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A CASE FOR PRO-ACTIVE ADAPTIVE APPROACH TO
STRATEGY FORMULATION IN A BUSINESS ENVIRONMENT

by

BIBHAS GHOSH

- A Master's Thesis -

Submitted in partial fulfilment of the requirements for the award of 'A Master of Philosophy' of the Loughborough University of Technology.

SEPTEMBER, 1983
ABSTRACT

A CASE FOR PRO-ACTIVE ADAPTIVE APPROACH TO STRATEGY FORMULATION IN A BUSINESS ENVIRONMENT.

The process of strategy and policy formulation in business, as in many other fields, is extremely complex. Though the literature on business policy and strategy is quite extensive, the subject itself is relatively recent. This researcher's interest in the subject arose partly out of teaching the subject and partly through exposure to consultancy assignments relating to strategy formulation exercises for a number of companies in Singapore.

In the process of this exposure a feeling gradually developed that strategies require adaptation to emerging experiences while retaining its long term characteristics. It seemed necessary to emphasise adaptation of a pro-active kind - that is a strategy formulation approach in a business environment which is responsive to the emerging experiences but not hamstrung by short-term pragmatism only. The main objective of this research is to further develop this philosophy through appropriate literature survey and case applications.

METHODOLOGY

An extensive survey of literature has been undertaken to support this view. Strategy is shown to be not as a homogeneous concept. Various strategic approaches and options or a combination of these are possible. Current thinking on the assessment of a firm's internal strengths and weakness and external opportunities and threats has been reviewed. In strategy building, it has been emphasised, the entire environment is considered and a globality of approach is necessary. Ultimately, in considering all these factors for business survival and growth purposes, a creative balance is to be achieved.
The literature survey also covers the area of decision-making approaches to strategy formulation process and it has been shown that given the internal constraints of a business undertaking and the pressure of external environment, a proactive adaptive approach to strategy formulation which is mindful of change as well the long term aims of an organisation would seem to be appropriate.

On the basis of this conceptual structure for a pro-active adaptive approach to strategy formulation, a flexible methodology for case analysis has been developed for applying the conceptual framework to real life cases. However, as emphasised earlier, a general notion of the framework was itself drawn from previous real life cases. Literature survey indicates that where the application of a model or a framework requires a global approach, a case study method of applying the framework would seem to be more appropriate.

The framework in its flexible form has been tested by applying it to 2 actual cases in Singapore. The issue areas were thoroughly examined, internal and external situations were investigated, analysed and synthesised and finally broad strategic options were identified. These 2 cases were selected because more or less the full exercise was allowed to be carried out within the constraints of a real life situation involving top-management participation. It has been shown that given the limitations of each case, the framework as a whole is applicable and found useful.
Finally, in the concluding chapter, the cases have been summarised highlighting their main features and showing how the steps in the framework have been applied to each case. It is shown that while all the steps are not equally relevant to each case, the framework as a whole is nevertheless valid. The main conclusions of this research have been drawn and the need for further research has been indicated.
# A Case for Pro-Active Adaptive Approach to Strategy Formulation in a Business Environment

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CHAPTER 1

INTRODUCTION
The objective of this research

The process of strategy and policy formulation is extremely complex and literature in this field is almost endless. Long before business policy studies became a subject of its own merit (which in any case is a recent event) policy formation process concerned politicians and others in many fields of administration. The study of strategy formation is also important in military sciences.

This researcher's main interest in this area derived partly from theoretical studies in this area (this was necessary as preparation for courses offered by this researcher as a University teacher) and partly from exposure to various business consultancy assignments. A feeling gradually developed that there was some apparent non-conformity between a textbook approach to strategy formulation on an overall basis bearing in mind the long-term point of view and how things actually happen. However, it was also understood that such dichotomy only indicated necessity for further studies and did not indicate any real contradiction. It possibly also indicated, like in all studies of this nature concerning business and social phenomenon, that no final reconciliation is possible (nor perhaps desirable). What can probably be done is to advance the studies in this area a little further.

Fuller (War And Western Civilisation, Duckworth, 1932 (1)) says in connection with German war efforts of 1870-71, that "a war of masses is a war of accidents in which genius is out of place". Moltke (Prussian Official History of 1870-71 (2)) says in a similar vein "that it is only laity who believe that a campaign can be prosecuted in accordance with the original plan, arranged beforehand in all its details and observed to the
very close (of operations)". Somehow in these words of Fuller and Moltke this researcher found an echo of his line of thought, though admittedly the contexts are different. They were talking about, evidently, detailed war strategies and their eventual adaptation to realities as facts revealed while not abandoning the long term aim for winning the war. It seemed necessary to this researcher, in the context of business strategy formulation too, to develop an approach (which will be called a pro-active adaptive model) which while will not be an advocacy for aimlessness will at the same time be sufficiently responsive to emerging experiences. What is intended to be shown is that the survival and growth aims of business must bend to reality in accordance with emerging developments and information. Goals of business will be respected but there are many ways of achieving goals and many goals themselves need revising.

Important aspects of strategy and policy formulation process will be dealt with in this research, e.g. distinction between objective, strategy and policies, various theoretical approaches to strategy formulation discussed by well-known authors, theoretical foundation underlaying the pro-active adaptive approach to strategy, the shortcomings of the normative and the incremental approaches to strategy formulation and finally a flexible methodology will be developed to apply the philosophy of pro-active adaptive model to real life cases. Taken as a package, the framework to be developed should be capable of being applied to most business situations for analytical purposes. However, work of this nature is not an end in itself but only a heuristic aid to decision-making. It is not a study which can be clearly circumscribed as belonging to logic, to philosophy, or to psychology, but more in the nature of investigating certain rules' which allow us to factor, approximately, and reasonably
reliably, the correspondence that allow us to act on that world predictably' (Simon & Newell, Management and Computer of the Future, Wiley, 1962, (3)). The pro-active adaptive processes for strategy formulation to be developed should not be treated as representing non-numerical algorithms but rather as description of processes that can be employed to handle complex problems and to arrive at a possible solution (as one of several) — a process of trying to grasp the nettle in a reasonable, pragmatic and constructive way rather than going through all of the possible alternatives to find the optimum solution.

As long as a framework or a paradigm is not offered as a finality, it is not likely to stifle the progress of knowledge. Conant (On Understanding Science — A Historical Approach, Yale University Press, 1947(4)) observes that a framework or a conceptual scheme has often led to progress even where the framework is not entirely right. Anthony (Planning And Control Systems — A Framework for Analysis, Harvard University Press, 1965 (5)) in a similar vein, advocates some kind of pattern from bits of knowledge — 'The very act of organisation may show that the framework will have served a useful purpose if it prepared the way for a better one.' These thoughts will be pursued through this research.
Methodology for Research

This study will consist of four main parts:

a) The theoretical development essentially from the contributions made by various authors in the business policy area and to some extent from the contributions made by other authors in policy-making and behavioural areas as considered relevant to this study. The conceptual framework will be slanted towards a pro-active adaptive model for strategy analysis, that is adopting an approach which is, while not probably the best ideally nor merely an adequate enough response to an immediate development, sufficiently imaginative and consistent with the growth and survival aims of a business organisation and its long-term needs.

b) Building further on the conceptual scheme described in the earlier two chapters, framework for analysis of case studies will be developed in the chapter 4. It will be explained why a case approach is more relevant for this research. This framework will also be attenuated towards a pro-active adaptive model and philosophy.

c) Testing the proposed framework through application to two actual cases (in Singapore). The issues for investigation will be presented and the whole process of strategy formulation (in which this author will play an active role) will be explained. Since each case is real-life and of an on-going nature, all aspects of the framework are not equally applicable in each nor are they equally important in all situations. Nevertheless, it will be shown that on an overall basis the application of the framework is valid. The first case took about 10 months to
complete and second one approximately about 5 months. Each case required considerable application of energy and thought which should be evident and normal in a strategy formation exercise.

d) A conclusion in which the application of the conceptual framework to the case studies will be further evaluated and the main conclusions of the research will be highlighted, as well as directing attention where further research may be worthwhile. In this analysis, the steps for case analysis will be applied to both cases on a comparative basis and relevant observations will be made.

In summary, the study will have identifiable theoretical and empirical components which will be summarised in chapter 7 - highlighting, as stated, the main conclusions. Since the proposed framework will be behaviourally oriented and strategy formulation process is in itself broad and complex, many conclusions will feature as the research proceeds. For instance, in chapter 5 (the first case study), it is observed that for a company to survive and grow successfully within a regional economy the national aspirations of the various countries within the region must be respected and that growth must be sought within the constraints of those national aspirations (or inhibitions). But in a research of this kind such observations as we proceed are unavoidable and cannot be repeated, but they should nevertheless be in conformity with the overall pro-active adaptive
theme of this research. What is intended is identification of a problem and how, in a strategy formulation context, such a problem is likely to be handled, bearing in mind the open-ended nature of the social phenomenon being investigated, and in so doing, what have been the views and experiences of this researcher. The viewpoint to be developed will have a certain validity and is intended only to be a small contribution to the body of knowledge relating to business policy and strategy formulation and corporate planning.
REFERENCES:

(1) J.F.C. Fuller, War and Western Civilisation, Duckworth, 1932, P.125.


Note: In chapters 2,3 and 4 references will be given by numbers only and a complete reference list will be provided at the end of each chapter.
CHAPTER 2

A DISCUSSION ON THE CONCEPTS OF STRATEGY AND POLICY AND THE STRATEGY FORMULATION PROCESS
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2.1 **INTRODUCTION**

In this chapter discussions will be directed mainly to an understanding of the concepts relating to strategy and policy and their relevance to a business enterprise in its interaction with the changing environment.

Meanings behind terms such as objectives, strategy, policy, etc. will be discussed and their linkage with the decision-making processes will be emphasised. The semantic confusion between the terms will also be highlighted as also the fact that words alter meaning as the decision-making process continues. Various strategic options and their combinations will be discussed.

In line with the main approach of the thesis, and adaptive model for strategy formulation, strategic decision methodology will be discussed. This should broadly correspond to the concepts that will be later introduced in chapter three where the main analysis will relate to decision making approaches to strategy formulation process.

In discussing strategy formulation process and strategic vulnerability current thinking on the assessment of a company's internal strengths and weaknesses and external opportunities and vulnerabilities will be highlighted. Delimiting the issue areas and successive reconsideration of the strategic variables will be emphasised.
2.2 SOME DISCUSSION OF THE TERMS 'STRATEGY' AND 'POLICY'

Though for the purpose of this conceptual scheme these two words (Policy and Strategy) will often be used inter-changeably, it is worthwhile distinguishing them at this stage rather than later. Ansoff(1) states that Lindbolm(2) uses the term 'policy' for 'strategy' - policy being a more commonly used term. The Dictionary of Social Sciences(3) defines policy as a "course of action, or intended course of action, conceived as deliberately adopted, after review of possible alternatives, and pursued, or intended to be pursued". This definition does not deal with, at least explicitly, the decision-making process involved in arriving at a policy (or a strategy). But this process is important, as we shall see later, from the point of view of analysing decision issues and selecting an appropriate mode for strategy analysis. Katz and Kahn(4) see policies as 'organisational abstractions' and as 'aspect of organisational change - the decision aspect'. Ackoff(5) defines policy as a 'rule for selecting a course of action - a decision rule'. Forrester(6) puts this in the perspective though, when he states that "policies and decisions are conceptually very distinct from one another although they are intermingled and confused in much of the management science literature...". Bearing this distinction in mind, policies can be viewed as major future orientated guidelines and framework for decision making.

In distinguishing 'strategy' from 'policy', Hussey(7) gives an example of the following kind:

Objective - reduce travelling expenditure by 10% within next 12 months
Strategy - control the class of travel by employees and reduce the frequency of travel (etc. etc.)
Policy - All employees (below a certain status, perhaps) to travel second class on the railways unless the journey is of more than 3 hours duration (etc. etc.)

This example is useful - and it is also useful to understand these distinctions in building up a conceptual scheme for strategy formulation. An understanding of the kind stated will put into focus the incompatibility
of a strategy vis-à-vis the objective, or a policy vis-à-vis the strategy and will bring about the necessary re-examination of the whole process.

Taking into account a much broader perspective, if the objective is long-term growth and survival (with a reasonable return on investment being considered a cost) then the strategy could be stated as securing a low cost position relative to competition, coupled with an acceptable quality, or achieving highly differentiated position relative to competition with respect to product/service/quality(8). However, this kind of statement is an abstraction not really grounded on workable reality as relevant to an organisation. What is necessary is to identify the specific types and areas of action taking into consideration various issues of strategic importance. At the strategy making stage, such considerations of types and areas will have a long term perspective and will be related to broad issues. Only at the policy making stage, such broad areas will be further broken down, in order to give a more concrete shape of reality to a particular way of thinking. Policy, therefore, in a way, translates the language of strategy into more operational terms. If strategy is stated only in abstraction, then it will fail to identify the major target areas for company action.

'Strategy', state Newman & Logan(9), 'takes a broad, total company view and singles out major targets for company action. Its strength arises from highly selective concentration on a few critical issues. Strategy sets aside a whole array of issues to be considered later. Policy deals with an important group - though not all - of these issues that were temporarily set aside'. Ackoff(10) views strategic plan as the one with longer term effect, and, as opposed to tactical plan, strategic planning is essentially 'long range planning'. Perhaps the missing line in this definition is highlighted by Taylor(11) who states that 'strategic decisions ... are concerned with affecting major changes in the linkages between the enterprise and its environment'. Taylor also distinguishes strategic planning from strategic management so that the 'strategic issues are not neglected owing to the pressures of day-to-day operations'.
2.3 STRATEGIC OPTIONS - AN ANALYSIS

In a strategy/policy formulation context, strategy should not be viewed as a homogeneous concept. A monolithic assumption should not be allowed to mask the existence of a variety of different types of strategy and their linkage with the decision-making process - a topic which will be dealt with in greater detail as we progress. The appropriateness of a generic type of strategy is obviously related to the 'stage of product/market evolution of the industry in which the firm competed'(12), but also, the personalities involved in strategy-making will play a significant role in the decision-making process and therefore the type of strategy selected. The nature of strategic options, whether to expand or stay still or prune, is an important area of study in the strategy formulation process - and various well known authors have touched on it.

Glueck(13), in a direct business context, classified strategies in the following fashion:

Stability Strategy - When the industry is mature and the environment is less uncertain - this strategy may appear desirable.

Combination Strategies - more relevant in a period of transition, used mainly by large firms. However, different strategies suitable to different environments and to different parts or divisions of a business would require to be envisaged. This is natural enough.

Growth Strategy - Obviously, the main focus of strategic thinking. This strategy is adopted when a firm's level of objectives is sought to be increased upward in a significant increment.

Retrenchment Strategy - Though this concept has probably received less attention in the past as a mode of strategic thinking (it smacks of failure) - closer examination of this concept may be justified in view of the increased uncertainties of today's environment. A variation of this strategy would be the cut-back or the partial divestment strategy.
Any list of this nature cannot be (and indeed should not be) exhaustive, but only indicative of the broad lines of classification. Others have talked about, for instance:

Turnaround Strategy (14, 15) - how managements turn declining firms into healthy ones, the goal mainly being 'to arrest and reverse the declining fortunes of the business involved'. If a business is considered worth saving, the next step in a turnaround strategy will be to assess the health of the business. If the failure is considered not imminent, various turnaround options may be available.

Integrative Approach to Strategy Making (16, 17) - in this, strategy-making is viewed as an integrative function, i.e., finding a product market segment or niche, identifying technological capabilities, procurement of further resource inputs and optimal deployment of resources, synergy, etc., etc. should all be simultaneously considered. This approach is also called 'portfolio approach' (18, 19) and may be usefully combined with a product market matrix model of the following nature:

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<tr>
<td>Sources of Current Earnings</td>
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However, this mode of strategy-making does not present an altogether new concept and is really concerned with the decision phase (which shall be discussed later). Taylor (20) maintains that planning should not be 'intuitive, sporadic and unsystematic', but should 'start from first principles'.

Though in a somewhat different context, talking about and distinguishing the concepts of strategy, policy, objectives, etc. Steiner(21) has developed the concept of 'semantic confusion' - stating that 'semantic difficulties exist in this field because there are many different definitions of terms used by various writers. Each embraces a range of statements from broad and important to narrow and comparatively unimportant. In this field we also are confronted with an end-means continuum in which words alter meaning as the decision-making process proceeds.' This understanding of continuum is important in a strategy formulation context - since an exercise of this nature in a practical sense can hardly ever fall neatly into one of the types discussed - especially when decision making process is also taken into account. In character, it would have to be Contingency one allowing both conceptual and pragmatic adaptation to particularistic strategic situations.

Several business policy authors have analysed strategic options in terms mentioned earlier, some emphasising perhaps one aspect more than another. Yet, where it is a company engaged in a variety of products (typically the Singapore situation) or a company engaged in a variety of businesses, during the decision-making phase, an element of flexibility must be retained in the strategy formulation process. Similarly as retrenchment is not always easily achievable and must necessarily be a slow process(22), concentrations on some areas while de-emphasising some others could also be an effective strategy. Such thoughts have been reflected in the writings of some authors.

Mixed Type Strategy - Etzioni(23)
According to this philosophy, especially having regard to many uncertainties and constraints that necessarily intervene a strategy and the target fulfillment, a more satisfactory approach would be to undertake strategic considerations resulting in an array of strategic choices. This is more like contingency plans - to which concept further reference shall be made later.

Comprehensive vs. Narrow Strategies - Dror(24)
A good policy or strategy is not necessarily comprehensive in nature. It is quite possible, for instance, to concentrate
scarce resources of an organisation on a few strategic variables and through multiplier effect to bring about significant new direction and changes. While it is not being argued that one approach is preferable to another, it is important to understand that such limited and concentrative strategy may as well succeed while at the same time being less costly in organisational terms.

Balanced vs. Disruption Strategies

While most strategic aims should be balanced (for balanced growth, etc.), it is possible to think of a strategy with the main aim of shocking a system (as opposed to a careful change of the direction). This strategic approach will inevitably result in having to re-design and re-direct and will be risky and expensive in nature. A consciousness of this concept is important in overcoming the normal and rather natural preference for a balanced change. Greiner also recognises the difference between evolution and revolution as organisations grow.

One then is almost forced to conclude and go along with the thinking of Slatter(26) that 'some of the new concepts are conceptually very simple, and therein lies both their appeal for managers and their main weakness'. The application of some of the strategic concepts must be approached with caution and an awareness that in a turbulent world the type of strategy to be adopted will be largely dependent on the 'causal texture' of the organisational environment(27). Such a texture is not merely determined by the inter-action among the various sub-systems within an organisation, but also by the 'dynamic properties' of the 'fields' of environment. The turbulence results from the causal inter-connections of these fields. The type of strategy will essentially constitute a basic response from the organisation to the persisting areas of relevant uncertainty in the environment and the 'lines of action that are strongly pursued may find themselves strongly attenuated by emergent field forces'.

2.4 AN ANALYSIS OF STRATEGIC DECISION METHODOLOGY

Strategies should not be mere abstractions but should be grounded in a
clear delineation of objective, i.e. strategy should be about something. Clearly, this aspect of strategy-making will inevitably invite an examination of the methodology proposed by various writers.

One of the most significant contributions to decision-making process came from Simon(28) who presented the four essential steps:

a) Perception of the decision need - to deal with an opportunity or a threat etc.;

b) Considering alternative courses of action;

c) Evaluating the pros and cons and the contributions of various alternatives;

d) Choosing one or more alternatives for implementation.

While the above may appear as a simple enough and rational model for decision-making, such rationality is seldom achievable as Simon himself recognises elsewhere. There may even be a case for 'not to decide' on an issue in order to maintain the basic consensus in an organisation. A preference for contradictory values can serve to meet the requirements of agreement, a necessary condition to arrive at a decision.

Ansoff(29) makes a significant distinction between operational types of decisions - concerned mainly with the operating efficiency of a firm's day-to-day resource conversion process, absorbing bulk of the firm's energy and attention, from the strategic types of decisions which are 'primarily concerned with external, rather than internal problems of the firm and specifically with the selection of the product mix which the firm will produce and the markets to which it will sell'.

Whatever may be the type of decision, it is essentially made in an environment of 'givens'. Simon(30) maintains that the knowledge of consequences (of some action taken, for instance) is always fragmentary. While rationality would require knowledge of all choices, only a few of them are ever known. To this extent, the actual behaviour will be a departure from the norm of rationality since an individual's behaviour is essentially purposive and 'docile' in nature - 'docility' here meaning a process of learning. Learning progresses by actually experiencing an opportunity and observing the consequences of a certain behaviour.
Realising this constraint on decision making process, Ansoff(31) discusses the 'cascade approach' to decision-making, successively refining the process through several stages as the solution proceeds - one of the important ingredients being the feedback. There is no fundamental conflict between these two approaches though (ie: rational vs. pragmatic). If one approach is normative, the other is descriptive. If one approach prescribed the roles, the other describes the role behaviours. Miner(32) maintains that fundamentally the 'economic man' and the 'administrative man' approaches are not in complete contradiction.

Bearing this rather undefined, open, dynamic and value dominated characteristics of a strategy formulation process, Ansoff's(33) contribution to the methodology is given in a schematic of the following nature (adapted):

Decision Schematic for Strategy

- **Trigger** - Set & Identify Objectives etc
- **Identify and appraise internal strengths and weaknesses**
- **Consider need for a strategy and the strategy types ie expansion, growth, retrenchment, comprehensive stability etc etc**
- **Look for, identify and evaluate external opportunities & threats**
- **Search & Evaluate**
- **Decision**
A similar, not fundamentally different methodology, is presented by Glueck (34) (adapted). (Glueck's approach adds the dimensions and relevance of organisational input and short-medium range plans and programmes to strategy formulation and implementation.)
Steiner(35) maintains that the basic strategy for long-term corporate survival is to anticipate the changing expectations of society and to serve them more effectively than the competitors. This implies change and adaptation to ever-changing environment. Anthony(36) thus identifies the economic, the social and the survival goals (and objectives) of an organisation. A firm, in addition to being profitable, must fulfill its social role duly in order to survive - the more fundamental goal. The relevance of strategic management to the fulfillment of these goals is obvious enough. Only through an analysis of necessary strategic conditions will the management be able to decide on the necessary course of action. Ansoff's thoughts are similar (see item 29, pp.65-67). Emery(37) and Allen(38) have forcefully drawn attention to the emergent environmental conditions and their relevance to strategic decision issues.

For a more complex business organisation, due mainly to the personal elements of managers that enter the objectives identification, Vancil(39) presents the following strategy formulation process matrix:

```
<table>
<thead>
<tr>
<th>Objectives</th>
<th>Constraints</th>
<th>Plans &amp; Goals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corporate Manager</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unit Manager</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Activity Manager</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
```

* Arrows indicating interactions and interdependencies - of a divisionalised structure
Vancil maintains that strategy is the conceptual glue. Managers will operate with constraints of multi-dimensional nature while retaining enough elbow room for a manager at each level to contribute effectively to the total organisation strategy. A similar concept has been further developed by Vancil and Lorange (40) in presenting a three-cycle system of strategy formulation - involving the chief executive, the divisional manager and the functional departmental manager in the strategy formulation process. The selection process and the feedback is also emphasised. This researcher felt, in addition to what have been emphasised by Ansoff, Glueck and Vancil, Emery or Allen, for instance, there are other factors that one should consider in building a decision schematic. Some of these factors have been considered by well-known authors, though in a somewhat different context. Drucker (41) for instance has emphasised the need for analysing one's own business. A large motor car dealer in Singapore, seeking to diversify, invested in an engineering company and found that it lacked expertise to manage it. It was an error of a fundamental nature rather than a mere weakness. An analysis of the past decisions is therefore a necessary pre-condition to know what kind of business one is in - partly or wholly. Is the business itself effective?

Also, borrowing on the thinking of Lorange & Vancil (42) and Paul, Donovan and Taylor (43) and large well known companies (44), it is clear that linking strategy to quantifiable short-term programs is at best only a vague exercise. What is more important is to understand the inter-connections of the environmental forces and how the company can be positioned most advantageously vis-a-vis the given environment. With these thoughts in mind, the following schematic is presented:
Start

Do you feel you want to go somewhere and you have a vision about it?

NO

YES

Appraise your available and possible resources. Match strengths to opportunities. Identify goals relevant to where you want to go.

Select broad options. Avoid 'number game' at this stage. Gradually narrow down choices. Loree & Vance 'How To Design a Strategic Planning System' HBR Sep/Oct. '76

Review strategy and plan at regular intervals - at least "all the basic assumptions" - 'The reality gap in strategic planning' - Paul, Donovan & Taylor, HBR, May/June 1978

Consider Divestment & other related issues

END
2.5 STRATEGY FORMULATION PROCESS AND STRATEGIC VULNERABILITY

An examination of the decision schematics (in strategy-making context) will reveal that the main emphasis of various authors is to relate effectively the internal strengths and weaknesses of a firm to environmental conditions, i.e., opportunities, threats and constraints in general. In any strategy formulation process, formally or informally, this process of assessing one's strengths and weaknesses vis-à-vis the external conditions will be carried out. A generally accepted name for this analysis is SWOT (Strengths, Weaknesses, Opportunities and Threats) analysis though by no means is the name used by all authors. But most authors on business policy have dealt with these aspects—though the emphasis given to various elements of the SWOT analysis would vary among these authors. This is partly determined by a certain writer's perception of the world and partly by the point of time when a material is being written. Surely, from strategic planning point of view, 1960s were materially different from the eighties!

Argenti(45) makes a useful point by drawing one's attention to the fact that formal corporate planning is not a device to bring about spectacular business success, but a defence against 'the increasingly difficult problems of management of the modern world'. He maintains that the existence of a formal corporate planning system and the business success are not necessarily correlated. But corporate planning is necessary because information for strategic decision is so poor. It is a study of major decisions based on limited information—to assist 'the chief executive to hold his company together against the increasing forces of disintegration'. Really speaking, there is no substitute for reflection. The process of SWOT analysis is a process of this reflection—with strategic aims in mind.

Opinions will vary whether or not formal strategic planning process is a factor for success. Hall(46), in writing on survival strategies in a current context, suggests that success comes to those companies that achieve either lowest cost or most differentiated position (product/market wise). Hall maintains that 'successful strategies come from purposeful moves toward a leadership position'. On the other hand, some authors(47)
still maintains that such 'leadership' is more in the domain of individual intuition and enterprise than in the domain of purposeful planning. Such assertions, though they may have some truth in them, cannot be used as a pathfinder. One is, therefore, not left with further options than to reflect.

Ansoff(48) has made significant contributions in the internal appraisal of strengths and weaknesses - identifying four main areas for closer examination - General Management, Research and Development, Marketing and Operations. An early contribution along this line of thinking was made by Standt(49). Ansoff seeks to identify, through a methodical checklist of internal strengths and weaknesses analysis, those respects in which a firm is differentiated from other firms in the industry. An adapted version of his competence profile matrix is given below:

<table>
<thead>
<tr>
<th>Facilities + Equipment</th>
<th>Management Competence</th>
<th>Organisation Capability</th>
<th>Level of Skills etc.</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Management</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Include finance,</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>personnel etc</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Research &amp; Development</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operations</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Marketing</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Include Distribution</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Ansoff also develops the scope of synergy in relation to opportunities, perhaps with greater emphasis than most authors, in terms of sales, operations, investment, management, etc.

In relation to external appraisal, Ansoff's main concern is in relation to opportunities, identifying those from the rest with a greater promise and their current relevance. In emphasising the relevance of both the internal and external appraisal analysis, Ewing(50) points out some may choose to rely on external opportunities exploitation (outside-in approach) more than the internal strength (inside-out approach). Whatever may be the mode of analysis, it is not possible (nor desirable in any paper of this nature) to try to be completely exhaustive. However, in one respect at least, Ansoff's approach* did not provide the answer that a strategic analyst must try to answer, that is to say assessing one's own position (product-market position mainly) in relation to the total environment. Significant literature on this is available. One of the original contributions was made by the Boston Consulting Group and the General Electric of U.S.(51) – both of which have encouraged further thinking along the line discussed earlier. In discussing the techniques for strategic advantage analysis (an exercise to identify the current strengths and weaknesses as well as the most probable future strengths and weaknesses), Glueck(52) introduces the concept of strategic advantage diagnosis as the subsequent step to advantage analysis. Boston Consulting Group's (BCG) portfolio analysis was the first matrix approach to this diagnosis. BCG's main assumption is that high market share and faster growth lead to high profitability and stable competitive position. The basic matrix structure is given below (of products and markets of an organisation):

* When writing in 1965. His thinking currently is significantly different – which will be discussed.
BCG portfolio analysis is apparently a simple and hence appealing technique. It provides a methodical tool to analyse the products and its prospects. A product (or a business) which enjoys a high growth rate but suffers from a relatively low market share position, may offer immense opportunity for further development. On the other hand, a certain product which is profitable and enjoys a high share of a 'small' market can hardly be called a very desirable product in which further significant investment can be justified. Then, in Singapore context especially, Slater's view (53) on the obscurity of the relevant market is especially significant. Market may as well be the whole world (for instance, building of rigs or refining of oil, to name only two products in which Singapore has a name). The greatest danger is of course to treat the portfolio as a 'closed system'. This becomes particularly evident when a portfolio of products (rather than businesses) is viewed in this way. The analysis, however good it is in some cases, cannot take away the necessity for other innovative managerial inputs in the decision-making process.

GE, in its annual planning cycle, rates each of its many businesses according to some criteria of business strengths and attractiveness. These criteria will include amongst others:
Size, growth rate, market share, profitability, technology position, image. Competitive structure, social environmental legal and human factors, etc., etc.

The result of this analysis (or ratings) is then presented in a planning grid:

<table>
<thead>
<tr>
<th>Business Attractiveness</th>
<th>High</th>
<th>Medium</th>
<th>Low</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>High</strong></td>
<td>Good</td>
<td>Relatively Good</td>
<td>?</td>
</tr>
<tr>
<td><strong>Medium</strong></td>
<td>Relatively Good</td>
<td>?</td>
<td>Relatively Not Good</td>
</tr>
<tr>
<td><strong>Low</strong></td>
<td>?</td>
<td>Relatively Not Good</td>
<td>Not Good</td>
</tr>
</tbody>
</table>
Again, the approach is diagnostic. But what about those businesses (or potential businesses) which are new or industries which are just beginning to grow? Hofer(54) thus adapts GE's approach to strategic advantage analysis to further indicating (a) the stage of product market evolution, (b) the competitive position, (c) the size of the business, and (d) the market share of the firm (or the product). Some of the criticisms of the BCG model will apply to GE's model viz: definition of a business, etc.

Extensive discussions are given in various articles in Part III of the book Corporate Strategy and Planning edited by B. Taylor and J. R. Sparkes (Heinemann, 1977) with regard to financial, production, procurement, industrial relations, etc. and their importance as key issues in any strategy formulation exercises. However, particularistic discussion is not the emphasis of this conceptual scheme. Nevertheless, Taylor(55), in discussing about strategic planning for social and political change, makes the very useful point of 'minimising risk' - of a social and political nature - to the company, as an important strategic variable. Social responsibility and priority are among other concepts espoused by Taylor. Key social issues should be identified, eg: control on mergers, acquisitions, etc., constraints on individual relations, pollution control requirements, etc. Such controls or constraints can be significant from a strategic development point of view. One relevant matrix analysis is as follows:

**Analysis of Social Priorities - Pressure Groups**

(GE's Model - quoted by B. Taylor)

<table>
<thead>
<tr>
<th>Demands</th>
<th>Consumer</th>
<th>Conservation</th>
<th>Racial</th>
<th>Women</th>
<th>Etc Etc</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marketing</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Production</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Personnel</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>International</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Etc</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rank Intensity</td>
<td>1 - 4</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Above analysis is significant. For instance, an exporter of motor
cars to Singapore/Malaysia failed to realise the government pressure
against cars above 1600cc. A Japanese builder similarly failed to
realise the extent to which he would have to rely on certain racial
groups (in Singapore) for his source of labour supply and the volatility
of that source. Allen(36) maintains that 'in recent years the
uncertainty and structural change stemming from a number of environmental
crises have added a particular poignancy to the task of corporate
strategic planning'. In a similar vein, Ansoff(37) maintains that a
company should be positioned 'in business areas which together offer
the best possible potential return on the firm's strategic investment'.
This though is a broad statement, also implies that the techniques
and methods of strategic management which have hitherto been used for
expansion chiefly could also be usefully employed for protecting a
company from strategic vulnerability (though Singapore is in an expansion
phase, it is not without vulnerabilities). Hence, Ansoff and Leontiades(58)
state that 'what is important today is not a particular technique, but
management recognition that perception of the environment through the
eyes of the organisation structure can give a distorted and confusing
view. Increasingly the logic of the environment, rather than the logic
of internal structure, needs to be used for a clear view of the outside
world.' In order to achieve this aim, it will be necessary to identify
those areas which are capable of strategic development (strategic
business areas (SBA) and the strategic resource areas (SRA)) in terms
of human, physical, and monetary input. Ansoff maintains that
'discontinuities are much harder to forecast than trends, because they
represent a sharp break with the familiar past... Their very occurrence,
as well as timing, remains uncertain before the event. As a result it
is frequently difficult and uneconomical to plan and prepare for
discontinuities...'. He advocates 'strategic flexibility' as a means
to provide some elements of preparedness. This is partly achievable by
a reduction of 'cross vulnerability', i.e: selecting SBA's, SRA's, etc.
which depend on different technologies and economic, political and
cultural climates so that discontinuity in one area will not materially
affect another. Partly, of course, the controlling managers and what
input they are capable of providing will determine what 'quick response'
capability a firm possesses.
However, returning to a general review techniques of the SWOT analysis, some further observations will be in order.

One significant contribution to strengths and weaknesses analysis came from Stevenson(59). He interviewed 50 executives of six companies (company sales ranged from $200m to $2000m) and presented the following summary of factors used to assess the strengths and weaknesses:

<table>
<thead>
<tr>
<th>Category</th>
<th>Nature of Attributes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Organisation</td>
<td>Form and Structure</td>
</tr>
<tr>
<td></td>
<td>Top Management Interest, Skill</td>
</tr>
<tr>
<td></td>
<td>The Control System</td>
</tr>
<tr>
<td></td>
<td>The Planning System</td>
</tr>
<tr>
<td>Personnel</td>
<td>Employee Attitude</td>
</tr>
<tr>
<td></td>
<td>Technical Skills</td>
</tr>
<tr>
<td></td>
<td>Experience</td>
</tr>
<tr>
<td></td>
<td>Number to be managed</td>
</tr>
<tr>
<td>Marketing</td>
<td>Sales force</td>
</tr>
<tr>
<td></td>
<td>Knowledge of customer needs</td>
</tr>
<tr>
<td></td>
<td>Range of Products</td>
</tr>
<tr>
<td></td>
<td>Quality, Reputation, Customer Service</td>
</tr>
<tr>
<td>Technical</td>
<td>Production facilities, technique</td>
</tr>
<tr>
<td></td>
<td>development, research etc.</td>
</tr>
<tr>
<td>Financial</td>
<td>P/E Ratio, Size, Growth History etc</td>
</tr>
</tbody>
</table>
The list given is not fully exhaustive but indicative of the general nature and direction of concerns expressed. The study also indicates that the main concern of the top level management is organisational, personnel and financial in nature (rather than marketing or technical).

Strategies should not simply build on strengths and opportunities, but should also seek to correct weaknesses and avoid environmental threats - these later aspects (or vulnerabilities) are being increasingly emphasised in more recent literature. Argenti's (60) analytical profile of external appraisal is as follows:

<table>
<thead>
<tr>
<th>Category</th>
<th>Considerations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Competitors</td>
<td>Number, significance, market share enjoyed by the company etc.</td>
</tr>
<tr>
<td>Political</td>
<td>Taxation, pollution, anti-trust legislation. List is virtually endless - significant changes can occur affecting growth prospects</td>
</tr>
<tr>
<td>Economic</td>
<td>Local and international (where significant). Type of industry, National income growth etc.</td>
</tr>
<tr>
<td>Social</td>
<td>Changes in social attitude, behaviour &amp; composition. Pressures: changes in education, life style etc.</td>
</tr>
<tr>
<td>Technological</td>
<td>Substitute products or new methods of manufacture can be major threats. Computer and tele-communications likely to see major changes - for instance</td>
</tr>
</tbody>
</table>
Other authors have discussed the matter in a similar vein (Newman & Logan, Steiner & Miner, for instance). Increasing awareness is now evidenced of the fast changing environment of the 1970s and the emerging 1980s. Basil & Cook(61), in emphasising the need for strategic development in an environment of continuous change state that 'the most pervasive change in the past few decades has been the growth of government and its changing role in society'. In talking about crisis-change model in action they maintain that 'building on past successes and rejection of uncertainty is to be expected of man and his institutions. It is only as change accelerates and companies enter turbulent environments that the impetus to develop change-responsive organisations will occur.' Most managers initiate change only in a crisis - instead they should try to predict problems. To cope with uncertainty, Basil & Cook present the following schematic of change (Vector analysis):

<table>
<thead>
<tr>
<th>Rate of Change</th>
<th>Magnitude of Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td>Transitional</td>
</tr>
<tr>
<td></td>
<td>Stable</td>
</tr>
<tr>
<td></td>
<td>- Low magnitude</td>
</tr>
<tr>
<td></td>
<td>of change</td>
</tr>
<tr>
<td></td>
<td>Unstable</td>
</tr>
<tr>
<td>Low</td>
<td>Turbulent</td>
</tr>
<tr>
<td></td>
<td>- Prediction</td>
</tr>
<tr>
<td></td>
<td>difficulties due to</td>
</tr>
<tr>
<td></td>
<td>accelerating changes</td>
</tr>
</tbody>
</table>
Basil & Cook's view corresponds with the view of Ansoff (ref.51) who states that 'managers who have historically regarded concern with strategy as a rich man's toys, to be used only in good times will be inclined to argue that a company in the midst of a recession cannot afford the luxury of strategic planning.... On the contrary, the company cannot afford to neglect it.' The model proposed by Basil and Cook is also a model which corresponds in some way with the concepts of 'strategic flexibility' and 'strategic vulnerability' espoused by Ansoff and Leontiadis.

This model is somewhat arbitrary though in the sense that the dimensions given cannot apply equally to all the parts of a business equally - but the model is still applicable to critical product/market areas of a business for analytical purposes and to identify areas where different types of strategic responses will be necessary. Hussey's Risk Matrix(62) or Shell's Directional Policy Matrix(63) (similar in concept to GE's model given earlier) represent, in effect, this risk management aspect of strategy planning. These matrices, as Hofer noted, fail somewhat to direct attention to prospective new lines and therefore need follow-up (further) analysis - mostly of a qualitative nature.

### Directional Policy Matrix

<table>
<thead>
<tr>
<th>Competitiveness</th>
<th>Prospects for Profitability</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>un-attractive</td>
</tr>
<tr>
<td>Weak</td>
<td>Divest</td>
</tr>
<tr>
<td>Average</td>
<td>?</td>
</tr>
<tr>
<td>Strong</td>
<td>Cash Generator</td>
</tr>
</tbody>
</table>

Note - ? indicates cautious approach
One suggestion that this researcher would like to make at this stage is that while the products of a company (in a strategy formulation context) can be usefully analysed in the above form, final strategic selection must still consider other issues. It is of course understood that a matrix of this nature is more relevant to strategic business units than to products, but even from SBU point of view the definitions of markets, of the inter-relatedness of product-market segments, are not easily determined. A simplistic solution to an essentially non-simple problem is not a solution. Finally, there is no real substitute for managerial judgement.

Ansoff's recent thinking (64) is in the direction of recognising strategic risks and vulnerabilities and being equipped to deal with them - though his earlier emphasis was on exploiting opportunities. Ansoff introduces 'surprise management' as a new concept (though this somehow smacks of Basil and Cook's 'response to crisis' concept - which they think is inadequate preparation for strategic management). "When an executive says that strategic planning has not worked for him in an era of turbulence, he is stating an obvious truth because it was never designed to do so". "When the fog of uncertainty descends, the forecasting horizon what you can trust comes closer and closer to your nose - being receptive to new directions becomes important." "You get yourself some radar, a command control system and a quick response scramble capability". Though the emphasis is new and quite significant - similar thoughts but in a different way were expressed by Michael(65) - in giving an explanation for contingency approach to planning - "the contingency approach is to introduce a considerable degree of flexibility into the managerial process. Such a flexibility shows the manager to find a better fit between a problem and its solution." How we plan and what we plan depend on the situation. The next suggestion this researcher would intend to make is that because of the complexity of the processes and issues involved in a strategy planning exercise, strategic decision making can only be evolved by way of a contingency/adaptive approach to planning through a process of iteration and successive reconsideration of the strategic variables and delimiting the issue areas. Entire environment relevant to the decision outcome will have to be considered - to the extent possible. That requires, according to Argenti, information.
Drucker who once said that 'results are obtained by exploiting opportunities, not by solving problems' is also turning increasingly to recognising the importance of managing in turbulence and the associated risk elements (66). He argues for an 'organised sloughing off' of those elements which are obsolescent in a business. Growth 'is not forever' is being realised now. Is he also becoming 'remedial' now? After all, Lindblom viewed problem as continuous, never-ending and hence his approach was incremental and remedial, not because he suggested directionlessness. Drucker still is an 'opportunities man' - but for old and large companies he advocates 'innovation' and then to give effective leadership in such innovation. The top management of Japanese business, Drucker observes (see ref. 66), does not operate but only relate. It takes care of the environment relating to the state, government, banks, businesses and other social political and international institutions. Actual management of a company is in the hands of younger people - while the top management is also concerned with management succession. The whole thrust is therefore, towards recognising the threats that can unexpectedly generate from the environment and taking reasonable steps to minimise such risks.

Recognising the true nature of a vulnerability is important. Cambridge Economic Policy Review (67) states that persistent inflation, recession or low productivity etc. in some of the western countries are attributed to internal weaknesses. It could be that the reason is not weaknesses in these countries. Europe's industries still dominate world markets*. The record trade deficits of EEC countries, according to the review, are largely due to depressed markets in oil importing countries and the start of recession is to be found in an external rather than internal reason, ie: world-wide shortage of energy.

One should also guard against turning one's strength into weakness (68). Tokuyama maintains that Japan's tightly knit organisations reject mobility and encourage exclusiveness - which is contrary to the principle

* The review shows that the combined industrial and agricultural output of EEC countries is very substantial compared to the world as a whole. This is true but a bit simplistic. Japan, for instance, mainly due to its highly motivated workforce, produce many things well as well as cheap.
of worldwide economic interdependence. Japanese, according to him, lacks strategic prescience. Accomplishing tasks rather than providing overall new direction has been their usual pre-occupation. If accomplishing tasks better than others is their 'social project' now, then these elements of exclusiveness may as well bring their downfall from that aim. One of course must take account of the total cultural climate of Japan. 'Problem isn't simple and neither is its solution'.

Weiner and Kahn make these useful points about threats and promises -

a) Explicit decisions not to take action when such is warranted. Staying still can also be a strategy.

b) Threat seen is relatively more powerful factor in recognising a situation than a promise seen.

c) A decision may be determinative of the future.

d) Inter-relations among decision-makers become even more important in a strategic context.

Cyert & March suggest that the search activity is to be triggered by some energetic stimulus - search activity to identify the threats and promises, the existence of a performance gap and an escalating aspiration level. Performance gap is also seen as a negative feedback, ie: identification of a performance shortfall. This would trigger a search for alternatives. If an escalating level of aspiration would not accept a state of equilibrium as a suitable system dynamic - then this situation may provide the stimulus for a change and improvement-oriented search. Whitehand observes that while an organisation would want to optimise, the complex reality of 'given' will produce a decision as good as is feasible within limitations. We should then, naturally enough, consider the decision approaches to strategy formulation (see next chapter).

In particular, several authors amongst many mention certain environmental factors, eg: new market and a niche, demand and supply considerations, competition, uncertainties, etc. as among the important elements to consider to assess the organisation's own position
vis-a-vis the outside world. The researcher did not feel it necessary to consider them in detail here in a conceptual scheme, though their importance as to the manner of conducting the environmental scanning and analysis in a corporate planning context is not to be minimised. Another aspect, which has considerable bearing on the goal-setting process, is the exogenous groups and the pressures they exert on the organisation strategy formulation (79). A primary responsibility of the executives is to be able to assess the form, focus and intensity of these pressures (e.g. unions, governments, shareholders, for instance) and to integrate them with the long term aspirations of the organisation. Some discussion of the impact of organisation and people in and around the organisation on the strategy formulation process will have to be undertaken at a later stage - as part of this discussion.

2.6 SUMMARY

In the earlier part of this chapter it has been shown that distinctive meanings should attach to words policy, strategy, objectives etc. However, it has been emphasised that strategy of a business undertaking is one of a long term nature, takes a broad view of the desired end results and should not be in mere abstractions. Its relevance to the decision-making process has also been discussed.

It is thus shown that strategy is not a homogeneous concept but could take one of many forms, or a combination of them. It is also emphasised that no list of strategic options can or need be complete, nor that all strategies are necessarily exhaustive. The key governing thought here again is one of adaptation - bearing in mind the ultimate survival of an organisation.

In discussing the strategic decision methods, various models proposed by a number of well-known authors (Ansoff, Glueck, Vancil, etc.) have been discussed and along those lines but with some modification
a proposed new schematic has been introduced. Emphasis has been given on the situations encountered by divisionalised undertakings.

Finally, a groundwork has been laid for strategy formulation with particular emphasis on strategic vulnerability (in view of today's fast-changing and turbulent world). In discussing these concepts, current thinking on the assessment of a firm's internal strengths and weaknesses and external opportunities and threats has been reviewed - with special reference to directional policy matrix and to a change responsive way of thinking. It is mentioned also, in discussing these models, that they do not necessarily draw attention to prospective new lines of business, ie: they are more diagnostic than opportunistic in nature. They also represent the organisation's own view rather than a view confirmed by the marketplace.

In discussing strategic vulnerability, which gains its importance due to the current economic state of the free world as well as the fast changing political/economic climate of the world, the concept of 'surprise management' has been discussed. In strategy building, entire environment relevant to the decision will have to be considered. This environment will include internal as well as exogeneous pressure groups. A balance is to be achieved which is also viable.
References


40. *Ibid.*, see pp.22-36 - the subsequent article, "Strategic Planning in Diversified Companies".


44. Some information on GKN's thinking was given to me by Professor Higgin. An article on Nestle appeared in Singapore Business Times (date unknown).


64. H. I. Ansoff, "Weak Signals from the Unknown", *International Management*, October 1979, pp.55-60; also refs. 57 & 58.


68. Jiro Tokuyama, "Turning Strength into Weakness", *Newsweek*, 25.1.82.


CHAPTER 3

THE DECISION MAKING APPROACHES TO STRATEGY FORMULATION
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Having laid down the general principles of strategy formulation process, again in conformity with the proposed pro-active adaptive approach, it is now necessary to examine the various approaches to strategy formulation and why a particular approach is being advocated in this thesis. This will now be attempted. In the earlier part various methodologies proposed by some authors will be discussed - entrepreneurial mode, planning mode, etc., etc. This discussion should then show that a purely rational model so far as strategy formulation decision-making process is concerned is hardly achievable - since we are humans and limited by our many limitations. The learning process continues and there is no ultimate learning - in some sense. Only progression from the less satisfactory position to another of greater satisfaction is possible and even that position is always subject to change and challenge. But incrementalism need not mean directionlessness - which again is in the substance of this thesis and hence this concept will be developed. Continuity will be emphasised.

The schematic given in chapter 2 will be further expanded. Can a manager fully grasp his strategic problem? What have we learnt from the past? How far can we go given the limitations of costs, human cognitive ability etc. etc. - these are among the questions which will be addressed.

Finally, a case will be developed in support of the proposed proactive adaptive decision approach to strategy formulation. In so doing, the explication of values held, the operational validity of strategic objectives, the feedback iterative process etc. are among some of the concepts that will be discussed.

3.2 AN ANALYSIS OF STRATEGY FORMULATION METHODOLOGY PROPOSED BY VARIOUS AUTHORS

An early contribution towards an analysis of the different modes of strategic behaviour was made by Ansoff(1) - drawing heavily on the thoughts of Cyert & March(2) and Chandler(3). In analysing the nature of strategic responses of firms to the problems signalled by the logistic process of analysing the environment, Ansoff classifies them in the following broad categories:

Lag Response type - acting more or less in response to the significant
changes that have already taken place.

Anticipatory Response type - Significant changes in the environment are foreseen and the firms prepare to respond to them in time.

Self - triggered response - Continuously searching for opportunities in the environment and cashing in on them.

Lag response implies occasional strategic concern whereas the anticipatory or the self-triggered response type implies more regular review of a firm's strategic needs. Ansoff recognises that the actual nature of response will vary 'in proportion to the difference between the goals and the potential offered by the firm's present product-market for satisfying the goals'. He also recognises that 'the management sensitivity to strategy should be proportional to the instability of the environment of the firm'.

Thinking somewhat in a similar vein Mintzberg(4) (drawing on the thoughts of Cyert & March, Drucker and Ackoff, amongst others) presents an analysis of the organisation decision behaviour and its relationship to strategy/policy making. His classification is as follows:

Entreprenneurial Mode - representing a behaviour pattern which in moments of crisis does not seek a situation of security. It is viewed as central to business, a thrust for new opportunities and characterised by dramatic leaps forward in the face of uncertainty. Growth has the dominant role. Drucker(5) thinks along these lines too, whose thinking almost always has been along the line of exploiting opportunities.

Adaptive Mode - Thoughts here are dominated by Lindblom(6) and Cyert & March (in particular). Clear goals are impossible in a complex coalition of power-sharers and therefore, solution to problems is more reactive, rather than pro-active, in nature. Decision-making is incremental and adaptive in nature and therefore, they are dis-jointed. Mintzberg's adaptiveness is somewhat similar to Ansoff's lag-response type.

Planning Mode - drawing more heavily on Ackoff(7) and Steiner(8) amongst others, this mode is viewed as anticipatory. It is (the decisions) directed towards producing one or more future states which are desired and dependent on something done by the organisation - now.

Mintzberg also observes that 'more likely, an organisation will find some
combination of the three that reflects its own needs' - his reflection here is somewhat similar (though not the same) to Ansoff's. Ackoff(9), in discussing the philosophy of planning, distinguishes among the various planning points of view in the following manner:

**Satisficing** - objectives and goals are set which are considered feasible and desirable. 'High enough' rather than 'as high as possible'. Feasibility is the key word. Ackoff's satisficing draws heavily on Simon's 'administrative man' concept.

**Optimising** - to attempt to do as well as possible. The optimiser seeks the best available policies, programs, procedures and to maximise the performance. However, such optimisation with complex problems that exist in a complex organisation is hardly possible. It is possible perhaps with a smaller-dimension problem, with issues more clearly defined.

**Adapтивizing** - process of planning is considered as important as the plan itself. It is innovative in concept and 'a planning directed towards removing deficiencies produced by past decisions'. However, 'the objective is not to eliminate prospective planning - planning that is directed toward creating a desired future'. Ackoff maintains also that 'adaptiveness can be designed into organisations to a greater extent than current practice would lead one to believe'.

Ackoff's 'adapтивizing' is not quite the same as Ansoff's 'lag response' or Mintzberg's 'adaptive mode'. Here, he is talking not something merely 'reactive' but adaptation with the future of the firm in mind. The researcher would suggest that this pro-active adaptation in an organised strategy formulation is a necessary and unavoidable ingredient.

Richards(10), in discussing 'politicised goal setting processes' also advocates, essentially, this 'pro-active' adaptation mode. 'Resources come from the environment; they are not acquired internally. The whole concept of rational goal formation and strategy is based upon taking advantage of opportunities in the environment or avoiding threats while aligning internal systems to accommodate these tasks'. Dyckman expresses a similar view, though in a different context (11) "... it may be reasonable to assert that no single widely accepted behavioural theory of choice exists. More to the point, it seems inaccurate to model individual and organisational choice totally with the rational calculation model. Nor
will it prove fruitful either to treat the observed violations of this model as merely correctable faults which can be removed by education in the normative model ... or explained as revealed preferences, or as resulting purely from contractual relationships". A descriptive model modifies and adapts a normative model to reality. Not being entirely rational is not the same thing as irrationality or extra-rationality though extra-rationality does have a role in some decision-making processes. This aspect will touched on later.

Lindblom's incrementalism is further expanded in his book 'The Policy Making Process'(12). But his exposition is not of a reactive response nature only - 'a policy analyst will design policy not merely on the expectation of a second step but on the projection of a third, or a fourth - of an endless series. In this style of policy analysis, he sees possibilities for revising both policies and objectives and he comes to treat policy-making as open-ended in all its aspects' ...! Later Lindblom observes that the policy maker's 'methods cannot be restricted to tidy scholarly procedures. The piecemealing, remedial incrementalist or satisficer may not look like a 'heroic' figure. He is nevertheless a shrewd resourceful problem solver who is wrestling bravely with a universe that he is wise enough to know is too big for him'. This is not mere reaction to problems - this is reality of the uncertain world we know.

An advocacy for 'heroic' (it could mean either an intuitional approach to risk-taking or an overly rational approach to long term planning) display of strategic planning appears from time to time in literature. Even Ansoff (who now talks about surprise management) held Lindblom wrong(13). He held that it was demonstrated by Sheehan's*(14) article. But one wonders today (with hindsight) what was the ultimate benefit of trying to set goals for 1975 in 1966 - especially firm quantitative goals. For one thing, oil price explosion was not probably foreseen; its multiplier effect on world economy perhaps even less so. R. Horwitz(15) observes that 'closer policy maker's approach to quantified objectives, the greater the likelihood of failure'. Later, he states that contrary to Taylor's view that planning should start from first principles ; 'the originating and sustaining inspiration for an enduring business achievement is hunch'.

* In this article, strong advocacy was made for a rational approach to strategy planning over a long horizon (say 15 years). It may have had some, though doubtful, relevance in 1960s, but hardly now.
Horwitz postulated 'guts' of strategic planning. He is implying here, presumably, that all worthwhile knowledge is in the mind of the decision-taker and given some divine source of intuition, he will then be able to make correct strategic decisions. But such people are rare and the businesses of business must still continue. In advocating change-responsiveness, Basil & Cook(16) however, maintain that 'even the innovative and change responsive firm all too often fails to recognise that it was not some specific market or product it developed but its change-responsiveness which created its success'. Though 'guts' and change-responsiveness are obviously not the same concepts, what Basil & Cook do probably imply here is that when a courageous project is proven successful (in developing and marketing a new or improved product for instance), it was probably, not some 'hunch' but thoughtful change-responsiveness which could as well have been the driving force. As an example, when disposable incomes grew in S.E. Asia, the demand for cars went up very fast, initially the small cars. However, most European cars (and at that time Japanese cars too) could not accommodate an air-conditioner in a car with engine capacity of less than 1600 c.c. SUZUKI, and later SUBARU, saw this gap and marketed, most successfully, good small cars with capacity less than 1000 c.c. which could successfully accommodate a small but effective air-conditioner. It was not a 'hunch' that other manufacturers did not have, but SUZUKI proved the ability ahead of others, to bring about a model which responded to the local needs (it is understood that the car is very successful in Japan, too).

Basil & Cook equate this responsiveness to these changing needs of the market place (in a human rather than in a super-human way) to a responsive-proactive strategy formulation approach - a change-responsive model - this is not reactive which is a result of underlying uncertainties, misunderstandings and rigidities within an organisation. Another relevant model to strategy formulation which in essence comes nearer to 'change responsive' model is the 'contingency approach' to strategy formulation(17). To cope effectively with changing environmental circumstances, strategies will be formulated to respond effectively to the environmental attributes of a given business purpose. This is essentially stating what was said earlier - a strategy should be tailor-made. It may not necessarily be something which is theoretically the best, or rationally the most acceptable, but it will be something which is capable of being implemented under constraints of various kinds (pre-dominantly the environmental ones) and at the same time presents itself as an intelligent
and feasible proposition to those who are supposed to work with it. It should be essentially a workable proposition having due regard to the issue in question, to those who are concerned with it and to the environment surrounding it.

Steiner(18) also identified entrepreneurial opportunistic approach (opportunity grabbing rather than problem solving), incrementing approach (remedial, geared more to present imperfections than to future development) and the adaptive approach. His adaptive approach is not Ansoff's lag response, but nearer to change responsive model of Basil & Cook or the 'Cascade' model of Ansoff(19). Thus, the emphasis is on feedback and a successive refinement of the decision-making process - and narrowing the scope of the decision rules. Steiner also maintains that the perceptions are variable and given the same strategic problems, different decision-making approaches are possible - which is to say that this list of classification is not and cannot be exhaustive - or, perhaps, any list for that matter.

One of the main drawbacks of Lindblom's approach - though it is not fair to say that he is entirely an incrementalist - is that Lindblom overemphasises agreement, neglecting perhaps to some extent the dynamic aspect of agreement reaching process, and the fact that feasibility is not the only over-riding factor in strategy/policy formulation. Dror(20) has labelled his concept of 'muddling through' as partly 'inertia' if partly a 'science'. Etzioni(21) advocates 'mixed scanning' concept and in his view the first necessity is to have an overview of a problem (or goals), avoiding detail at this stage. Certain fundamental reviews and decisions rules are also necessary and within this domain, incrementalism may be acceptable in so far as such an approach is realistic or opposed to the unrealistic demands of rationalism.

Lindblom's emphasis on agreement in accordance with constraints is capable of being misunderstood, as Mintzberg has apparently done so. But agreeing without a fundamental review of what is necessary and relevant has serious pitfalls and is not advocated here. As an instance, even though the feelings were voiced, in the National University of Singapore the attitude to consultancy assignment as opposed to pure research changed abruptly from time to time depending on who the vice-chancellor was. For a variety of reasons, the Heads of Departments could not hold on to a philosophy of their choice. Yet, on a fundamental review, one could argue with some
validity that there is really no reason why should one be preferred to
another since both have their places in a University faculty - especially a
faculty with direct industry and commerce relevance. Consultancy, apart
from providing relevant industry experience, may also provide useful
thoughts for further research. The fundamental review in this context will
also probably reveal that while a University may represent a body of
knowledge, its component parts may have widely different characteristics
requiring different approaches for further strategic development.

Simon(22) states that the 'attainment of maximum values with limited means
must be a guiding criterion in administrative decisions'. But 'it is...
impossible for the individual to know all his alternatives or all their
consequences'. He also states that 'the planning procedure is a
compromise, whereby only the most plausible alternatives are worked out'.
Significantly, both Cyert & March and Simon regard decisions as being more
concerned with discovering courses of action that satisfy a whole set of
constraints - rather than aimed directly at achieving goals. It is
possible that the truth is somewhere in between and it is not inappropriate
to suggest that a change-responsive, creative adaptive approach would be
acceptable from an organised strategy formulation viewpoint. Another name
for this approach could be the contingency approach - depending on what
meaning is imputed to that in a strategy formulation context. In line with
Etzioni's thinking such an approach is at once a descriptive and normative
model, retaining the merits of a practical approach while not disregarding
the fundamental rules. Shank, Niblock, and Sandalls Jr.(23), after
studying the long range planning approach used by six companies, state that
different combinations can be used to achieve a workable equilibrium. To
balance creativity with practicality, some companies leave shorter planning
horizon to relatively lower level of management while the top management
retains concern for long term planning - in more general terms. The
conflict is between 'reach' and 'realism' and the concept of 'realistic
reach' in planning 'is not just an illusory phenomenon'.

Various authors seem to emphasise one or the other aspect or aspects of
planning. For instance Uyterhoeven(24) emphasises the 'creativity' aspect
of planning. Steiner(25) draws attention to the changing environment
pattern, changing social role of business and the managerial and
organisational style needed, amongst other things, in strategy planning
context. Andrews(26), Ansoff and others emphasise on an analysis of
internal and external position of an organisation and the role of
leadership in strategy formulation and implementation. Planning however is a process of mental preparation - by people who have to get the framework for this preparation right. Importantly, the planning approach and the planning needs of an organisation must match. An overall strategy must take account of parts which make up the whole. Planning approach to pricing may not necessarily correspond with the planning approach to production - at least on a medium term basis. Planning in all its parts must therefore be relevant, while being consistent with the overall strategy. While optimising parts may not, in some cases optimise the whole, reality may as well dictate a balanced approach to what could be done under the circumstances as opposed to what should be done. Adaptation is essentially situational and has its own logic. Lawrence & Lorsch and Simon(27) express similar views.

Uyterhoeven(28) maintains that 'every company in the conduct of its business faces some critical choices ... they are constrained both by the company's internal resources and by its external environment. Within these constraints, however, some basic choices are typically made.'

Some of the significant elements of these constraints on choices are obviously external in nature - making increased demands of strategic choice which is creative as well as respectful of these constraints. Choice indeed, is no other than to make the best of what we have. Guth(29) observes that:

- less a firm has control over the environment with which it must interact, the more its change in strategy will be incremental in nature, irrespective of opportunities or the threats facing the firm, and

- the greater the degree of such fragmentation of decisions and their strategic significance to the firm, the less the firm's overall strategy will become integrated.

Hofer(30) in a critique states that with respect to the limited control that a firm will have over the environment, it is preferable to use persuasive techniques to gain acceptance (and bargaining is preferable to formal power) of a firm's strategy. Be that as it may, there is need for a rational and comprehensive strategy analysis and choice and that must remain as a 'fundamental rule' or a 'first principle'. Within this governing fundamental, 'reach must take account of realism'; some
formidable constraints may impose a strategic behaviour which essentially becomes, for a time at least, piecemeal, almost incremental in nature. On this point both Guth and Hofer seem to agree. In so far as management has clearly defined and articulated the corporate objectives and the strategic planning needs, incrementalism need not be another name for aimlessness which will make the organisation more vulnerable to the ever increasing stresses of the environment. The management and the organisation will benefit by taking a holistic approach to strategic planning in the full context of social, political, technological, economic and other criteria and constraints.

3.3 A PROPOSED MODEL FOR DECISION APPROACH TO STRATEGY FORMULATION

The Nature of Strategic Problem

The primarily intended contribution of the discussion so far lies in suggesting some useful ways of looking at the strategy formulation process. This researcher, through his own involvement in several strategy and systems development assignments, has gradually come to believe that in a strategy formulating context while rationality has its due role to play, there are limitations which require another mode of thinking. This mode of thinking, in view of this researcher, will represent a model more representative of the processes that actually occur in developing a strategy. Such a model does not indicate any departure from rational mode of thinking. It represents a descriptive view of the what can be generally be regarded as a normative approach to problem-solving.

One view on problem-structuring is to state it in the following manner(31):

a. "What is the problem."
b. "How do you know you are working on the right problem."
c. "How do you decide what to do about the problem."
d. "How do you set limits to the area of investigation in a project."

For instance, in a Japanese subsidiary company in Singapore, it was claimed that with equal machinery and training, worker productivity was lower in Singapore compared to Japan. It was also claimed that the wage level in this subsidiary company was higher than the prevailing rates. The problem was addressed by various OR men in their usual methodical manner until it was realised that the real issue was behavioural and one of communication gap between the management (which was almost entirely Japanese) and the
labour (which was Singaporean). In any case, problems of a somewhat more defined nature are readily identifiable and accordingly its consequences are controllable to a certain degree, at least for a reasonable length of time, until one possibly discovers ways to cope with it.

The definition of a problem in a Strategy/Policy context is far more complex(32). It is not a question of facing a 'given' problem, but rather one of identifying and formulating a problem. When riots broke out in the cities of England in the summer of 1981, was it a problem of unemployment? Or, one of racial discrimination? Or, one of police repression? Or, one of disrespectful youth of the new generation? In a similar view, with regard to the loss of competitiveness of U.S. auto industry (or steel industry) to Japanese, is it a question of incorrectly identifying 'stars' or 'dogs', or is it a question of Japanese 'dumping', or is it a question of endemic neglect of technical competence for the sake of short-term financial gains(33)? The 'riot' or the 'loss of competitiveness' are merely symptomatic of the real problems to be solved. But what is the real problem? Do we want to know this? Do we have a 'real' mission to solve it? It is important not only to be aware of a problem, but also to know the real nature of the problem and to have a mission to do something about it.

It is with this view in mind, the first part of the schematic (given in chap. 2) was designed:

```
  Can anything be done for the chin-down manager?
  
  Analyse Yourself
  
  The manager is conscious of a problem.

  What is the true nature of the problem.
```
We are already facing one significant limitation i.e., identifying the true nature of the problem. We would like to be in a position to deal with the problem most rationally, but problems in a strategic context are often invented, in order to exploit a new opportunity or to be in a position to avoid possible strategic vulnerabilities. It is not usually an old sore to be healed. Hence, there is room for controversy over what the strategy or policy should be and so necessarily there is limit on analyses. It is not a question of irrationality but one of inherent limitations. We try to agree on what we consider the trouble spots, but often the problem is so complex and the alternative ways of dealing with them are so numerous that all this runs beyond the capacity of human mind, and beyond the time and energy that a decision maker can possibly devote to problem-solving. Analysis can never be finished and so it can never be proved that the right policy has at last been found. It will always be subject to challenge and inconclusive. But attempts must nevertheless be made to cope with the problem, sometimes if only with its symptoms. Where analysis remains forever unfinished, even educated guesses have to be relied on. Hence, we have the second part of the schematic:

Try hard. Any clue

Is something to be learnt from your past?

Yes

Can you identify the trouble spots?

Yes

Some of it may be relevant, if not all. Market shrinking for instance. But why?

Limitations of human mind time, costs etc make this exercise difficult, but there is no alternative to reflection. The impossibility of being entirely rational is not irrationality.
Essentially, one is left with much alternative but to come to some decision to do something for the purpose of exploiting an opportunity for growth or to take a certain position in order to be less vulnerable in the future, even if such actions do not always produce the desired end results. Partly, it is because actions may become necessary before all the analyses can be completed and partly because the cost of extended analysis may be prohibitive.

**Evaluation of Strategic Problems**

It is more important to study and reason a policy issue than to fight over it. We often do only the later and consider this a process of evaluation. It is because it is easier to feel than to think, to cling to beliefs that suit one's personality. A personality is formed by beliefs from the surrounding world, a world that one would not therefore like to challenge. It is however, necessary for a man to be frank about himself - and it is certainly so in a strategic evaluation context. The first step in doing so is to assess one's own strengths and weaknesses. The step in the schematic is stated thus:

```
Relate your lessons to the environment. What are the threats and opportunities?

.. analyse your own strengths and weaknesses. (Is there a definitive way for doing this?)
```

It is necessary to purposefully match the business environment with what is perceived to be the needs of business. This includes perceptions about threats and opportunities. Such perceptions will vary. It is never flawless!

Individual preferences may achieve alternate orderings(34). There is no tractable means of sorting our individual preferences. This imposes a severe limitation.

The man in charge of evaluating the threats and opportunities and of assessing one's own strengths and weaknesses are subject to manipulation by others. There are those who do not believe in this kind of analysis or those who prefer inaction to actions. There are also those who believe
they already know what is to be done. And there are those who may believe that the analysts themselves may be biased and hence not to be trusted. Above all, all analyses undertaken especially by organisation men are subject to organisation biases, rigidities and other incompetences. All evaluations and analysis of strategic problems are subject to organisational obstacles and individual value systems and therefore a complete and unflawed analysis is hardly possible. We therefore have to adapt to what we have and what we can do with it. It is hard to find someone who can be trusted to carry out the analysis under the constraints. It is even harder to find someone competent to study the analysis and give an opinion. The limitations are real and the intellectual abilities to cope with them are probably in short supply.

In chapter 2 we have dealt with, in some detail, the concepts relating to evaluation of strategic threats and opportunities and assessment of strengths and weaknesses. One way of handling these concepts would be to adopt a pure-rationality model(35) which will include the following steps:

a. Establish complete operational goals, with weights allocated to each
b. Establish complete inventory of resources and other values (with relative weights)
c. Prepare complete set of alternative policies
d. Prepare complete set of valid predictions for costs and benefits of each alternative
e. Relate each alternative to operational goals and establish the extent of their relevance
f. Calculate expected probability of the net benefit of each policy alternative
g. Select the alternative with the highest net expected value.

But we have problems with formulation of operational goals. Final goals depend on the values, beliefs and preferences of the policy-makers. Goal is not handling or fulfilling of a given task, it is rather a question of perception as to what the task is. Then, how can one add up the values held by various individual participating in policy making? Or, how to synthesise them? We also have real problems with valid predictions, especially in a strategic context. In strategy-making, we are constantly inter-acting with the environment over which we have only marginal control(36). Also, in predicting costs and benefits in terms of dollars and cents we may lose sight of the real purpose of a policy. For instance, although the alternative of buying one was cheaper, a furniture
manufacturer in Singapore preferred to make parts in-house for the sake of better production control and quality. Evaluation of expected probability of the net gains of the policy alternatives is obviously far from easy where values are contradictory, policies cannot be clearly articulated and predictions of net real benefits may not even be expressed in terms other than some abstractions. We are again facing questions of limitations — limitations of great magnitude and certainly not of a marginal character. What we need is an ability act within limitations since actions alone(37) 'provide knowledge with current states and develop flexibility through knowledge'.

Environments within which the companies will operate in eighties will become increasingly more complex, and dynamic. Planner, hence will become increasingly more a strategist. The planner will have to make his organisation effectively relate to the turbulent and changeful environment. Leontiades(38) argues that this innovative function cannot be carried out satisfactorily by a mere 'traditionalist'. He advocates a specialist role for the modern corporate planner with a strategic management emphasis. Nutt(39) maintains that managers will require to have a broader understanding and range of assumptions and the planner's role will be to monitor these assumptions, securing corporate consensus and negotiating the resultant corporate plan through a process of iteration. Ansoff and Taylor also advocate these broader assumptions by managers, away from today's involvement with operations only. As part of strategic management concept, adapting ability to environment quickly is being emphasised. The planning function must also be supportive of the top management, with an open line of communication, to ensure success and cooperation.

Most authors in business policy area essentially have adopted a synoptic/adaptive approach in proposing a strategy formulation methodology. For instance, Katz(40) in describing the steps in planning corporate strategy, mentions the following:

Step 1 - Environmental Analysis - of new opportunities, threats etc. Threat is seen as a greater motivator and changes are seen to result more often from a perception of a major threat. He gives many examples.

Step 2 - Identifying one's resources and strengths and weaknesses with regard to finance, marketing, production, management, etc.
Step 3 - Identifying competitive advantage and then building on one's strength.

Step 4 - Defining the scope of future development - which should emphasise selectivity among priorities.

Step 5 - Specifying performance requirements and allocating resources, etc.

While the above methodology is appealing and sensible, one wonders in how many situations such a methodology is fully applicable. To what extent, for instance, such a methodology will adopt synopsis in preference to a realistic adaptation. Lindblom's(41) adaptive advocacy may suffer from the criticism that it fails to provide a direction, it does not mean that synoptic ideas are always achievable, even in a narrower context. And when synopsis fails (and it does often at least now) one wonders if the whole purpose of strategy building is to try to cope with a problem (or tackle an opportunity) or to solve it. If our comprehension of a problem is limited, then we have to make a choice between 'errors of omission and errors of confusion'. This is all the more important since our knowledge of consequences of an action taken is also incomplete. Since inadequate information is inescapable, synoptic ideas are rarely achievable.

Recognising this, Dror(42) discusses his 'extra rational model' in decision making - though it smacks of a 'failure to explain' attitude. However, this cannot be dismissed though. There are many instances of policy-making - which though not exactly rational resulted in 'net output' higher than could be obtained under a more rational method. Up to now, however, knowledge about extra-rational processes has come mostly from intuition itself and the 'science' itself is dependent on non-scientific convictions. The fact is that we do not know much about extra-rational processes to be able to use that model for strategy building purposes.

Having regard to the above discussion, one could conclude that a rational/synoptic or a purely normative model in a strategy-making context is limited in the following ways:

a) Man's limited intellectual capacity is not ideally suited to apply this model in a strategy formulating context where issues are wide-ranging and often diffuse.
b) Inadequate information, time factor and costs impose severe strains on men’s ability to process information and take actions which are appropriate, timely and cost-effective. Man’s cognitive capacity cannot cope with unlimited information.

c) In a normative approach to problem-solving an implicit requirement is that the relevant values relating to the objective (in a strategy context, this would be the overall future posture) are clarified, systematized and known in advance. However, as we have seen, in a strategy context, the objective is often invented and the relevant values are not known until analysis is far advanced. There is no correct solution for a complex policy issue. In such circumstances, what a policy analyst or strategy formulator requires is some loose criteria or guidelines. This is another name for adaptation, but incompatible with normative or synoptic ideals. We are only capable of seeking a solution within limitation, not an ideal solution, because there is not any.

d) In any strategy analysis facts and values are closely intertwined and they unfold them as they begin to be known. There is no way of pre-ordering them or judging them in advance. We must be able to contend with the variables of an open system and that must be a component of any strategic planning system. A growth-oriented firm must also be employee-oriented and respectful of its social obligations. All these and others requirements impose behavioural limitations.

e) Strategy formulation will require skillful handling of a host of disparate but interlocked problems (eg. phasing out old products, introducing new products and markets, cash problems, R & D, employee development, monopolies regulations to name only few). The issue is not one of removal of some concerns or even reduction of some frustrations, but rather one of reconciling interests. Problem-solving is essentially thus a continuous process and this is especially so in seeking strategy development. What is considered satisfactory today must have regard to the pattern of reconciliation of yesterday and what it might be tomorrow.
3.4 PRO-ACTIVE - ADAPTIVE DECISION APPROACH TO STRATEGY FORMULATION

How does a strategy and policy formulation process then really work? Can it really be a rational process - especially in today's fast changing and turbulent world? Since a company cannot, as only one of many organisational units in a society and the world at large, change the environment (let alone direct its course) in a meaningful way, is not the process of policy making singularly incompetent? If policy making is what the participants make it, then how rational and consistent are they in their inter-actions amongst themselves? And if they fail to make rational policy, does that necessarily render the system inherently ineffectual?

The outcome of a policy making process is necessarily a joint product among the participants, limited as it is by environmental constraints, leadership constraints and multiple other constraints of time, of decision-making with limited information, of costs and of the less-than-ideal men who inhabit the earth. The process of strategy formulation is essentially a defensive behaviour on the part of management. In a way management is justified to feel that it is under constant pressure - pressures that generate internally and externally and that it can only anticipate and prepare itself for. A significant impact on those who exert these pressures is beyond the capability of any management (in a wider sense) - hence the management's task in policy making is essentially one of adjustment - adjustment of its own position and influencing others, only perhaps in a marginal way, to adjust their positions too. To this extent, the policy making can hardly be expected to produce the ideal, but it is not necessarily irrational.

A company or an organisation can no longer choose to locate where it likes (in a practical sense, that is), nor hire or fire as in the days of laissez faire, nor sell its products at any price nor do some of the many things today that it could happily do yesterday. But it still intends to survive, to do well and move ahead. Is an organisation, in that sense, anything other than a 'moving compromise' - indeed, a series of never ending sequence of compromises?

Even Taylor(43) who once emphasised on the first principles of planning, now writes that the job of the planner is 'to help the decision-makers to identify what are the key decisions to be taken - and to assist them in taking these decisions with the best available information and in the most
effective fashion. The 'key decisions' will obviously be respectful of the 'fundamental review' which has been mentioned in chapter 2, and the 'most effective fashion' of helping the decision-making cannot mean a mere formal concern for planning. It is planning with a real concern for the limitations within which an organisation is working. Even Conference Board(44) finds 'that much planning - indeed in some companies all planning - is accomplished outside the context of a formal planning routine'.

Even Ansoff(45) says this: "Experience in companies has shown that the precepts of strategic planning are difficult to translate into practice ... rigorous strategic discipline typically run into 'resistance to planning' - an organisational inertia which appears to frustrate the efforts and given the opportunity, to reject the planning effort as a foreign antibody". There is not only much truth in this statement, it is important to remember that the planning process is a form of product or service which the decision-makers must find useful to use. A good principle should not be imposed on others merely because some theorists consider it good. It must be good enough for users to emulate it voluntarily as good. Mintzberg thus writes 'rather than seeking panaceas we should recognise that the mode used (for planning) must fit the situation. An unpredictable environment suggests use of the adaptive mode just as the presence of a powerful leader may enable the organisation to best achieve its goals through the entrepreneurial mode'. Dror(46) finds 'growing awareness that efforts to improve decision-making in organisations through methods such as analysis and planning-programming-budgeting cannot succeed unless accompanied by broader organisational changes'. This implies a basic response to the needs of the moment and adjustment (with due regard to the company's overall goals) of one's position consequent upon changing environment and condition. Our schematic thus states:

- Appraise your available and possible resources. Match strength to opportunities. Identify goals relevant to where you want to go (Relevance is the keyword).
- Select broad options. Avoid number game (This tends to distract one's mind from reality). Gradually narrow down choice. Link strategy to planning (always bearing in mind the practicability).
- Review plans regularly (nothing is to be taken for granted).
A planning system in an organisation can be viewed as following with influences and pressures from divergent sources:

The Government Regulations

The Customers

Employee Organisations

The FIRM
Planning System and Culture

Stockholders, Banks, providers of Finance.

Internal Inhibitions

The Competitors

Suppliers and and constraints therefrom

Distributor Interests

Other Countries & their trade restrictions.

The scope of planning thus must articulate the formulation of policies in an appropriate background of analysis of the explicit and implicit norms and values. Jantsch(47) thus views his 'future creative' planning to indicate 2 essential components:-

a) Normative policy planning - that one ought to do.
b) The strategic planning - that one can do.
In seeking to find what can be done as opposed what ought to be done, one must of course, extend policy-analysis sufficiently to show, amongst others, that:

a) the 'obvious' policy alternative may not necessarily be the best. It could be that the 'king is naked'.

b) some low-probability alternative(s) may as well approximate the value systems held by the policy-makers. The fact of 'low probability' may help to affect the 'value judgement' system. The Japanese are known to have a preference for dealing with businessmen (in S.E. Asia) with a strong eastern orientation. The success rate of these businessmen in the face of competition from others is not always assured. This helped re-thinking.

c) the reformulation of the problem may well indicate other innovative alternatives. A motor car dealer in Singapore/Malaysia was considering actively which possible alternative franchises to go for. There were hardly any available. Another way of looking at the problem was to examine how to use effectively the enormous cash resources available to the Company. This generated substantial new thinking.

Any proposed model for decision approach and policy-making has only provisional utility and will need further revision. In suggesting this model, this researcher is humble enough to record this without equivocation. In general, though, in a pro-active-adaptive decision approach model attention to the following issues will be necessary and these have been touched upon in this paper in one place or another, though not necessarily in these words:

a) Explication of Values - Strategy/policy formation process involves choice and some value judgement. Vickers(48) noted that judgement is an art and its exercise can only be approved or rejected by an exercise of judgement of a similar ability. The potential importance of values and assumptions in the strategy formation process lies in the fact that many of the decisional premises(49) of the policy analysts will be strongly influenced by these values and assumptions. As consensus building and coalition formation and maintenance are however necessary pre-requisites of an acceptable strategy formation process among actors with diverse viewpoints, there may be a case that the explication of values may have to be somewhat repressed, but that is only valid where we have reached a point of diminishing utility.
b) **Operational validity of strategic objectives** - the goals to be achieved should be properly articulated and elaborated during various phases of policy/strategy formation process - to induce appropriate actions and subsequent evaluation(50). Where goal expectations are formalised (ROI to go up by 10% each year for the next 3 years and we shall not be in engineering, for instance, was the explicit statement given by the MD of a major trading company in Singapore in the context of strategy formation exercise), criteria for evaluating policy outputs may be more pragmatically established. There is often danger, which is seen among some managers as well as among some academics, in stating strategy objectives in pure abstractions (assume most differentiated position with regard to your product market, for instance) which cannot be translated into operational terms. Even where goals are complex and conceptualisation difficult, operational criteria must be sought and can be established(51).

c) **Process of feedback** - the relevance of this to the decision-making process and to strategic adaptations has been emphasised by Ansoff, Wiener(52) amongst many others. Process of learning and its relevance to the limited human cognitive ability has been emphasised by Simon. The feedback will direct our attention, during policy considerations, to where learning from past experience is necessary and where in this context one policy alternative as opposed to another will be considered more operationally valid. However, over-dependency on the past is to be avoided. Learning from the past may help adaptation but must not be allowed to obscure the basic strategy objectives and perpetuate dominant historical constraints. We have already argued that 'incrementalism' must not mean aimlessness and must fall in line with the 'governing fundamental'.

d) **Inter-connections among policy-issues** - Vicker(53) has observed the following: "Those who are engaged in a course of decision-making soon become aware that each decision is conditioned not only by the concrete situation in which it is taken but also by the sequence of past decisions; and that their new decisions in their turn will influence future decision.." Policy issues considerations are value-dominated, open and operate within undefined boundaries. What is probably possible and needs to be done is the identification of the main inter-dependencies. Although in nature all things are inter-connected, it
is necessary in a strategy formation context that the interconnections of issues are articulated in more specific terms, with knowledge of first order consequences, second order consequences, and so forth. Every problem posed for a decision in strategic context must be delimited in such a way that it can be analysed in the context of our limited understanding and scarce resources. The decision issue, therefore, must not be over-atomised and truncated in a strategy context. Though in considering cross-impact of issues one suffers from real problems with respect of cognitive human limitations and behavioural and methodological barriers, judgements must nevertheless be made.

e) Absence of Reliable theory of evaluation of policy-issues. Though undoubtedly, in connection with strategy formation process, the steps are deciding on long term objectives, assessing those objectives in the background of emerging environment and translating information so obtained into quantified long term and short term plans, such abstractions do not help us readily to deal with the complex and dynamic variables and system inter-dependencies which render the task of predictions all the more difficult. There are not (and should not be) any given and specific tools and procedures for dealing with these problems universally, although literature is replete with indications and guidelines as how to go about them. While we may not have an ability to explain all the causal relationships (among variables, among environmental forces and constraints, among organisational power groups, etc.) even a partial and tentative analysis of interrelatedness may have some valuable pay-off given our limited understanding of complex policy issues and given the absence of a reliable and specific theory for dealing with them. Such absence is desirable and hence requires adaptation of unique nature - unique to each group of issues under consideration.

f) Translating the analytical output into policy input - the 'normal state' of analysis has to be transformed into a state which will render the analytical outputs more acceptable to a strategy formation system. The focus here is the question of policy feasibility.

This conceptual scheme has highlighted the inter-connections, linkages and the relational pattern among many variables that enter the strategy formulation process - some of those variables are external in
nature over which the firm will have less control. The main focus of
discussion is related to the decision issues surrounding the strategy
making process - while the organisational planning and the strategy
implementation, the other issues of a strategic plan have not featured
in this discussion - the main attention of this research being the
identification and an analysis of the basic forces shaping the
strategy of an organisation.

However, it is necessary to consider the concept of strategy/policy
feasibility in some more detail - why a certain alternative or policy
output is considered more feasible than others - and in that
connection how a certain mix of intervening variables make such a
policy or strategy output more relevant in financial and
organisational terms.

Economic and financial potential of a policy(strategy consideration
cannot be over emphasised. A high degree of financial relevance and
the policy relevance are obviously positively correlated and the
commitment of the firm's scarce resources to a
project/program/strategy will be dependent on this factor over a long
term. Though, admittedly, parts of an overall strategy may not have
an immediately identifiable financial perspective.

The main concerns of the organisational feasibility are a) willingness
to get somewhere and b) ability to get somewhere. It was earlier
mentioned that a strategy must be about something. It implies
therefore an institutional awareness of a mission and a capability to
fulfill the mission - or a capability potential. Organisational
feasibility vis-a-vis strategic objectives can also be viewed in the
following perspective.

**Technological elements** - technological capability to implement a
system - or technological potential.

**Behavioural elements** - willingness to implement a system to attain
policy goals.

**Structural elements** - refer to capacity to accommodate patterns of
relationships and the flow of organisational energy to realise the
strategy objectives.
An early examination of the organisational elements is necessary and this may lead to the recognition of necessary manipulation or substantial structural re-arrangement requirements with a view to strategy feasibility. However, there is no one best way to tackle the problem - though a significant amount of literature exists which can be used as a heuristic aid(54). Again, in this connection the work of contingency theorists(55) is worth noting whose emphasis is not on rigid algorithms but rather on an understanding of the implications and consequences of an alternative system design configuration and an awareness of the task and the environmental conditions, including risks, under which one approach rather than another, one design rather than another, may be more appropriate.

The relationship of organisation to strategy is emphasised by several writers(56,57). Organisation must support strategy. Even in public sector such a phenomenon is observable(58). It is hard to say (nor it is crucial to answer) which one is the dependent variable - but the latest innovation of the Strategic Business Unit concept to support GE's growth strategy considerations is a confirmation of this line of thinking.

One thing to note is that a policy (or a strategy) is not necessarily better because it is organisationally or otherwise more feasible(59). History, no doubt, will show examples of poor policies being adopted with high feasibility potential. That is not to say that easier policies are better than harder ones. It merely suggests that, essentially, strategies should be feasible enough propositions. While being creative, they nevertheless must be pragmatic.

Feasibility is a variable concept though - meaning it can be partly shaped by the strategists themselves, or modified or maintained. One way to achieve this is coalition formation - internally among managers and externally among the pressure groups - another name for consensus building. Blau(60) maintains that all kinds of power is exchanged between persons and groups where one induces the other to accede to one's wishes by rewarding the others for doing so - a method of overcoming resistance.

Lindblom(61) thus observed" "What is wanted is endlessly reconsidered in the light of what is
possible or most feasible. What is possible or feasible is constantly reconsidered - and the possibility themselves re-structured - in the light of what is wanted.

Khandwalla's(62) contribution in relation to the style of management and its effect on planning is also worth noting - "... the task environment is an important source of forces that should enter into what management style to adopt. There is greater probability, for example, that in a dynamic competitive environment the risk taking and organic styles will lend to better organisational performance than the conservative and mechanistic styles" whereas "the adoption of a risk-taking, growth-oriented style is likely to lead to inter-departmental conflicts, possibly because head-long growth leaves little room for careful planning ..."

Another related issue in transforming analytical output into policy-input, especially in a business context is a need for reduction in technical jargons which usually proliferate as a result of institutionalisation and professionalisation of the so-called 'analytical capability'. Weiner(63) has warned against metalanguages comprehensible only to professional elite. While translating analytical output for use by the policy-makers, the variety of audiences and their needs ought to be borne in mind. Research has shown that both individuals and organisations filter information in relation to their own experience and familiarity with the use of symbols for communication.

g) **The need for multiple analysis** - another name for this phenomenon is 'multiplexing' - or obtaining and establishing independent lines of analysis performing the same functions - some of which will be considered redundant. This is often done (for instance, asking the Consultants to work out a strategic plan while using the in-house facility to do the same) because of the policy-maker's preference for reducing uncertainty(64). Multiple analyses also help to guard the policy-makers from the possible biases of the policy-analysts and from the danger of 'closed-system' with the men in power not being exposed to healthy criticism. Constructive criticism and deliberation do not mean 'fighting it over' though - a misconception that should be avoided.
The overall emphasis in this framework summary has been to encourage direct systematic attention on the part of the policy/strategy researcher to an assessment of the patterns of evaluation used in a strategy formation process. This researcher suggests that the process is one of adaptation within constraints, not forgetting the fundamental objectives. Vicker(65) thus rightly says "everyone with experience of decision making knows that more closely we explore alternative courses of action, the more clearly we become aware of limitations of various kinds .. experience also recognises situations in which the decision-maker can in some degree impose a pattern on the future course of affairs, rather than merely responding to its demands."

3.5 SUMMARY

A general discussion has been made relating to various decision-making approaches to strategy formulation process. Resources come from external environment and any formation of strategy is therefore essentially mindful of external threats and opportunities. As we are limited by our human shortcomings - a responsive-proactive strategy which is similarly mindful of change is advocated. It is also emphasised that strategies should fit the organisation and the situation but may not necessarily be that which is theoretically the best.

It is shown that while 'incrementalism' is somewhat unavoidable, some fundamental reviews must still be done. This places this model of pro-active adaptive approach somewhere between the pure incrementalism and a pure normative model. Attainment of maximum values within limited means should be the guiding principle.

Finally, it is shown that the nature of strategic problems can never be fully grasped. It is a question of perception rather than a 'given'. The issues relating to human cognitive ability, time, costs and other limitations impose severe constraints on how far we can go - so really it is a question of how we can know more than we already know. We have to adapt to this changing world with what we have and what we can do with it, but this is not a message of pure incrementalism. In discussing this concept of pro-active adaptive model some relevant and associated concepts, eg. explication of values, operational validity of strategic objectives, iterative feedback process, absence of reliable theory of evaluation of strategic issues, etc. etc. have also been specifically touched on.
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25. Steiner & Miner, op.cit. see item 18, chaps. 4-6, also chap. 12.


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34. Op.cit. Ref. 11


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54. For example -

OR

There is considerable literature.

55. For example -

OR

There is considerable literature.


ANALYTICAL CASE STUDY AND ITS RELEVANCE TO A PROPOSED FRAMEWORK
FOR STRATEGY/POLICY FORMATION PROCESS
CHAPTER 4

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4.6 SUMMARY

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4.1 INTRODUCTION

In chapters 2 and 3 the basic principles relating to corporate and strategy planning have been discussed. In chapter 3 especially, a model has been developed hypothesizing that an adaptive approach to strategy formulation is not only more appropriate, it is also more relevant in the sense that strategies should be feasible enough propositions and while being creative they must nevertheless be pragmatic. It is intended now to study in greater depth and in an applied sense the motions and the processes involved in the strategy building phases of 2 cases in order to test the model. But, before a particular methodology is adopted, it is a relevant question to ask if the methodology adopted is appropriate enough having regard to the type and the content of this research. In this chapter, therefore, an attempt will be made to answer this question, emphasising in particular the following aspects:

a) The need for research on policy/strategy making processes.

b) Justification for case study approach to this research.

c) More detailed observation on case study methodology.

It will also be attempted to develop a proposed framework for the analysis of cases - a framework that should be internally consistent with the thoughts that have been developed so far in chapters 2 and 3. The main theme for this analysis would be an appropriate strategic response to the needs of a particular situation. While such a response would vary from situation to situation and indeed, from one individual to another, it would also try and identify a broad and sufficiently long term direction for the strategic development of each of the cases studied. While respecting the constraints and limitations, a pro-active adaptive model will not advocate aimlessness. The process of strategy development will also be emphasised.
4.2 THE NEED FOR RESEARCH ON POLICY/STRATEGY MAKING PROCESSES

Bauer (1) held that 'on the whole it has been mankind's experience that we are able to guide our affairs more to our liking as we better understand what we are doing'. Though what Bauer says is commonsense enough, in the opinion of this researcher, this process of a better understanding of the processes involved relating to the policy inputs and their relationship with the outcomes and other related fundamental factors deserves greater attention by business policy authors. Even Hofer (2), in writing 'analytical concepts' on strategy formation, pays only lip service to this very fundamental process—though. He does not minimise it when he says 'one of the complicating factors in strategic decision making in practice is the fact that the intellectual analytical aspects of the process are often intertwined with ongoing social-political processes'. Realistically, however, as long as humans are intimately involved, such social and political factors will play an important role in the strategic decision making process.

The need for research in this area is also evident in the fact that the issues involved are so extremely complex, so uncertain and so all-pervading. There is hardly a situation of business (or any other social institutional) decision-making of a broad scale significance which can escape a close examination of these issues and yet can be made satisfactorily. Lindblom (3) thus says 'we are going to look at policy making as an extremely complex ... analytical process to which there is no beginning or end, the boundaries of which are most uncertain. Somehow, a complex set of forces that we call "policy-making" taken together produces effects called "policies". We want to learn what we can about the causes of these effects'. Elsewhere, Lindblom (4) says, that 'many aspects of policy-making still need explaining, because almost no one is well satisfied with his understanding of how policy is made'.

Such being the case, there certainly is no one best way of policy/strategy making. Each circumstance will determine what is best for it at a given time. When such a moment or the circumstance is past, new dimensions of an evolving set of requirements will dictate re-examination of the policies to be adopted. A research may thus be directed towards analysing and understanding a problem, and not necessarily towards proving beyond question what is or is not the best solution. This has been the focus of this research and this researcher feels that there is a need for that.
Bauer (5) says, 'This is about where our understanding of policy formation stands: We have the accumulated experiences of human history, many men who have mastered such skill and judgement, but we are merely beginning to systematise our comprehension of what the process of policy formation is about'.

Some authors, eg. Kaplan (6), have viewed policy-making as unscientific (but they have not articulated clearly, what is the alternative). In their view, we almost never know enough, or with enough certitude, to provide a scientifically valid basis to adopt one policy as opposed to another. This view has only a limited validity. We must still do what we can. After interviewing many executives of many companies, this researcher feels that though policy-making considerations are not answers to all evils, they do play a role in risk management related to business decision-making processes, especially those of a long term nature. Hence, Bower observes, that there is a need for an effective and meaningful synthesis between what is prescribed for in a normative theory and the descriptive dimension and the behavioural content of what really happens (7).

4.3 JUSTIFICATION FOR CASE STUDY APPROACH TO THIS RESEARCH, IN ESTABLISHING RATHER THAN PROVING, A POINT

As opposed to field survey, which often is directed to confirm (or otherwise) certain hypotheses one draws in an initial literature survey, some theorists (referred to later) held case study approach of conducting research with lower regard. But when stripped to the bare bone, field survey can only be directed to smaller (though not less significant) and clearly definable issues. For instance, one could carry out a survey, in policy making context, on the extent of environmental analysis if regularly carried out by companies and how often such an analysis is not a desk research only, ie. includes a market research especially designed for corporate planning purposes. But such an information collection process will not provide detailed examination of events, people and issues of an interacting nature (continuously) which is obviously necessary in a research of this kind. Allison (8) thus says this -
"Most theorists have little respect for case studies - in large part because of the a-theoretical character of case studies in the past. But the only substitute for detailed examination of particular events and problems is construction of theory in the absence of specific information. What we need is a new kind of 'case study' - done with theoretical alertness - on the basis of which to begin refining and testing propositions and models..."

One of course, has to be aware of the ongoing nature of a real life case study. Theoretical alertness must not mean pre-conceived notions or biases. Nor, one or two case studies can either prove or disprove a theory entirely. It can only confirm (or otherwise) the reasonableness of an assumption of an overall basis. To expect more, in an area this researcher is engaged in, would be futile exercise. To this extent, as earlier emphasised, this research is directed towards analysing questions and issues that arise in policy/strategy making processes rather than finding definitive methods to solve these questions. Such definitive methods can hardly ever exist. It is also suggested, based on experiences gained in the course of handling a number of corporate planning cases, that the process of analysing a set of questions and issues and attempting to find an answer is in itself sufficiently rewarding and important enough. There often is no definitive answer to a rather imprecise question. Often, the extent of technology controlled by a company is not easily defined. Hence, the very question of what one could do in future will raise issues of fundamental importance as one answer will lead to more questions and the process will continue. The nettle can never be fully grasped and all that is possible is an answer within limitations - of a limited validity. Though such a limited answer is not entirely satisfactory, it is nonetheless a very important beginning to the process of moving away from a state of lesser to a greater achievement.

A ship-repair company is Singapore, in seeking to diversify, considered proposals to build leisure boats. But there were many questions, not least among them, the declining wealth of the western world. Initially they then decided to move on to ship-management instead. Yet another company, in seeking pioneer company status for tax relief purposes, accepted a somewhat lower advantageous position as the negotiation seemed never-ending. They both achieved something though. The whole issue of monetary economics and
its implications in the face of mounting unemployment, company liquidation, etc., etc., has exercised the minds of policy-makers in a number of countries. This is a case in point that even with a somewhat limited understanding of the nettle we are trying to grasp, some decisions and beginnings must still be made.

4.4 SOME FURTHER OBSERVATIONS ON THE CASE STUDY METHODOLOGY

Austin Ranney (9), a political scientist and social thinker, has held (long ago) that both the analytical case study method of observation, i.e., trying to compare the results of a case study with a framework etc. and the quasi-experimental designs have their limitations. To experiment with policy issues as on-going real-life-proposition is hardly feasible unless such a process could be broken down into small issues which can be viewed in a policy-content-outcome-perspective, and also where there exists a clear-cut quantifiable decision criterion - that X should lead to Y and so forth. Such is, however, not the case with this research. Policy/strategy formation process is essentially wide-ranging and complex in nature and a research of this process does not readily lend itself to be tested with a quasi-experimental design scheme.

A case study will still be criticised on the grounds that -
- while it is capable of providing significant insights as to how a process works, and while
- it is capable of generating fruitful hypotheses, nevertheless
- it provides no serious possibility of testing these hypotheses.

On the other hand, a survey method of hypotheses testing in many organisations offers the possibility of producing generalisable findings having a high degree of both external and internal validity. But one ignores the fact that such findings can often be trivial in nature and may even lead one to make impossible conclusions. We are talking about people and their complex nature at work, and not mere matters.

Two fundamental questions thus remain:
- Do we need to study a few questions well - which together they may not (and most likely will not) present a wholesome picture of the process of strategy/policy making? or
Do we need to study everything involved in a certain (one or more) strategy-making process - while not all that is involved can be studied so well?

To this researcher this is a false dichotomy. So far as policy-making processes are concerned, further researches and a variety of research methodology will always be valid as the circumstances and the environments will keep changing. Just as a variety of organisation study researches have their own places in the total research effort in this direction, and while there is no reason for asserting one methodology as superior to another, a variety of methodology can be adopted in the policy-making area too, each having its own place.

With any research experimentation methodology, control element over what is being researched is of paramount importance (10). Social science researchers have held this for a long time. A management control system or a policy making system under observation is not so different in character and a researcher in this area cannot even hope to approach complete control of a real world dynamic setting. To this extent again, quasi-experimental or true experimental designs are hardly achievable objectives in strategy planning context.

Time to time though, authors do make valid points against case study approach. Zetterberg (11) and Price (12) have criticised them on the grounds that

- variables involved not necessarily correlated and that correlationship cannot be adequately and validly tested, and
- case studies inadequately deal with, often, the problems of spuriousness or that the input-output relationship cannot always be proven (eg. policy-input-outcome relationship for instance) etc.

On the other hand, Walton (13) has come strongly in favour of case study approach. He suggests, amongst others -

- a high degree of potential relevance of the case study method to policy related studies. It can be an excellent vehicle for development of new and usable theory. It will also help to keep existing theories and technologies under scrutiny and open to change, modification and refinement.
- It provides the potential reader with a vicarious experience upon which meaningful learning - insight and generalisation - can be based.

- It explicates the role of personal characteristics and styles (preferences, strengths, weaknesses, biases) of the system actors, through the provision of sensitive description of the events and personalities.

Walton also suggests that in a descriptive case study, those points and questions which contribute to the development of new concepts and hypotheses should be clearly and emphatically articulated. Aspects which have not been fully understood should also be noted.

Such conflicting viewpoints have been there and expectedly will continue. But a case study approach in this type of research has a certain validity. Hence, we also see, and increasingly so, that the business policy texts consist largely of case studies. Thus Haner (14) observed that 'cases add reality and the human dimension to the theory of what should occur'. Katz (15), in describing the organisation of 'Management of the Total Enterprise' refers to cases contained in his book as 'extensive and pervasive' designed to provide a 'deepening experience' (of the management process). His cases do not have clearly defined issues and problems which would lend for simplification and generalisation. But they would rather require the student to separate the crucial from the trivial and his primary concern is an understanding of the situation. Linda Smircich (16) maintains that qualitative research is an approach rather than a set of technique - and its appropriateness derives from the nature of the social phenomena to be explored. In describing subjectivist approaches to social sciences as opposed to objectivist approaches to social sciences, Linda Smircich proposed an 'epistemology emphasising the need to understand process and change'. This 'epistemological position ... emphasises how social situations should be researched in a manner that reveals their inner nature'. Later, in discussing the issue of methodology for a research and in referring to the manipulation of data through sophisticated 'quantitative' method, she observes that this is in effect an attempt 'to freeze the social world into structured immobility and to reduce the role of human beings to elements subject to the influence of a more or less deterministic set of forces'. The epistemology involved, in studying a social (or business situation) will not hold that the findings obtained will be universally true but would nonetheless provide insightful and
significant knowledge about the social (of which the business is a part) world.

4.5 A PROPOSED FRAMEWORK FOR THE ANALYSIS OF CASES WHICH IS INTERNALLY CONSISTENT WITH THE THEME DEVELOPED IN CHAPTERS 2 AND 3

In attempting to build up a methodology for case analysis which will be used for the development of strategy for the two proposed cases in this research, a note of caution is appropriate. In skeleton, all case analyses for strategy might be essentially the same i.e. a study of the company's current strategic needs, its internal and external environmental conditions and how best to find a way for further future development etc. etc. However, the flesh, the approach and the philosophy adopted to the analysis or the strategy formulation will obviously lead to different conclusions or at least a different emphasis. As in strategy development we are talking about long term consequences, such difference in conclusion and/or emphasis will also have its long term implications.

Furthermore, any exercise in strategy development is 'shrouded in ambiguity' (17). This makes the task of methodology development all the more difficult. Linda Smircich (18) hence rightly emphasises the study of 'the inner nature'. The main problem of a decision of a strategic nature is the consequence that follows. Hence, all the caution and all the pull towards 'one step at a time' approach. But, in so doing, we may risk not carrying out the necessary fundamental reviews which alone can lead to a 'strategic response' as opposed to merely a 'tactical' one. While limitations on knowledge impose severe constraint on our risk-taking ability, in a strategic context a subtle balance must still be achieved. Kono (19), in discussing Japanese management style says this:

"Top management takes aggressive actions in strategic decisions. Strategic decisions involve large risks, so it is the area where top management should make decisions."

The statement is straightforward but truthful in that in this area bottom-up approach has some severe shortcomings. However, the context is fast changing and the aura for 'aggressive actions' is becoming somewhat constrained. In so far as this is true, the bottom-up approach will have some validity even if the risk-taking finally remains the top management
responsibility.

It should be mentioned at this stage that this researcher intended initially to study the approaches adopted by various companies in Singapore with regard to their strategy development exercises and to compare them in a theory context. More than 30 firms were written to but no positive response was forthcoming. Even Singapore Airline, a state-owned organisation, and another Singapore Government-owned organisation, agreed to discuss the matter only generally stating that their approaches to strategy development varied from situation to situation and is not a matter for discussion. Other researchers in the corporate planning area, with whom this researcher had an opportunity to discuss the matter generally, revealed similar kind of experience too, i.e. difficulty in obtaining data from real-life applications and not mere collection of views, opinions and observations.

This situation left this researcher no option but to obtain corporate planning assignments on consultancy basis and in the process to develop, with the theoretical alertness mentioned earlier on, a conceptual understanding of a certain approach to case analysis which it is suggested has a certain theoretical validity too. The conceptual background to this theoretical validity - the pro-active-adaptive approach to strategy formulation - has been laid out in the discussion in chapters 2 and 3.

In conformity with the approach, the following steps are considered necessary for the purpose of case analysis in this research in order to demonstrate and validate the adaptive-proactive model for strategy formulation that has been discussed in chapters 2 and 3, and also in this chapter. It is important to remember that these steps are not necessarily successive as given here, but they very well overlap. That may not be entirely "scientific", but strategy building is essentially a question of perception - of moving from one of less satisfactory position to another of possible greater satisfaction. It is a description of how to sufficiently manage a changing situation that cannot be allowed to drift even where our knowledge of the situation is limited. It should also be mentioned that not all the steps will apply with equal emphasis in each case. For instance, where survival is at stake, internal opposition can be more easily overcome.
Step 1 - The Chief Executive Officer will be sufficiently concerned with the prospects and the aspirations of his company which in the event may be part or whole of his charge. In this the CE has to be conscious about the distinction between objectives, strategy, policy etc. (see discussion in chap. 2) and the nature of the strategic problem. He ought to be able to overcome the attitude held by many in the organisation - we already know. The nature of the strategic problem is not a 'given' and is a question of perception - see discussion in chap. 3. It is at this stage the questions (amongst others) to be addressed are:

- What is the problem?
- How do we decide what to do about the problem?
- How do we set limits to the area of investigation in a project?
- How is the situation changing?
- Are we sure about ourselves? etc. etc.

Some boundaries on how to understand the problem and how to tackle i.e. how to arrive at a meaningful decision with strategic pre-science, will have to be set, but such limits as seem necessary must remain essentially loose and subject to changes as new information are gleaned, i.e. Ansoff's cascade process. The relevant strategic variables must be considered and reconsidered through a process of iteration and in that context, within overall human cognitive constraints, the issue areas must remain delimited (see discussion in chap. 2, pp25 -29 and chap. 3, pp. 12-15). In other words, while search and consideration have their human limits, some reasonable risk taking ability and a non-dogmatic approach are essential requirements at this stage so far as mental attitude forming is concerned.

Step 2 - The planner, in conjunction with the CE, will then (and also concurrently) consider the particular nature of the unit he is assessing in the background of the strategic problems perceived or generally agreed upon. The question to ask will be in the nature of 'are we in the right business' rather than to say if we are doing 'business right'. The issue is one of judging 'effectiveness' rather than efficiency (20). It will, also be necessary to identify the
corporate level at which the strategic change is being sought and the limitations that go with it. At the group level for instance, with diverse business activities, a balance between growth and profit opportunities will be sought. At the division or unit level, given a certain commitment and product/market situation, the emphasis is on how to succeed in the competition (see for further discussion chap. 2, pp. 10-21). This will decide the strategic slant and the overall direction of analysis. The general rationale for being in a certain business, in the background of a company's strength, weaknesses, threats and opportunities will be assessed and a pattern for further in-depth analysis will be set in motion.

**Step 3** - The planner at this stage will also consider (and this process can also be simultaneous), though further considerations will have to be deferred, the broad strategic options available to the organisation/unit - see discussion in chap. 2, pp. 4-9. This consideration at this stage is tentative but necessary in the sense that this may generally indicate the lines of approach and the emphasis that may be required in any strategic analysis. For instance, retrenchment or substantial cut-down may be a point of view that may need to be considered substantially in one set of exercises while that may not be the case in another situation - from a practical viewpoint. This is also important since at a later stage when strategic options and their operational validities are being considered (see chap. 3, pp. 20-21 and 22-26) necessary analytical output will be required to translate it into appropriate policy inputs. There is also considerable overlap between this stage and opportunistic search that is considered in the next step.

**Step 4** - Anthony (21) views strategic planning as unstructured and irregular to deal with problems, opportunities etc. not arising to some set timetable. He even suggests that overemphasis on a systematic approach which may stifle creativity should be avoided. However, through 1960's and 70's we have witnessed the growth in complexity and competition in business environment. One result of this was
to collect data and feeding computers with information for projection and forecasting purposes. This caused the qualitative and conceptual thinking to take the backseat when exactly the opposite should have happened. While the issue should have been direction-finding, the emphasis however was wrongly placed on forecasting based on enormous (sometimes qualitatively unrelated) data fed through computers. The issue was and is one of objective assessment of the business opportunities and threats and a study of the environment (see also discussion in chap. 3, pp12-16 and chap. 2, pp19-25).

While strategic planning exercises are indeed un-structured and in character (in some ways) non-repetitive, problems are ever-changing and the requirements for regular review of the business posture are always there. However, considering this researcher was involved in the cases on one-off basis only, a systematic scouring of the markets (a planning related market survey) was sought for. This approach was made possible for 3 reasons - a) all parties agreed that there was merit in this approach, b) due to this researcher's attachment to a university - the task was made easier, and c) the managements of the companies were agreeable partly to finance the project because they too were convinced, like this researcher, that the view of the competition, qualitatively obtained, must have its due role in any strategic thinking. This researcher would like to suggest that this approach to qualitative information gathering from the competition was consistent with the earlier theory of an overall direction finding and proactive model building (see discussion chap. 3, pp19-26).

This search process is part of a very relevant and real learning process. McMahon (22) rightly suggests that an 'analyst should be adaptive and capable of learning'. The greatest emphasis should be on an understanding of the overall situation and environment within which the organisation is operating, the key factors operating externally (and internally) and translating this understanding into a framework for judgement.
A common feeling that next year will be more or less like last year results in manager's resistance to facing needs for change. This is further aggravated by the feeling that the 'problems' have already been considered as if the problems are the problems of business-as-usual. The emphasis should, however, be on the environment. This process will bring to focus, in a necessary but somewhat formal way, the matters to which attention should be given. The systematic and formal way of information gathering may also help to avoid extrapolative thinking which often prevents meaningful assessment of the business situation.

Step 5 - The Iterative Feedback Loop. Having obtained and in the process of obtaining information from the environment, communication with the managers within the organisation will continue. In a Singapore context, this will have a formal and an informal aspects, since open and frank explication of values is not as evident here as one would expect to see in a European country. The iterative properties of the feedback (which continues along all stages, really) are important though and will result in some of the following:

a) Identification of knowledge and planning gap. In some ways, this process will contribute to a reconciliation between the top-down and the bottom-up approaches, a reconciliation between what could be done and what should be done and a marrying between the status-quo and a necessary extension of the horizon.

b) The Chief Executive will have necessary feedback to modify his initial understanding of the situation. This modification may be both in an upward or a downward direction or partly one and partly another.

c) The CE may, in the background of a higher level of understanding achieved by managers, be convinced to re-allocate the discretionary resources away from some businesses and in the direction of other more appropriate and profitable businesses - so that businesses of a strategic prospect are emphasised.

d) A realisation may occur as to the needs for certain necessary divestiture and acquisition of other new product/business portfolio.
The understanding of the planning gap, though through a somewhat slow iterative process, is probably the greatest benefit of this (see also discussions in chap. 2, pp 9-14, 23-25 and chap. 3, pp 12-20, 24).

**Step 6 - Position Audit.** The analysis would be quite advanced by now and the mental attitude forming process is also continuing—which would essentially have 2 aspects a) how can we know more than we already know and how can we do this as objectively as possible and b) how can we arrive at some meaningful strategic conclusions which, given our refurbished and enhanced knowledge and various constraints partly due to internal factors and in a large measure due to external reasons, will provide us with strategic scenarios which are consistent with the 'art of the possible'—see also discussion in chap. 3, pp 17-26. One significant step at this stage is to prepare a *portfolio analysis*—according to one of the models discussed in chap. 2 (see pages 17-18, 23-24) - or some modification thereof. Companies are rarely simple these days and their products would not only be varied but could also be difficult to define. The markets to which these products are addressed will also defy precise definition. All these not only require recognition of limited human cognitive ability but also imagination. While 'gutsy' thinking may suit the style of an entrepreneurial mind, a planner cannot possibly assume this role. He will assume that all worthwhile knowledge for the development of an organisation in a complex business situation cannot be in one mind. The corporate planning in this fashion is a process of forming logical opinions knowing our human limitations. Managers who are somewhat unused to this process will no doubt resent this somewhat slow process of information gathering and opinion forming. But this resentment has to be gradually overcome.

Along this line of building up a position audit - some consideration should be given to pressure groups and other influences (see chap. 2, pp 21-22). This too will emanate partly internally and partly externally. Each situation has to be dealt with as given - and not as desired. This is one
main emphasis of the adaptive approach being advocated here, while not abandoning the element of creativity. This also implies respecting the past while not being overly dependent on it - see also discussion in chap. 2, pp 18-19. It is at this stage too, the details of strength, weaknesses, opportunities and threats will be taken account of.

Step 7 - The natural outgrowth of position auditing is the translation of analytical output into policy input. At this stage a synthesis will be attempted of the knowledge gained internally and externally, of human elements with their contribution potential and their limitation, of the lapses in the organisation structure, of internal administrative and other weaknesses, of history and precedents, of possibilities of setting new objectives etc. etc. This is essentially a process of rational inference by the planner and during the process of analytical thinking further feedback loop with the managers in the organisation is advocated, feedback being an essential element for risk-reduction.
The process is one of thinking and no substitute for it is possible—not even a formidable array of data analysis. See also discussion in chap. 2, pp 24-28 and chap. 3, pp 19-26.
Step 3 - Broad options & Scenario Building:

Lorange (23) referred to broad options in strategy building - see chap. 2, pp12-13, emphasising the need to avoid the number game. These thoughts have now further crystallised in the thought of such authors as Beck (24) or Zentner (25). Future is now seen as not the product of the past. The future posture of an organisation will depend on a consensus of understanding among the system actors, using an iteration and 'soft' method approach - using mind more than a technique. A forecasting or projection will be assumed to take account of all relevant factors and provide the 'best answer'. A broad option statement on the other hand will state the key factors and how they possibly could affect your line of business. A scenario is an 'archetypal' description of a possible future and not in any way an expert opinion. It is not an authoritative statement but a tool and backdrop for a possible better decision. A broad option statement does not lay any claim to the effect that the future can be measured or even controlled, but it would be internally consistent, with the analysis so far undertaken and will constitute one or more feasible enough propositions without being unduly constrained in terms of creativity and risk-taking ability.

It provides the decision-maker with a basis and a framework of information and knowledge which are also the basic ingredients for an informed decision. It does not unduly interfere with the decision-maker's role.

In the case analysis the following fundamental questions, as seen in the process described earlier, will be addressed, among others:

1. Studying the problem as perceived and re-defining it.
2. Questioning what business we are in and if it is the right business. Investigating the cause for dissatisfaction.
3. Questioning what strategic option is most suitable now within the given constraints.
4. Systematic scouring of the market to obtain its view on the company, its products, and the market generally. This process is the key and will be long.
5. Meshing the environmental information with the views of
managers - iterative loop with process emphasis.
6. Options/scenario building etc. etc. Essentially all the
eight steps will apply.

The scope of research here is already so wide that further
corperation of strategic planning matters, ie. translas
ting the broad planning strategy into short-term budgeting,
avoiding pitfalls etc. will be impossible to cope.
Strategic programming in essence is operational in nature
and will consider how long term strategic criteria are being
translated into normal annual planning exercises, eg.
expense and capital budgeting for instance.

In making a statement of broad options for growth,
diversification, divestiture etc. operational validity is a
key consideration. As mentioned earlier, thoughts are not
in one mind - that should be the attitude of the planner.
He finds them, integrates them and initiates more thoughts.
His contribution is not in striking an entirely new line of
thinking but rather to elevate the level of thinking and
provide a threshold level only after which policy decisions,
sometimes of a high-risk nature, are possible.

One method for risk-reduction associated with high risk
decisions is multiple analysis undertaken by different
people. While this is commendable enough, in this
researcher's view there ought to be open communication by
and among such people. The issue is not one of checking
one's opinions against another, but rather one of improving
the quality of opinion expressed. This aspect of
'multiplexing' is often not fully understood. The quality
of the final decision will be dependent on the quality of
opinions obtained here.

As will probably be the case with all research in strategy planning area,
the difference in approach in one proposed methodology from another is
probably in fine prints rather than in bold letters. But various
approaches proposed by various authors (ie. Katz's normative mode or
Lindblom's incremental mode for instance) and by this research are not
really in contradiction with each other but rather represent a progression
To be read as the last paragraph of Chapter 4 (Section 4.5) prior to summary (Section 4.6)

It should also be understood that Chapter 2 of this thesis is mainly related to concepts - such as strategy, policy etc. It has been emphasised that strategy takes a long term view and that it is not a homogeneous concept. The schematic of pro-active adaptive model given in this Chapter (P-23) basically lays down the principles of this model beginning with the awareness of the chief executive, through analysing one's strength and weakness to envisioning a goal or goals for the business to pro-active adaptation to the opportunities offered by the environment and the situation. The next Chapter, Chapter 3, is mainly concerned with explaining the philosophy behind the pro-active adaptive approach and its relevance in a strategy context. The Chapter explains the concepts of Chapter 2 further and reasons, drawing on literature and with examples, why a certain approach is being advocated in this thesis and how in particular it is different from pure 'normative', 'political', 'interactive' and other models. The main concern of Chapter 4 is to build a framework for application to case studies - a method to operationalise the concepts and philosophy discussed hitherto. Such a framework of necessity will blend the pro-active adaptive concepts in a manner such that it will be relevant for application. It was derived partly from the theoretical alertness of the concepts discussed in this thesis and partly from past experience of this researcher in strategy planning studies with companies. It cannot be more than an outline of how to do - remembering that even that suggestion is subject to alteration in the light of new experiences.
of thoughts. Subtle though they are in their differences, each adds on, compliments and builds on one another. The methodology for strategy formation process proposed here is thus not something entirely new but emphasises a viewpoint which treads the middle ground between pure synopsis and one-step-at-a-time approach. It promotes understanding and consensus-building based on information and knowledge. It is an approach of contingency combined with 'satisficing' — where the level of satisfaction is kept as a high enough level but still within the possible limits of an organisation. These limits refer to the organisations' ability to cope with change, to obtain necessary finance, to re-organise, to identify and move into new areas of opportunities and to do some of the many things an organisation must do in today's world to avoid being too exposed.

In reading through the steps given here for case analysis purposes, it should be borne in mind that the earlier 2 chapters, which contributed to forming these steps, are in themselves a kind of condensed thoughts derived from this researcher's literature survey along with his own experience in application. To this extent, these steps really represent a summary of the thoughts expressed in chapters 2, 3 and also in this chapter. It is for this reason quite a bit of cross-reference to earlier chapters has been made.

4.6 SUMMARY

The need for research in strategy/policy making arena has been emphasised. It is recognised that the issues involved in the policy making area are extremely complex — and that there is thus no best way to deal with the issues of this nature. A research in this field will not thus find ways to solve problems of this nature, but would rather be directed towards analysing and understanding a problem or a set of problems of strategic significance.

The relevance of case study method of approach to this research has also been discussed. Though some theorists have held case study approach (as a research methodology) with somewhat lower regard, it has its own place in studying policy/strategy formulation process. It is an excellent vehicle for the development of new and usable theory and to keep existing theories under scrutiny. It provides the potential reader with a vicarious experience upon which meaningful learning can be based. A number of business policy writers have used case studies to support the concepts they
have developed in the text. In a subjectivist approach to researching social sciences, the basic epistemological stance requires an understanding of the social (and business) reality and how it is created. The findings obtained will not be universally true but will nonetheless provide significant knowledge of the real world with which this research is concerned.

At a later part of this chapter an attempt has been to describe the steps relating to definition, analysing and understanding the strategic problem which will be used for case analysis purposes. These steps in effect represent further condensation of the thoughts expressed in chapters 2 and 3, though some new thoughts have been unavoidably added. These steps will provide a guideline for analysis of the cases.

The purpose of writing this chapter is to provide a rationale as to why case study approach (rather than some other method) has been adopted in this research. In the preceding chapters an attempt has been made to provide a conceptual framework of the strategy formulation process and the relevance of an adaptive approach. In the following chapters, 2 case studies will be discussed, involving 2 different companies in 2 different industries (in Singapore). After each case and its process of strategy formulation (at a point of time) has been described, an attempt will be made to reconcile the case materials and the conclusions with the framework discussed in this and in the earlier chapters. In so doing of course, as mentioned in this chapter, one has to take account of the ongoing nature of a real-life case. It can only confirm (or otherwise) the reasonableness of an assumption on an overall basis - and no more. It has also been emphasised that in a strategy formulation context different methodologies and approaches advocated by various authors represent a progression of knowledge, and therefore rather than being contradictory they are in effect complimentary to each other.
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18. Op Cit item 16.


22. Op Cit see item 17.


FIRST CASE STUDY

EPL LTD
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As indicated in the previous chapter, it was not possible for this researcher to obtain access to the strategy development process of an organisation except by way of accepting a corporate planning assignment. This avenue had to be cultivated though, since an understanding of this process rather than mere methodology is the main interest of this research. The methodology or the model described in the earlier chapter should apply to this case on an overall basis as well as in some detail. However, as is to be expected, to attempt to apply a model of this nature (which is substantially if not wholly derived from literature survey) to a real-life case has limitations. This said though, it would be demonstrated that the model does in fact apply to this case substantially.

EPL, the company in this case, is a subsidiary of a large ship-repairing company in Singapore. Due to some historical reasons, associated with the British pull-out from Singapore naval base, a very substantial plot of land with excellent sea-frontage was obtained practically free from its previous British owners and it was then assigned to this ship-repairing business on a minimal value basis. The current market value of this land alone is at least $100m to $150m.

This ship-repairing group is large in a Singapore context:

<table>
<thead>
<tr>
<th>Year</th>
<th>Sales</th>
<th>Pre tax profit</th>
</tr>
</thead>
<tbody>
<tr>
<td>1980</td>
<td>$300m+</td>
<td>$70m+</td>
</tr>
</tbody>
</table>

But more than this, it is very well known in the region and internationally. Its growth prospects are believed to be very good. It is also largely owned by the Singapore Government.

Approximately 10 years ago, in 1972/73, EPL started as an engineering outgrowth of this ship-repairing business. EPL is situated in the ship-repair yard, and uses some of the many facilities of the group, i.e. machine shop, power, water supply, land and management services. This researcher believes that for some of these EPL is charged only an out-of-date price. The land assigned itself will have a market value of $25-30m, but nothing practically is charged for this significant facility.

<table>
<thead>
<tr>
<th>Year</th>
<th>Estimated Sales</th>
<th>Profit before tax</th>
</tr>
</thead>
<tbody>
<tr>
<td>1981</td>
<td>$50m, approx</td>
<td>$1.3m, approx.</td>
</tr>
</tbody>
</table>
Both in 1977/78 and 1978/79, during a period of low business, EPL suffered losses. 1981/82 is however, expected to be good. Profit/loss accounts, Balance Sheets and Fund Statements are shown in the tables. Though 1982 profit of about $6m is about 47% on net capital employed of $13m, and looks good, two things should be noted:

a) The business is oscillatory, i.e. one year's good profit may be misleading, and

b) Net Capital is non-representative of the true picture, i.e. it does not include the current value of the land used. If this is assumed to be at least $20m, then the performance will not look so good. Management is aware of this.
### EPL LTD
#### PROFIT & LOSS A/C

<table>
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<tr>
<th></th>
<th>1982</th>
<th>1981</th>
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<tbody>
<tr>
<td>Profit (before Tax)</td>
<td>6,329</td>
<td>1,257</td>
</tr>
<tr>
<td>After Charging/(Crediting)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aud. Remuneration</td>
<td>18</td>
<td>15</td>
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<tr>
<td>Depreciation on Fixed Assets</td>
<td>739</td>
<td>587</td>
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<td>Directors Fees</td>
<td>5</td>
<td>5</td>
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<tr>
<td>Hire of Plant &amp; Machinery</td>
<td>48</td>
<td>26</td>
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<td>Loss on Disposal of Fixed Assets</td>
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<td>10</td>
</tr>
<tr>
<td>Rent for Land &amp; Building</td>
<td>241</td>
<td>197</td>
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<tr>
<td>Int Expense on Long Term Loan</td>
<td>189</td>
<td>126</td>
</tr>
<tr>
<td>Interest Earnings</td>
<td>(317)</td>
<td>(124)</td>
</tr>
<tr>
<td>Taxation Provision</td>
<td>(1,811)</td>
<td></td>
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<tr>
<td>Profit After Tax</td>
<td>4,518</td>
<td>1,257</td>
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<tr>
<td>Dividend Proposed</td>
<td>(360)</td>
<td></td>
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<tr>
<td>Retained Profits</td>
<td>4,138</td>
<td>1,257</td>
</tr>
<tr>
<td>Acc. (Losses/(Profits)</td>
<td>1,006</td>
<td>(251)</td>
</tr>
<tr>
<td>Unappropriated Profits Carried Forward</td>
<td>5,144</td>
<td>1,006</td>
</tr>
</tbody>
</table>

Sales - Not officially disclosed
EPL LTD
BALANCE SHEETS

<table>
<thead>
<tr>
<th></th>
<th>Estimate to 30.9.82</th>
<th>Actual to 30.9.81</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$'000</td>
<td>$'000</td>
</tr>
<tr>
<td>Fixed Assets</td>
<td>6,620</td>
<td>4,969</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Current Assets</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stocks of Materials</td>
<td>825</td>
<td>1,720</td>
</tr>
<tr>
<td>W I P</td>
<td>3,094</td>
<td>2,836</td>
</tr>
<tr>
<td>Debtors</td>
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<td>8,906</td>
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<tr>
<td>Others Debtors/Prepayments</td>
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<td>301</td>
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<tr>
<td>Bank Balance etc.</td>
<td>3,288</td>
<td>2,720</td>
</tr>
<tr>
<td></td>
<td>17,941</td>
<td>16,483</td>
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<tr>
<td>Less Current Liabilities</td>
<td>10,967</td>
<td>11,904</td>
</tr>
<tr>
<td>Net Current Assets</td>
<td>6,974</td>
<td>4,579</td>
</tr>
<tr>
<td>Deferred Liabilities for Retirement</td>
<td>(346)</td>
<td>(269)</td>
</tr>
<tr>
<td>Provision</td>
<td>13,248</td>
<td>9,279</td>
</tr>
<tr>
<td>Capital Employed:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Issued Share Capital -Ord.</td>
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</tr>
<tr>
<td>$1 share each</td>
<td>6,000</td>
<td>6,000</td>
</tr>
<tr>
<td>Reserve &amp; P/L Balance</td>
<td>5,437</td>
<td>1,279</td>
</tr>
<tr>
<td>Provision for Taxation</td>
<td>1,811</td>
<td>-</td>
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<tr>
<td>Loan From Holding Company</td>
<td></td>
<td>2,000</td>
</tr>
<tr>
<td></td>
<td>13,248</td>
<td>9,279</td>
</tr>
<tr>
<td></td>
<td>30.9.82</td>
<td>30.9.81</td>
</tr>
<tr>
<td>--------------------------</td>
<td>---------</td>
<td>---------</td>
</tr>
<tr>
<td><strong>Profit before Tax</strong></td>
<td>6,329</td>
<td>1,257</td>
</tr>
<tr>
<td><strong>Add Non Cash Provisions etc.</strong></td>
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<td></td>
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<tr>
<td>Depreciation</td>
<td>739</td>
<td>587</td>
</tr>
<tr>
<td>Provision for Ret Benefits</td>
<td>82</td>
<td>58</td>
</tr>
<tr>
<td>Loss on Disposal of Fixed Assets</td>
<td>11</td>
<td>10</td>
</tr>
<tr>
<td><strong>Fund from operation</strong></td>
<td>7,161</td>
<td>1,912</td>
</tr>
<tr>
<td><strong>Loan from Holding Company</strong></td>
<td>-</td>
<td>2,000</td>
</tr>
<tr>
<td><strong>Fund from Internal Source</strong></td>
<td>7,161</td>
<td>3,912</td>
</tr>
</tbody>
</table>

**Applications**

<table>
<thead>
<tr>
<th></th>
<th>30.9.82</th>
<th>30.9.81</th>
</tr>
</thead>
<tbody>
<tr>
<td>Purchase of N/C</td>
<td>(2,041)</td>
<td>(1,031)</td>
</tr>
<tr>
<td>Net Gratuities Paid</td>
<td>(5)</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>4,755</td>
<td>2,881</td>
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<tr>
<td>Net Movement in Working Capital</td>
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</tr>
<tr>
<td>Increase (decrease) in balance</td>
<td>568</td>
<td>1,616</td>
</tr>
</tbody>
</table>
It's great how—
they cooperate

THE boats have all gone. The Singapore River can now, for the first time in generations, be seen. How remarkable it is that it all happened so quietly.

In England there would have been months of public inquiries, conservationists lying in the streets, television coverage, etc. In Singapore, however, it all runs perfectly. Everybody goes when they are told, a few grumbles, but no trouble. No heavy tactics are used, no riot squads, no one is towed away.

Would that other nations could show a balance between the determination and subtle control by the government, and the pacifism and cooperation of the people.

HENRY STEED

Soulless

I FIND it a sad reflection upon your newspaper that you should include on the front page a photograph and approving report of the so-called "lighter" face of the Singapore River. Will there soon be nothing for tourists and local people to look at but soulless and ugly high-rise offices, hotels and shopping complexes?

JULIA WILKINS
This researcher, along with an engineering colleague from the National University of Singapore, was called upon to develop a strategy for growth and survival for EPL, along with a brief to identify its future prospects as thoroughly as possible. The group management felt that EPL had drifted in the past in its sales and profit performance and that it had lacked a niche and a company growth philosophy. If the prospects, after possibly some new and necessary investments, were not considered good then the group may even wish to pull out from EPL's current business. The management felt the necessity of obtaining outside advice and it eventually appointed the National University for assistance in the matter. The project was then assigned to this researcher. This researcher, as stated earlier, was assisted by an engineering colleague in order to obtain a greater understanding of the products and the markets involved.

In writing this case study some reference to the environment of Singapore and Far East should be appropriate. A lot of information does not come there voluntarily but only by prodding. In addition, although it is a growth region, growth itself is a result of many opportunities as yet unexploited and many development that is yet to take place. For instance, construction industry in Singapore is so significant only because so much construction is possible as opposed to say, in Britain. Labour unions in Singapore do not play a contestive role— but they are not a mere appendage to management. They play a complimentary role. These factors will influence this case analysis and the adoption of the model earlier described in chapter 4 to this case. One possible way of explaining the situation is to borrow from the concepts built into the old saying 'self-government is better than good government'. Men in a company look to their managers, and people in the country look to their leaders for a lead. This is more or less the situation in S.E. Asia now. As a result, meetings often turn out to be a forum for dissemination of information rather than where minds meet. Decisions often are taken fast then and on the whole they benefit all. But at the same time, it would be futile to claim that all contributed equally to such decision-making processes. Even their participation is of a limited fashion. Nonetheless though, majority of decisions made in these circumstances are still correct and adequately responsive to the changing environment. There are in general less inhibitions and corrections of errors can be done quickly too.

In the step 1 of model the emphasis is on the CE's awareness with the prospects and the problems of the company. It is also emphasised that the
'problem' is not a given but really a question of perception. This falls in line with the case analysis.

In the second step search is really to identify if we are in the right business, and if the general feeling is that we are not, then the search is for defining the problem and identifying what further investigations are necessary to focus on the main issues. Again, the case analysis does this substantially. However, before this researcher came to be involved with this case much of the interactions had in fact already taken place. Much further discussions took place and references to some of them have been made. Though conflict resolution is a part of it, the emphasis is on problem-solving.

The steps 3 and 4 will be inter-mingled. What mode of strategy is appropriate will depend on what opportunities, vulnerabilities, strengths and weaknesses exist. In an un-structured strategy building process qualitative market-centred information gathering and matching such information to the company's past and present is a significant process. In the case, it will be seen that this process consumes considerable drive, energy and inter-actions. Again, the emphasis is on what can be made of the market, what adaptations are relevant and necessary. Inter-actions played a vital, though not in a Singapore context, the over-riding role. Building on what we have and with what is available is again the main mode of thinking.

Step 5 of the model describes the iterative feedback loop and in the step 6 leads to the position assessment. Information gleaned from the market place, the feedback loop and position assessment are necessarily inter-mingled processes and this will be demonstrated in the case analysis. This will include a portfolio analysis and its relevance to the company will be examined. In the step 7 of the case an analysis and synthesis will be attempted which should lead to the scenarios to be described in the step 8 - again in line with the model.

It should also be mentioned here and prior to this case analysis that a pro-active model for strategy formulation may well assume different orientation in different cases. It is not a static concept. It has been emphasised in chapter 4. While in a Singapore context market-centred strategic response may fit this model more, it is conceivable that in another country or company pre-occupation may be elsewhere. Always, however, attention should be given to what is most purposeful and
productive. There cannot be any single definition for it.

However, pro-active adaptive model will have a positive connotation which may on occasion be missing from a model which is overly dependent on agreement by inter-action. For instance, when HYSTER (a US forklift truck manufacturer, Economist, Feb. 19, 1983) made a payout offer to its employees it was due to the challenges faced from the Japanese. It was a pro-active adaptive response to the needs for survival. At about the same time, the agreement by inter-action to settle the British water employees' dispute has possible negative consequences (PM's speech on 23.2.83 at the Annual Convention of the Institute of Directors). Agreement seeking must not be allowed to reach the level of diminishing returns. For a change responsive model, new modes of agreement must be sought. Fortunately, for this case, and more so probably in a Singapore context, constructive agreements were reached for the strategic development of this company. App. B, which is in fact a news item from a Singapore paper (STRAITS TIMES) does in fact demonstrate this.

EPL: Its products, the Chief Executive's awareness of the problems facing the Co; (The STEP 1)

Products: Process, power and compression modules, jackets and production platforms, pressure vessels of various types and designs with speciality in small/medium types, industrial engineering and construction/fabrication of boiler structures, pressure heaters, sewage treatment plants, dredges etc.

Problems: One main problem is the product range vis-a-vis the market. To date, the market is mainly restricted in Singapore, Brunei and Malaysia and many of the orders stem from the same few customers. The oscillation of this product market situation is remarkable, sales ranging from S$45m in 1975 to S$5.7m in 1977, to about S$50m in 1981.

Another big problem is the labour market conditions. As the labour shortage is a persistent problem, the present wage policy of the nation is designed to discourage wasteful employment. The labour costs are expected to continue to rise. Yet the company's main cost overruns occurred in the labour cost area, largely accounted for by the shop manhour overrun. It is evidenced by the
pressure vessel man hour/ton analysis which shows that in some
cases the actual man-hour per tonne was about three times the
budgeted hours. The question now is bigger than just this. Given
the present product-market situation, will it be more beneficial
to set up manufacturing facilities elsewhere?

Yet another problem is the strong competition from other firms
within the industry. There are about 10 small firms with pressure
tank-making capability. This is further aggravated by the
involvement of firms with building knowhow and capability, such
as shipbuilders, to enter EPL's field of manufacture when in a
downswing - as is possible during '82/'83.

The company also faced problems arising from a) cost control and
b) insufficiency of investment in plant and machinery and space.
The company seemed to have moved on over time but did not seem to
get on top of it.

Searching and Identification of the Strategic Problem (Step 1 and 2)
Many discussions took place among the CE of the Group, the GM and
management members of the Company and this researcher over several weeks as
to the precise nature of the Company's problems and among other things the
following thoughts featured in the discussion:

a) Since EPL was a subsidiary of a ship repairing business which was
soundly placed, its oscillation in profit and loss did not matter so
much. This was a view somewhat wearily put forward by the GM whose
view was that the business was hard to define and even harder to
predict. But this did not comfort the CE, nor this researcher. We
felt that the scarce resources could be then utilised elsewhere more
profitably and purposefully, the latter being as important.

b) The CE, this researcher and several of the managers finally agreed,
though the agreements were of somewhat different degree, that the
company had developed in the past somewhat without direction and this
position should not continue. Marketing, production and financial
reports of a number of periods were considered and they confirmed this
view more or less. The Sales Manager admitted that he went for what
he considered feasible without much consultation with the production.
Both sales and profits jumped from one level to another. Production
complained that they were asked to do what they did not know sufficiently. See also schedules 2 and 3.

c) There was general agreement that the Company’s market penetration and acquisition of technology were sporadic and that there was evidence of lack of continuity in the main activity areas. This is a confirmation of what has been noted earlier. Both the Chief Designer and Production Managers complained of lack of facilities. One construction manager quoted the case of a tin-dredger of which the company had little experience and thus suffered losses. Manufacture of clad-steel vessels was yet another example.

d) There was also the question, since the group itself was largely government owned (this view was also expressed by a government Permanent Secretary who was on the board), as to why this company without a proper mode of operations should remain in the government hand. This was shaking for all, the GM, the CE and all the management men were sort of warned that they could not possibly continue as in the past. It should be borne in mind that the company was ultimately held by the state (in a majority sense) and the state was only interested in a continuing investment provided there was justification in terms of profit as well as technology.

e) There was also another view which was somewhat resisted by the CE, that the company should transfer to Malaysia or Indonesia where labour was cheaper. CE’s view was that in most places the labour was less trained, generally less productive and the infra-structure weaker. There were other questions too, for instance, possible state intervention. A Permanent Secretary doubted if a state-owned company should go out of Singapore. This researcher felt that to try to remain within Singapore will be somewhat self-defeating. Singapore was ultimately a closely linked part of the region.

After much discussion the following tentative examinations were agreed on:

a) A survey of the demand situation of the Company’s products (including related products which the company is capable of producing) in South East Asia. A base-load of work was to be identified to give more purpose to the Company’s future. The GM and the Marketing Manager agreed that this was now overdue.
b) Explore and possibly visit some of these areas to assess market situation, government assistance (if any) available, the tax position, infra-structural facilities, labour situation and labour costs etc. It was felt that some subsidiary operations could be transferred elsewhere. Indonesia, for instance, has regulations which require part of the imports to be assembled in that country. Both the CE and the GM agreed with this researcher that knowledge existed within the company in an incoherent manner.

c) Explore possibilities of merger with firms within or outside Singapore. The Company's margin over prime cost appeared low during the down cycle, and this has been one of the main contributory reasons for loss over last few years. This gap has to be filled in by (a) adequate diversification (b) merger with a view to extending the product range and (c) starting new operations as appropriate to generally improve the margin. This latter aspect needs further examination. A majority of managers agreed that the company had to succeed within the region and its overall constraints.

d) If the Company intends to have a profitable base in Singapore, it would have to try to reach a new technology level. In considering any diversification or technological link-up proposal, this should be the central theme. It was felt that (c) and (d) are specially important to sharpen the purpose of the Company's continuing existence.

The following minutes were prepared on the basis of which the corporate planning study will be based:

The current management efforts are aimed primarily at rationalising EPL's operations with the objective of trimming costs to show a positive return in the short term. Although these efforts obviously deserve high priority, it was felt that one should not ignore or put aside longer term objectives. The present scope of the Company's activities involves essentially a support function for marine and land based heavy engineering projects. There is also no discernable policy as to whether one should aim to specialise in certain types of work.

On a medium or long term perspective, it seemed necessary that the Management addresses itself to the following further issues (the list is not exhaustive but some actions were now necessary):
1. Beyond the short term rationalisation exercise and assuming that EPL emerges to become profitable as a result, where does it go from there?
2. What kind of marketing environment will confront EPL in the coming years and should one aim to specialise in specific areas which the company has identified its strengths and weaknesses being compatible with? What are the opportunities and threats facing the Company?
3. Is there a future for EPL which operates mainly as a contractor or would the company increasingly find itself becoming less competitive with its heavy overhead burden, and its drifting as in the past?
4. Should the company aim towards technological upgrading whereby the design capabilities would be geared towards development, acquisition and/or application of proprietary technology for areas which the company has decided to specialise in? Is technical link-up necessary? See also (5) below.
5. Should the company regard the home base more as a technological base and accept that one may have to move offshore eventually for fabrication work to enhance the competitiveness? Wholly or partly?
6. If an analysis of the medium and long term objectives indicates a necessity to evolve differently from what the company is currently doing, what are the options available for injection of new technology and knowhow? Such options might include entering into licencing arrangements, or a collaboration arrangement or at the other extreme, merger with a foreign organisation with the necessary knowhow and technology.

The opinion of the Marketplace and the Exploration of Opportunities and Vulnerabilities, Strengths and Weaknesses (Steps 3 & 4)

Over a period of 13/14 weeks senior executives of 34 well known companies in Singapore, Malaysia, Thailand and Indonesia were interviewed by the researcher and his engineering colleague. See appendix A for a summary. Some are competitors, some end-users and rest were interviewed for more information.

The thrust of the survey was basically qualitative in nature – and it should be seen from the information gathered that the market for EPL’s
current and potential products is quite large. Besides, the products are of a character which defy the precise measurements of the market. This was found to be a basic problem, but should not be an insurmountable one.

**Major conclusions drawn from the strategic market survey**

**Demand for engineering fabrication**

1. Almost all companies agreed that the prospects for oil-related business in the region appear to be very good on a long term basis, though on the short-term this picture is oscillating.

2. Significantly, the consumers, i.e. the oil companies, stress this more than the fabricators in the region. It is possible that the fabricators have memories of the past (say in 78/79) fresh on their minds when the orders were low and they had to carry the burden of heavy costs and overheads.

3. Most of the consumers emphasised that the demand for fabricated materials, especially pressure vessels and heat-exchangers, will continue to be good for at least the next five years. Amongst the reasons quoted were:
   a) South East Asia looks a politically stable and a growth region.
   b) Preliminary surveys indicate possibilities of tremendous resources of gas and oil in the region - especially in Indonesia, Malaysia and Thailand (and Vietnam at a later stage).
   c) Oil companies are quite liquid and many of them are investing in the region. Oil prices would eventually stabilise.
   d) Oil refineries in the region are going to undertake major capital expenditure projects, especially in Indonesia, Thailand etc. Singapore is investing S$2 billion in petrochemicals.
   e) Needs of energy conservation will create demands for more fabricated products, for example, heat exchangers. Shell has significant plans in this direction.
   f) There are probably as many untapped sources of oil and gas resources as there are already tapped - especially in Indonesia and South China Sea and other places.

4. It is felt that considerable business development opportunities now exist within the region in Singapore, Malaysia, Thailand and Indonesia; refineries are expanding and new ones are being built. A large number of rigs are being built too.* All these will generate

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* This is going to slow down somewhat now.
business and this may well be the time for EPL to expand its operations generally or be in readiness for it, develop contacts and re-affirm its leading position in this industry in Singapore. Spillover of business from China and India now seemed a distinct possibility too. See also schedule 1.

5. There are promising prospects for fabrication business in tin-mining and palm oil industry.

6. Prospects for bulk tank manufacturers, which is related to oil business, appear good.

The competition

1. Japan will continue to be the dominant suppliers of fabricated products - but Singapore has special advantages in terms of location, generally English-speaking population, and costs. This is especially significant from the point of view of the companies who are engaged in off-shore production, for whom the time of delivery can be more significant than costs alone.

2. Singapore is looked upon by the consumers as the source of supply of many products and to have the best knowhow in the region. Its capacity is still very limited in some aspects though and some suggest that this may be usefully expanded now, with foreign help if necessary.

3. EPL is looked upon as a local company in this particular field with most knowhow, investment and facilities - though not without competition.

4. No matter how good the business prospects, the competition will be keen both from local fabricators as well as the overseas suppliers. Suppliers outside the region will for a long time enjoy a higher technical knowhow and support of their allied companies - especially the Japanese.

5. There is probably some opportunity now for price improvement despite the keenness of competition. Demands from various sources will continue to grow.

6. EPL is considered quite capable of meeting the requirements of pressure vessels (though with regard to heat exchangers some reservations were expressed) for gas production platforms and it already enjoys a certain reputation in this regard. Since Thailand and East West Malaysia, China and India show now much prospects for gas development, business development prospects appear good.
7. It appears that major international oil companies have a system of international bidding and the local companies either do not feature in that bidding list or do so only in a marginal way. This image has to be improved despite the technical limitations. It was a failure of the Company that the Company did not look to this much earlier.

Quality Requirements

1. There were complaints from some major consumers, that finished products of local fabricators often were not up to specifications particularly with regard to welding. There were specific complaints against the Company from some significant oil companies.

2. There were complaints about design capability and general administrative lapses.

3. There is close co-relationship between the quality of the products and the quality of labour employed. Consumers were especially vocal about the quality maintenance of such products as pressure vessels and heat exchangers and about the necessity of a dependable nucleus of labour force. They emphasised the need to conform to international standards.

Options and Limitations

1. All inputs in the industry will continue to increase in costs - labour, steel and supplies. Hence cost planning must be rigid and quotations realistic. Cost-plus method of quotation has severe limitation. Competition is the key word.

2. On diversification into other lines of business, it was felt that Singapore capabilities would suffer from inherent limitation. At the lower end of technology, eg. general types of structural and pipe fabrication, competition is too keen from small-time fabricators whose overheads are low. As regards a bread and butter line in the nature of diversification, investigations did not indicate that there exists one within the scope of EPL's present operations. The researchers felt that two factors were important in the present context:
   a) Continuously seeking to improve product quality through better inputs of all types and hence, gain confidence of major international consumers.
   b) A formal or informal link-up of interest with a group of companies with substantial international influences. Command of
technology will provide the needed assurance.

3. If transferring business from Singapore is ever considered, Indonesia and Malaysia appear to be most suitable. But shortage of skilled personnel and other factors will be the inhibiting factor.

4. It appears that EPL should seriously consider further investment in manpower quality improvement in key areas; eg. design capability, welders, supervisory management.

A Strategic Overview

The survey indicated that although the profits in the past few years have not been satisfactory or were oscillatory, the situation in the market has changed materially to permit profitable business development. There is now need to examine EPL's technical and management capability generally to identify in broad terms how the company can take advantage of this brightening business scene more effectively. In particular the following were to have special significance from a strategy point of view:

a) A general consensus that the market for products in which EPL is or may become interested is good and will continue to be so.

b) Despite technical and other limitations, Singapore's location will offer business advantages, and

c) Though rationalisation of operations is helpful, EPL has much scope for growth. Strategic emphasis should therefore focus on this growth aspect.

Matching Strengths to Opportunities and Searching for Weaknesses, Internal Discussion, Iterative Process and Position Auditing (Steps 5 & 6)

As the interviews proceeded the matters were brought in by this researcher and reported verbally and discussed among various company managers - a diagram of the key personnel interviewed will soon follow. In a summary, the following discussion took place:

a) The end-users generally felt the company is more established in its particular field in the SE Asia, but it lacked an appropriate level of technological knowhow and its investment in plant, machinery and trained manpower was less than satisfactory. Shell, for instance had to return 40 pressure vessels for rework. Union Oil felt that AE, another small company, was somewhat more dependable for quality and delivery dates. Naturally, their view was only partly concurred by
the production manager and the GM. The Chief Designer, however, pointed out that he long insisted on further training of welders and better welding equipment. It had to be conceded on the whole that quality and delivery dates schedule needed improvement. Production and administration and quality inspection had to be tightened up.

b) The question of investment in plant, machinery, manpower was then investigated and several more end-users and competitors were interviewed and then further discussions took place. After much discussion, it was felt that investment in some heavy bending press, a numerical drilling machine and some faster more sophisticated drilling machines were overdue and several million dollars had to be allocated for this purpose. Company's cold-rolling process was found slow and inadequate. It had no capability to make dish-heads and it was not equipped to tap in emerging market for heat-exchangers.

c) As the technical knowhow and marketing were related in this company, they were approached in a combined fashion and further interviews took place with end-users, design engineers (Brown & Root, McDermott) and others. The marketing manager was vocal that he was ham-strung by the company's accounting policy which required a certain rate of overhead charge for pricing purposes. The Financial Controller was of the view that this was necessary. Esso said that some of the prices quoted were frankly wild and they did not think that the company was properly equipped and that when they gave orders, they took much account of what a company could do. Brown & Root felt that the company should train its people to conform to US standards and such investments were justified. It was tentatively seen that the Company's overhead apportionment structure required review, that marketing in this instance did not mean merely tendering for jobs but also close link-up with the end-users and compliance with their overall requirements and finding out how to improve the know-how level of the company. It was conceded that heat-exchangers offered new market-scope.
Key personnel interviewed - EPL

Group M D

Corporate Planner

Group Financial Controller

G.M. EPL

M K T G Manager

Asstt G M EPL

Production Manager

Construction Manager

Chief Designer

Proposal Engineer

Contracts Manager Projects

Projects Managers

Engineering Manager
d) Most end-users agreed that the market was bright enough and after temporary slack would brighten up again and especially so in SE Asia and for Singapore, its labour force being highly disciplined and well-motivated. We found confirmation of this view among end-users and government-departments in Indonesia, Malaysia and Thailand -- as well as Hong Kong (though the last was somewhat outside our scope of investigation). Malaysian Govt. agency (MIDA) was especially keen. We also discovered one of the competitors, PROMET, was trying to move into Malaysia fast and this was important information. Indonesia indicated (our interview with PERTAMINA) that they will soon tighten up on their law of within-country assembly requirements. We even found a Japanese builder in Indonesia who were willing to link-up with EPL. All these went over many weeks and though the CE recognised the merit in all this work, in our view, he was somewhat less enthusiastic to consider substantial investment in these other countries. We felt that some mistakes were again being made. But CE was limited in his capacity as the company was largely government owned. It was keenly felt that both Malaysia and Indonesia, even given their nationalist policies, needed cultivation and offered opportunities. Business is seldom done in ideal conditions.

e) The question of module construction was then considered and it was discovered that when a substantial order was obtained, its margins were high. But our interview with a shipbuilder revealed that when in a downswing, all the ship/rig builders will compete in this business -- EPL being capable only of spill-over business. The GM and the Construction Manager both more or less had to agree. We then pursued the question further with Jarong Shipbuilding, Keppel, Brown & Root, Matthew Hall, NATCO etc., etc., and it then clearly emerged that EPL's greatest strategic drifting occurred in this area. During periods of high business ('74-'76, '79-'81) the Company missed many opportunities relating to rig-building etc. because it lacked know-how for the total structure and because it did not have appropriate technical link-up. The marketing manager claimed that he was aware of this but felt that his tasks were limited by the Company's capacity. The CE admitted, though not entirely, that the group's preoccupation was elsewhere. One significant competitor (PROMET) wondered why EPL chose to remain substantially the same when so much happened. One end-user (Singapore Oil Refining) also felt that the group neglected an obviously developable niche while it could get support from various sources.
<table>
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<tr>
<th>Step</th>
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<td>A1</td>
<td></td>
<td></td>
<td>A2</td>
</tr>
<tr>
<td>B1</td>
<td>Investment policy improvement needed at all levels</td>
<td>NOW</td>
<td>Degree of low priority near to choose</td>
</tr>
<tr>
<td>C1</td>
<td>Immediate</td>
<td></td>
<td>C2</td>
</tr>
</tbody>
</table>

After much discussion it was agreed that serious attention should be paid to this issue. It needed extra space which was in short supply. It also needed investment in manpower and plant. It needed additionally appropriate technical link-up. It was agreed that this consultant will assist the management in these matters - but as part of another assignment to follow.

This apparent profitable module construction business forecasted oil exploration activities were going on.

After much discussion and process auditing the firm proceeded to prepare a capabilities profile matrix as follows (the following analysis could as well have been included in the Step 7 i.e. Analysis and Synthesis).
<table>
<thead>
<tr>
<th>Class Description</th>
<th>Site or Shop</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>A1 Living quarters</td>
<td>Site</td>
<td>Strong</td>
</tr>
<tr>
<td>B1 Production modules</td>
<td>Site</td>
<td>Lack of process design</td>
</tr>
<tr>
<td>A1 Mooring units</td>
<td>Site</td>
<td>Strong</td>
</tr>
<tr>
<td>C1 Heat exchangers</td>
<td>Shop</td>
<td>Lack of equipment</td>
</tr>
<tr>
<td>A2 Clad vessels</td>
<td>Shop</td>
<td>Strong</td>
</tr>
<tr>
<td>A3 Carbon steel vessels</td>
<td>Shop</td>
<td>Too competitive</td>
</tr>
<tr>
<td>(small size)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A2 Carbon steel vessels</td>
<td>Shop</td>
<td>Medium profit</td>
</tr>
<tr>
<td>(large size, up to 20T)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>B1 Pipe work</td>
<td>Shop</td>
<td>Lack of special equipment</td>
</tr>
<tr>
<td>A3 Bulk/Silo/Storage Tank</td>
<td>Site/Shop</td>
<td>Too competitive</td>
</tr>
<tr>
<td>B1 Columns</td>
<td>Site</td>
<td>Lack of design</td>
</tr>
<tr>
<td>C2 Jackets</td>
<td>Site</td>
<td>Limited size</td>
</tr>
<tr>
<td>C2 Cranes</td>
<td>Site</td>
<td>No design</td>
</tr>
<tr>
<td>C2 Hatch cover</td>
<td>Site</td>
<td>No design</td>
</tr>
<tr>
<td>C3 Dredges</td>
<td>Site</td>
<td>No design</td>
</tr>
<tr>
<td>B2 Separators</td>
<td>Shop</td>
<td>Lack of design</td>
</tr>
<tr>
<td>C1 Other process design and turnkey projects</td>
<td>Site/Shop</td>
<td>Lack of design/ experience</td>
</tr>
</tbody>
</table>
This profiles confirms that the Company, while profitable in some business, lacked design and engineering capability in many areas. Above all it confirms this researcher's earlier observation that this kind of directional policy matrix remains somewhat pre-occupied with what the Company already does rather than saying what it should do. That is where our market study came useful - which was carried out as objectively as possible.

The question of cost and productivity was only considered rather generally as this was not meant to be deeply investigated. Even a superficial examination revealed weaknesses, but most of all we found considerable amount of idle time charged to jobs. There was also evidence of cost over-runs on-shop jobs. Evidence of breakdown of communication between design/engineering and the shop and other construction jobs and contract coordination (see schedule 2) was also available. This was in accord with the view expressed by some end-users that there were lapses in administration and contributed partly to quality deterioration. Reporting on cost performance was generally inadequate and past cost data were often an unsatisfactory guide for price quotation purposes. Even though it appeared true to us, this was not fully conceded by the costing and financial control departments.

This corporate planning related market research revealed without doubt that there was a large and significant gap between what the Company's managers thought of their own effectiveness and the market's view on the same. This objective verification then was justified. It revealed in the process many other useful information and substantially contributed to a renewed thinking process which otherwise probably was not possible.

**Situation Analysis and Synthesis (Step 7)**

As is mentioned in the introduction of this case, EPL is a subsidiary of a large group whose main business is in ship-repairing. A significant part of the group's equity capital is held by the government.

The group maintains close contact with the Swan Hunter Company of UK. Its present MD is from Swan Hunter and has very successfully steered the group's ship-repairing business. It has accumulated large cash surplus
over the years and is now considering various investments. Among other alternatives it is also considering the expansion of its engineering activities in EPL, provided it has potential.

The process of gathering outside opinion and discussing the matter internally as described previously went on over many months. Most of the reports were made verbally and in short reports - as we completed some of the interviews. One of the reasons why the matter was so protracted is because the consumers are spread over the whole region. Besides, securing interviews was far from easy in some cases. It was felt, and the assumption proved to be correct, that as outsiders we were able to secure these interviews more successfully than it was possible for the company on its own. In this respect, this researcher's viewpoint that a qualitative and objective market survey is a necessary condition for a major corporate planning study was accepted by the group MD, even though it was expensive. Only in this way long-held but not securely-based ideas could be identified.

While the outside opinion was in general favourable in 1981/early 1982, situation has altered somewhat since then. The general long term outlook for this region in general and Singapore in particular continues to be bright, though. This researcher does not see any special reason for changing opinion drastically. Changing conditions in M. East may turn out to be favourable for F. East, as this region is more stable both economically and politically and has better trained manpower.

Within EPL there were some additional problems regarding managerial motivation which revealed through the interviews. In particular the following additional information emerged:

a) EPL's general manager was an expatriate with limited regional experience. It was also felt that he was somewhat unable to motivate workers at the shop floor level, partly because he was unable to communicate in a local language and also partly due to his somewhat limited experience in pressure vessel and heat-exchanger fabrication. His rather open style was misunderstood by his subordinates.

b) A significant number of managers were on secondment from the group. They did not like the problems of EPL and the keen competition faced from other marine fabricators. On the contrary, ship-repairing in
Singapore is more or less a stable and profitable business now. They preferred the security of that situation.

c) The nature of strategic problems faced by EPL were considered by many of the managers as significantly different from the group and they felt that the group was unable to see it. The managers were not even sure about the group's commitment to their business. They were disturbed that the group did not consider the different market they were operating and the significant revenue they were generating. They also felt that the group's hesitant commitment to the development of the company was a stumbling block to moving up the ladder of technology, which they all felt a necessity.

d) The managers were suspicious that the whole purpose of the corporate plan exercise was to rationalise a decision already taken to gradually wind down the company.

This researcher was not in full agreement with the managers in some of their suspicions or other ideas and notions - though some neglect on the part of the group management was probably true. It was mainly due to the group's preoccupation with the profitable ship-repairing business.

However, it was also true that the Group MD, i.e. the CE, was concerned and wanted to know genuinely if the engineering side of the group's business offered prospects. In addition to hiring consultants to assist him in coming to a decision in the matter, he also asked his group planner to conduct his own independent study. The MD insisted that these two studies remain independent. These two studies went on concurrently and whether it was desirable or not, mutual consultation was not permitted.

It was in our view somewhat restrictive and not entirely in conformity with the concept of 'multiplexing' - see discussion in chap. 3.2. However, there was not much choice in the matter. We felt for the purpose of this case, the company gave us sufficient latitude and freedom anyway and incurred considerable expenses to finance the project. It was not for us to air disagreement if some of our views were not acceptable to the group MD.

* Multiplexing does not assume a negative posture. Exchange of information does not mean that independent opinions cannot be formed.
There is no simple framework which is capable of explaining all aspects of a complex system. It is also true that as long as a framework or a paradigm is not offered as a finality it is not likely to stifle the progress of knowledge. With this in mind, in chapter four, it is further stated that so far as policy-making processes are concerned, one has to be aware of the ongoing nature of a real-life case study and that theoretical alertness must not mean preconceived notions or biases. A case study can only confirm (or otherwise) the reasonableness of an assumption on an overall basis.

Policy/strategy making process is complex, to say the least - Vickers thus says 'it seems strange ... that something so familiar and apparently important should remain so obscure'. The only meaningful test is whether or not a set of concepts can be used as a heuristic aid in policy analysis and research of a particular case.

It was held that a strategic problem is not something 'given' but a question of perception. In EPL's case, a performance gap is clearly realised. Its magnitude is even more obvious in the context of the success of ship-repair business even though the success of that business can be explained by some very plausible reasons which do not apply in the case of EPL. It was also felt, while interviewing the managers especially, that what was stated to be the strategic problem of EPL was in fact also a strategic problem of the group. If it was EPL's problem alone, EPL could have and indeed would have gone for some major re-structuring and re-furbishing much earlier. It was unfortunate that the unsatisfactory performance was not acted upon earlier than now.

Although the pretax returns on capital appeared satisfactory, the group's view was that the space allocated to modular construction work could be more profitably used by ship-repairing where contribution rate was higher. This raises another fundamental question as to the nature of strategic problems. From EPL's viewpoint, it held significant technological knowhow, its returns were comparable with some other companies in the industry (which was difficult to define, anyway) and increased group commitment was necessary for the furtherance of prospects. From the group's viewpoint the capital and space would be more profitably used in ship-repairing - at least, for the time being. The question thus posed was who actually needed a strategic review. We came to the conclusion that it would be always unsatisfactory to examine the strategic problem of a company which is part
of a group in isolation of the group's total strategy. We also came to
the conclusion that the boundary line of a strategic problem is almost
always delimited and unprecise. But we recognised that a problem as
perceived must nevertheless be dealt within its inherent constraints and it
would be naive and unsatisfactory, in a real world setting, to merely wish
that the things were not as they were.

It may also be apparent that this researcher played a significant role in
this case, but that was only circumstantial. This role needed to be
played.

A Synopsis of the Case Analysis

In accordance with the model described in chaps. 2, 3 and 4 and case
analysis given hitherto in this chapter, the following represents a
synopsis:

<table>
<thead>
<tr>
<th>Categories</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. An initial understanding of the problem.</td>
<td>We felt that a strategic problem cannot be fully perceived nor defined accurately right at the beginning unless and until we delved into it further. There is need for redefinition and reformulation of the problem.</td>
</tr>
<tr>
<td>B. A study of the strengths and the weaknesses of the company.</td>
<td>To study this objectively the need for going out and meeting the relevant people was stressed. It was felt necessary to interview consumers as well as competitors and others to obtain an objective profile of the industry, its scope and its prospects. It was also necessary to obtain views and data from internal and other sources. It was necessary to consider that the state was a factor in that it held a significant part of the group's equity. Whereas, the group had no funds problem as such, shareholders in this case had</td>
</tr>
</tbody>
</table>

26
<table>
<thead>
<tr>
<th>Categories</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>significant control over how that fund was utilised and were prone to compare the group with its subsidiary rather superficially. It was also necessary to consider how EPL’s organisational strength could be more fruitfully utilised. In general, we felt, that the company’s policy-making machinery was not effective and that its past development was rather from one step to another without a broad directive to follow.</td>
<td></td>
</tr>
</tbody>
</table>

C. Matching strengths to opportunities and

In these processes we keenly felt that indeed there is no single theory or approach available as how to carry on with the assessment of strengths and weaknesses of an organisation and how to relate the findings to opportunities available or the vulnerabilities revealed. The process does not allow any room for panaceas and rather than finding solutions for problems, it became a question of how we could learn more than we (or others) already knew. It also became a question of reconciling our views with others' wherever such was possible. The context of feasibility and receptivity was important, because no proposition was beyond debate and no solution could be deemed exact and the cross-impact of complexities was immense.

In particular it appeared that the Company’s strengths and weaknesses included the following:

a) Its organisation was sound and it had a base strength of technical knowhow.
b) It was well known in the market place.
<table>
<thead>
<tr>
<th>Categories</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>c) Market itself was diverse and required imaginative exploitation. Potential was high.</td>
<td></td>
</tr>
<tr>
<td>d) It has advantages as well as constraints being associated with a large group whose main interest was elsewhere.</td>
<td></td>
</tr>
<tr>
<td>e) The Company was only someway in a large technical field - it lacked a niche. It was not capable of building a complete top and bottom structure of large marine jobs such as jackets. In shop jobs, eg. pressure vessels, tanks, pipework, etc., it was somewhat uncompetitive.</td>
<td></td>
</tr>
<tr>
<td>f) It had a large and deep enough sea-frontage which it was not using profitably enough - which the group felt that it could use profitably in ship-repairing.</td>
<td></td>
</tr>
<tr>
<td>g) The space-availability within the yard was somewhat fragmented which contributed to physical disturbance. Lack of coordination was partly responsible.</td>
<td></td>
</tr>
<tr>
<td>h) The GM of EPL was somewhat unmotivated because (a) he felt he lacked sufficient group commitment, (b) the functional managers lacked motivation, (c) of the lack of communication ability with the lower level workers.</td>
<td></td>
</tr>
<tr>
<td>i) The Company suffered from coordination problem which resulted in quality defects of its products and delivery delays which annoyed several important customers including oil companies.</td>
<td></td>
</tr>
<tr>
<td>j) It did not detect in time new potential market for products in which it could move into, eg. rigs, heat-exchangers, etc. It was felt that the company needed a broad policy directive, ie. growth into new and developing market away from competition from the small-</td>
<td></td>
</tr>
</tbody>
</table>
timers for instance, and then responding to the new developments in these new areas which we were able to identify. This identification was not something that others did not know. It was rather a process of confirmation and putting-together process of knowledge and information held by others and confirmed empirically by a series of interviews. This is adaptation of a creative kind.

**Broad Scenarios/Options Analysis (Step 8)**

As opposed to public policy making (nationalise or do not nationalise, for instance) we felt that the mode of analysis in a business context should be different. Our implied terms of reference, as revealed in our many discussions with the management, were to identify broad options which we felt were open to the company. As outside consultants and in our attempt to aid the policy-making process, and especially in view of the fact that it was also being considered independently by the company, investigation beyond identifying broad options would be part of crystallisation of policy-making process. It was therefore in line with our observation earlier that strategic decision-making is a 'cascade' process i.e. analysis, identifying broad choices, further investigation and narrowing choices - this latter part we would define as crystallisation process of policy making. In this crystallisation process, along with analyses, values held by the policy-makers and extra-rational processes, such as hunch, have a role to play.

In selecting the broad options we were also guided by the following facts:

a) A few of the board members were seriously of the view that the group should pull out of the business of EPL and concentrate on ship-repairing.

b) Some others, including the Group MD felt that EPL had problems of its own and was capable of development. It had established business connections which should be developed rather than frittered away.
c) EPL had some leads in terms of organisational structure, connections, technical knowhow and business development prospects (though outside its current product range) which were worthy of further exploration and pursuing.

In formulating the broad strategic options, the following further issues in accordance with matters discussed in chaps. 2 and 3 are worth mentioning.

**Explication of Values and Opportunistic Search**

As opposed to Cyert & March view that search activity is triggered in response to a problem, and response being therefore incremental in nature, a strategic change is opportunistic in nature and this was realised in this case. We were therefore given the brief to interview many people from many sources but to identify opportunities and weaknesses) and form our opinion. The thrust therefore was one of opportunistic (rather than problemistic) search.

The CE was able to visualise a crisis situation developing in due course. He therefore divided the strategic search action into 2 phases – analysis and crystallisation. Our brief was to be involved in the former phase and partly in the second – the actual policy – decision being part of the latter phase is not being investigated in this research. However, it can be envisaged that in this later stage values held by various policy-makers, the constraints within which they operate and extra-rational processes will influence the final decisions.

**Feedback as a Process of Risk-Reduction**

The analysis stage is itself a process of feedback. In a strategy-making context it is also a risk-reducing device intended to minimise the risks and damages inherent in all decision-making under conditions of high-stress. The defining of issues, formation of opinions and generally indicating the directions of potential solution would be the expected outcome of policy analysis. Many of the intuitive thinking of policy-makers may be right (or wrong) but they ought to be put above a threshold level before overt policy initiative, sometimes entailing high risks, is possible.

This confidence building process is not a mere process of rationalising
pre-conceived notions. It will take account of overall constraints, the people who will make use of the policy analysis and the inherent limitations within which they will operate. It is thus a highly complex synergistic process mutually reinforcing and operating on a heuristic mode.

**Actionable Policy Package and Operational Validity**

We have attempted in describing the case to develop first of all a perception of the problem. It is obvious enough, in a strategy-making context that this is far from easy. Policy-makers themselves were divided in their opinions even before the case investigation started. The company itself is engaged in marine related products in some of which it is not profitable enough and in some others it should have moved in earlier, not only for its own expansion and survival but also for the purposes of group activity diversification, eg. rig-building and top and bottom structural fabrication, etc., etc. Furthermore, questioning the prospects of EPL in isolation of the group's overall aim was in itself a severely limiting factor.

The options that would be given shortly were considered operationally valid. To move into heat-exchanger and pipe fabrication (for oil refineries, tin mines etc.) was feasible enough and required not too major an investment commitment. But this would be only relatively minor diversification as competition from some local (and some Korean and Japanese companies) would continue to be strong enough. To move higher up the technical ladder, such as rig-building, would require major investment commitment and further economic studies.

In this case the narrowing down the choice was outside the scope of our terms of reference. We were called upon to aid the perception of the problem and in indicating broad directions open before the company for its further development. This early iterative process was our task. It leaves its subtle influence on the final decision outcome which would be arrived at as a result of further interaction between policy-makers and their judgement, values and intuitions.
Scenarios

Option 1

Investment expansion with a modest amount of around $3 million in order that it can undertake the fabrication of heat exchangers, higher value added pressure vessels, pipes and tanks in a more productive and efficient manner. This researcher also recommends a major review and overhaul of the management information system within the company with a view to more effective cost control. At the same time a core group of managers should be developed with appropriate specialisation in the various product lines. These managers should not only be able to assume responsibility but would also be willing to pass their expertise to the next line of managers. In accordance with this strategy, the company can expect to be profitable in the engineering fabrication business for the next five years, but is unlikely to enjoy a spectacular rate of growth. The risk of major losses in any particular year can be considered to be quite low provided management keeps a tight control on costs and overheads and exercises care and prudence in its pricing procedures.

Option 2

To take advantage of the tremendous market in rigs and modules and other larger construction jobs, EPL should consider in addition to Option 1 above, a major expansion program in which increased site space is obtained and large investments would be required in equipment and space. Pursuing such an option will require serious group commitment to the company and the willingness to take some risk, particularly in the initial years. Prospects of growth and profitability are good*, and the company may attain turnovers in hundreds of millions of dollars within five years or so. This option may especially enable the company (a) to move to a significantly higher level of technology and (b) to achieve a desirable degree of stability in its operations.

* Even if 1982/83 look somewhat less promising now.
Option 3

If the Group considers its management and financial resources can be better applied in more lucrative investments elsewhere then the company will have to continue in its present state of unimpressive productivity and less than adequate machinery capabilities. Profit margins cannot be expected to improve greatly and as labour costs continue to rise, the company will find itself no longer in a competitive position compared to the small timers around the region who can engage in the same kind of fabrication work at a much lower cost. Failure therefore to step into higher technology products and attain higher value added per worker within production operations must mean the eventual demise of the company. This last option therefore is thus a phasing out of the business. If this be indeed the option chosen by the Group this researcher would recommend that the process be accelerated by a phased disengagement from the industry preferably by finding a suitable outside company to acquire EPL.

Implementation

It is also recommended that a senior person within the top management is vested with the responsibility to monitor and effect the implementation of improvements and changes, including those that this researcher has suggested and are accepted by EPL management. It is felt that a concerted and a formalised effort is made to bring about the necessary changes in an orderly fashion, as otherwise EPL may only remain in a state of knowing its weaknesses and not finding time to rectify them.

Postscript

These recommendations and analyses were valid, in the opinion of this researcher, at the time of forming the opinions which was about the end of 1981 and early 1982. Writing it in the later part of 1982 when situation has changed somewhat has posed some problem. We still believe that our opinions remain largely valid. See also Appendices B(and C) which are reproduced from Business Times of Singapore. They indicate that the company in the case is about to take appropriate measures in response to market and as suggested by this researcher, and that the general economic climate seemed favourable in 1982(when this case was being written).
Summary

This case is related to a subsidiary company of a large ship-repairing business in Singapore. The subsidiary company, EPL, is engaged in manufacturing and selling equipment related to oil exploration, production and refining businesses in the S.E. Asia region. EPL's main troubles in the past were that both sales and profits were oscillatory in nature and as a result the group management felt that there was need to examine the products, the market and all other factors affecting the business of EPL in order to be able to make meaningful strategic decisions regarding the growth and survival prospects of EPL.

In chapter 4 of this research a framework for pro-active approach to strategy formulation process has been described. In accordance with this framework, this case demonstrates the steps adopted for analysis and information gathering and for arriving at some meaningful scenarios for future growth and development of EPL.

In particular, it has been shown in this case that in a Singapore context the second line managers and others look to the higher management (or to the national leaders in a national context) for giving them a lead for pro-active adaptation to environment. Though inter-active processes exist, the need for change and adaptation is considered supreme and usually allowed to hold sway over other factors.

It has also been shown in this case that there is need to actually go into the marketplace and search for information. There is need for objective intelligence gathering. For this reason a large number of companies who are EPL's end-users or competitors or related to EPL's kind of business (such as designers like Brown and Root or McDermott) as well as government departments were interviewed in Singapore, Malaysia, Indonesia, Thailand and Hong Kong. In this way an objective profile on the market of EPL and EPL's products was obtained.

These information were then thoroughly discussed with various managers of EPL at various times and further information were gathered until all felt that reasonable amounts of information were secured for further analysis and action purposes.

EPL's own position was then assessed in view of these information and a
consensus was arrived at as to its strengths and weaknesses. A directional policy matrix for its products is also prepared. It is stated though that a directional policy matrix may not necessarily direct the attention where it should actually belong. In the case of EPL, its future lay, it seemed, in taking a quantum jump into acquiring technology and knowhow for rig and module building.

In giving the broad scenario in accordance with this analysis and framework, some mention has been made that strategic search is opportunistic in nature (and not merely incremental), that feedback is a process of risk-reduction and that actionable policy packages must have operational validity. All these ideas have been discussed in the framework given and in earlier discussions in chapters 2 and 3.

It must be borne in mind though that no framework is possible to apply to a case in its entirety with equal emphasis on its various areas and concepts. Ultimately, each case is unique and unstructured and should be viewed that way. There is no substitute for commonsense and reflection.
Appendix A
Case Study - EPL

A Brief Summary of
The Interviews for
Strategic Survey

(All Companies Not Included)
<table>
<thead>
<tr>
<th>Company</th>
<th>Products</th>
<th>Comments Briefly</th>
</tr>
</thead>
<tbody>
<tr>
<td>- competitor</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Hume</td>
<td>Mainly pipe fabrication (PVC, Concrete, Steel etc) also PVs, tanks.</td>
<td>Specialised piping work would continue to be good. PVs too competitive. Lack of good designers and welders are big problems. Business shall be good though with tight margin. Quality very important.</td>
</tr>
<tr>
<td>- Competitor</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Levingston</td>
<td>Jack-ups, Rigs Oil-drilling ships.</td>
<td>Full capacity (in 1981). Demand will be good. Even allowing for market oscillation, Far East should have a good long term future in rigs and specialised construction.</td>
</tr>
<tr>
<td>- Large scale Fabricator</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Fabrication (Japanese owned)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Keppel</td>
<td>Ships and ship-repairing, rigs, crane-construction, structures.</td>
<td>Ship-repairing will continue to be good - so would rig-building - but semi-sub-merocibles would have a better prospect. Days for jack-ups getting limited.</td>
</tr>
<tr>
<td>- Largest marine fabricator in</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Far East</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Promet</td>
<td>Oil rigs, Jack-ups, marine structures, tugs etc.</td>
<td>Top-bottom complete turn-key market is good and will be there - not only FE but also in Australasia and elsewhere. Singapore's market is the whole world. Marine fabrication can be greatly varied and used good designers and skilled workers - both in short supply in Singapore and in the region. Responsiveness to market changes and good quality products are important.</td>
</tr>
<tr>
<td>- Highly successful fabricator</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Brown &amp; Root</td>
<td>Design office in Singapore - Fabrication in Malaysia.</td>
<td>Fabrication yards are fully booked in 1981. Good engineers and welders present some problem. Living quaters and modular construction business would continue to be good but fabrication capability should be developed. Complicated vessel building capability is rare in Singapore.</td>
</tr>
<tr>
<td>Company</td>
<td>Products</td>
<td>Comments Briefly</td>
</tr>
<tr>
<td>-------------------------</td>
<td>------------------------------</td>
<td>---------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>8. NAT Co. CE</td>
<td>Design Engineering</td>
<td>Heat Exchanger demand would be good as a lot of refineries coming up in the region and heat-conservation is a prime necessity. Good business in general expected from China and India – Jack-ups, rigs, heat-exchangers, tanks etc. Moving into Malaysia and Indonesia recommended.</td>
</tr>
<tr>
<td>- Designer</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. McDermott</td>
<td>Design Engineering and fabrication.</td>
<td>EPL products do not compete favourably with those produced by AE. In this business, oscillation and slump are always a possibility and Far East is a better bet than elsewhere at the moment.</td>
</tr>
<tr>
<td>10. Matthew Hall</td>
<td>Design Office</td>
<td>Local fabricators have inherent limitation – local expertise is limited. Marine related business hopefully would be good in the region – though 1982 is uncertain. Fabrication business does have good prospects. For rigs etc good design support essential.</td>
</tr>
<tr>
<td>11. B.P.</td>
<td>Refined Petroleum Products (in Singapore)</td>
<td>Storage tank (cone-roof, floating roof etc) business significant. It goes mostly to Japan – Chiyoda, Takada etc. Substantial investment in heat conservation and expansion possible.</td>
</tr>
<tr>
<td>- End User</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12. Shell, Singapore</td>
<td>Refined Petroleum</td>
<td>Demand for storage tanks, steel structure columns, PVs etc exists. Heat Exchanger should be in demand soon. EPL lacks coordination. Delivery delays and quality faults have been mentioned. Design and welding faults mainly responsible.</td>
</tr>
<tr>
<td>- End User</td>
<td></td>
<td></td>
</tr>
<tr>
<td>13. Shell, Brunei</td>
<td>Refined Petroleum Products</td>
<td>Most products e.g. tanks, PVs, structures are obtained from Japan, Holland etc. Some Singapore products not competitive with Japan. To obtain business from this company, quality, price and delivery schedules are important. Factory must be properly equipped. Marketing and follow-up extremely important.</td>
</tr>
</tbody>
</table>

.../3
<table>
<thead>
<tr>
<th>Company</th>
<th>Products</th>
<th>Comments Briefly</th>
</tr>
</thead>
<tbody>
<tr>
<td>14. Singapore Petroleum</td>
<td>Petroleum, Refining</td>
<td>Major expansion plans on hand - Singapore's exports are dominated by petroleum products. Refining companies in Singapore, Malaysia and Thailand are extending. Fabricated products should be in demand for 3 to 5 years at least. EPL should gear up to produce large vessels and heat exchanger. Quality should improve.</td>
</tr>
<tr>
<td>- End User</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15. Esso, Singapore</td>
<td>Petroleum, Refining</td>
<td>To be included in Esso's international supplier's list factories should be better equipped and management must be dependable. Consider AE better than EPL in several respects. Heat Exchanger, pipe/pump fabrication and vessels should enjoy good market for at least 3/4 years. Local fabricators should up-grade equipment and keep to delivery schedules. Exploration work in the region should add to demand.</td>
</tr>
<tr>
<td>- End User</td>
<td></td>
<td></td>
</tr>
<tr>
<td>16. Halliburton</td>
<td>Bulk tanks, contracted out</td>
<td>Jobs mostly go to AE, for their good quality work and delivery schedule maintenance. Oil rig activity in Far East is expected to continue. There are many undiscovered areas still to be explored. Oscillation in oil price is not helpful.</td>
</tr>
<tr>
<td>(U.S. owned-supply</td>
<td></td>
<td></td>
</tr>
<tr>
<td>tanks, pump etc to</td>
<td></td>
<td></td>
</tr>
<tr>
<td>oil rigs and explorers)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>17. Schlumberger</td>
<td>Oil Exploration Services</td>
<td>Off shore activity in China, India, Australia, Indonesia, Malaysia, Thailand should bring in business for Singapore companies. The company confirmed their increased oil related activities in the region.</td>
</tr>
<tr>
<td>- U.S. owned</td>
<td></td>
<td></td>
</tr>
<tr>
<td>French origin</td>
<td></td>
<td></td>
</tr>
<tr>
<td>18. PETRONAS</td>
<td>Refined oil Products and</td>
<td>Refineries being built in Malaysia and very large capital expenditure is envisaged. Good marketing should bring business for Singapore - it is already an important source of supply. Exploration for oil and gas is continuing in Malaysia. To take part actively in business, foreign fabricators should consider setting up shop in Malaysia. Prospects for business are good.</td>
</tr>
<tr>
<td>- State owned</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Malaysian Co. End User</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Company</td>
<td>Products</td>
<td>Comments Briefly</td>
</tr>
<tr>
<td>---------------------------------</td>
<td>---------------------------------</td>
<td>----------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>19. YEOW Mining Consultants</td>
<td>Tin Mining Consultancy - mainly</td>
<td>Demand for tin-mining piping (to carry slurry) and pump casing (annual demand $40/50 m) should remain steady. Government policy favours local set-up, though 800 + mines in Malaysia. Demand for mining dredges is there.</td>
</tr>
<tr>
<td>20. Union Oil, Thailand (U.S. owned)</td>
<td>Exploration work Gas liquefaction (in Thailand).</td>
<td>EPL is considered a good fabricator although the quality is better maintained by AE. PVs for gas should be in demand. EPL management, design and welding capability were not favourably commented on. Rolling capacity should improve. Singapore should aim to get large vessel market. Rigs should be good business. Business should be good for next 4/5 years - though 1982 may be uncertain.</td>
</tr>
<tr>
<td>21. Petroleum Authority of Thailand</td>
<td>Exploration, Refining.</td>
<td>Off-shore exploration work contracted out to TEXACO, Union and AMO. Plenty of gas is being found. Lot of pipeline work is going on. Advised contacting Brown &amp; Root for business. Business for fabrication should be good provided quality, price and marketing were good.</td>
</tr>
<tr>
<td>22. PERTAMINA INDONESIA - State owned</td>
<td>Oil Refining, distribution, exploration.</td>
<td>Business in Indonesia would be good for a long time (provided one considered setting up business in Indonesia).</td>
</tr>
</tbody>
</table>
Becoming Chicken
Join in Thomson

Engineering (Pie) Ltd has signed a cooperative agreement with Humphreys and Glasgow of Britain for engineering and technical support. Under this agreement, Engineers will have the services of technical personnel from Humphreys to assist the company's existing capabilities.

"Humphreys' extend training in international engineering and contracting firm for the oil and gas industries. A company, Engineering asset," says Singaporean sponsor.

Hotel Grand Central to bid for URA land

HOTEL Grand Central will be tendering for a small piece of land in the 11th Urban Redevelopment Authority land sale.

"Managing" director Tang Chwee Heng, says the company is interested in a commercial site, one of the nine parcels available in the 11th sale.

Tang also could not say when the company will tender for a hotel site. But his former firm, Oriental, looking into other business activities in order to achieve greater growth, chairman John Lee said.

It is already feeling the effects of the huge growth in tourist arrivals, making the hotel trade more competitive.

Hotel Grand Central has therefore stepped up its overseas marketing efforts. It is sending its promotion team to Switzerland to pick up new ideas from their French counterparts.

In the meanwhile, the company has awarded tenders for the setting up of a new brewery, new processing plants, additional tankage capacity, cooling capacity and utility plants.

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in Sime project

SIME Darby Bhd has chosen Sime Engineering (Pte) Ltd, one of the main operating arms of the Sime group, as its joint-venture partner in a multi-million dollar fabrication yard project in Johore.

This is the first time a Singapore company is involved in such a project in Malaysia.

The other two fabrication yards, one by Promet Bhd and the other by Straits Builders Sdn Bhd, are wholly owned Malaysian projects. The latter’s, however, is managed by an international group with experience and technical know-how in the fabrication business.

The possibility of a tie-up between Sime and Sime Engineering to set up a fabrication yard in Malaysia was first reported in the Business Times in September last year.

Under an agreement signed in Kuala Lumpur on Wednesday, a new company called Sime Engineering Sdn Bhd will be set up to undertake the project.

Sime will take a 70 per cent stake in the new company while Sime Engineering will hold 30 per cent, the maximum allowed under Malaysian investment laws.

Approved

Sime Engineering will have an authorised capital of M$50 million and an initial paid-up capital of M$5 million.

Sime said the project, which will be located on a 2.1-hectare site in Pasir Gudang, Johore, has been approved by the Malaysian Industrial Development Authority and the Ministry of Trade and Industry.

Sime Engineering is part of the Sime group of companies which offers one of the most comprehensive and integrated industrial facilities in South-east Asia.

Sime Engineering itself specialises in high-quality fabrication for the oil production, petrochemical, power and transportation industries.

Thus, Sime Engineering’s role in the project will not only involve capital investment but will also include the transfer of its expertise and technical support, including manpower training.

It will also second one of its senior personnel to act as general manager of the new company. The chairman and managing director will be nominated by Sime.

A Sime Engineering official said yesterday that this is the first time the company is exporting its expertise.

Negotiations

It is, in fact, holding advanced negotiations with several other parties outside Singapore to set up similar-type ventures in which it will not only contribute capital but also technical know-how.

The official added that such ventures fit in well with the company’s strategy of transferring a mature industry elsewhere in the region.

By doing so, it will allow the local industry to be upgraded to perform more high-value-added operations.
Appendix C

Extract from The Sunday Times, February 7, 1982

Growth in the Singapore rig building industry has peaked. With order books filled up to next year, local yards are quietly counting their dollars and mapping our survival strategies to tide over the coming slowdown.

For the second year running, the Singapore marine industry turned in a spectacular performance last year as buoyant market conditions hoisted total revenue to an all time high of $1.9 billion.

Industry revenue surged by a massive 36 per cent from the previous year as all three sectors of the industry — ship repairing, oil rig construction and shipbuilding — registered record turnovers.

The oil rig construction sector gave the most impressive performance, up 78 per cent to bring a turnover of $499 million. Its share of total industry turnover grew from 20 per cent to 26 per cent, although ship-repairing (with its share reduced from 52 to 46 per cent) remained the leading revenue-earner.

Local yards are riding the crest of the rigbuilding wave. According to Offshore Rig Data Services annual reconciliation of the offshore rig market, the offshore industry placed more orders for mobile drilling rigs in 1980 than in any previous year in history.

A total of 176 mobile rigs valued at US$2.7 billion were ordered from yards around the world.

Singapore won 33 orders, comprising 29 jack-ups, one semi-submersible and three tenders. This makes the Republic the second largest builder of jack-up rigs after the United States, with a 20 per cent share of the market.

Budgets

Japan and South Korea are quite far behind with a total order of some 30 jack-ups.

In fact, if yards do not have their natural limitations they could take on more jobs, said Mr. Tan Wah Thong, managing director of Baker Marine. "A temporary slowdown set in about two months ago. Companies have limited budgets; the availability of labour is strained; delivery time slots have been filled. Consequently, yards were not able to accept more orders," he explained.
Four of the island's five shipyards worked at full capacity throughout 1980. Of the 33 rig orders placed in the Republic, Marathon secured orders for 11 jack-ups. Far East Livingston is building six jack-ups, one semi-submersible and one drillship to be completed by 1983. Promet follows close on its heels with orders for six jack-ups and one semi-submersible to be completed in the first quarter of 1983. Bethlehem would have built four jack-ups and Robin two, by the middle of next year. The reasons behind the profit tide on which off-shore construction has been carried into the Eighties are mainly the rapid rise in oil prices and the desire of oil companies to widen their sources. The surge in the demand for oil rigs has led to a sharp rise in prices. Three hundred-foot deep jack-up rigs now cost about US$55 million for one of 300-foot compared with some US$25 million in 1976 and 1977. The more sophisticated semi-submersible rigs of the North Sea type cost about US$100 million each against US$60 million during the leaner mid-Seventies.

In their eagerness to forge ahead with their worldwide drilling programmes and not to be caught out by a shortage of rigs, oil companies were prepared to pay these escalating prices. Mr Ho Kwon-Ping, senior vice-president of the Wah Chang International Group of Companies, said: 'that since the beginning of last year, local yards had raised prices at least once in every three months, by 3 per cent to 9 per cent each time to absorb inflationary costs.

Local yards are aware that the present oil boom which has proved a great boon to Singapore won't go on for very long. "Every oil boom goes bust some time or other," said Mr O.E. Spell, assistant general manager of Bethlehem Singapore. Several factors bring about this situation. The belief of the oil industry that the most enticing areas of the world have been explored, that the best fields have been found, has forced oil companies to venture into more remote areas and into deeper waters.

Future

The amount of financing available through the scheme is about 80 per cent of the Singapore content or a maximum of US$20 million. Industry sources say that although the scheme enables a buyer to get preferential fixed-interest money to finance his purchase, its attraction is only "marginal" when compared with the credit extended in non-traditional rigbuilding countries like South Korea, Spain and Finland. Nevertheless, yards are confident of the future. "We can still build rigs competitively," said Mr Loh Wing Siew, managing director of Far-East Livingston Shipyard.

* A govt-aided rig/similar products financing scheme.
"Diversification is the key to survival," added Mr Loh. "We are more prepared this time, having learnt from the first slump (in the mid-Seventies). Singapore yards are highly flexible. At Far-East Livingston, for example, we can build anything so long as it is a structure."

Robin Shipyard describes itself as an "odd-job shop". In anticipation of the slackening demand for jack-ups, Robin is penetrating the production drilling rig market. Feasibility studies are being carried out to form a consortium with two other companies to design, engineer and install production platforms.

"Even when the boom subsides, the industry will not fizzle out," said Mr Tan. "New horizons will open for any yard with good designs. The coming downturn will affect only those which produce 'run-of-the-mill' rigs."

He feels that the day of "rig tailored for the environment" is not far off. In a way, a slowdown in activity will be a blessing in disguise for it will afford local yards the opportunity to acquire higher technology and study the manufacture of specialised rigs. An example of specialised rigs is a jack-up which does the work of a semi-submersible but which costs three-quarters the price.
1. Petroleum Refining & Related Products. From 1981 onwards PSC products will be added.
2. Electronic products. It is expected to grow through eighties.
SCHEDULE 2

Contracts department co-ordinate with the following sections and will see to the completion of the project.

**Purchasing Manager**
- Procurement of Material, bottles, dishheads, etc.

**Liaise with Engineering Dept.**
1) Design details, 2) Generation of fabricating drawing.

**Cost control & planning**
1) Work out service changes in detail 2) Tender for contractors 3) Production planning & control

**Liaise with site & Production Shop**
1) Site & production 2) Fabrication procedures.

There is generally some communication between different sections but not a great deal of feedback.

**Client Liaison**
1) Design procedures 2) Fabrication drawings 3) Fabrication procedures 4) Quality Control

**Quality control & inspection**
- Inspection by own Q.C. dept. & third party inspectors such as ABS, Lloyd, N.V. BV, BEI. Hydraulic test, stress relief etc.

**Operation & Services**
- Sandblasting, cleaning and painting

**Delivery**
SCHEDULE 3

Learning Curve on Pressure Vessel Fabrication

MANHOURS PER TONNE OF VESSEL

SIZE OF VESSEL

a > b > c

YR 1

YR 2

YR 3

YR 4

2.5

20 Tonne
CHAPTER 6

SECOND CASE STUDY

HARRICK/ASME JOINT

EFFORT FOR EXPANSION

THROUGH DIVERSIFICATION
CONTENTS

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Introduction

In a recent article in Long Range Planning (Ingolf Bamberger - Portfolio Analysis for the Small Firm, December 1982 issue) the writer (who drew his data from a sample of 25 small/medium sized firms in the Western France) concluded, amongst others, the following:

a) "The interviewed managers showed a substantial lack of strategically relevant information."

b) On the question of what type of information would they need for strategic decision-making, the interviewed managers indicated the following:

"A better knowledge of markets"

"A better knowledge of strengths and weaknesses in comparison to competitors"

"A better knowledge of actual strategic position"

"A better knowledge of new products and/or new markets which could interest them"

"Better cost information"

"A global view of the potential of development of the firm."

This researcher quotes this article mainly because the findings conform to the views held by this researcher, and reasonably demonstrated in the first case study, that there is often a considerable gap between what the managers thought of the market and what the market actually is. This intelligence can only be obtained by actually examining the market. The market in this context would include not only the end-users but also the competitors and other relevant people, for instance, in the engineering industry, the established design engineers, government sources etc.
While discussing the matter with a military strategist (met in an informal party in early April '83 in Singapore) it was revealed that the military strategies of South East Asian countries have recently undergone sea-change based on intelligence - only part of which is public knowledge - the rest of it being obtained through organised intelligence from many sources. He wondered how is it possible for companies to do otherwise really because in his view, venturing into a new products, markets or any other project is anything but gambling. South East Asian nations' military strategy formerly, he explained, was based on containing the internal communist subversion and they were not too unduly worried about Vietnam due to their pre-occupation with Cambodia, Laos and China. However, this all changed when new and reliable information seeped in about the new arrival of soviet advisers and military equipment in Vietnam.

From a corporate viewpoint, the ever-changing business scenario will mean consideration of alternatives, prediction of consequences and strategic decision-making.

Ben-Heirs in his recent book (The Mind of The Organisation, Harper & Row, 1982) has emphasised 'thinking' as the essential managerial element for better decision-making. He postulated the following:

**Question** - forming the questions to be answered (refer to chapter 4 model - the perception of a problem)
Alternatives - Gathering information to identify and create alternatives to the question (chapter 4 model also refers to such questions as "as we in the right business"? Or "how to succeed in the competition"? Or "planning as unstructured and irregular." Or "a systematic scouring of the market and the competition").

Consequences - Predicting the consequences of acting on each alternative answer (our model refers to broad scenarios and their consequences).

Judgement/Decision - Selecting what appears to be the best overall line of action given the limits of circumstances. (the pro-active adaptive approach).

In this case study the strategic search for growth and survival of 2 companies together will be examined. It is stated both in chap 3 and 4 of this research that strategic problems and issues are unstructured and delimited. Therefore, in applying the model described in chap 4, each situation has to be taken as it is and examined on its own merits. It was also mentioned in chap 4, in introducing the model, that 'strategy development is shrouded in ambiguity' and that strategy building 'is essentially a question of perception - of moving from one of less satisfactory position to another of possible greater satisfaction'. It was emphasised that all steps are not necessarily successive, nor will they apply with equal emphasis in each use. All these points should be borne in mind in reading through this case.
In the step 1 of this case analysis the Chief Executive of one of the companies (Mr Wong of Harrick - more of his background will be given soon) is seen to be the motivator in perceiving a growth and survival problem and has identified another company with whom he could synergistically match to venture into a new area. He has seen possible growth in a certain area from his past knowledge of the marketplace, but is unsure of what the real position is. It is at this stage this researcher came to be involved in this case through his personal acquaintances with Mr Wong and the case materials were procured over a period of 4 months.

In the second step, the search for identification and internal conflict were of lesser consequence because both the chief executives and their managers realised that the traditional products offered less scope for growth. Coupled with the question of 'are we in right business' the overwhelming issue was what else can we do.

In steps 3 and 4, which here also, are of an inter-mingled character, the main focus is on the market place and the qualitative information and intelligence gleaned therefrom. The issue is to identify how the advantages owned by these two companies can be matched with the possible opportunities offered by the market. The important difference in this case (as compared with the first case) is that the limit of search was somewhat bounded, by the thoughts of these 2 chief executives. But as in the first case, we have to face a situation as given.

In step 5, in the iterative feedback loop, the information gained from the market place will be matched with the companies' own strengths and weaknesses. The case analysis and synthesis will be attempted in
step 7 - which would lead to broad scenarios in step 8. Various other remarks made in the introduction to the first case will also apply in general terms. The 2 companies together employ about 400 people and their combined annual sales value is about $40M.

HARRICK/ASME* - Their Products and Chief Executives' Awareness of Growth and Survival Problems (Step 1 and 2).

Harrick was incorporated in Singapore about 2 years ago (in 1981) but that does not adequately describe its position. Mr Wong, the ultimate owner of this organisation, has a proven track record of success in metal fabrication industry in Singapore and in the region. He built up another engineering company with an annual sales value of around $25m. He is well known among the international fabricators in this region (e.g. Japan Gas, McDermott, Chiyoda etc) and among consumers of fabricated products (e.g. Shell, Mobil, Boving, Petronas etc). In 1980, he decided to sell up his first successful company to another group and then established his new organisation, Harrick Engineering, which he felt was better located and organised. Apart from engaging in traditional fabricated products e.g. P.V.'s, heat exchangers, vessels and storage tanks etc, due to market conditions in general, need for diversification was felt. This gives an outline for Harrick's interest in a proposed joint venture with ASME. Harrick, however, does not have a sea-frontage.

ASME fills up an important lacuna in this joint project-it has an at-the-moment under-used but suitable sea-frontage with yard facilities for the construction of barges, tug-boats etc. ASME was incorporated about 5 years ago and one Mr.W.Wan was its Chief Executive. The Company mainly

*Name in disguise
built and supplied barges and tug-boats but on the whole the venture was not a very profitable one. The present non-resident owners of this rather not-so-active organisation have indicated that on suitable terms they would be happy to team up with Harrick. ASME's chief executive in Singapore, Mr. John Mclellan, is a known person in the marine industry circle in Singapore (with long experience in chartering and boat operating) and Mr. Mclellan has expressed a positive interest in participating in the proposed joint venture.

In 2 meetings between these two CEs and this researcher the general thoughts centred around how effectively to combine the design, knowhow technical and equipment capabilities of Harrick with some advantages and market conditions offered by ASME. Mr. Wong appeared to be the main motive force. The synopsis of these discussions is given below:

Viewing the shipbuilding industry rather generally, despite significant automation, it has remained a labour intensive industry—hence an area in which enterprising developing nations (where labour cost is still low, such as S. Korea) will continue to do well. There is also worldwide massive over-capacity in this industry. Though Singapore's marine industry has an impressive record (Total 1981 (Est) sales about $2.5 billion, of which shipbuilding accounted for about one third—source—Statistics Dept) and though Singapore has built some large ships in the past, Singapore is not able to compete in the subsidised international ship-building market— but only in relatively small market sectors e.g. supply vessels etc. This is because, amongst other reasons, of Singapore's location in S.E. Asia where a lot of oil activity is going on and such activities are estimated to increase with the increased oil consumption in
future (as a result of decreased prices). This will be further strengthened by demands from South China Sea and from ONGC, India (who are said to be in the process of requiring these vessels).

Supply vessels (of about 180ft length – which this project should aim at) are usually required to service the rigs/jack-up on a continuing basis and are dominated by U.S. designs. Though Japan and Korea can be a source of competition, mobilisation costs can be high. Besides Japanese currency is appreciating. All these are advantages in Singapore's favour. Compared with the U.S. design and specification, cost advantage will be significant. There is a suspicion that Halter Marine Inc. – a very well known builder of these boats, is thinking of moving to Singapore for the said advantages. But if we are ahead in market with suitable technical back-up, we will be in a more advantageous position to compete.

Though at the moment there is a partial over-supply of these boats causing day-rate to drop, this situation is not likely to endure for a long time. For one thing, a number of these boats are too aged, 8-10 years old, which will need replacement soon. For another, the local governments, such as Malaysia and Indonesia, are encouraging local ownerships entirely by providing cheap financing (Malaysia provide 90% financing, for instance) and this is expected to create new form of market both for boat operation and boat building.

The question of building modules and platforms for oil industry was discussed but both the CEs felt the facilities and the availability of resources were inadequate. On the question of discussing the market with other management members it was felt that it would be premature to do so now as it might contribute to misunderstanding and even a feeling of
insecurity. This, it was thought would be done when our search for information made some progress and when it was thought it would be appropriate to commence the iterative process.

However, in separate and rather informal meetings with the marketing manager of Harrick and the Chief Engineer of ASME it was determined that they felt that their main markets (which were in Malaysia and Indonesia) were shrinking mainly due to national aspirations of those countries who wanted to build their own industry. Singapore's success would lie in moving up the technology ladder.

The Opinion of the Marketplace and The Exploration of Opportunities and Vulnerabilities, Strengths and Weaknesses (Steps 3 & 4)

In order to test the thought expressed in the earlier section inquiries were made into the positions of some of the well known companies who are operating supply boats or utility boats in S.E. Asia and could eventually be our customers. Eleven companies were interviewed. Some of these finding are given below:

a) Offlog (name in disguise)

This company operates a fleet of approx. 60 supply boats with more than half of them working in S.E.A. They have the oldest average fleet age with none of their vessels less than 8 years old. Consequently they have been barred from bidding on Union Oil contracts and are being frozen out of several more markets. According to the manager (area) for S.E.A., they must now upgrade their
fleet and are in such a hurry that they might buy some existing tonnage which is 2 or 3 years old. He commented that Singapore is the logical place for them to place orders for new buildings as this is the area where they will be putting most of their efforts in the future.

There are no yards in Singapore in which they have full confidence although he felt that some of them can do an adequate job of building. He will prefer to build in a yard which has facilities to also repair. This is important. It is felt that Offlog is a candidate for a multi-boat multi-year order or at least an order with option for them to take up further boats. If we are reasonably well along in our yard organisation, then we can get support from them. But we must be ready to show that we are serious and have firm plans to run a yard along truly professional lines.

b) **American General Marine**

AGM had 2 older supply boats in the area but one just left on a charter to Alaska. The company itself has no immediate plans to build but the GM, had plans eventually to build 1 tugboat (anchor handling) and 1 or 2 300 ft. barges for work in the Beaufort Sea. The import duty is low on vessels built in Commonwealth areas. They were generally enthusiastic about our proposal, but felt Singapore needed a modern yard with mass production facility.
c) **P.T. Pertamina Tongkang (Indonesia State Oil Co.)**

On speaking with one of the senior managers of this organisation their extensive future requirements were confirmed but they asked us to appoint an Indon agent to receive their tender documents. It would be impossible to penetrate this lucrative market without an Indonesian agent to act on behalf of the proposed venture. The same would be true in M'sia in one form or another.

d) **Seahorse Inc.**

One of the largest U.S. Supply boat companies working worldwide out of their base at Morgan City, La. They have never had any vessels working in S.E.A. and were represented here by an agent who watched the market for them and sent them reports. They have now probably decided to move into the area after signing an agreement with Wah Chang to provide supply boats into China market. They will eventually build in Singapore and it is expected that they will be placing orders soon after a suitable yard sets up. Walter Marine also plans to attract their business. They have to build 10 new boats for the China Joint Venture (JV) and are looking at Japan yards now. A good yard in Singapore could compete favourably. They indicated their surprise as to why Singapore lagged behind in modern boat-building technology. See also Appendix I.
e) **Stirling Shipping**

Stirling Shipping is a subsidiary of Harrison's Clyde. They own and operate around 16 supply boats in the North Sea. One of their senior managers will be coming to S'pore soon to discuss the matters of setting up some JV's in Indonesia and Malaysia to operate supply boats. They explained that was the only way to operate their boats in these markets.

f) **P.T. Acquaria**

Tri patra Group, Indonesia

**P.T. Paranada Esa**

P.T. Acquaria is a large, well managed marine logistics company. They own a large mixed fleet of tugs and barges mostly, and operate other vessels for foreign owners. They have been moving into specialized vessels such as well testing barges and are now considering going into supply boats. They have ordered one vessel from Santan and considering buying a few more.

P.T. Acquaria recently teamed up with P.T. Paranada Esa which is a Joint Venture between Tri-Prata and a U.S. company - Pacific Architects & Engineers. Acquaria provides the marine equipment.

It should be possible to approach this group on the basis of assisting them in obtaining a JV partner for a supply boat operation as well building vessels such as the well test barge for their normal operation. The combination of PA&E, Tri Patra and Acquaria will make them a strong contender in Indonesia and they may prove to be a significant consumer of our products.
g) P.T. Satmarindo, Indonesia

A senior officer was spoken to over the phone at the end Mar.'83 and it was gathered that he ordered some boats from Korea in Dec.'82. He is also taking delivery of a supply boat from Maroil of Singapore end April, 1983. These units are on specifications and he is counting on Substantial Indonesian business.

Satmarindo has the full range of Pertamina licenses for offshore oil work and is a prime candidate for joint efforts in helping them to develop into an aggressive supply boat operation. They are just planning to hire expats as master & possibly Cheng to get them credibility as an operator. It can be suggested that they consider a management agreement with a well known operator at least for 1 or 2 years who cannot only see to it that their company is trained properly as operators but who can also assist in bidding and negotiating contracts.

It is possible to build a number of vessels of their requirements.

h) Petromar Inc

There is a good possibility for some JV to represent this company in S.E.A. and they have been even expressed interest to line up some JV's for them in Indonesia & Malaysia. They may require a number of boats which these joint projects may require.
i) **Arya Shipping, Bombay, India**

Arya Shipping has an allocation from the Indian Govt. to provide 4 supply boats to ONGC. We were referred to them through their financial partner, an Abu Dhabi friend of an industry expert with whom we have connection. The government is apparently encouraging indigenous ownership of supply boats to service the rigs and Jack-ups in the Indian Ocean (Bombay High, for the moment) and it is felt that the business will grow. A Singapore yard, Maroil, has already obtained some orders from Arya Shipping. Tentative plans of ONGC are to issue licences for 100 supply boats. Robin Shipyards of Singapore has good contract with them, but there is room for others. See Appendix 3.

j) **Malaysian Situation**

Some companies have license from Malaysia Govt. for supply boat operation. All boats will be acquired by way of cheap financing, to the extent of 90%, from the government. Some are keen on joint venture to build supply boats and still others may want to build fabricated materials in available yards. They lack expertise but some have surplus cash from their trading operations otherwise. It was felt that Malaysia may offer much business prospects for both boat-owning and boat-building.

All these information were gathered together for discussion with the two CEs in which the Marketing and the Technical Manager of Harrick, the Chief Engineer and the Admin and Financial officer of ASME, as well as this
researcher, participated. Both the marketing manager of Harrick and the Chief Engineer of ASME felt that the rig-builders of Singapore were low on jobs now and that it would be difficult to meet competition from them. But this researcher felt, and Mr Wong supported his view, that they were not adequately geared to supply/utility boat-building, their organisational costs were high and they would not be effectively our competitors. The large ship/rig builders were committed to large-scale operations with substantial management and other overhead costs as well as costs for owning and operating a large land area. Records indicate that in past downswings they tried to diversify, rather unsuccessfully, into smaller areas of activity. They seem to operate at a different level and with high capital commitment. It was also felt that within this market there were sectors - large state-owned demand sources such as India or China and small/medium sized local ownership such as in Indonesia or Malaysia - and that our advantages lay in this latter sub-sector. Both China and India seem to require large financing arrangement beyond the capability of these two companies. The conclusion from this part of survey - which took nearly 2 months - were the following:

a) There is sizable potential market for supply boat building and operation in the region, though in the short term there may be competition from different sources. See interviews with Offlog, Seahorse and Tri Pata Group, for instance.

b) Cooperation and joint ventures with indigenous organisations is a necessity to overcome the local resistance. Local aspirations must be respected, even if commercially undesirable. See interviews with Partimina and the description of the Malaysian situation, for instance.
c) International operators will soon appear in the scene. That is a good sign but we should be ahead in the market and be able to exploit our connections. Success must be through competition. See data on Offlog and Seahorse, for instance.

d) Proper yard facilities are necessary pre-requisites for business expansion. It must be geared to small-boat building specially, perhaps with yard facilities for repair. See remarks by Offlog and American General Marine.

e) New boats must attend to new boat design requirements e.g. firefighting, mud tanks etc.

f) The proposed joint venture should also look-out for joint ownership for boat operation. A boat has a life of about 10-12 years and its costs are usually recovered in 4/5 years. See remarks by Satmarindo and Petromar, for instance.

But while these advantages were there, both the CE's this researcher and ASME's Financial Officer felt that this information was not enough. We needed to know, more objectively, what was the profile of competition. Further information gathering into this area was thus felt necessary. It is already seen that despite current lull in the shipbuilding market there are segments which are fairly active - one such being the supply boat operation and building possibilities in South East Asia. Present operators also feel that the builders in Singapore, though equipped to build rigs with foreign design, are not so well equipped to build supply boats on a
large scale. With this in mind, some inquiries into five* existing yard facilities in Singapore were made and the following picture emerges (in Malaysia and Indonesia the facilities are practically non-existent).

a) **G Engineering** (name in disguise)

G Engineering is a member of the Keppel group. It builds the largest and most sophisticated boats in Singapore. Recently it delivered or is delivering, 2 boats, Ulstein design, 8000 BHP Anchor Handling Supply Tug (AHST) to Feronia Int. Shipping (FISH), a French supply boat company. Two other AHST were built for Seaforth Shipping. These are 12,250 BHP and were also Ulstein design.

On speaking with both FISH people and Ulstein it was found that both were disappointed with workmanship and attitude of the yard. Ulstein felt that being a part of the Keppel group made it less responsive to the needs of the customer. Neither of them was satisfied with the finishing work and the general level of engineering was below expectations.

G Engineering is the main yard in Singapore which bids on almost all international tenders for North Sea type boats and is probably the only yard which has experience to justify bidding. But it is part of a

* These five companies basically engage in supply boat type industry. There are several other rig builders e.g. Keppel, Robin, Promet who could and possibly would complete in the short term, but their specialisation and orientation are not in this industry.
large state-owned ship-repairing organisation and harrenstrung by
bureaucraies. Its overhead is very high and is probably unable to
compete effectively in the small-sized supply boat industry

b) S.O. Shipbuilding (name in disguise)

S.O.S. started in Sungei Pandan on a 2.5 acre site in 1979 and has
moved to a much larger site in Tuas in 1981.
They have another company which owns and operates boats and the first
boat that they built was placed on a long term charter with Union Oil
of Indonesia. Their strategy is to build and also, look for a charter
and at the same time keep alert for buyers. They now have 6 boats in
various stages of construction and are in severe financial stress.
They recently sold 2 boats to a Kuwaiti who needed delivery in April so
that the boats could go to Hong Kong and tow a jackup from Eurosia
Shipyard to Kuwait. There are rumours that S.O.S. is in discussions
with Chuan Hup and Red Sea & Gulf regarding a JV or merger resulting
from financial distress. S.O.S. builds a standard Conan Wu 56m supply
boat in the 2250 - 4800 BHP range. These boats were suitable in the
past but now more and more companies are requiring more sophisticated
boats with firefighting capabilities (FFI) and liquid mud tanks etc.
S.O.S is known primarily as a boat owning/operating company and
building is considered to be an adjunct to their overall operation.
The market realizes that S.O.S. is a competitor of the boat operators and this will always be in the minds of the major operating companies in the area, before they offer to buy from them. On the whole, S.O.S. appear to be less than ideally organised and are burdened with financial losses of the past.

c) **S Engineering Pte Ltd** (name in disguise)

S. Engineering presently has 3 units of 58m supply boat/cement carrier in the water being outfitted and 5 more under construction. A little time ago they signed a contract with Gray Mackenzie to build 2 more vessels for work in Australia. They just sold 2 of their spec boats to GrayMac also.

S. Engineering started building boats 3 or 4 years ago for their own use. The first 2 are on charter to Halliburton. It is only in the last year that they went into building in some volume. Their strategy is to start building and then look for charters while at the same time keeping alert for buyers in case suitable charters are not available. S. Eng is basically a marketing oriented company. The company is known as one which holds onto its customers by maintaining very close contact and treating their needs very effectively. They are building now for Dowell, P.T. Acquaria, and GrayMac, in addition to the spec boats.

The quality of their boats is good and the organization as a whole is very good. But they lack mass production facilities. They have another customer of long standing from Dubai who deals only with E.Eng in Singapore. They are reported to be in town now negotiating some new business with them. S.Eng will be an effective competitor.
d) Maroil

Maroil started its yard in Tuas in 1980 and in Oct. 1981 they expanded from their 8 acre site by leasing another 20 acre site in Northern Tuas. The company has experience in boat building which they received while working as a subcontractor for Promet for several years. Their main selling point is their experience and engineering background.

They have not been very successful in keeping work in the yard in the past but lately they received an order for 4 or 5 AHST for Arya Shipping of India which has license from ONGC. This will keep them busy for over a year and was a needed shot in the arm.

They have a tie in with a U.S. builder of aluminium boats, Swiftships, to build their aluminium boats under license. So far this license has not resulted in any contracts for aluminium boats. Swiftships recently bought a supply boat building yard in Houston and it is this company that has been reported to have obtained the contract to build the ONGC boats.

Maroil has a problem in their 20 acre site. They do not have enough work to use both yards and they cannot spin off one and keep the other as both are leased to Maroil. Both leases are at the previous JTC* rate (before Nov. 1, 1981) AND SO ARE QUITE A BIT CHEAPER than the current JTC rates.

*Jurong Town Corporation of Singapore offers cheap land rental for industrial use only.
Maroil is probably the most professionally run yard from a technical point of view and they will become a strong competitor. Their ideas for running a yard are in line with the market requirements and in any upturn they will be in the forefront. Besides the ONGC contract, Maroil also is building a supply/utility/seismic boat for Jackson Marine and 1 or 2 other smaller utility boats for other clients.

Maroil on the whole is cost-heavy and is in some financial problem. They still build by using rather old techniques though they have a high level of knowhow otherwise.

e) Halter Marine Inc./Bethlehem Joint Venture

Halter Marine is the largest builders of Supply boats in the world with 10 yards operating within 200 miles of New Orleans, Louisiana. They have identified S.E.A. as the area of greatest growth potential and have almost finalized a joint venture agreement with Bethlehem to set up a supply boat building co. on a part of the Beth yard. According to their man in Singapore, they plan to start cutting steel sometime next year.

There are several yards in the U.S. Gulf area which are just as good as Halter but none so large and dynamic. They are very aggressive in their marketing and use the latest in production equipment and procedures.
Halter would not be coming to Singapore unless they knew there was a market here. They will be good competition in that they will put Singapore on the map as a place to build supply boats and will advertise their presence heavily. On the other hand, another yard which is organized along the same lines as Halter, with the same production methods and machinery will easily compete for the business. Halter will have to maintain a price level which will be well above that now prevalent in this area and they will justify this price by stressing quality, consistency, engineering and their reputation. Their overhead will be high as Bethlehem runs a very expensive yard. At this time Beth is low in other business and so far as one can see, unless they can get some other substantial contracts the entire overhead load will fall onto the boat building JV. Besides this, Halter will not be able to undercut their U.S. yards or they will find no orders for their main operation. Their U.S. yards are already facing financial problems.

All in all Halter's presence will be good and it is felt that it is important to be set up and running before they announce publicly that they are starting up here. See also Appendix 7.

**Conclusion And The Strategic Overview**

In brief, the conclusion from this survey of the competition and the market can be stated as follows: (See Appendices 2 to 5 also).

a) There is confirmation that there is an emerging and possibly growing market for supply boats in this whole region ranging from India through S E Asia to China and that international builders are likely to appear
in the scene. There are sub-sectors within this market, each with its own characteristics. Interviews with Offlog, American General Marine, Partamina of Indonesia and discussions on Malaysian situation and India should indicate this.

b) There are some local builders who have varying capabilities, some beset with cost and organisation disadvantages. This competition is possible to meet and practically restricted to Singapore only in S E Asia. Large shipbuilders will only offer ineffective competition because of their size. Boat-building must be coupled with specialised repair facilities. See discussions with Offlog, AGM, etc and comments on Maroil, Bethlehem, G.Engineering etc.

c) There is room for a well organised builder of supply boats who will have contacts (as the proponents of this project seem to have), and will be able to obtain appropriate U.S. or other foreign design and technical help and will also be able to compete with Halter Marine by organising yard facilities and keeping costs rigidly under control. See comments on the proposed set-up by Halter Marine Inc in particular.

These conclusions were generally agreed on by Mr. Wong of Harrick, Mr Mclellan of ASME and this researcher. It was then considered necessary to determine how the internal strengths and weaknesses of these companies can be meshed together to mutual advantage towards the proposed project.
Marching of Strengths and Weaknesses to Opportunities Offered by the Marketplace. Iterative Process (Steps 5 & 6).

It was seen in the earlier chapter that the concept of iterative process is a continuum and is not restricted to any one stage alone. However, they begin to crystallise at this stage more than earlier, and whilst feedback went one almost continuously as the interviews proceeded— they were in an informal manner. Generally speaking, this diversification exercise and related investigation and the information that emerged were kept at the level of the chief executives and this researcher only, though from time to time other managers of both companies, the engineering and finance managers principally, were drawn in.

Mr Wong generally summarised the position of Harrick by saying that while his company has acquired substantial knowhow in metal fabrication and process engineering and indeed enjoys a leading position in this field in S.E. Asia, he has somewhat miscalculated by over-investing in plant and machinery in a shrinking market (caused mainly by the current recession and the restrictions on imports imposed by Malaysia and Indonesia and partly India). Hence his need for diversification which will on the one hand generate substantial metal fabrication activity for Harrick and will one the other provide him with an adequate and promising avenue for resource diversification.

For ASME, their main weakness seemed being unable to compete with small-time operators (in Singapore and Malaysia) effectively. They were small organisations and therefore enjoyed cost advantages with lower burden for overhead. Their marketing and quality control (some of them have acquired long experience in tug/work boat building) seemed to be on par
with ASME, at least. But ASME is more organised, enjoys a better overall reputation in the marketplace and apparently ready to respond more effectively to the changing market situation. ASME also seemed to have a better overseas technical link-up since it is an associate company of a company quoted in the U.K.

Beyond this analysis, further analysis of internal weaknesses was not considered necessary by the chief executives. It seemed that with the possible launching of the supply boat project, Harrick's spare machine capacity (bending machines, presses, welding facilities) will be effectively filled and ASME's spare sea-frontage will also be utilised. ASME's also had just about enough space to prepare a slipway for servicing the repair needs of supply boats in a cost effective manner. At present, these repairs are carried out by yards who are believed to be more costly.

One main concern expressed by almost all but in particular by the financial officers was the ability to obtain a good estimate of the cost of building a supply boat (of the stated type). For this a proper naval architect was contacted and reasonably dependable data were obtained. Other discussions naturally centred on how to make the proposed project technically, financially and synergistically rewarding. Main features of these discussions are given below:

**Technical Support**

The proposed joint venture will be set up along the lines adopted by the U.S. boat builders who have successfully used mass production technique - and coupled - to some extent with shortened delivery dates.
One essential feature would be the introduction of the numerically controlled shape cutting machine. This machine would use gas/plasma 1 cutting features - with abilities to cut steel up to 185 inches per minute instead of 35 inches with the use of Oxygen/Acetylene - a normal Singapore phenomenon. Steel will be cut in a carefully prepared water-bed which will eliminate gas and noise pollution and at the same time will reduce plate distortion.

Furthermore, by use of an appropriate system of computer software back-up, it would be possible to achieve higher degree accuracy in multiple cutting, reduce manpower needs (Singapore is always short of trained and good welders) and will improve overall fit-up quality in sub-assemblies and assemblies. An appropriate system of computer-aided-design (CAD) and computer-aided-manufacturing (CAM) will be identified.

An overall cost estimate for the stated feature is about $1.2M but, initially, a large part of steel cutting can be done by using the software and hardware back-up of Harrick Engineering and until a volume order is obtained investment in an NC Machine and Water Bed can be deferred. One can possibly make a small beginning to start with.

Eventually, the project would include:

a) Separate assembly and erection areas

b) Wide application of advanced faster welding techniques

c) Training of own labour force to ensure quality maintenance.

d) Export of pre-cut steel for site-assembly to other developing countries in the region and elsewhere.

To begin with, all steel cutting and welding will be done by Harrick and assembly and finishing will be at ASME site.
Financial Forecast

Some Financial Features

Since this is a proposed joint venture the relevant financial statistics should relate to a possible future scenario. It is assumed that the joint venture into the project is possible with at least an order for 2 supply boats (of a length of about 180 feet) with a clear possibility for building another 2 in the first 12 - 18 months. This is felt to be a realistic enough proposition, since Harrick already owns a current baseload of work and ASME is less than fully active and undecided about what next to do. Harrick can sell cut steel sections to the proposed JV and ASME yard facilities will be used for assembly purposes, using current available engineering facilities of Harrick and other design and manufacturing knowhow from elsewhere (initially from the U.S.) Currently market price for the 180 feet vessel is about S$6 M. It is also assumed that 4 boats will be delivered in the first 18 months and this will be followed by 6 boats assembly for the next 2 years. Once the JV is well established in the market place, and considering the expanding economic scene of this region, the project is expected to expand in future. Inflation will be moderate in the medium term and in our calculations is taken at 5%.
Cost Estimate

An important question to consider at this stage as earlier mentioned was to obtain an estimate for building a supply boat of the proposed type. The enquiries revealed the following picture: (See also appendix for a brief specification).

Steel, Deck and Hull
Outfits materials, pipe
Rack, Mast, Doors + Ladder etc. 465,000

Other Machinery + Equipment e.g.
2 1250 BHP main engines, shafting
propellers, rudders, thruster, generators,
pumps, fire monitors + pump, mud pump,
valve compressor steering gear etc. 2,500,000

Piping and Fitting 100,000
Accomodation Outfit & Installation 175,000
Electrical & Installation 95,000
CO2 System in engine room 45,000
Fire Detection & alarm 40,000
Painting & Cathodic Protection 130,000
Wooden Deck sheathing 70,000
Air-Con. cold rooms etc 150,000
Communication & Navigation equipment 65,000

Possible sub-contract labour for piping,
electrical, Hull and Deckhouse outfits and others. 700,000

Sales Value per boat less
Sales Commission @ 2½% 5,850,000
Estimated Contribution per boat 1,315,000
Less contingency 65,000
Net Contribution per boat 1,250,000
It was difficult to obtain a more accurate technically detailed cost estimate. It was difficult to assess how cost savings will arise when it is possible to acquire an NC machine other than to say that there will be significant cost savings in terms of faster operation, reduced wastage and improved inter-change ability of parts.

Profit Forecast

<table>
<thead>
<tr>
<th></th>
<th>1st 18</th>
<th>2nd</th>
<th>3rd</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>months</td>
<td>year</td>
<td>year</td>
</tr>
<tr>
<td>Net contribution from boat building</td>
<td>5,000,000</td>
<td>7,875,000</td>
<td>8,270,000</td>
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</table>

Other Costs

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<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td>Design &amp; classification fees</td>
<td>500,000</td>
<td>600,000</td>
</tr>
<tr>
<td>Utilities</td>
<td>400,000</td>
<td>450,000</td>
</tr>
<tr>
<td>Crane operation &amp; Hire</td>
<td>220,000</td>
<td>260,000</td>
</tr>
<tr>
<td>Land Rent (Possible ASME charge)</td>
<td>100,000</td>
<td>150,000</td>
</tr>
<tr>
<td>Vessel launching</td>
<td>50,000</td>
<td>80,000</td>
</tr>
<tr>
<td>Management &amp; Supervision</td>
<td>1,000,000</td>
<td>1,400,000</td>
</tr>
<tr>
<td>Depreciation</td>
<td>130,000</td>
<td>150,000</td>
</tr>
<tr>
<td>Provision for Contingency</td>
<td>750,000</td>
<td>950,000</td>
</tr>
<tr>
<td></td>
<td>3,150,000</td>
<td>4,040,000</td>
</tr>
<tr>
<td>Forecast pre-tax profit</td>
<td>1,850,000</td>
<td>3,835,000</td>
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</table>

It is thus assumed that on a 6-boat building stage, an annual pretax profit of approx. $3.5M after adequate contingency provision is a good possibility. It was also assumed in this estimate a 6-member top management - 1 M.D., 2 Technical Managers, 1 Shipyard Manager, 1 Project Manager and one Financial Controller plus adequate supervisory staff.
Capital Investment and Return on Investment

<table>
<thead>
<tr>
<th></th>
<th>1st 18</th>
<th>2nd</th>
<th>3rd</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>months/year</td>
<td>$</td>
<td>$</td>
<td>$</td>
<td>$</td>
</tr>
<tr>
<td>1. NC Cutting machine</td>
<td>750,000</td>
<td>-</td>
<td>-</td>
<td>750,000</td>
</tr>
<tr>
<td>2. Welding machine</td>
<td>250,000</td>
<td>50,000</td>
<td>50,000</td>
<td>350,000</td>
</tr>
<tr>
<td>3. Boring Tools</td>
<td>150,000</td>
<td>150,000</td>
<td>150,000</td>
<td>450,000</td>
</tr>
<tr>
<td>4. Shed Preparation</td>
<td>750,000</td>
<td>250,000</td>
<td>250,000</td>
<td>1,250,000</td>
</tr>
<tr>
<td>5. Miscellaneous</td>
<td>100,000</td>
<td>100,000</td>
<td>100,000</td>
<td>300,000</td>
</tr>
<tr>
<td></td>
<td>2,000,000</td>
<td>550,000</td>
<td>550,000</td>
<td>3,100,000</td>
</tr>
<tr>
<td>6. Working capital</td>
<td>1,500,000</td>
<td>2,000,000</td>
<td>2,500,000</td>
<td>2,500,000</td>
</tr>
</tbody>
</table>

Assuming an after tax profit of about $2.1M ($3.5M less 40%) this gives an annual return of approx. 40% of the initial investment. This was considered well above the industry average. When the production has reached a 5 boat plus stage through, facilities will have to be shifted from Harrick and new permanent yard facilities may require to be created at ASME site or else-where, which may require a capital sum of $6/7M. At this stage of course, output may well exceed 5/6 boats annually. Though further information seemed desirable, they were not available at this stage of corporate investigation. It was felt that if necessary this will be investigated further.

Owing to general nature of progress payment, working capital requirement is not greatly significant.
On the whole the project seemed a feasible proposition on the basis of best of information available and both the CE's accepted this viewpoint. However, there were some other issues and questions to be dealt with this together with an analysis of the overall situation and this will be presented in the next section.

Analysis and Synthesis (Step 7)

At a meeting with this researcher the CE of Harrick (Mr Wong) admitted that he was probably not right to go into a business again substantially in the same line as his previous business. This probably indicates why Harrick wanted a substantial diversification which would also provide Harrick with substantial orders for steel cutting and welding.

One of Mr Wong's senior engineers raised the point as to why the focus was on the boat building. One answer, Mr McLellan suggested, was that the proposition was mutually synergistic. The other was that these boats are required at the exploration, exploitation and production phases of oil and oil will continue to be produced in this region. They were required for all sorts of transportation needs of oil rigs, Jack-ups etc. In addition they were also required for such activities as fire-fighting, oil-spill recovery, rescue of divers and other rescue operations. So long as there is a search for oil, these supply boats will continue to be required.
The questions were also raised on the prospects of continuing oil needs. However, the general consensus in the region and elsewhere seems to be that the demand for oil will on the whole increase, even though it is low now. No other source of energy is likely to replace hydrocarbons in the near future. All countries in the region e.g. Indonesia, Malaysia, India, China, are looking forward to increase rather than decreased oil production. All of them want to build up their own supply/utility boat facilities. WORKBOAT (July, 1982 issue) supports this view. This was also the general consensus of the "Offshore S E Asia 82 Conference".

It was also agreed that though for Harrick alone this venture would be a quantum jump into a region in which it was not familiar, together with ASME the proposition seemed feasible enough. Mr Mcellen was familiar with the marine industry in S E Asia and capable of obtaining the necessary technical link-up for boat-building purposes. There were a number of subcontractors in Singapore who had experience of working on boat.

On the question of having computer based techniques for design and manufacture, a government agency advised that the government was helpful to such proposition and even some financial assistance was possible in the form of subsided loans and training grants.

On the whole, as mentioned in the framework in chap 4 and in the previous case, this researcher's viewpoint that a qualitative and objective market survey is a necessary condition for a major corporate planning exercise seems to be borne out here too. This view was accepted by both the CEs and the exercise was carried out. This appeared to be also a necessary pre-condition for pro-active adaptation.
The question of internal weaknesses was not deeply studied because the overwhelming issue was a substantial diversification. In most corporate development studies certain preconditions will exist. In this exercise, they were amongst others the personal rapport of the two CEs and their need for a quantum jump from their present respective positions. Hence, the search was concentrated on some possible diversification areas rather than on the current product range of which the CEs felt there were only limited prospects. At an interview with an Economic Development Board officer, the following position assessment of supply/utility boats industry (made internally in 1981) was supplied to us:

(Note: The above presentation can be viewed as a form of directional policy matrix taking into account the whole industry picture).
At the same meeting, the following figures (Source: OIL (London 1981)) were given to us (this is a worldwide picture in which S E Asia plays a significant role):

<table>
<thead>
<tr>
<th>END</th>
<th>1981</th>
<th>1982</th>
<th>1983</th>
</tr>
</thead>
<tbody>
<tr>
<td>RIGS/JACK-up/Drill Ship in use</td>
<td>419</td>
<td>466</td>
<td>476</td>
</tr>
<tr>
<td>Est. Need for Supply Vessels</td>
<td>754</td>
<td>838</td>
<td>836</td>
</tr>
<tr>
<td>Est. Availability of Supply Vessels</td>
<td>742</td>
<td>742</td>
<td>742</td>
</tr>
<tr>
<td>Shortfall</td>
<td>12</td>
<td>96</td>
<td>114</td>
</tr>
</tbody>
</table>
The initial impression that competition from rig/ship builders will make venture into boat-building not a viable proposition was repudiated by the market study. It was like those who build motor cycles may not necessarily succeed in bicycle manufacturing. For boat-building speed is important, overhead cost must be low and the sub-sectors within the overall market must be properly identified. There were several technological difference too. The market survey also introduced many elements of information of the market, the competition, the possibilities of government assistances etc which otherwise were not available. Only in this way it was possible to secure the motivation of the managers concerned.

Broad Scenarios/Options Analysis (Step 8)

Scenario 1

Harrick is engaged in a relatively traditional product range i.e. pressure vessels, heat-exchanges, spherical vessels etc in which it has substantial knowhow. However, there are many limitations for the business in Singapore. First of all there is limited home market. Then, both Malaysia and Indonesia harbour, whether one likes it or not, nationalistic attitudes which will make export growth in these places more difficult. Both China and India have prospects but export growth will be slow in those countries. They have their own knowhow too. All in all, Harrick will survive but in a limited way. Setting up in M'sia or Indonesia is a possibility, but will require both economic and political clout. This Harrick does not have plentifully. Harrick therefore, has to seek out substantial diversification possibilities or its future does not appear to be particularly attractive.
ASME built some barges, tugs workboats i.e. rather low tonnage boats in the past. Due to mismanagement in the past, company history and keen competition from Kallang boatyards (small operators) this project has not been successful. It has significant locational and sea-frontage advantage. It will either capitalise on this or sell-up.

Scenario 2

Alternatively, these two organisations can join up to great mutual advantages. Harrick has significant amount of steel-cutting machinery and welding equipment together with highly trained welders. ASME, as stated has significant sea frontage. Coupled with the advantages offered by a numerically controlled machine discussed earlier and the stated computer software back-up for cutting steel to the required specification, venturing successfully into supply-boat building is a distinct possibility. On current reckoning, business over a hundred million dollar is possible within 3 to 5 years. Market potential in this region (though not so much in the gulf of Mexico) looks quite promising.

Summary

Harrick, an engineering company with steel-cutting, engineering and welding knowhow and facilities, preceives limitations on its business growth and therefore seeking diversification possibilities. ASME, a not-so-active company with some boat-building knowhow and a rather unsuccessful past, offer some advantages in terms of location and sea-frontage. It is possible to group these 2 companies in a joint venture for supply boat-building, for adaptation to growth possibilities.
A survey of the market and competition indicates that there is good possibility for business success. Though competition exists, it is possible to meet the competition by an appropriate combination of knowhow and the knowledge of market place.

Though search for oil will slow down somewhat in the short term, oil consumption will grow faster now with fall in oil prices. Rigs and jacket will continue to need to be serviced by new design new generation boats. S E Asia is short in these boats. Vessels are being built and will continue to be so. A survey published in OIL (LONDON) and our sources in Economic Development Board conform to the views expressed in this research.

It is felt that supply boat-building will continue as a viable industry in Singapore for years ahead and will put Singapore significantly ahead of her neighbours in terms of technology. Singapore government offers tax and other advantages for new technology, specially those with high-tech potential and high-value added possibility. Government also assists with grants for computerisation and training of labour. All these fit with the proposed investment in CAD/CAM software cutting system and the numerically controlled machine.

Singapore's existing boat builders, according to information available, consist of smaller management organisation and are relatively ill-equipped now. This is surprising but appears to be true. Capital and technology support is not high and a good deal of work is sub-contracted out. Large ship/rig builders cannot economically survive in this business.
Singapore boatbuilders should obtain a fair share of the world supply boat-building market providing it moves with the time and are able to adapt to the needs of the day in terms of technology, price and quality. The proposed joint venture should be successful if these attitudes prevail.

It has also been shown in this case analysis that in accordance with the framework described in chap 4 and in line with the earlier case the following steps led to meaningful strategic conclusions which were also pro-active adaptive in nature:

Step 1 & 2 – Search, Awareness Identification of a strategic problem in which the Chief Executives play the main role.

Step 3 & 4 – The search at the market place by a meaningful survey process to identify the opportunities that an organisation can purposefully exploit and the vulnerabilities that it can avoid.

Step 5 & 6 – The information obtained at the marketplace are then internally synthesised through iterative processes. This results in going to marketplace for more information and verification.

Step 7 – Analysis and synthesis when opinions and information are digested and the decision-making process begins to crystallise.
Step 8 - Broad Scenarios/Options Analysis which is internally consistent with the analysis given so far.

As was mentioned at the introduction not only the issue areas in each case are delimited but each case and how it proceeds are different from one another. But on an overall basis the framework is equally applicable, though emphasis used at different steps may be different.

This case also has given enough attention to the following principles enunciated in chaps 3 and 4:

(a) Explication of values and opportunistic search
(b) Feedback as a process of risk-reduction
(c) Operational validity of the actionable policy packages.
Wah-Chang in supply vessel joint venture

Wah-Chang International Corporation yesterday signed an agreement with Seahorse Incorporated, a leading supply vessel company, to form a joint venture to operate supply vessels in China.

The new company, registered in Singapore, is called Sin-Hai Offshore Co Pte Ltd (Sinco). It will, in turn, team up with the China Nanhai Offshore Joint Services Corporation (CNOJSC) in another joint venture which will be called Zhong-Chang Offshore Services Co (Zosco).

Sinco will charter supply vessels to Zosco for use in China’s offshore exploration activities in the South China Sea. Sinco will be responsible for marketing and managing the vessels as well as providing training for Chinese crews.

The Sinco-CNOJSC joint-venture agreement will be signed in Guangzhou, China, in December. The new company will be registered in Guangzhou.

Under the agreement, Sinco will charter supply vessels to Zosco for use in China’s offshore exploration activities in the South China Sea. Sinco will have its head office in Singapore and operate a liaison office in Hong Kong.

The operational base for the supply vessels will be at Chivu, the supply base under construction near Hong Kong. This base has been selected by China as the central base to serve the Pearl River basin and the South China Sea.

Logistic arrangements are currently being finalised and Sinco’s base will likely be serviced and supported by Singapore’s two supply bases at Jurong and Loyang.

Both Wah-Chang and Seahorse will each provide a joint managing director as well as other staff to Sinco.

Straits Times
11 Nov 1982
No sign of slackening in offshore oil and gas exploration

OFFSHORE oil and gas exploration activities in the Asia Pacific region show no sign of slackening, according to figures released by International Energy Advisors, Gaffney, Cline and Associates.

Exploration activities during the fourth quarter of last year continued to grow while drilling activities (including exploration and production wells) which took a dip in the third quarter picked up again at the end of the year.

It was noted that a number of new offshore exploration areas, off China, Indonesia and Australia, are now receiving attention and it was pointed out that this is "undoubtedly contributing to the sustained drive to appraise the region's full potential for petroleum development".

GCA also said that the overall drilling activity figures confirm that successful exploration wells are being followed up by appraisal and development drilling.

In the fourth quarter last year, the success ratio of exploration wells was about one out of every four in the Asia Pacific region. This is lower than the one in two ratio recorded in the previous quarter.

GCA's exploration index, compiled on a quarterly basis, shows that exploration activities in the fourth quarter last year climbed to 130 points from a previous 119 points for the Asia Pacific region, while the drilling activity index rose to 235 points from 163 points.

For the ASEAN region, the success ratio was one in three while the exploration index rose from 180 points to 202 points. The drilling activity index rose from 190 points to 125 points.

GCA said that countries in the Asia Pacific region, increasing their consumption of oil and the potential for future growth is such that the petroleum exporting countries "must continue to explore and develop if they are to maintain their position".

It said while Indonesia continues to dominate the scene at present, interest throughout the region shows every sign of increasing.
SCI plans to buy forty-three vessels

The state-owned Shipping Corp of India (SCI) plans to buy 43 ships totalling 773,000 gross register tons by 1984 at a cost of six billion rupees, an SCI official said. SCI has already begun placing orders for the ships which comprise 12 tankers, 18 off-shore supply vessels, two product carriers and 11 bulk carriers.

A deal for buying eight tankers costing US$300 million from Hyundai shipyards in South Korea has been completed, the official said. The spokesman said the supply vessels worth over US$5 million will be built in Singapore and the SCI has also ordered three bulk carriers worth US$75 million from the state-owned Hindustan Shipyard at Cochin in southern India. He said bids for the product carriers are being examined and tenders will shortly be invited for the remaining ships. After these purchases are completed, the SCI plans to place orders for a further 600,000 gross register tons in fiscal 1984/85 ending March for delivery later, he said. The SCI is India's largest shipping company with a fleet of 143 ships totalling three million gross register tons. - Reuters, 25 March 1983.
Big step forward likely in Chinese oil project

CHINA'S massive offshore oil development programme is poised to take a major step forward this year, in spite of crumbling world oil prices.

The project is tipped by some experts to develop into the biggest oil-drilling boom since Britain's North Sea exploitation. Production is expected to start early in the 1980s.

China is now evaluating bids from 23 foreign companies which have applied to take part in the initial stage of the drilling.

Analysts said 'joint-venture contracts were expected to be awarded within three months with drilling likely to commence less than six months later.'

China specialists believe that multinational companies which have shown an interest in the programme will remain keen, although many have slashed exploration efforts elsewhere due to the prospect of a sustained world glut of oil, and low profits in currently depressed markets.

For the major oil companies, the political and economic advantages of gaining a foothold in joint development of China's resources are inevitably attractive, they say.

"Exploration and development costs are estimated to reach US$30 billion by 1990," said Jason Magee, manager of Chartered Bank's China department. "But political strategy may override short-term economic considerations. Oil may be seen as a stepping stone to other resource ventures with China."

Also, larger companies were able to look beyond the depressed, short-term state of the oil industry, and assess medium- to long-term prospects, he added.

"But the oil companies have been invited to submit bids, covers some 181,000 square km in the South China and Yellow seas. The area is about a third of the total offshore acreage over which China has conducted seismic studies for oil."

Western estimates of China's total recoverable offshore oil reserves range between 30 billion and 75 billion barrels, while China itself has indicated that it believes the reserves exceed a massive 120 billion barrels. — Reuters
Contracts for Chinese offshore oil project

Several contracts for Chinese offshore oil development are expected to be signed before June 30 this year, the general manager of the China National Offshore Oil Corporation, Qin Wencai, said.

The New China news agency quoted him as saying exploration operations would develop progressively starting in the second half of this year.

Bids from thirty-three foreign oil companies were received by last August for shares in the development of 43 blocks on offer in the South and East China seas.

"We will select the most competitive companies after discussions with all participants in the bidding and then start contract negotiations," the agency quoted Qin as saying.

Qin also said that a semi-submersible drilling rig to be completed by 1986 in Shanghai's Jiangnan shipyard would be used.

The company, incorporated under a 14-year term, will lease rigs and undertake drilling operations within or outside Chinese territorial waters. It will also provide related services.

Profits, losses and risks will be equally shared.

There will be a board of six directors, three from each side, with a Chinese chairman. More than 30 joint ventures have been established in China, according to the Foreign Trade Ministry.

More...
## APPENDIX 6

### BRIEF SPECIFICATIONS

**OF 180' X 40' X 14' SUPPLY VESSEL**

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>LENGTH</strong></td>
<td>180' 0&quot;</td>
</tr>
<tr>
<td><strong>BEAM</strong></td>
<td>40' 0&quot;</td>
</tr>
<tr>
<td><strong>DEPTH</strong></td>
<td>14' 0&quot;</td>
</tr>
<tr>
<td><strong>DRAFT</strong></td>
<td>12' 0&quot;</td>
</tr>
<tr>
<td><strong>FRESH WATER CAPACITY</strong></td>
<td>11,500 GALLONS</td>
</tr>
<tr>
<td><strong>CARGO DEADWEIGHT</strong></td>
<td>964 LT</td>
</tr>
<tr>
<td><strong>FUEL OIL CAPACITY</strong></td>
<td>79,000 GALLONS</td>
</tr>
<tr>
<td><strong>LUBE OIL TOTAL</strong></td>
<td>1,900 GALLONS</td>
</tr>
<tr>
<td><strong>BALLAST/DRILL</strong></td>
<td>141,000 GALLONS</td>
</tr>
<tr>
<td><strong>BULK MUD</strong></td>
<td>4,000 CUBIC FEET</td>
</tr>
<tr>
<td><strong>LIQUID MUD</strong></td>
<td>1,700 BARRELS*</td>
</tr>
<tr>
<td><strong>DECK CARGO</strong></td>
<td>660 LT</td>
</tr>
<tr>
<td><strong>MAIN ENGINES</strong></td>
<td>TWO (2) CATERPILLAR D399</td>
</tr>
<tr>
<td><strong>BHP EACH ENGINE</strong></td>
<td>1250 HP @ 1225 RPM</td>
</tr>
<tr>
<td><strong>REVERSE/REDUCTION GEAR</strong></td>
<td>CATERPILLAR 7271 MARINE GEAR</td>
</tr>
<tr>
<td><strong>PROPELLERS</strong></td>
<td>86&quot; DIAMETER, STAINLESS STEEL, FOUR BLADED</td>
</tr>
<tr>
<td><strong>BOWTHRUSTER</strong></td>
<td>ONE (1) CATERPILLAR 3406 300 HP WITH FRONT PTO FOR FIRE MONITOR PUMP</td>
</tr>
</tbody>
</table>
GENERATORS
TWO (2) CATERPILLAR 3306 MARINE
DIESEL ENGINES 135 KW @ 1800 RPM

ENGINE ROOM FLOODING SYSTEM
CO₂ SYSTEM

FUEL OIL SEPARATOR
WESTFALIA OTA-07-066

FIRE MONITOR
1000 GPM 140 PSI AT PUMP

MAIN DECK
TWO INCH WOOD PLANKS

STEERING
3-STATION, ELECTRO/HYDRAULIC

ACCOMMODATIONS
16 PERSONS IN AIR CONDITIONED SPACES

CLASSIFICATIONS
ABS LOADLINE CERT.: UNRESTRICTED SERVICE
A1 MALTESE CROSS, CIRCLE E

* LIQUID MUD TANKS COULD BE USED FOR ADDITIONAL FUEL
(70,000 GALLONS).
APPENDIX 7

The Straits Times, 5th May, 1983.

Bethsing in venture to build oilfield vessels

This project to construct vessels for the offshore oil industry is a joint venture of Bethlehem Steel Corporation and Halter Marine Inc.

"Bethlehem is to provide technical assistance and design for the vessels, while Halter Marine will handle the construction.

The agreement is part of a broader strategy by Bethlehem to diversify its business and enter new markets.

"We are excited about this opportunity to work with Halter Marine," said CEO of Bethlehem Steel Corporation. "This will allow us to expand our presence in the offshore oil industry, a sector that is expected to grow significantly in the coming years.

"Halter Marine, on the other hand, is looking forward to this collaboration, saying it will enable the company to access new markets and services.

"This is a win-win situation for both companies," concluded the CEO of Bethlehem Steel Corporation. "We are confident that this partnership will bring significant benefits for both parties in the long run."
CHAPTER 7

SUMMARY AND CONCLUSIONS
In this chapter the discussions contained in the previous chapters will be summarised and main conclusions will be drawn. It should be pointed out at this stage rather than later that at the concluding stage and elsewhere of each case (at Step 7 - analysis and synthesis in particular) the main features of the case were highlighted and hence why they led to the broad recommendations for company development. Indeed, in the first case (EPL), where the scope of strategy research was more conventional (compared to the second case), a synopsis too was provided listing as well as further analysing the materials gathered in the case.

In chapter 2, which is mainly literature based, it is shown that distinctive meanings should attach to words such as policy, strategy, objective etc. Since strategy of a business undertaking is essentially long term in nature, it should take a broad view of the desired end results and should not be in mere abstractions. It has also been shown that strategy is not a homogeneous concept and that the list of strategic options can indeed be endless. The key governing thought should however be the ultimate survival and growth by way of positive adaptation to the changing environment. A ground work has been laid for strategy formulation processes including the proposed methodologies (by various authors) for assessing internal strengths and weaknesses and opportunities and vulnerabilities facing the organisations. Attention has been drawn to more recent models such as directional policy matrix, emphasising at the same time that while such models are diagnostic in nature they do not necessarily draw attention to prospective new lines of business i.e. they may fail to be opportunistic. Fast changing environment of the modern economic scene has been emphasised. In strategy building, the entire environment relevant to the decision will have to be considered, full consideration being given to the internal situations as well as the external pressures.
In chapter 3, which too is literature based, discussions have taken place relating to various decision-making approaches to strategy formulation processes. Resources come from the external environment and any formation of strategy is therefore essentially mindful of external threats and opportunities. As strategy-seekers are constrained by our human cognitive abilities and availability of limited resources, a pro-active adaptive model for strategy building should be sufficiently mindful of changes that are occurring. While some element of 'incrementalism' is unavoidable, some fundamental reviews must still be done. This places the pro-active adaptive model being advocated somewhere between a pure incrementalism and a pure normative models. It is also shown that the nature of strategic problems can never be fully grasped and it is therefore a question of perception rather than a 'given'. It is also a question of how we can know more than we already know within the severe constraints of various types.

In the prevalent business literature traditional approaches to strategy formulation have been emphasised: such as normative model by Bourgeois, 1980 or Hofer & Schendel, 1978 (Strategy and Environment: A conceptual integration, Academy of Management Review, 1980 Vol 5 and Strategy Formulation: Analytical Concepts Wests, 1978) or strategies as a result of political processes mainly such as by Cyert and March, 1963 (A Behavioural Theory of the Firm, Prentice-Hall, 1963). While a normative approach of maximum attainment may be found unachievable, an alternative approach of merely responding to problems may appear to be a pursuit of aimlessness. This negative element is also present in strategy seeking through political processes of interaction which tend to change the strategic content. What is being emphasised in the proposed pro-active adaptive model is a longer term innovative adaptative approach which will
be based on facts and information (within limits of human cognitive ability) gleaned from marketplace and other sources. Such information will be synthesised and assimilated internally to arrive at an appropriate strategic choice. Only then would it be sufficiently innovative, adaptive, positive and pragmatic enough for implementation.

In chapter 4 this theme has been pursued further and it has been shown that while there are many research approaches, the appropriateness or a certain approach derives from the social phenomenon and the inner nature of the subject area of the research. While all the generally known approaches to research of a certain area have their validity, it seemed to this researcher that a case study method of illustrating the applicability of the model developed in chapters 2 and 3 of this research would be more appropriate. It was also felt that since the scope of this research is quite wide and the conceptual framework itself is global in approach, case study method alone can satisfy the requirements of this globality.

A flexible methodology for case analysis has also been developed in chapter 4. This methodology is stated to be flexible because, as emphasised earlier, we are trying to deal with the issues involved as well as the past, present and future of a company and its people. Issue areas are intermingled, delimited and generally extremely complex in nature.

Though they are inter-connected, it is far from easy to describe how to identify such inter-connections. Though there are many people involved with their views, different matters that affect the future of a company, many opportunities and constraints that one may or may not be able to fully recognise, a reasonable enough effort must nevertheless be made to
reconcile all the conflicting variables of a dynamic business situation and still move forward. But so far as a business enterprise is concerned, its rationale for survival and growth (moving forward) must always remain supreme.

The methodology described in chapter 4 is in fact drawn from the principles and the fundamentals described in chapters 2 and 3. It consists of certain steps beginning with the initial perceptions of the case issues through information gathering, analysis and synthesis to broad company development programmes for each case. What will be attempted now is to describe each step briefly, how it applied in each case described in the earlier two chapters (5 and 6) and the validity of each step to each case. However, this analysis has already been done in analysing each case and observations have been made. They are only being summarised here to show their linkages with the main conclusions to be drawn from this research which will follow.

Case Analysis and Steps - A brief Summary: Application of the Pro-active Adaptive Model

Introduction

EPL: It is a subsidiary (engaged in engineering products and construction) of the largest ship-repairing business in South East Asia. The Company has a substantial know how in its chosen line though it developed as an outgrowth of the parent company's main line business. It developed also a
certain technology and market of its own but lacked a developable niche. Its production, sales and profits oscillated from period to period and the company faced the fundamental question of where to go next.

Harrick/ASME: Here one company (Harrick) is engaged in a substantially high technology industry with knowhow for metal cutting and engineering fabrication. Its investment in plant and machinery is substantial and its owner-cum-chief executive is extremely well-known in the whole region as a top-rated engineer in the oil-equipment industry in the region. The industry is facing difficulty due to recession and also partly due to import restraints being practised by other countries in the region who want similar industries of their own. The CE feels that despite his special expertise and substantial investment, he is beginning to get hamstrung owing to factors beyond his control. He wants diversification in which his facilities can be more usefully employed. He sees an opportunity in combining with ASME to go into a kind of business which will be mutually synergistic offering opportunities for both to move forward. ASME has a sea-frontage and is engaged in small-size boat building business.

Observation: Strategic situation and needs of each case will quite possibly be unique and different. Each situation will call for a constructive solution which ought to be appropriate to the issue and problems presented.
Step 1 & 2: Chief Executives' Awareness of the Growth and Survival problems and issue areas

EPL: It has been emphasised that issue areas are intermingled and delimited in character. The CE of the group felt what while EPL's line of business had some substantial promises to offer in terms of business prospects and knowhow, it also presented many problems. Its managers, being mostly nominated by the parent company, had to work under difficult conditions and competitive pressure and lacked motivation to make a career there. It used up space which probably could have been more profitably used by the main line business. EPL presented itself as a worthwhile diversification effort, successful in many ways, yet without a strategic pre-science.

Harrick/ASME: Harick's CE felt that his investment in a high-technology industry was somewhat wrongly timed and environment changed too abruptly for him to cope. The possibility of under-utilising the assets and therefore less than adequate return on capital loomed large. He felt the necessity of diversifying which will at the same time generate business for Harrick. ASME's CE felt that trying to continue in work/tug boat industry in the region will become less and less rewarding due to competitive pressure building up. Both the CEs identified supply boat industry as a possible diversification which will use up their spare capacities and provide a possible line of useful diversification. They saw needs for further search and information.

Observation: One possible observation is that the perceptors of strategic issues and problems will probably be the chief executive himself and he will be the initiator of strategic search. It is also possible to observe
that the need for further information and search of the environment will be felt by the chief executive more keenly than others, because of his position of responsibility.

Steps 3 & 4: The Opinion of the marketplace and exploration of opportunities, vulnerabilities and internal strengths and weaknesses.

EPL: As stated in the chapter 4 model and framework, a comprehensive qualitative market search was carried out involving about 40 companies/organisations who were either the end-users or the competitors or other organisations interviewing whom would yield useful information. The search was not only useful and but also confirmed the view earlier held that there was a considerable gap between what the market revealed and felt of the company and what the managers' own view was of their own company. For instance, the company's product quality, its administrative procedures and pricing philosophy were sourly criticised. It also revealed that the company failed to participate effectively in an expanding market during the period '78 to '81 inspite of its lead and knowhow in certain products such as jackets, heat-exchangers etc. Relatively new companies, such as Promet, did very well during the period and gained reputations on their own merit. There were complaints of various kinds i.e. quality, price, delivery, administrative lapses etc. by well known companies such as Eso, Brown & Root, SRC, Shell etc. In particular, it seemed that there was lack of coordination in construction work and that the company lacked knowhow for
complete marine structures. It also missed opportunities in the expanding markets of Malaysia and Indonesia for its failure to respect the national aspirations of these countries. It seemed that there were still possibilities in rig and module building and other areas provided the company moved up the technology ladder and substantially changed its outlook for business i.e. of not moving from one step to another. Internal disents and dissatisfactions were noted but the answer still seemed to be a substantial proposition for moving forward.

Harrick/ASME: Again in accordance with the model, a substantial qualitative planning oriented market survey was carried involving several companies and organisations who were either users (of supply boat type of products) or competitors or organisations who would otherwise provide useful information. It seemed that there was a growing market for supply boats in the region which were about 180-feet in length, medium powered, less sturdy than those needed in North Sea and the proposed supply boat would need to be fitted with some fire-fighting capabilities as well as mud-tank facilities. Both China and India seemed large and possible markets but they needed larger organisation and financing capabilities than possibly owned by these two companies. On the other hand smaller boat-owners in the region would be interested in quality boats which can also be delivered quickly. Financing would generally be state provided. There was strong hint that a US boat-builder (Halter) would soon appear in the scene and therefore the time for action was now. All these information were made available for internal synthesisation and discussion to the extent it was considered practically possible. They certainly helped fill the information gap that the CEs expressly stated that they needed to be examined.
Observation: It seemed that this information gathering process from the outside sources was useful and highly rewarding. It helped to fill gaps in information and helped change long-held ideas. It also seemed that this role-playing for information gathering for strategic moves was needed to reduce the threshold for risks or increase the risk-taking ability of companies. It almost certainly provided a level of assurance which seemed to be a necessary ingredient for strategic decision making.

Steps 5 & 6: Matching Strengths and Weaknesses to Opportunities and Vulnerabilities. Internal Iterative Process

EPL: Matters were gradually brought in and discussed internally in joint and separate meetings. The latter were necessary to overcome resistance and to gain access to information and views which are not generally expressed in open meetings in a SE Asia setting. For instance, the fault in pricing seemed partly to stem from the way the overhead cost was charged to products. It also seemed that some investment in plant and machinery was overdue, such as welding machines. Design faults were acknowledged. Lapses in coordination between production and sales were also revealed. There was a discernible lack of motivation and many managers felt that the subsidiary company was neglected by the parent company and hence strategic investments were not made. The basic question of resource diversification need by the parent company seemed necessary to be addressed.

Harrick/ASME: Internal discussions were restricted mainly between the CEs and this researcher. There was a need for confidentiality and not upsetting the morale of the employees. The question of design capability of Harrick was discussed and it was felt that Harrick could usefully produce
the sections and fabrications necessary for supply boat building. These could then be assembled in the space available in ASME site (with had necessary though limited sea-frontage) with other materials (such as engine) using technology of a more up-to-date kind eg CAD/CAM and US based design. The financial officers insisted on an appropriate descriptions of the inputs needed and dependable cost estimates which in the event were obtained through this researcher's contact with a naval architect. Harrick seemed to have over-invested in a shrinking market and ASME seemed under excessive competitive pressure from small but effective organisations.

Observation: The information gleaned from external environment will have to be usefully matched against internal needs, capabilities and weaknesses. This process will be unique in each case and will be carried out in the best possible fashion possible. It is probably not necessary that this should be carried out in exactly the same fashion and same depth in each case. In some cases, such as in Harrick/ASME an outside-in rather than an inside-out approach would seem to be more appropriate. What is important to remember is that the researcher must conform to the needs of each case of a practical situation rather than expecting the other way around.

Step 7: Analysis and Synthesis (As Derived from Previous Steps) This step is closely inter-twined with the previous step.

EPL: At this stage a directional policy matrix is prepared and the company's products are arrayed in terms of their prospects and opportunities. It is found that such an analysis does not indicate clearly the lines of further development eg. the need for acquiring top-and-bottom structure building capability, for instance. However, this analysis in
itself is informative and thus rewarding and provide a way for linking the
internal affairs with the external information. There is no simple
framework which is capable of explaining all aspects of a case. A case
study can only confirm the reasonableness of a set of assumptions on an
overall basis. Strategic problem is not a 'given'. In EPL's case, inspite
of its apparent adequate return on investment (which was not satisfactorily
measured anyway) a performance gap is realised and a need for strategic
development with long term aims was felt; In the past it failed to take
strategic moves partly through the parent company's neglect and partly, it
appeared, through the non-commitment of the company managers who were
mainly seconded from the parent company. It all culminated in trying to
look for a proper strategic niche and identifying possible ways and means
to correct past mistakes and neglects. In the event it was possible to
find some probable ways for development. There is considerable overlap
between this step and the previous ones.

Herrick/ASME: The issue and the rationale for going into supply boat
industry was looked into and its synergistic aspects were stressed. The
question of continuing in a product which will essentially service the oil
industry was also addressed. The consensus seemed to be that oil will
continue to be a source of significant activity in the region. An adapted
version of directional policy matrix was prepared to assess the supply boat
industry's prospects in the region. Data were obtained and analysed to get
a world-wide perspective too. On the whole, the personal rapport of the
two CEs was a significant factor in the proposed venture and it was
discovered that due to their individual positions they together needed much
less investment than would be otherwise needed to launch the proposed
new project. Although they expected competition from ship/rig
building companies due to current lull in that industry, it was felt that such organisations with their large investments and overhead costs cannot possibly trim sufficiently to offer effective competition.

Observation: Decision processes seem to crystallise at this stage. Information gained earlier through qualitative market survey and internal iterative processes seem to fall into places and a clearer picture seems to emerge. The application of directional policy matrix also seems to have some limitations and requires imaginative applications. It is possible to overcome, it seems, internal constraints with imagination, at least to some extent.

Step 8: Broad Scenarios and Strategic Options

EPL: As a result of the analysis the broad options open to the company appear to be to continue as at present ie in a limited fashion, or to take appropriate measures to take advantage of the expanding markets of rig and module building (as it then appeared in 1981). This latter action will require some investment and above all some commitment from the parent company. Both propositions are actionale policy packages which are operationally valid. A third option would be to wind down the company altogether.

Harrick/ASME: The options open to these two companies appear to be either to continue in a limited fashion only (Harrick due to its technological lead and ASME due to its past and overseas connections and its having a sea-frontage) or to join up together in launching the proposed supply boat project which will be mutually advantageous, will use up some of the
spare capacities of both and may eventually turn itself into a multi-
million dollar business.

Observation: Broad scenarios or the strategic options seem to be informed
opinions on strategic development, rather than being expert opinions as
such. They are based on the information obtained. They provide a backdrop
for possible better decisions with long term consequences for a company.
They do not guarantee any success.

The discussions contained in chapters 2, 3 and 4 (mainly literature based-of
which a summary has been given in this chapter) and the application of the
framework and methodology given in chapter 4 to the two cases described in
chapters 5 and 6 of which a summary is also provided here would possibly
indicate a certain validity of the pro-active adaptive approach to strategy
formulation in many respects. The main conclusions and further research
indications that seem to arise from this research ie literature survey and
case applications, are the following:

a) Strategic content and needs of each case would vary and it would
probably be the chief executive who would be the initiator of the
strategic considerations and perceptor of the strategic issues and
problems. Because of his position of responsibility, he would
probably feel the need for further information and search more keenly
than other managers.
b) The planning oriented strategic market survey seemed to be useful and rewarding in both the cases. A great variety of people need to be interviewed eg. the end-users, the competitors, the governments and other related organisations, for instance. This researcher needed to apply considerable effort in carrying out these exercises and it seemed this will be the case in most situations. Who will do this will have to be identified and the quality of information obtained seemed to be the emphasis. The process seemed to fill important information gaps and thus increase risk-taking ability in a strategy building context and where generally the commitment of resources will be large. In this researcher's experience, this exercise consumed great energy and application and was therefore, the most difficult part of the research. It is therefore, in this area further case study related research would be indicated.

c) It appears that strategic search would require to take a global and holistic view of the situation - the aim being a more wholesome rather that a narrow, at best a partial truth. Therefore, a case-based rather than a survey-based research approach would seem to be more appropriate.

d) The information obtained from external sources would probably and in most cases require to be synthesised internally and matched against internal capabilities, resources and weaknesses. This would also be a sensitive area, especially the internal interactive process. Each case would possibly be different from another. How this is to be carried out would need further investigation and further research would be helpful. So far as this research indicates, it seems that each step need not be carried out in the same depth and fashion in each case. As emphasised, situation of each case would possibly be different.
e) Directional policy matrix analysis would seem to take different orientation in different situations and would require imagination for application. It seemed more diagnostic than indicative areas for potential further development. Further research in this area would also be appropriate.

f) Constraints of each situation will have to be respected possibly because real-life cases will have such inherent characteristics. This may result in not being able to apply the framework fully in each case. But this will not invalidate the overall applicability of the model developed in this research.

g) Pro-active adaptive model is essentially long-term in nature and advocates imaginative responsiveness to emerging environment and experiences. It does not advocate short-term pragmatism or merely responding to a development. It is also not the same as the inter-active model which over-emphasises the political processes which tend to change strategic needs. It differs from the normative model in that the latter may be unachievable in practical terms.

h) In seeking strategic moving forward, a concept closely intertwined with the concept of management control, it appears then and as a result of this research that overall and substantial progress is not a matter which can be guaranteed by good internal management only. It is a function of open and informed management which is prepared to take appropriate risks and actions at appropriate times. Strategy analysis and information gathering and the resulting broad scenarios are therefore informed opinions which would probably provide the necessary backdrop for such appropriate actions.
i) The framework advocates globality and hence it is suggested that further research in applying the framework as a whole would be useful. This will no doubt indicate its shortcomings as well as strong points.

This researcher has also emphasised that the proposed framework (and the related philosophy) is merely an attempt to move the body of knowledge related to strategy planning further, may be by a small step only. There is no attempt in this proposition to repudiate any other thinking. For instance, in one of the cases the portfolio analysis was found to be inadequate for direction-seeking. In the other case, it has to be adopted with some modification. Neither refutes the validity of portfolio analysis but merely underlines the necessity for further thinking.

This research also underlines the point that there is not any substitute for thinking and corporate planning is really a process of constructive thinking. Methods help but quality is more important. Also important is an ability to gather together the relevant information that must be available in the process of developing a role for constructive thinking by all concerned. This information gathering process consumes energy and drive and also requires an intimate knowledge of the society and the surrounding in which the firm operates. The planner must have the ability to interact as well as the necessary energy and drive.

The world and its environment are changing rapidly and it is so well known that it is almost needless to over-emphasise this. Man has always adapted to changes and man will. But mere acceptance though may be form of adaptation is not progress. What is being emphasised is progressive
adaptation even if that means a price to be paid. What is also being shown is a certain way, among many other possible ways, of doing so.

Lindblom (The Intelligence of Democracy, The Free Press, NY, 1965 Pp.148-149) states that 'one develops a strategy to cope with problems, not to solve them'. In a non-static environment of business (and society) objectives and other values constantly continue to shift as do the actual possibilities of change. Hence a strategic process of any kind is not likely to successively approximate to any solution but would continue to move apace with changing values, needs and possibilities. In a non-static environment it can be almost said that the ideal solution does not exist. The pro-active adaptive model therefore carries a message for moving forward not merely by remedial steps nor abandoning the long term aims. It seems to achieve a positive progression from a position of lesser satisfaction to a level of higher achievement with the realisation that that achievement is not necessarily the best nor guaranteed for ever.