightway in spite of the attractiveness of the project in financial terms.

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Appendix

Table 5A- Project Evaluation Factors

Category-I: Production Factors	**Category-III Financial Factors**
1.Time until ready to install	1.Profitability or NPV of the investment
2.Length of disruption during installation	2.Impact on cash flows
3.Learning Curve - time to reach desired efficiency level	3. Payout period
4.Effects on waste and rejects	4. Cash requirements
5.Energy requirements	5. Time until break-even
6.Facility and other equipment requirements	6. Size of investment required
7. Safety of process	7. Impact on seasonal and cyclical fluctuations
8. Other applications of technology	***Category-IV Personnel Factors***
9.Change in cost to produce a unit of output	1. Training requirements
10.Change in raw material usage	2. Labour skill requirements
11.Availability of raw material	3.Availability of required labour skills
12.Required development of time and cost	4. Level of resistance from current work force
13.Impact on current suppliers	5.Change in size of labour force
14. Change in quality of output	6.Inter-and intra-group communication requirements
Category - II: Marketing Factors	7. Impact on working conditions
1.Size of potential market for output	**Category - V: Administrative and Miscellaneous Factors**
2.Probable market share of output	1. Meet government safety standards
3.Time until market share is acquired	2.Meet government environmental standards
4.Impact on current product line	3. Impact on information system
5.Consumer acceptance	4.Reaction of stockholders and securities markets
6.Impact on consumer safety	5.Patent and trade secret protection
7.Estimated life of output	6.Impact on image with customers, suppliers and competitors
8.Spin-off project possibilities	7.Degree to which we understand technology
	8.Managerial capacity to direct and control new process