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Operational Foundation of Strategic Investment Decision Making: Contextual Influence on Process Characteristics

Vassilis M. Papadakis

Thesis Submitted to the University of London
in Fulfillment of the University Requirement
for the Award of the Degree of Doctor
of Philosophy

London Business School, 1993

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THESIS ABSTRACT

The aim of this thesis is to examine the way Strategic Investment Decisions (SIDs) are made and the factors influencing the characteristics/aspects of the decision making process. The nature and substance of strategic decisions, and particularly those of an investment nature, makes them of considerable importance to an organization, since they usually imply a significant commitment of resources, have a profound impact on the organization as a whole and on its long-term performance and viability.

The thesis draws together and integrates aspects of what decision making theory, organizational theory, strategic management and modern financial theory say about strategic decisions and determinants thereof. At a general level particular attention is devoted to the following research question:

DO THE CHARACTERISTICS OF STRATEGIC DECISION MAKING PROCESSES VARY IN DIFFERENT CONTEXTUAL CIRCUMSTANCES? AND IF SO, WHAT IS THE ROLE AND SIGNIFICANCE OF CONTEXT IN SHAPING DECISION PROCESSES?

More specifically, the study attempts to:

1. Identify and measure the major characteristics of strategic decision-making processes, as perceived by key participants,
2. Explore the linkages between the **process** of strategic decision making and the **context** in which these decisions are taken. In defining context the research framework draws heavily and integrates three basic perspectives which have been developed in the field of strategic management; the **"environmental determinism-population ecology"** perspective, the **"free will-strategic choice"** perspective and the **"inertial"** perspective. Thus, in examining context the thesis focuses on corporate environment, internal systems, top management characteristics and characteristics of the SID itself.
3. Incorporate characteristics of the strategic decision making process and contextual elements in integrated models,
4. Identify managerial and theoretical implications of these interactions.

The empirical testing was based on a sample of 70 SIDs drawn from 38 industrial enterprises operating in Greece. The research approach focused on several key participants in the decision making process, using a combination of semi-structured interviews and questionnaire completion.

The empirical analysis yields several findings. Each contextual domain alone appears to experience a unique association with specific characteristics of the decision making process. This may imply that by correctly sensing and interpreting context, managers may directly influence subsequent decision processes. In trying to integrate the contextual influence into models which simultaneously consider the effects of various domains, several patterns worth noting emerged. *First,* all the models afford reasonably good to excellent predictions of the extent to which the process characteristics are determined by various contextual domains. *Second,* the findings suggest that the SID process may be viewed as the interplay of various contextual factors. It is reported that neither the external control model (environment), nor the strategic choice model (decision makers), nor the corporate inertial model (e.g. size), nor the resource availability (performance) alone, adequately explain actual SID making behaviour. On the contrary decision makers should be seen to be partially constrained in their attempt to manage contingencies posed by various contextual domains. Implications for theory and practice are advanced and discussed.

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The data collection effort of this thesis has been an enormous effort. A special word of thanks to As.Prof. Dimitris Bourantas. He has been of much help by providing me access to a large number of companies and by offering stimulating feedback and comments on earlier drafts of the thesis.

My grateful thanks are extended to a large number of people (university people, professional consultants, even people I had never met before) who provided me access to over 40 companies. Mr Embeoglou, managing director of 'Methodoi' as well as managing director of the Athens Laboratory of Business administration (ALBA), deserves special thanks. Without his help I would have never managed to collect a significant portion of my data. Professors Avlonitis, Ladopoulos, Chassid, as well as Ass. Professors Patsouratis, and Papalexandri and Dr Mantes have also helped me decisively in finding access to specific companies. I would also like to express my appreciation to mr Roulias, director of education at the Hellenic Management Association (EEDE).

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Naturally, the usual qualification applies: I alone am responsible for any unintended mistakes, faults, omissions or errors which remain in the text.

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LIST OF ABBREVIATIONS USED

1. BEP — Business Economic Performance
2. BP — Business Policy
3. CEO — Chief Executive Officer
4. FPS — Formal Planning System(s)
5. LOCON — Locus of Control
6. MCL — Multicollinearity
7. MNC(s) — Multinational(s)
8. MSA — Kaiser-Meyer-Olkin's Measure of Sampling Adequacy
9. NACH — Need for Achievement
10. OB — Organizational Behavior
11. PEU — Perceived Environmental Uncertainty
12. PLC — Product Life Cycle
13. ROA — Return on Assets
14. ROI — Return on Investment
15. ROS — Return on Sales
16. SD(s) — Strategic Decision(s)
17. SDM — Strategic Decision Making
18. SDMP — Strategic Decision Making Process
19. SID(s) — Strategic Investment Decision(s)
20. SIM — Strategic Issue Management
21. SM — Strategic Management
22. TMT — Top Management Team
23. TM — Top Management

Chapter 1

Introduction

A brief account of the origins of this thesis may offer an explanation of the paths followed at the initial steps of the design of the whole effort, and the specific reasons why a certain course of action was finally adopted. Before starting my PhD I was working as a research officer at LBS in a major research project studying issues of strategy and autonomy, in state controlled enterprises in Greece (e.g. Lioukas, Bourantas and Papadakis, 1994). During this period my initial thoughts about starting a PhD emerged. Professor Chambers (my supervisor) as well as Professor Lioukas encouraged me to begin a thesis in strategic decision making.

I was quite familiar with the stream of research on strategy content, but had a rather incomplete view of the vast literature on strategy process. My first impression, as a new researcher in the area, was that strategy research is notoriously difficult. Strategic problems have in the past been characterized as wicked, vexing, notorious, fluid, emergent, novel, openended, collective, consequential, unique, context-specific, ambiguous, complex, on-going (Ackoff, 1974; Mintzberg et al. 1976; Dutton et al. 1983; Pennings 1985; Barwise et al. 1986 b).

Three important research works guided the initial literature review, before the final methodological and other decisions were made. The *first* work, with which I was already familiar, was the landmark work of Bower (1970), that investigated four major investment decisions in a large diversified company. The *second*, was a clinical study conducted at LBS by Barwise, Marsh and Wensley. The *third* was the influential Bradford studies (Hickson, Butler and Colleagues), which examined a significant number of Strategic Decisions (SDs). All of them represent different ways of conducting research in the area. Bower's work is an in-depth case study effort while the work of Barwise and colleagues is a clinical research effort, studying Strategic Investment Decisions (SIDs) in a real-time mode. The Bradford studies are based on interviews and questionnaire completion on a large number of SDs, and attempt some contextual considerations as well. While obviously these approaches need not be mutually exclusive, they do represent three markedly different philosophies to approach Strategic Decision Making (SDM).

In further reviewing the literature in the area I recognized (and this is analysed in chapter 3) that severe criticism has been raised against current research. Most criticism focuses on the fact that research is usually characterized by an overarching emphasis on normative models, and on the fact that little attention has been devoted in empirically validating possible linkages between contextual dimensions and the process or outcomes of strategy making.

The literature review in strategic decision making (chapters 3 and 6) reveals that despite the fact that the area is one of the most popular in the management field, it is though one where more rigorous, large-scale empirical research, which explicitly integrates process and organizational context, is highly recommended. Indeed, the vast majority of research efforts in the field, are small sample case-study explorations.

Four factors weighted in favour of some type of approach based on interviews and questionnaire completion on a large number of actual strategic decisions. **First**, the initial survey of the relevant literature revealed a lack of research trying to relate the process of strategic decision making with the context in which these decisions are made. **Second**, I always believed that by adopting the proper methodology the thesis could take advantage of both the methodological rigour and the quantitative results stemming from the large number of decisions investigated in data-base methods, and the in-depth view offered by case-studies. **Third**, despite the difficulties inherent in studying a large number of decisions by means of personal interviews, I was confident enough that I could succeed to gain access to a large number of companies. **Fourth**, I strongly believed that empirical research in a small EEC member country like Greece could be of value since research of this type in such a context is a rarity. Indeed, most of the relevant work in the area has taken place either in the U.K. or in north America.

RESEARCH FRAMEWORK

The proposed research focuses on the way *strategic decisions* are taken and the *factors influencing* the characteristics/aspects of the *strategic Decision*

Making Process (SDMP). It is clear that I consider the decision rather than the particular firm as the unit of analysis. The discussion is largely based on Mintzberg et al. (1976), who define a **DECISION** as a *specific commitment to action* (more often a commitment of resources), and a **DECISION PROCESS** as a "set of actions and dynamic factors that begins with the identification of a stimulus for action and ends with a specific commitment to action".

More specifically, only **Strategic Investment Decisions** (SIDs), are examined. By the term **SID** I define any decision implying a significant commitment of resources, having a profound impact on the firm as a whole, and on its long-term performance and viability (Barwise et al. 1986 a). The thesis follows the decision based view of strategy, which considers strategy as a 'system' whose elements are strategic decisions. Thus, each important decision, to some extent, directly or indirectly influences organizational strategy.

The central concern of this study is **not only to identify and measure the major characteristics of the decision-making process but also to explore the linkages between the process of strategic decision making and the context in which these decisions are taken.**

The research framework draws heavily on and integrates three basic perspectives which have been developed in the field of strategic management; the **"environmental determinism-population ecology"** perspective, the **"free will-strategic choice"** perspective and the **"inertial"** perspective.

According to the logic of the **environmental determinism** perspective, an organization is an open system, and its strategies seek the adaptation or matching between characteristics of the environment and those of the organization, with the aim to survive and perform. The **"strategic choice"** perspective emphasizes the role of decision makers. Its logic centres on the fact that strategic choices of the organization have a large behavioural component and hence reflect the idiosyncrasies of decision makers. Finally, the **inertial model**, posits that organizational size and structure, initially determined by environmental and managerial forces, may constrain

future strategic decisions. Thus, internal structure and systems as well as size directly or indirectly affect strategy formulation and strategic decision making (SDM).

At a general level particular attention will be devoted to the following research question:

DO THE CHARACTERISTICS OF STRATEGIC DECISION MAKING PROCESSES VARY IN DIFFERENT CONTEXTUAL CIRCUMSTANCES? AND IF SO, WHAT IS THE ROLE AND SIGNIFICANCE OF CONTEXT IN SHAPING DECISION PROCESSES?

In retrospect, it seems that what is needed is a research design which adequately takes into account and integrates the various contextual domains, which have been found to bear on SDMPs, and assesses the role and significance of each one of them. Such a research should not stick on only one model, but should attempt to integrate several other contingent variables as performance, decision characteristics, formal planning systems etc. Chapter 4 further describes the research framework and discusses the major objectives of the research.

METHODOLOGICAL CONSIDERATIONS

The principal source of data stemmed from interviews and questionnaire completion by several major participants from various organizational levels. This type of data gathering was preferred despite the considerable amount of time and effort required. The study employed two detailed questionnaires examining not only the firm and its context but also the process of making specific SIDs. Both research instruments, were subjected to the comments and criticism of researchers in the field before they were tested in a corporate context, studying actual SIDs. In total four in-depth case studies in two industrial companies were conducted. Caution was exercised so that data from other sources (organizational records, informal observation etc.), also be obtained when possible. The major data sources included: (i) initial interview

with the CEO, (ii) semi-structured interviews with key participants in the decision making process, (iii) questionnaire completions, (iv) secondary sources (i.e.industry reports, internal documents, press cuttings) when available.

The empirical testing was based on a sample of 70 SIDs drawn from 38 industrial enterprises operating in three different industrial sectors in Greece (i.e. food industry, chemicals and textiles). Approximately two cases of SIDs are studied at each organization. Only industrial enterprises with more than 300 employees were incorporated in the final sample. The final sampling frame is considered to be one of the strengths of the research design, since most of the pertinent research in SDM refers to large, diversified, multi-site, multi product corporations (see chapter 3).

Chapter 5 further analyses methodological aspects of the thesis. Such aspects include the explanation of the decision to study SIDs, the delineation of the criteria used for the selection of specific SIDs, the rules followed in formulating the research instruments, the testing procedures, and finally the reliability and validity thoughts prevailing in the entire thesis.

DATA ANALYSIS

The design of this research builds on generally accepted characteristics of the decision making process, while building on the premises of relevant literature arguing for the existence of certain steps in the decision making process. Building on current theory and the results of empirical data chapter 6 suggests that the process of making SIDs may be reliably described by nine dimensions/aspects: *rationality*, existence of *formalized rules* guiding the process, *formal coordination devices* used (e.g. task forces, interdepartmental committees), *extent of financial analysis* conducted, *hierarchical decentralization*, *lateral communication*, extent of *politicization*, *problem solving dissensus* and *duration-timing* of the process.

Chapter 7 presents the empirical results exploring the association between project (i.e. specific SID) and process characteristics. A number of perceived project characteristics is adopted and they are related to the specific characteristics/aspects

of the SID process. What becomes evident from the results is that the perceived characteristics attributed to strategic decisions, to a significant extent may determine decision-maker's responses to issues and trigger cognitive and motivational processes that direct the process into predictable paths.

Chapter 8 explores the association between SID process characteristics and various dimensions of corporate environment. The results of the chapter lend credence to the environmental determinism school of thought and suggest that environmental characteristics can be significant predictors of SID processes.

Chapter 9, sets out to investigate planning systems as an interesting and rather unexplored internal dimension which may influence the way SIDs are made. Strong associations are found between certain attributes of FPSs and the decision-making processes used in handling strategic choices.

The main thrust of **chapter 10** has been to evaluate the role and significance of the strategic choice perspective in SID making. The chapter examines the extent to which certain characteristics of the CEO and the Top Management Team (TMT) are likely to be associated with specific decision making behaviour and validates the significance of the 'upper echelons' in SID making.

The results of **chapter 11**, provide some insight into the association between Business Economic Performance (BEP) and SID process characteristics/aspects. The results should be interpreted as an effort to shed some light into the process-performance relationship since only partial and disjointed patterns have up to now emerged on how SIDs affect the BEP or vice-versa.

The purpose of **chapter 12**, the final empirical chapter, is to integrate the results of previous chapters, by means of regression analyses, into an overall model which simultaneously considers the effects of various contextual domains in influencing SID process characteristics.

Finally, **chapter 13** pinpoints the major conclusions of the research and discusses specific implications for theory and practice. Moreover, the chapter addresses the strengths and weaknesses of the thesis and argues for the need for further research.

Chapter 2

Conceptual Framework: The Strategic Management 'Jungle'

2.1. EMERGENCE OF THE BUSINESS POLICY (BP) AREA

The very concepts of strategy and strategic decision making, emerged at about the beginning of the 60's. At this period of time several major changes occurred. Markets started becoming highly competitive, the various functional areas of the firm started dominating the business concerns, accelerated change together with scarcity of major resources and constant need for information took place. Consequently, executives began to realise that all the profit planning and forecasting techniques could not help them place their products and successfully compete in an increasingly volatile environment (Hickman and Silva,1987). Naturally, there was a sharp shift of attention to the business environment and to the alignment of the business to the ever changing contextual forces. As Hickman and Silva (1987) content, **"Strategy became the buzzword of the day"**, and the area of strategic management (or else business policy) has acquired major significance.

2.2. FOUNDATIONS OF THE BP AREA

Due to its importance, the field of strategic management has become a multi-syllectic one, drawing from a wide variety of related and unrelated fields. According to several researchers (e.g. Thomas 1984; Chakravarthy and Doz 1992; Thomas and Pruett 1993; Spender, 1993), organizational phenomena can be seen by a wide variety of disciplinary lenses, including:

1. *Economics*: Theories of industrial organization (e.g. Porter, 1980), microeconomic analysis, strategy-structure-performance relationships, have been the stepping stones on which the area in its early stages of development has been based.

2. *Finance-Accounting*: Portfolio theory, capital asset pricing model, analysis of financial statements, also claim their share of contribution to the BP literature.

3. *Marketing* also contributed to the BP literature by applying such concepts as product life cycle and market segmentation to the strategic apex of organizations and by providing the tools necessary for competitive analysis.

4. *Political science* through the study of political processes (e.g. Lindblom, 1968) and governmental decision processes (e.g. Allison, 1971) provided a number of viewpoints, concepts and methodologies for strategic management.

5. *Organization behaviour*, by studying such concepts as power in organizations (e.g. Hinnings et al. 1974; Butler et al. 1979), strategy types (Miles and Snow, 1978), leadership (Vroom and Yetton, 1973), greatly contributed and still claim a significant share of the developments in the area. Moreover, several other pockets of research such as observation and *monitoring of actual decision behaviour* (e.g. Cyert et al. 1956; Bower, 1970, Mintzberg et al. 1976) have paid their contribution to the area.

6. Finally, *cognitive psychology* conceptualized managers not as infallible machines, but as human beings with profound biases in judgement and limited information processing capabilities. This body of research studied the impact of this incompleteness on the strategies, structures and processes followed. (e.g. Kogan and Wallach, 1964; Schwenk, 1986; 1988; Haley and Stumph, 1989).

2.3. IDENTIFICATION OF MAJOR RESEARCH STREAMS

From the beginning of the sixties, until nowadays, the field experienced a tremendous growth. Countless researchers have shifted their focus of attention to aspects and determinants of strategy. An effort to structure the vast and highly unstructured research in the area certainly is a formidable task. Several researchers have in the past attempted to put order by classifying the research into comprehensible chunks (e.g. Datta, 1980; Thomas, 1984; Camerer, 1985; Fahey and Christensen, 1986; Freeman et al. 1988; Montgomery et al. 1989). Recently, Hambrick (1989) as well as Blair and Boal (1991), have argued that the domain of strategic management primarily consists of four major components as well as of interactions among them: the *external corporate environment*, the *actors involved* in SDM, the *content of the strategic decision* itself (Business level strategy, or corporate level strategy), and finally *corporate performance*.

Figure 2.1 attempts to present a 'holistic' model incorporating most of the significant domains which have achieved theoretical and empirical salience. It is not an exaggeration to contend, that in terms of depth and breadth of research, one is entitled to speak about a 'strategic management jungle'. As is evident, strategy formulation and strategic decision making, in general, lie on the heart of the model. A host of different contextual domains seem to bear on them, including the four already mentioned, together with such additional domains as *internal structure, corporate culture, technology, size* and the *perceived characteristics of the strategic decision.* All these factors directly or indirectly bear on the strategy formulation process, on the content of strategic decisions and on performance. Simultaneously, strategy and performance levels may have direct or indirect influence on all the above mentioned domains.

i. Strategy Content vs Strategy Process

But figure 2.1 may itself be confusing. An attempt to classify research in the area has been initiated by examining the various definitions of strategy. To give the essence of the various descriptions of strategy and to avoid clutter and confusion, we have selected three of the most often cited definitions.

The first, was developed three decades ago by Alfred Chandler (1962). According to him strategy is: "the determination of the basic long-term goals and the objectives of an enterprise, and the adoption of courses of action and the allocation of resources necessary for carrying out these goals".

In concert with Chandler, Andrews (1971) produced a second definition viewing strategy as a: "*... pattern of major objectives, purposes or goals and essential policies or plans for achieving those goals, stated in such a way as to define what business the company is in or is to be in and the kind of company it is to be*".

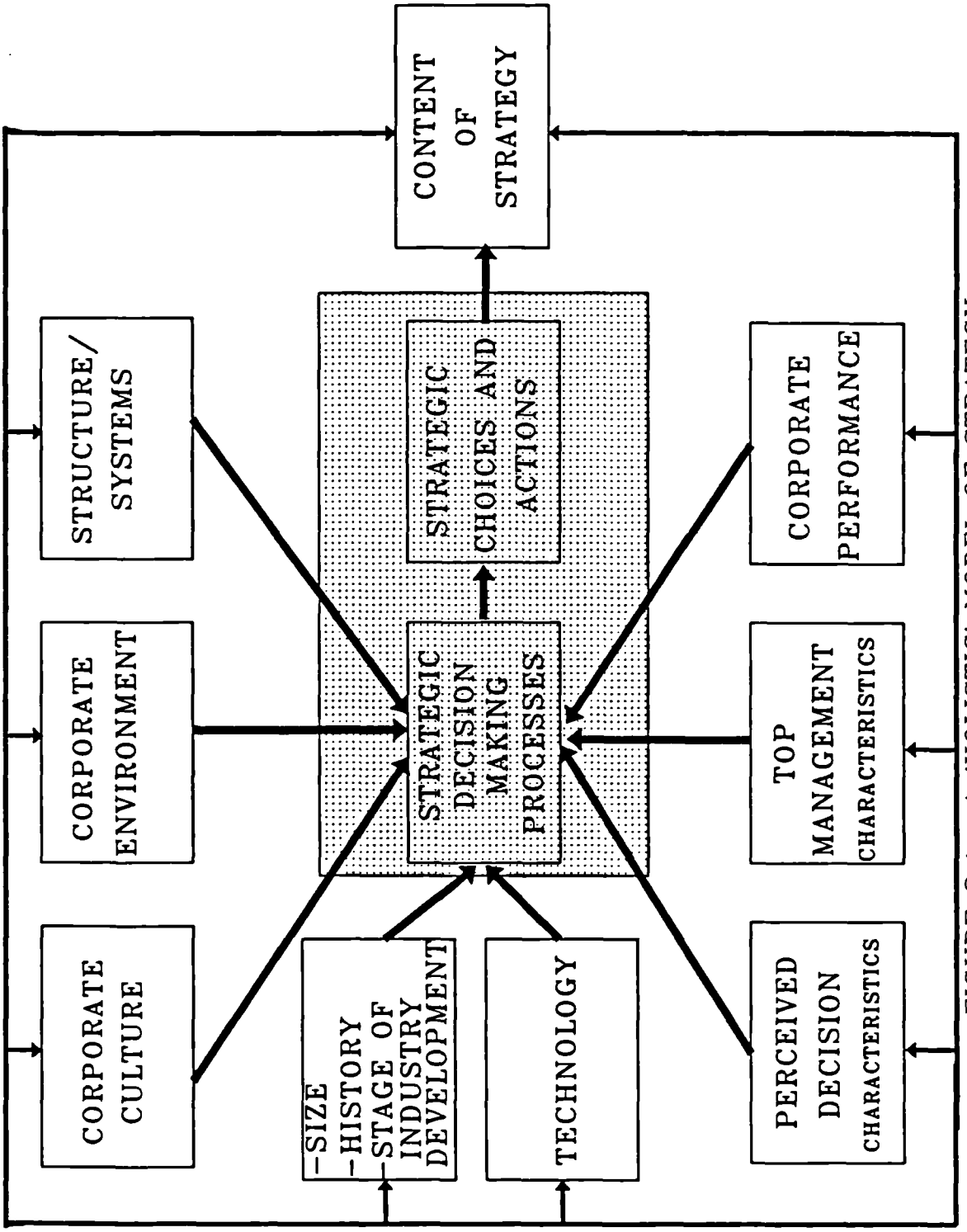

FIGURE 2.1 : A 'HOLISTIC' MODEL OF STRATEGY

Finally, Mintzberg and Waters (1982) offered a quite 'erratic' description of how he conceives strategy. According to them: "*Strategy is a pattern in a stream of decisions*", or as has been modified recently "strategy is a pattern in a stream of actions" (Mintzberg and Waters, 1985).

As can be inferred, strategy is viewed as either a pattern of **objectives, goals, policies,** and **plans** (Chandler, 1962; Andrews, 1971), or as a **pattern in a sequence of decisions** occurring over a period of time (Mintzberg and Waters, 1982; Uyterhoeven et al. 1977). The former view represents the **content** approach to strategy (Huff and Reger, 1987). It focuses on the content of the strategic decision itself (e.g. merger, acquisition, divestment, vertical integration, product/market differentiation, entry, exit and other competitive strategies). In an evaluation of the research on **strategy content**, Fahey and Christensen (1986), divided research in the area into three major avenues of research:

(i) the goal content research (focusing on survival and turnaround strategies, on economic performance issues and on social conduct and commitment issues).

(ii) the scope content research which addresses such issues as diversification, vertical integration, expansion, strategic alliances, and methods of changing scope.

(iii) competitive strategy content research which focuses on strategic groups, industry segmentation, determinants of BEP, strategic typologies, stages of market evolution etc.

In contrast, the **process research** has been focused on the actions that lead to and support strategy. The special issue on strategy process (Schendel, 1992; Chakravarthy and Doz, 1992) emphasizes that both approaches to strategy offer stimulating research opportunities for potential researchers. It is obvious, that since the thesis deals with SID making processes, its principal interest lies in the area of process research. Research in this area includes, among others, prescriptive and descriptive work on **planning methods** and **decision making**. According to Huff and Reger (1987), the process research literature can be divided into eight interrelated

streams of efforts. They are:

1 - planning prescriptions: This stream encompasses studies that have given normative prescriptions for how strategies should be formulated (e.g. Steiner, 1969; Ansoff, 1980),

2 - prescriptions for systematic implementation of strategy,

3 - decision aids to help decision makers overcome their inherent shortcomings in making rational decisions,

4 - devising and implanting incremental changes instead of 'holistic' rational approaches to strategy-making (e.g. Quinn, 1980a; 1981),

5 - planning practices: Survey of the actual planning practices followed by industry (e.g. Armstong, 1986),

6 - bivariate relationships between such concepts as strategy, structure, systems, performance etc (e.g. Burgelman, 1985),

7 - analysis of the processes followed in making strategic decisions ,

8 - and finally, research efforts trying to integrate some of the above mentioned categories.

ii. The Planning vs the Decision Based View on Strategy

Despite the excellent categorization of process research attempted by Huff and Reger (1987), one may be tempted to further divide research into two distinct streams of thought: The ***planning view of strategy making*** and the ***decision based view***. Looking at the previous mentioned streams of efforts in strategy process we may infer that streams 1,2,4,5 tend to adopt a planning view on strategy while only stream 7 clearly adopts a decision oriented view of strategy. The planning view of strategy relates to the first two definitions of strategy (Chandler, 1962; Andrews, 1971). To a significant extent, it views organizational strategy as a well-defined set of goals and plans stemming from a typical and rational planning process. It is argued that strategy is "*the alignment between the external environment and its internal processes and structure*" (Galbraith & Nathanson, 1978).

On the contrary, the decision based view considers strategy as a 'system' whose elements are strategic decisions. Thus, each important decision, to some extent, directly or indirectly influences organizational strategy. Indeed, as Mintzberg and Waters (1982) have pointed out, strategy is a pattern in a stream of decisions (or actions). That is, strategy may be formed through certain very important decisions which are taken at different times in an organization's history.

As is evident from its title, the present thesis follows the decision based view on strategy, since it focuses on the making of strategic investment decisions and the context in which these decisions are made. The attempt to better understand how these very important decisions are made and the factors influencing the way they are made, represents an analytic effort to shed light into the elements of organizational strategy and not strategy per se (Stein 1981a,b). Understanding the strategies of organizations inevitably requires a clearer comprehension of the process of strategic decision-making (Cray et al. 1988), and the factors influencing the way those decisions are made. Or to use Narayanan and Fahey's (1982) words: '*only by investigating the organizational processes out of which strategies emerge, can we understand and explain why they come to be*'. On this basis, it is obvious why much attention should be devoted to how these strategic decisions are made and to whether the way these decisions are made, that is the structure of the decision process itself, may influence decision outcomes and hence strategies which organizations follow (Cray et al.1988).

Moreover, several researchers overtime, have argued that the formal planning perspective is not at all satisfactory in trying to approach the conceptualization and implementation of corporate strategy (e.g. Mintzberg, 1978; Fredrickson,1983). While it may be intuitively appealing to suggest that researchers should focus on formal planning systems it may be more appropriate to adopt a "decision based" perspective which, among others, arms researchers with important methodological weapons in their attempt to shed light into the concepts of strategy and strategy making processes.

First of all, such a research perspective enlarges the potential population of companies enabling the researcher to subject into examination not only the 'formal planners' but the 'non-planners' as well. There is a wealth of empirical evidence arguing that not all companies utilise formal planning systems in their decision making processes. Instead they all make and integrate strategic decisions over time.

The *second* major advantage hinges on the varied number of methodologies available in studying strategic decisions. The adoption of a planning perspective makes difficult the measurement of the various dimensions of the decision making process and is an impediment to the development of various methodologies designed to approach the problem (Fredrickson, 1983). *Finally*, following the reasoning of Shirley (1982), one may content that a decision orientation facilitates the study of both strategy content and process.

Having adopted a decision based perspective in the course of this study, we will now turn our attention to other important issues. Among the most important is that as researchers it may be more feasible to limit the scope of investigation and examine a reduced number of relationships, for in trying to look at everything one might end up finding nothing. Indeed, we should be very cautious in 'crafting' our research, and we should limit our interest to a manageable number of possible relationships. Moreover, we should use 'mixed scanning frameworks' (Thomas, 1984), by drawing concepts, ideas, practices, methodologies from the various disciplines contributing to the BP area, but at the same time be sufficiently selective in defining our own limited area of research in order to produce meaningful results which will contribute to the theory base in the field.

The following three chapters further determine the scope and aspects of this research effort and set the guidelines for the rest of the thesis. More specifically, chapter 3 reviews the literature on strategic decision making processes and attempts to identify possible gaps, chapter 4 further clarifies the focus of the research, while chapter 5 discusses the research methodology.

Chapter 3

Literature Review on Strategic Decision Making

3. Introduction

The aim of chapter 3 is to give a concrete presentation of the relevant literature concerning strategic decision making and strategy formulation processes and to answer to three basic questions, relevant to this thesis: **First**, are there specific perspectives explaining the way strategic decision making is taking place in various organizations, and what are the distinctive characteristics of each perspective? **Second**, can we identify specific steps followed in making strategic decisions, and especially decisions of an investment nature? and **third**, are there specific internal and external organizational forces influencing the ways SIDs are made?

In the beginning, an attempt is made to depict the current avenues of research in the strategy area and to pinpoint the major streams of inquiry in each of them. More specifically, section 3.1 attempts to answer the first two questions, to cite the most significant empirical research efforts in the field of strategic decision making, and to draw some conclusions about the state of research in the area. Finally, section 3.2 emphasizes the need for quantitative, contextual and integrative research in the area, attempts to introduce the reader into the significance of contextual influence on strategic decision making processes (something further investigated in the forthcoming chapters), and raises propositions about the directions of future research.

3.1. WHICH ARE THE MOST NOTABLE RESEARCH EFFORTS IN THE FIELD OF DECISION MAKING?

The theoretical area encompassed by the term organizational decision making is extremely broad and the associated literature vast and riddled with a plethora of theoretical dilemmas. According to Mintzberg et al. (1976), research in the field of decision making can be classified into three streams of inquiry: individual decision making, group decision making and field research on decision making.

3.1.1. INDIVIDUAL DECISION MAKING

This body of research deals with the human mental processes taking place in such situations as those dealing with a rather simplified problem (e.g. Newell and Simon, 1972). It is beyond the scope of the thesis to further analyse research in this area.

3.1.2. GROUP DECISION MAKING

The second, and indeed much larger body of research, deals with the subject of group decision making. Researchers in this area attempt to analyse the processes taking place in cases where several decision makers are involved in making or integrating a specific decision (e.g. Glazer et al. 1987). The same stream of literature assumes that decision makers fall short of the demands of comprehensiveness and rationality and thus, most of the time, can benefit from aids (e.g. Dialectical Inquiry, Devils Advocate) to help them make faster, more effective and rational decisions (e.g. Schwenk, 1986).

3.1.3. FIELD RESEARCH ON ORGANIZATIONAL DECISION MAKING

Finally, the third stream (where the interests of the thesis are) comprises all the field research on organizational decision making. The literature on organizational decision making, being part of the strategy process research, has already become enormous. Many concepts have emerged in very different disciplines, ranging from business policy to organizational behaviour, political science and psychology.

Although extremely interesting, it is beyond the purpose of this chapter to analyse in depth the properties of various schools of thought. Instead, a brief description of their major properties is attempted. In fact, several researchers tried in the past to organize the vast array of publications in the area (e.g. Gremion, 1972; Nutt, 1976; Murray, 1979; Simon, 1979; McMillan, 1980; Lyles and Thomas, 1988; Hart, 1992; Bailey, 1992; Schoemaker, 1993). They distinguish the various decision making models into several distinct categories such as: rational, bureaucratic, incremental, political, avoidance, symbolic, intrapreneurial etc. A careful inspection

of the relevant literature resulted in a taxonomy (presented in table 3.1) attempting to integrate all the above mentioned streams of thought into seven distinct and widely cited models of decision making. Particularly useful in the representation of the seven models have been the comprehensive works of Lyles and Thomas (1988), Hart (1992), and Bailey, (1992).

The seven models are described using some of their most prominent characteristics, i.e. style of strategy making, role of top management, role of organizational members, criteria used, processes followed, assumptions on which the model is based, environment suitable for this mode of decision making, size of the firm. Moreover, a brief list of representative researchers who contributed to the creation of these models, is provided. The seven models are briefly outlined below.

i. The Rational-Analytic-Comprehensive Mode

The rational-analytic-comprehensive model is the prevalent model in decision making theory. For many decades the predominant view about decision making was that organizations behave in a consistently rational way. The basic concepts of the rational view are: (i) the goals and objectives of decision makers are clear and known in advance, (ii) the decision maker chooses the best alternative among all the possible courses of action, (iii) full information about the consequences of possible action is available, (iv) there is no uncertainty involved.

According to this model strategy formulation is a purposeful, consistent, sequential and deliberate process starting with the examination and evaluation of corporate mission, major objectives, strategies and tactics. Systematic analysis of major competitors, threat of new entrants, bargaining power of buyers, bargaining power of suppliers, threat of substitute products or services takes place regularly (Chaffee, 1985). This is coupled by an analysis and evaluation of internal strengths and weaknesses as well as opportunities and threats (Porter, 1980). The whole process results in specific strategies capable of fulfilling the corporate mission and major

objectives. There are predefined resource allocation methods as well as specific systems for monitoring programmes and strategies. Overall, strategies are deliberate and fully realised and no implementation deviations are expected to take place.

	STRATEGIC DECISION MAKING MODELS						
CHARACTE-RISTICS	RATIONAL ANALYTICAL COMPREHENSIVE	AVOIDANCE	INCREMENTAL-ADAPTIVE	POLITICAL BUREAUCRATIC	SYMBOLIC-CULTURAL-INTERPRETIVE	ENTREPRENEURIAL-VISIONARY, COMMAND	INTRAPRENEURIAL-GENERATIVE
CRITERIA	Rationality	Maintainance of Status Quo	-Incremental Satisficing	-Bargaining -Negotiation	-Organizational Paradigm -Cognitive Frames	Presence of Strong Entrepreneurial Leadership	Intrapreneurship
PROCESS	-Sequential	-Discontinuous	-Discontinous -Cyclical	-Cyclical	Use of Symbols, Metaphors and Emotions	-Conscious -Deliberate -Centralized at the Very Top	-Autonomous Behaviour of Organizational Members
ASSUMPTIONS	-Rationalization -Wishful Thinking	-Selective Perception -Rationalization -Wishful Thinking	-Escalating Commitment -Illusion of Control -Selective Perception	-Social Pressure -Escalating Commitment -Illusion of Control	-Corporate Paradigm Guides Actions -Symbolism,Metaphors, emotions Pervade	Total Control by Owner or Small number of Executives	-Employee Initiative -Innovativeness
STYLE OF STRATEGY MAKING	-Strategy Driven by Formal Planning Systems	Strategy Driven by Actions to Preserve Status Quo	-Strategy Driven by Successive Limited Comparisons-Steps -Cycles & Recycles	Strategy Driven by Internal Political Processes	Strategy Driven by Mission and Vision of the Future	Strategy Driven by Owner-Leader	Strategy Driven by Organizational Actor's Initiative
ROLE OF TOP MANAGEMENT	Evaluates and Controls	Action Avoidance	Orchestrate a Step-by-Step Incremental Process	Empowers and Enables	"Leader" Motivates and Inspires	"General" Provides Direction	Endorses and Supports
ROLE OF ORGANIZATIONAL MEMBERS	Follow the System	Inertia	-Proceed With Caution -Flexible to New Options	Learn and Improve	Respond to Challenges	Obey Orders	Experiment and Take Risks
PROBABLE CORPORATE ENVIRONMENT	Stable	Simple, not Complex	Dynamic, Complex, Uncertain	Complex	Dynamic	Simple, not Complex	Turbulent
SIZE OF THE ENTERPRISE	Medium,Large	No Relation	Medium,Large	Large	Medium-Large	Rather Small	No Relation
REPRESENTATIVE REFERENCES	-Allison (1971) (Rational) -Mintzberg(1973) (Planning) -Grandori (1984) (Optimizing) -Fredrickson (1984) -Chaffee (1985) (Linear)	-Cyert & March (1963) -Janis & Mann (1977)	-Quinn (1980a) (Incremental) -Lindblom (1959) -Mintzberg(1973) (Adaptive) -Grandori (1984) (Satisficing) -Chaffee (1985) (Adaptive)	-Allison,1971 (Bureaucratic) -Nutt (1984) (Behavioural) -Mintzberg (1973) (Adaptive) -Mintzberg & Waters (1985) (Process) -Pettigrew (1973) -Wilson (1982)	-Grandori (1984) (Cybernetic) -Mintzberg and Waters (1985) (Ideological, Umbrella) -Chaffee (1985) (Interpretive)	-Nutt (1981) (Normative) -Mintzberg(1973) (Entrepreneurial) -Shrivastava & Grant (1985) (Managerial Autocracy) -Bourgeois & Brodwin (1984) (Commander)	-Grandori (1984) (Random) -Mintzberg and Waters (1985) (Unconnected)

Table 3.1: Models describing alternative strategic decision making approaches.
(Partly adapted from Lyles and Thomas 1988; Hart, 1992; Bailey, 1992)

According to **Janis and Mann (1977)**, rationality is an ideal to be achieved during decision making. In their attempt to describe rationality, they devised some standard criteria for evaluating the quality of any decision. Failure to meet their criteria automatically implies "defective"-irrational decision making.

Dror, (1968), developed the notion of economic rationality. He sees rationality as the ideal in making any decision, but recognizes that in real world situations this is almost impossible to be achieved. He is then ready to make some concessions, e.g. sacrifice rationality in those cases where the cost of achieving it outweighs the benefits. Thus, he tries to match rationality with the idea of being "economic".

Conceptual elegance and rigour are the two most significant characteristics of the rational model. But it has come under attack because obvious problems arise in trying to meet these requirements. One of the first who shed doubt on the assumptions behind the rational model, and undoubtedly, one of the pioneers in the field of organizational decision making is **Herbert Simon** from Carnegie Institute of Technology. He was among the very first who tried to understand the way in which decision makers act in real-world decision situations. His research was based on observation, document analysis and personal interviews in a computer purchasing decision process. Contrary to what economists claimed, he proved that decision makers are not "infallible machines" that make decisions in the most rational and analytic way. On the contrary, they are "satisficers" who most of the time show little resemblance to the "economic man" presented by most of the economists. In fact managers act with **bounded rationality**.

Moreover, values and goals are not always clear to the decision makers. Most of the time means and ends are closely interrelated. Furthermore, it is utopic to believe that full information can be achieved, or that there is an abundance of resources to be disposed. Third, the power-behavioural aspects of organizational decision making, the political behaviour, bargaining and negotiations are completely ignored. Enterprises are 'loosely coupled' systems with dynamic internal processes. These are but some of the many possible limitations of the rational actor model.

ii. The Avoidance Mode

In his seminal work "Administrative Behaviour", **Simon (1947)**, attempts a comparison between the famous 'economic man' and his "spiritual child" the administrative man. The former is indeed a rational actor. When having to make a decision he has a consistent system of preferences, together with full knowledge of all the alternative choices of action, and the capability to overcome any computational difficulties encountered. All these qualities allow him to directly compare all possible alternatives and, acting in the most rational way, to choose the best.

On the contrary, **Simon (1957)**, states that the administrative man has little discernible resemblance to the economic man. It is not an exaggeration to contend that "power of prescience and capacities for computation (present in the economic man) resemble those we usually attribute to God" (Simon, 1965, pp 12). In real world decision making, man is not a value maximizer, but a satisficer, in the sense that he chooses the course of action that is "good enough". This in turn, means that most of the time he does not evaluate all the possible alternatives or that he may use rules of thumb when making a decision. Moreover, he tends to overlook those facts of the real world that have no profound relevance to the issue he is trying to resolve. The administrative man deals with only small parts of issues at one time. In fact he divides organizational problems into smaller parts and then solves them one by one. One thing decision makers "hate" is uncertainty. Therefore, they create monitoring mechanisms, such as feedback loops, of uncertainty avoidance devices.

In one of the landmarks in the area of decision making Cyert and March (1963) introduced the concept of "problemistic search" in their endeavor to describe the way in which decision makers act. According to them, three major terms can reliably describe the way a decision maker behaves: (i) he is simple minded, (ii) most of the time he is biased and (iii) he is also motivated. Moreover, four major concepts influence organizational goals, expectations and choices:

- **quasi resolution of conflict** among several subunits that constitute the different coalitions of members within the same organization. Organizational goals are

both highly ambiguous and in many instances not operational in practice,

- **uncertainty avoidance.** The assumption behind the uncertainty avoidance is that there is always a tendency to maintain the status quo and if problems are ignored they will eventually go away.
- **problemistic search.** Organizations tend to consider for further evaluation only those alternatives that meet their predetermined goals or norms. People tend to look to the neighbourhood of current alternatives to choose the preferred one.
- **organizational learning.** The whole decision making process is a learning process for any organization at any given time. Operating procedures and decision rules, more or less present in all organizations, are the outcome of organizational learning based on routine.

The main assumption behind this model is that people show the tendency to preserve the status quo. Especially, when loss of power or prestige can be the result of the identification of a potential problem, it is very likely that avoidance will prevail (Cyert and March 1963; Lyles and Thomas, 1988). Action will take place only when there is fear of serious disruption of the status quo. The process is discontinuous following choice procedures based on short run feedback of actual vs desired results. As Butler et al. (1979) suggest, such an attitude towards strategy making may fit companies operating in rather munificent and simple environments, where no major changes in the external environment are expected.

iii. The Incremental-Adaptive Mode

The incremental-adaptive model attempts to extend the previously mentioned avoidance model, while at the same time borrows ideas from the rational-analytical school of thought. The foundations of the model are built around the assertions that (i) in todays rapidly changing competitive situations, companies operate in complex, demanding environments (ii) managers, as human beings, suffer from profound mental limitations which preclude them from acting in a completely rational-analytic manner (iii) there exists fragmentation in decision making and differences in the

values, attitudes and interests of major participants. Under such conditions strategy is formulated in a disjointed and incremental fashion, and major decisions are taken by resorting in "successive limited comparisons" and incremental departures from the status quo (Lindblom, 1959).

Lindblom (1959, 1965), as well as Braybrook and Lindblom (1963), are probably the most well known proponents of the 'disjointed incrementalism' in decision making. Studying decision making in the public sector they conceptualized strategy formulation as an incremental process of "muddling through". According to them decision makers do not act in a rational way by looking for and evaluating all possible alternative courses of action. Instead they take into account only those alternatives which marginally differ from the existing state of things. Under their framework, means and ends are considered simultaneously. During the decision making process one cannot set definitive objectives to achieve, instead objectives are reconsidered and sometimes reformulated as the process evolves. As colourfully described, decision making is "a never-ending process of successive steps in which continual nibbling is a substitute for a good bite".

Quinn (1978), again significantly contributed to the pool of existing theory in decision making. By observing decision making processes and evolution in strategy in ten large corporations, he realised that the processes followed had little discernible relation to what the rational school of thought teaches. In fact the process is characterized by fragmentation, constant evolution and significant intuition. Despite this, researchers can trace areas (subunits) where rational analysis takes place. The final outcome (may it be strategy or outcome of a significant decision process) is a mixture of both incremental and rational elements.

According to Quinn, effective top managers succeed in blending the widely recognized formal-analytical techniques with the more behavioural elements of strategic decision making and produce a "*cohesive step-by-step movements toward an end, which initially are broadly conceived, but which are then constantly refined and reshaped as new information appears*" **(Quinn, 1980b; p.3).** The role of

other organizational members is to proceed with caution and to be flexible to new options and ideas.

The "*logical incrementalism*" school of thought in strategic decision making is a purposeful and effective management technique using both the rational-analytical and the power-behavioural aspects of strategy formulation. It stresses the cyclical-discontinuous character of most decision processes which may for example start with problem definition, alternative generation and before moving to alternative evaluation return to reshape the initial definition of the problem. Goals and objectives are not firmly clarified but are subject to adjustment as the decision proceeds. Comparatively narrow analysis of alternative courses of action together with consideration of a restricted number of consequences usually takes place.

According to Lyles and Thomas (1988) the biases inherent in the model may be escalation of commitment to a losing course of action, the illusion of having better control of the situation due to step-by-step evolution, and the probable bias towards information gathering and interpretation. The incremental mode may be best suited to medium sized or larger companies operating in rather dynamic and uncertain environments.

iv. The Political-Bureaucratic Mode

Alisson (1969), is one of the fathers of the political model of decision making. According to him, decisions are the outcome of a political bargaining process. In any decision process, power is shared among several actors or groups of actors, having different personal goals and interpreting organizational goals in various different ways. In many instances the outcome of the decision making process is a mixture of various competing preferences and bargain and compromise between coalitions. In several instances constellations of interests are formulated with the aim to support certain views of the world. Especially in cases where adoption of a certain course of action implies a reshuffling of the future allocation of resources and power, political activity is more visible.

Cohen and associates (1972) extended Cyert & March's model by supporting the contention that in most of the decision situations it is plausible not to find a purpose behind decisions. Decision making processes resemble organized anarchy situations and decisions to garbage cans, suffering from ill-defined preferences and goals, fluidity and high turnover participation. Moreover, managers usually follow a course of action based not on rational thinking and examination of every possible alternative but on past experience and the way they are used to make things. In fact: "an organization is a collection of choices looking for problems, issues and feelings looking for decision situations, in which they might be aired, solutions looking for issues to which they might be the answer, and decision-makers looking for work" (Cohen, March and Olsen, 1972, pp 2).

In the same vein, **Pettigrew (1973)** introduces the concept of political behaviour as a central element in the decision making process. He sees power shared among actors as more a significant explanator of the actual choice among alternative courses of action than the notion of satisficing behaviour present in decision making, and suggests that organizations should be viewed as complicated political systems.

Narayanan and Fahey (1982) as well as other researchers may well be right when they argue that very seldom the actual maker of strategy is a single individual. In such processes different sets of political actors usually participate and the distribution of power/influence among different groups involved, not only constrain the alternative courses of action under consideration, but also prescribe to a great extent the final strategy adopted.

A significant implication of the recognition of the importance of the political model in strategy formulation is that "*the politics of decision making must be managed just like its analytical or rational side .... and .... formulating the content of strategy inevitably entails managing its context and processes*" (Narayanan and Fahey, 1982; pp 32).

To summarize, organizations do not always act rationally. Instead, they are usually highly political entities where multiple, sometimes conflicting organizational goals, are present and decision makers along various levels in the hierarchy play as actors in a political process. Moreover, because decision makers suffer from profound biases and cognitive limitations, issues may receive completely different interpretations from various participants. The existence of conflicting viewpoints favours coalition formation within the company. Each coalition supports its view of the world and influences strategy making. Differences emerged are likely to be resolved through bargaining, persuasion and negotiation attempts (Carter, 1971; Wilson, 1982). The strategy pursued will finally emerge through mutual adjustment and compromise of key decision makers. What is actually decided is far from a rational solution, but rather the result of alliance formation, political manoeuvring and power differentials.

v. The Symbolic-Cultural-Interpretive Mode

Only recently have theorists discussed the existence of this model the parameters of which are not yet clear (Chaffee, 1985). It is based on the assumption that actions and strategies are guided by and finally formulated through a compelling corporate vision and a clear mission of the future (Hart, 1992). What is clear is that there exist some common elements among organizational members, which act as a conceptual glue that bind the diverse activities of organizations and which decisively pervade in shaping the strategies pursued. These common elements might be labelled as organizational symbolism, metaphors, emotions, corporate philosophy, corporate culture, shared attitudes, values etc. Organizational reaction to external opportunities and threats is not simply an outcome of decisions formulated by planning systems or of political activities between various stakeholders, but it is shaped by the organizational culture the shared attitudes, values etc. The role of top management is to motivate, inspire, and provide an "umbrella" under which strategies grow (Mintzberg, 1987), while organizational members adapt by responding to challenges.

This mode of decision making seems to be suitable to larger, diversified companies where a common corporate culture is the necessary conceptual lens through which environment is interpreted and actions are guided. The symbolic-cultural mode may also fit companies experiencing more dynamic, even hostile environments (Dess and Beard, 1984; Bourgeois and Eisenhardt, 1988).

vi. Entrepreneurial-Visionary-Command Mode

This model of strategy making is dominated by the presence of a strong entrepreneurial leadership (Mintzberg, 1973; Bourgeois and Brodwin, 1984; Shrivastava and Grant, 1985). The whole process is characterized as conscious, deliberate and centralized at the very top, where one person or a small group of persons assess the situation, explicate alternatives, evaluate alternatives and choose the preferred course of action (Mintzberg, 1973; Bourgeois and Brodwin, 1984).

The leader relying on his personal power, intuition, innovation and charisma, is the "general" who provides direction to other organizational members who act as soldiers executing orders (Mintzberg and Waters, 1982; Hart, 1992). According to Mintzberg (1973), the strategy-making under this model is characterized by: (i) the active search for new opportunities, (ii) the power centralization in the hands of the owner or a small number of executives (iii) the making of large, bold decisions in the face of uncertainty and (iv) the domination of the goal of growth over other corporate goals.

But the leader is not relying solely on intuition and charisma. The vision guiding his individual strategic decisions is grounded on personal experience and very deep understanding of the organization, its external environment, and strengths and weaknesses. Of considerable importance is the way the vision is conveyed to the various layers in the hierarchy, because "it must be effectively articulated and communicated" (Bailey, 1992 pp 8). Again, the receptiveness of subordinates and their willingness to share this vision and contribute to its implementation is not of less importance.

This mode of decision making is expected to be found in rather simple environments and may be associated with small or medium sized firms, so that top management can maintain effective control over the environment and the company.

vii. The Intrapreneurial- Generative Mode

Sometimes strategy is formulated through internal corporate venturing of specific organizational members (Burgelman, 1983). Indeed, innovative ideas may emerge from autonomous strategic behaviour of individuals who by behaving like entrepreneurs, identify high potential ideas and try to persuade other organizational members that they are worth implementing. In such a model the role of top management is to allow experimentation and support the creation of new high-potential ideas, while other organizational members are left free to experiment, take risks and either succeed or fail (Hart, 1992). Such a strategy formulation mode is likely to be found in high velocity environments (Bourgeois and Eisenhardt, 1988).

viii. Discussion

The above presented quick review aimed at capturing some of the flavour of the various models of decision making. This relatively brief excursion into organizational decision making theory is not intended to belittle its importance; it however seems more appropriate to delve into theory as required rather than produce thick descriptions. What should be evident out of this analysis is the existence of an extensive conceptual development in the area, but what may be also evident is that none of the above mentioned typologies captures the plethora of issues, concepts, dimensions and biases present in strategic decision making. They are indeed simplifications explaining small portions of very complex phenomena.

Each of the models presented is based on different assumptions, advocates its own style of decision making, utilises varied criteria, and experiences different processes. Lyles and Mittrof (1980) contend that any decision model might be in the repertoire of any decision maker, and that "successful firms might be expected to

utilise all of the available decision models as thinking frameworks" (Lyles and Thomas, 1988, pp 141). Indeed, each of them represents "pure" typologies, each of which may evoke at any time. Chaffee (1985) went one step further to suggest that there is a hierarchy of strategic typologies, some of which are more comprehensive and incorporate others, less complex. Moreover, firms may have the capacity to blend various decision models sequentially, or simultaneously. A decision process might start from an entrepreneurial idea (entrepreneurial-command model), proceed with careful information gathering and examination of alternative courses of action (rational-analytical model), meet stiff opposition and continue as a rather highly political issue, involving bargaining and negotiation among participants (political-model), and end up in efforts to maintain the status quo (avoidance model).

Moreover, each one of the models seems to be more suitable for specific environmental categories and for enterprises of specific sizes. For example, in situations of low environmental uncertainty, external stimuli tend to be clear and unconfusing, thus getting the same interpretation by decision makers in various levels in the hierarchy. This implies that a consensus among participants is the probable outcome and that all the available resources will be unanimously utilised in solving the problem. Under such low-uncertainty, high-consensus environments one might expect either the rational or the avoidance models to be used (Chaffee, 1985; Lyles and Thomas, 1988; Hart, 1992). On the contrary, the political and incremental models might be suitable in high uncertainty situations, where debate, questioning of assumptions and negotiations might be helpful in processing the issue (Dess and Beard, 1984; Hart, 1992).

In general, the utilisation of any model during the various phases of the decision making process seems to be the interplay of a number of forces, such as corporate environment, managerial vision, managerial perceptions, organizational learning processes, planning systems and various other internal and external forces. The forthcoming chapters will attempt to both theoretically and empirically validate this assertion.

After having examined the various models of strategic decision making, in the following sections we will briefly deal with the two major issues present in organizational decision making literature. First, following the normative part of the literature, can there be identified specific steps in a decision making process? and second; which are the most important empirical research efforts in the field of strategic decision making?

3.1.4. STAGES (STEPS) IN THE DMP

This section deals with a significant debate within the organizational decision making theory. It concerns itself with whether there can be identified a sequence of distinct and separable stages in every decision making process. Indeed, a succession of iterative models of varying degrees of elegance have found their way in the international literature. For reasons of parsimony no thick descriptions of the voluminous research in the area are to be attempted here. Instead, we will try to mention a handful of pathbraking efforts and to propose a simple five-stage model which will be followed in the course of this study. In parallel, table 3.2. presents a number of selected research efforts on stages in strategic decision making processes.

One of the earliest attempts to formulate specific stages in a decision belongs to **Soeldberg** (1966). He describes the decision process as a sequence of 8 stages (Table 3.2.). These stages are:

1. the *participation stage*
2. the *recognition and definition* stage, where the decision maker identifies the salient characteristics of the problem in question.
3. the *understanding of the issue*,
4. the *design stage*, where alternative courses of action are identified and their consequences estimated.
5. the *evaluation stage*, where various alternatives are directly analysed by means of specific qualitative or quantitative evaluation criteria.
6. the *reduction of the set of alternatives* into one single preferred choice,
7. the *implementation phase*,
8. The whole process culminates with the final eighth stage, the *feedback* and *control* stage.

1.SOELDBERG, 1966	2.POUNDS, 1969	3.WITTE,1972	4.KING,1975a	5.MINTZBERG et al. 1976	6.SIMON, 1977
1.Participation 2.Recognition & Definition 3.Understanding	1.Choose a Model 2.Compare to Reality 3.Identify Differences 4.Select a Difference	1.Problem Recognition 2.Gathering Information	1.Triggering	1.Identification -Recognition -Diagnosis	1.Intelligence
4.Design	5.Consider Alternative Operations	3.Developing Alternatives	2.Screening 3.Definition	2.Development -Search -Design	2.Design
5.Evaluation 6.Reduction	6.Evaluate Consequences 7.Select an Operator	4.Evaluation of Alternatives 5.Choice	4.Evaluation 5.Transmission 6.Decision	3.Selection -Screen -Evaluation/ Choice -Authorization	3.Choice
7.Implementation 8.Feedback and Control	8.Execute an Operator	-------	7.Execution	-------	4.Review

7.JANIS AND MANN, 1977	8.CLARK & SHRODE, 1979; MAZZOLINI,1981	9.HORVATH AND Mc MILLAN,1979	10.NARAYANAN and FAHEY, 1982	11.VOLKEMA, 1983
1.Appraising the Challenge	1.Decision Need Identification	1.Identification -Recognition -Diagnosis	1.Activation	1.Detection or Discovery 2.Formulation
2.Surveying for Alternatives	2.Search for Alternatives for Action 3.Investigation of Courses of Action	2.Development -Search -Design	2.Mobilization 3.Coalescence 4.Encounter	3.Exploration
3.Comparing the Alternatives 4.Deliberation about making a Commitment	4.Review and Approval	3.Selection -Screening -Evaluation/Choice -Authorization	5.Decision	4.Selection 5.Detail/ Design
5.Adherence to the Decision	5.Implementation	4.Implementation -Initiation -Planning -Execution 5.Monitoring -Evaluation -Feedback		6.Implementation 7.Evaluation

12.HOFER AND SCHENDEL,1978	13.DIO, 1983	14.FREDRICKSON 1984	15.NUTT, 1984	16.SCHILIT,1987	DERIVED MODEL
1.Strategy Identification 2.Environmental Analysis 3.Resource Analysis 4.Gap Analysis	1.Start-Up	1.Situation Diagnosis	1.Formulation	1.Problem Identification	1.DIAGNOSIS OF THE SITUATION
5.Strategic Alternatives	2.Developmental	2.Alternative Generation	2.Concept Development	2.Generation of Alternatives	2.GENERATION OF ALTERNATIVES
6.Strategy Evaluation 7.Strategy Choice	3.Finalization	3.Alternative Evaluation	3.Detailing 4.Evaluation	3.Evaluation of Alternatives 4.Strategic Choice	3.EVALUATION 4.FINAL CHOICE
----------	4.Implementation	4.Decision Integration	5.Implementation	5.Implementation	5.DECISION INTEGRATION

Table 3.2. Presentation of Selected Research Efforts on Stages in Decision Making Processes

Another influential work belongs to **Janis and Mann** (1977). Studying the way people arrive at difficult personal decisions, they view the decision making process as a series of progressive changes in the attitude of the decision maker, from the initiation of the process to the final commitment to action. Their five-stage schema (presented in table 3.2) starts with the appraisal of the specific challenge faced, and continues with the survey for alternatives, the comparison of alternatives and the deliberation about the making of a commitment. Finally, the process reaches an end when the decision maker adheres to the decision.

Undoubtedly one of the most comprehensive and illuminating set of insights into the nature of strategic decision making belongs to **Mintzberg, Raisinghani and Theoret,** (1976). In contrast to the majority of previous researchers they conducted an indepth study of 25 decisions of a merely strategic nature, using a convenience sample (see table 3.2). Their work paved the way to more sophisticated decision models in the area, but its uniqueness lay in the fact that by concentrating on a large number of actual cases, provided a more realistic and enriched depiction of the process of making SDs. Moreover, Mintzberg and associates never advocated a rational sequential progression of steps in the process, rather they stressed the complexity and convolution that may characterize SDs.

They view decision making as a series of three interrelated central phases incorporating seven action routines, as well as six sets of dynamic factors. The central phases of decision making are: the identification phase, the developmental phase and the selection phase. The central routines are defined as the recognition of the existence of the issue, the diagnosis of the situation, the search for alternatives, the design, the screening, the evaluation/choice and the final authorization. The dynamic factors encountered by the decision can take the form of interruptions, scheduling delays, timing delays/speedups, feedback delays, comprehension and failure recycles.

Another influential research work belongs to **Fredrickson,** (1983; 1984; 1985; 1986). His main contribution is that he operationalized and measured the comprehensiveness-rationality dimension of strategic decision processes in a

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controlled environment. He identified four stages in a decision making process. Those stages are situation diagnosis, alternative generation, alternative evaluation and decision integration. Thus, the focus of his research is not on testing sequential models of strategic decision making but on trying to detect whether certain contextual factors (e.g. size, performance, structure etc.) directly influence the comprehensiveness/rationality with which those decisions are made. For the purposes of his work he assumes the rather simple four stage model.

Despite the large number of descriptive and prescriptive models that attempt to elucidate specific steps in the decision making process there is still no widely recognized series of stages in decision making processes. As mentioned before, table 3.2. presents some of the most salient decision making models which have been so far presented in the international bibliography. Evidence from this table shows that there exists no consensus about the existence of specific stages. In fact, there can be identified as many as eight steps (e.g. Pounds, 1969; Soeldberg, 1966), or as few as four stages (e.g. Simon, 1977; DIO, 1983; Fredrickson, 1984).

This in turn places every new researcher in the area in a very difficult position, when trying to adopt either a simple four to five stage decision model, or a more complex multistage one. But if we study table 3.2 in more depth, having in mind to achieve parsimony in the number of steps adopted, we may easily detect that certain steps in the process overlap. A more simplified derived model may then be adopted containing just five stages which can, to some extent, reliably depict every decision making process. This **derived model**, which will be adopted in the course of this study, is similar to Fredrickson's (1984) four stage model. It incorporates the diagnosis of the situation phase, the alternative generation phase, the evaluation and selection phases and a final stage where the decision is integrated into the plans and goals of the company.

But the researcher should be very cautious in adopting any one of these models, because despite their apparent reasonableness and conceptual rigour there exist serious challenges to their sequential nature. Probably the most well-documented

challenge comes from Witte (1972). By studying 233 cases of decisions concerning data processing systems procurement, he reached the conclusion that there cannot be a universally applicable set of stages followed in any decision making process.

In fact, there is a very intimate relationship between the different stages of the process (e.g. problem recognition, information gathering, development of alternatives, evaluation of alternatives, and final choice). Decision makers sometimes tend to search for possible courses of action even before fully anticipating the meaning of the problem they face, or they develop alternatives even at the very early stages of information gathering. In many cases managers tend to seek solutions even at the stage of situation diagnosis, or evaluate possible alternatives even before they have collected all the necessary information (Mintzberg et al.1976, Nutt,1984). In other words, the process may contain both rational and incremental elements (e.g. Rowe, 1989). For example, companies can be extremely comprehensive in diagnosing the situation but rather incremental in evaluating the alternatives or integrating the decision (Nutt, 1977).

3.1.5. EMPIRICAL RESEARCH IN STRATEGIC DECISION MAKING

It has been already mentioned that, the area of organizational decision making (in general) is one of the most highly researched areas in management literature and yet one where more rigorous large scale empirical research is highly recommended (Fredrickson 1985; Hickson et al. 1986; Schilit 1987; Bourgeois and Eisenhardt 1988; Bateman and Zeithaml 1989).

Moreover, considerable criticism has been raised lately, focusing attention on the fact that the field has been largely characterized by an overarching emphasis on normative models as those of Steiner, 1969; Delbecq and Van de Ven, 1971; Nutt, 1976; Hofer and Schendel, 1978; McMillan, 1980; Mason and Mitroff, 1981; Nadler, 1981; Lyles and Thomas, 1988. According to critics, (e.g. Nutt 1984; Shrivastava and Grant, 1985), far less attention has been directed toward **large scale empirical studies** on how managers go about making decisions, and especially decisions of a

strategic nature. This can be partly attributed to the fact that the vast majority of research efforts in this field, are small sample case study explorations. Analysing the empirical part of research on strategic decision making, one concludes that the main stream of work can be divided into two parts: the small sample case-study part and the large scale empirical research in the field.

A. Small Sample Case Study Research.

The first part, and the biggest one, is that of analysis of particular cases. At the very beginning, particular emphasis was given to studying significant capital investment decisions (SIDs) in large diversified companies. This tradition started from Harvard (e.g. Berg, 1963; Aharoni, 1966). **Aharoni** (1966), analysed the decision to invest in Europe in a sample of 30 USA companies and using a research approach based on questionnaires and interviews. **Ackerman** (1968; 1970), using a research methodology based on interviews, written questionnaires and case studies, studied the investment processes of integrated and diversified paper making enterprises.

Bower (1970), continuing the tradition of Harvard in this area, followed the emergence and evolution of four investment projects in a large diversified company. His work resulted in a model of SID making that consisted of three aspects; the definition, the impetus and the context. The definitional aspect of decisions was related to the technical/economic proposals at the product market level. Subsequently, only projects to which a certain amount of impetus was given finally succeeded in receiving serious consideration in the organization. Finally, corporate-level executives participate in the process mainly by exerting influence on the structural context within which investment decisions are generated.

Carter (1971), was heavily influenced by the work of Cyert and March (1963), when designing his study of six investment decisions in a small computer firm. **King (1975a b)**, studied three investment decisions in two U.K. companies and closely monitored activities especially during the early stages of the process (i.e. identification of need, situation diagnosis).

Following Bower, **Burgelman (1983)** focused on the process of internal corporate venturing by studying six projects in a large diversified corporation. His work resulted in a meaningful process model stressing (i) the significance of autonomous entrepreneurial behaviour present in middle management levels (ii) the ability of middle managers to extensively influence corporate strategy by actively sponsoring certain projects while "burying" others and (iii) the role of top management in adopting middle management's ideas, thus reshaping corporate strategy.

Barwise, Marsh, Wensley and Thomas (Barwise et al. 1986a,b, Marsh et al,1988ab) studied three SIDs in the making and in detail. They conducted clinical research which lasted for about 3 years and advanced our current knowledge about the influence on SID processes of: (i) formal planning systems, (ii) formal capital budgeting procedures, (iii) senior management, (iv) organizational structure, (v) measurement and reward systems, (iv) corporate climate.

Bourgeois and Eisenhardt (1987; 1988), and Eisenhardt and Bourgeois (1988), following the case study approach to strategic decision making, made a series of publications based on an increasing (from paper to paper) sample of SDs. They made a significant contribution to strategic decision making literature by focusing on such aspects of the process as conflict, politicization, imbalance of power among executives. Moreover, they devoted much attention to speculating on how process characteristics can possibly influence organizational performance levels. Recently, **Langley (1988)** attempted to examine, by using three in depth case studies, the impact of formal strategic planning systems on the making of individual strategic decisions, and **Rowe (1989)** articulated and extended some thoughts of the Bradford team by focusing on two decisions referring to computer installations.

Finally, a new wave of case studies examining specific SIDs seem to have emerged. The comparison of SID making in China and Britain (**Lu et al. 1992; Child and Lu, 1992**), together with the research of **Yamamoto (1992 a b; 1991)** in Japan seem to urge for more research investigating strategic decision making processes in different contexts. Indeed, there exists a significant number of empirical works in the U.K. and USA, but there is a dearth of research referring to other countries.

B. Large Scale Empirical Research

In retrospect, there is no doubt that, the case study research significantly aided our understanding of decision making processes as incremental socio-political activities, involving several hierarchical layers, and taking a significant time to reach the decision stage. But as Simon (1979) states:

"The case studies of organizational decision making, represent the natural history stage of scientific inquiry. They provide us with a multitude of facts about the decision making process. But we do not yet know how to use these facts to test the model in any formal way. Nor do we quite know what to do with the observation that the specific decision making procedures used by organizations differ from one organization to another, even from one situation to another. We must not expect from these data generalizations as neat and precise as those incorporated in neoclassical theory" (Simon, 1979, pp 508).

But the main contribution of small-sample case-study research is that it has provided us with a thorough insight of the decision making processes and elaborated a number of very important hypotheses to be tested, thus opening a fruitful avenue of inquiry for researchers tempted to further explore this area.

Unfortunately, only a few research efforts have appeared in the recent two decades attempting to draw conclusions based on a sufficient number of cases. It is these very few notable works we are going to trace and through them draw some conclusions about the trends in the field of strategic decision making. The most important of them are depicted in table 3.3. This table may not be exhaustive, but it includes the most important large scale research efforts in the field of strategic decision making.

NAME/(s) OF THE RESEARCHER(s)	YEAR	No. of DECIS.	DECISION TOPICS	TYPES OF DECISIONS	TARGET SAMPLE	TYPE OF RESEARCH	CONTEXTUAL CONSIDERA-TIONS
1.AXELSSON & ROSENBERG	1979	20	Decisions on Education	Various Decisions	Universities	Mail Questionnaire	NO
2.BUTLER, DAVIES, PIKE and SHARP	1992	17	Various	Strategic Investment Decisions (SIDs)	Organizations from Various Sectors	Semistructured Interviews and case studies	YES
3.DUHAIME & GRANT	1984	40	Divestment Decisions	Strategic Decisions	Industrial Enterprises	Interviews	NO
4.DIO TEAM	1983	56	Various	Mainly Tactical Decisions	3 Enterprises Only	Interviews & Observation	NO
5.DIO Team	1979	103	Various	Operational Decisions	7 Organizations from various sectors	Questionnaires	YES
6.FAHEY	1981	Unspe-cified	Energy Related SDs	Strategic Decisions	Enterprises from Various Sectors	Case Studies	NO
7.HICKSON et al.(BRADFORD STUDIES)	1986	150	Various	Strategic Decisions	Convenient Sample, Various Sectors	Structured Interviews	NO
8.LYLES, M. LYLES and MITROFF	1981 1980	33	Problem Formulation	Strategic Decisions	Enterprises from Various Sectors	Interviews and Questionnaire	YES
9.LYLES, M.	1987	102	Strategic Problem Formulation	Strategic Decisions	Enterprises from Various Sectors	Mailed Questionnaires	NO
10.MARCH and OLSEN	1973	13	Various	Both Strategic and Tactical	Convenience Sample	Case Studies	NO
11.MINTZBERG et al.	1976	25	Various	Both Strategic and Tactical	Convenience Sample	Interviews	NO
12.NUTT	1984	78	Various	Both Strategic and Tactical	Health and Service Organizations	Interviews	NO
13.NUTT	1986 b;c	91	Various	Both Strategic and Tactical	Health and Service Organizations	Interviews	NO
14.PATCHEN	1974	33	Purchasing Decisions	Both Strategic and Tactical	Enterprises From Various Sectors	Interviews	NO
15.SCHILIT and PAINE	1987	352	Various	Influence Attempts from Middle Managers	Enterprises From Various Sectors	They don't Share their Methodology with us	NO
16.SHRIVASTAVA and GRANT	1985	32	Information Systems	Strategic Decisions	Enterprises From Various Sectors	Interviews	NO
17.SINHA	1990	1087	Various	Strategic and Tactical Decisions	Enterprises From Various Sectors	Mailed Quests	YES
18.STEIN	1980	64	Various	Strategic Decisions	Unspecified	Mailed Quests	YES
19.WITTE	1972	233	Purchase of EDP systems	Innovative Decisions	All kinds of Companies having Bought an EDP System	Mirror Image Analysis	NO
20.LANGLEY	1990	27	Various	Strategic Decisions	Three State Controlled Companies	Indepth Case Studies	YES

Table 3.3: Presentation of some of the most notable large scale,empirical works on Strategic decision-making*.

* Excluded from this presentation, are research attempts based on laboratory investigation (e.g. examination of student behaviour during controlled experiments based on case studies) or simulated cases to garner the views of executives. I do recognize, however, that some of them are indeed very important and methodologically rigorous research efforts (e.g. Henderson and Nutt, 1980; Volkema, 1983; Fredrickson, 1985; 1986; Fredrickson and Iaquinto, 1989; Bateman and Zeithaml, 1989; Schneider and DeMeyer, 1991) as well as others not cited. Nevertheless I have chosen to present in this table only "real world" research, that is research based on monitoring of actual decisions, in actual situations.

We should also note that certain other large scale empirical research efforts exist, which never appeared to have presented any quantitative results. A major example is the work of Mazzolini (1980). These are not presented here.

Probably the most prominent work of all those depicted in table 3.3 is that of Mintzberg et al. (1976). It is not its methodological rigorousness that has established this work as one of the 'landmarks' of the strategic decision making literature, as is the fact that it acted as a catalyst for the succeeding research in the field.

Other important works are those of March and Olsen, 1973; Axelsson and Rosenberg, 1979; Stein 1980; Fahey, 1981; Nutt, 1984; Shrivastava & Grant, 1985; Hickson et al. 1986; Schilit and Paine, 1987; Witte, 1972 etc. Their common characteristic is that they have attempted to collect a sufficient number of observations in order to make some generalizations concerning the decision making process. We are going to use certain characteristics of these research efforts in order not only to answer a number of questions that may arise, but also to draw some conclusions about the state of research in the field.

The main conclusions we can draw from the analysis of table 3.3 are:

1. Fourteen out of the twenty research works (i.e. 70%) appeared during the 80s or 90s. Only six large-scale empirical research efforts appeared during the 70s or earlier.
2. The maximum number of decisions taken is 1087 and the minimum 13. But if we exclude the works of Schilit and Paine (1987), Sinha (1990) and Witte (1972) the maximum number of decisions studied is 150, while most of the others use comparatively small samples.
3. Most of these works do not focus on specific decision topics. On the contrary they address many different types of decisions (e.g. strategic, tactical, operational).
4. It is also worth noting that **all of the research efforts presented** use convenient samples from various sectors, or from a specific sector of interest. None of them gives us indications of any type of sampling procedure followed.
5. The most common data collection method is that of personal interviews (14 out of 20 works), directly followed by the methods of mailed questionnaires and case studies.

6. A final striking point is that only a fraction of these research efforts attempts to draw quantitative conclusions on the relationship between SDMPs and the context in which those decisions are made. This could be a vital point emphasizing the lack of research in this area and the possible avenues of inquiry for future researchers. Indeed, these linkages seem to have received very sparse conceptual and empirical treatment and quantitative research seems to be in great demand. However, there are two major questions that remain to be asked: Are there gaps in the literature on strategic decision making and if so what are the fruitful areas for future research? Section 3.2 deals with the issue of future research.

3.2. THE NEED FOR FURTHER RESEARCH

According to a recent survey (Lyles, 1990), the area of SDM is the most preferred area of current research. Almost 20% of the respondents indicated that their current research interests fall in that area. Moreover, decision making appears to be very popular as an area of published research, being third in the number of published works after the mergers/acquisitions and the strategy implementation fields. Finally, the sentiment of the respondents in this survey was that strategic cognition and decision making will be the third most important area of research during the nineties.

It is true that during the recent years, a substantial body of literature has emerged in the area but it is still widely recognized that not only our knowledge of strategic processes is mostly normative or descriptive and remains highly untested (e.g. Bourgeois, 1980; Cosier, 1981; Fredrickson, 1984; Shrivastava, 1985; Kriger and Barnes, 1992), but also that there is a lack of a conceptualization capable to provide a framework for ongoing research (Hart, 1992). A few years earlier Astley et al. (1982 pp 359) pointed out that: "*... no integrated theory of decision-making exists, as yet. Many of the theoretical stand-points remain mutually exclusive*".

There are three areas where those remarks seem to be particularly valid: (i) quantitative research, larger databases, rigorous empirical analysis (ii) contextual considerations and (iii) integrative research.

3.2.1. QUANTITATIVE RESEARCH, LARGER DATABASES, RIGOROUS EMPIRICAL ANALYSIS.

Many researchers (e.g. Nutt,1984; Hickson, et al. 1986; Cray et al.,1988) have in the very recent past pointed out the need for substantial **comparative research**, and rigorous **empirical analysis**, based on **larger data bases that deal with a new set of topics**. They contend that although it seems that enough work has been done in the field, much of the literature remains speculative and largely theoretical, providing (till very recently) limited quantitative evidence in support to show how organizations go about making **strategic decisions** of an unstructured nature. In general, their view is that there exists no significant body of empirical research at the top levels of the organizations. Or to quote Day, Farley and Wind (1990, introduction), "*the field of strategy research is still in the early stages of its development*.

3.2.2. CONTEXTUAL CONSIDERATIONS

One of the first who recognized the lack of a framework explaining the impact of context on SDMPs was *MacMillan (1980)*. He made clear that "there have been few attempts to study SDMPs as systems of variables involving antecedent and dependent relationships, such that researchers can specify under what conditions certain specified hypotheses will be supported" (McMillan, 1980 pp 37).

The following section attempts to pinpoint some of the very recent as well as some older views supporting this empirical and theoretical vacuum. *Pettigrew (1985)*, considers contextualist research as the natural way to bridge theory and practice and stresses the need for theoretically sound and practically useful research examining the context and the process of change. Five years later, Pettigrew (1990), raises two major research questions to be answered:

- what is the role and significance of context in shaping decision processes?
- does the nature of the decision problem and interests shape the process more than organizational context through which the process proceeds?

Similarly Hambrick and Snow (1977) articulated their own model of contextual influence on strategic decision making by arguing that:

"Strategic decision making is seen as a process with a manager (i.e., the dominant coalition) at its center. The manager makes decisions on the basis of his perceptions of a variety of environmental and organizational factors. These 'contextual' factors are environmental conditions, internal power and influence patterns, and the organization's past and current strategy and performance. Once made, the manager's strategic decision interacts with these factors to shape the organization's performance, and these performance results then become part of the context for the manager's next strategic decision".

Very recently Bateman and Zeithaml (1989) argued that: "Recent theory on strategic decision making says that they *suggest* that strategic decisions and the processes that lead to them *may be* influenced by the context within which the decisions are made". (italics added). They also argue that SDs are influenced by a great number of contextual elements such as future perspectives, past experience, present situation, environmental forces, cognitive biases, decision making culture as well as other aspects of strategy formulation and implementation.

Schneider and DeMeyer (1991) attempted to integrate much of the above mentioned thoughts into a structured model. They contend that several factors are expected to contribute to the interpretation of a strategic issue (threat, opportunity, crisis etc.) and the subsequent responses (e.g. magnitude of responses, proactiveness-reactiveness). According to the authors these factors can be located in:

- manager's individual characteristics (e.g. locus of control, experience, introversion/extroversion)
- group dynamics,
- organizational context (e.g. centralization, formalization, politics, ideology),
- environmental context (e.g. economic, market, cultural, political).

Unfortunately, their model provides only statistical support to the impact of national culture on issue interpretation and response. Despite its normative and untested nature the model provides us with a rich agenda for further research into the determinants of strategic issue interpretation and subsequent organizational responses.

Fahey (1981) acknowledges a noticeable absence in the literature of interactions between stages or characteristics of decision making processes and such contextual

factors as organizational structure. Blair and Boal (1991), in reviewing the health care literature in relation to the strategy formation literature note that 47% of the articles dealt with description or theory building, while only six articles attempted to test theory. This makes explicit to the reader the need for quantitative research, characterized by contextual considerations at the same time.

But the most "dramatic" remark for subsequent researchers to bear in mind, is made by Fredrickson (1985). He contends that:

"Empirical tests of factors that have been hypothesized to affect the way that strategic decisions are made are notably absent. For example, theorists have suggested that managers make strategic decisions differently when responding to problems rather than opportunities. Organizational performance level - poor or excellent- has also been argued to affect strategic decision making".

Hart, (1992 pp 346) extends Fredrickson's remark by stressing the need for "multi-industry survey studies (which) would help to establish the general relationships among strategy-making processes and firm performance".

In the same vein, Langley (1990; 1989) hypothesizes that the pattern of decision making may be related to such factors as organizational structure, leadership style, the nature of issues faced, ownership (public vs private), industrial sector, as well as the market in which a company operates.

Very recently Dutton et al. (1989) proposed as a task for future research to address how the various dimensions of strategic decisions influence the allocation of resources in organizations.

Pennings (1985 pp 27) points out the fact that the prevailing models in the decision making literature focus on organizational or suborganizational levels of analysis while ignoring at the same time to consider organizational context.

Dutton (1985), evaluating the Bradford studies, one of the most prominent research efforts in strategic decision making, 'attacks' them for focusing only on a limited number of contextual factors (namely decision characteristics) while totally ignoring the influence of other factors such as environment, structure and strategy.

In the same vein, Lyles and Thomas (1988) argue that: "Strategic problem formulation is a complex process ..... it is still not clear what variables are involved, how these interact and what debiasing procedures exist".

And last, but by no means least, comes the plea from Huff and Reger (1987), in their excellent review of the strategic process literature, for more work that explicitly is trying to detect the effect of context on strategic decision making processes.

In summary, a significant amount of theoretical development has been done in the area of strategic decision making but much remains to be done in empirically testing the propositions developed by various researchers. Indeed, with the notable exception of Stein (1981a,b) there exists no other large-scale empirical research attempting to quantitatively assess the influence of context on SDs.

3.2.3. NEED FOR INTEGRATIVE RESEARCH

But there is not only a scarcity of contextual research, but also a paucity of integrative research. Surprisingly, despite the large number of contributions in the field, several authors have pointed out that the study of strategic decision making has remained highly fragmented (Hendry, 1988; Marsh et al., 1988ab; Rowe 1989). Pennings (1985 pp28) points out the fact that few links have so far been made with other disciplines and attributes it to the diversity of disciplines that intersect in the research of strategic decision making.

In line with this opinion, Schilit (1987) argues that: "*research has failed to emphasize ..... the need for integrating strategy and strategic planning with strategic decision making*" and Bourgeois (1980) urges for more empirical work which links environment with strategy formulation processes.

Very recently Miller (1987), added that "it would be useful to examine how strategy making behaviour moderates the relationships between strategy structure and environment, and to investigate the relationships between such constructs as rationality in strategy making with strategy content and the nature of the environment".

Using the perspective which claims that strategy is a composite of sequential important decisions, Fredrickson (1983) claims that strategic process researchers should focus on a decision making framework of research and try to study how organizations make individual strategic decisions and how these decisions contribute to the overall concept of corporate strategy. Moreover, Fredrickson and Mitchell (1984) recognized the need to reposition the research framework away from a comparatively narrow focus on planning systems to a more inclusive focus on the strategic decision making process which, in fact, incorporates the planning systems.

According to Volkema (1983) several factors influence the formulation of problems in planning and design. Such factors are the complexity of the problem, the environment in which planning takes place, and the limitations capabilities and experiences of major participants. Others, hypothesized that apart from these factors several others like **performance** (Fredrickson, 1985), and **characteristics of the specific SID** (Stein,1981b), affect the strategic decision-making process.

Lyles and Mitroff (1980) advanced and tested an integrated model of influence on problem formulation. They expressed the same view with the above mentioned works by assuming that organizational problem formulation is dependent on manager's individual characteristics, type of problem encountered, method of inquiry, and emergent themes (personal commitment, managerial turnover, denial etc).

Recently Shrivastava and Nachman (1989) recognized the variety of contextual factors (e.g. technology, environment, regulatory agencies, corporate structure, strategic leadership) influencing decision making processes. A large number of other researchers have in the past referred to the point of contextual influence of strategic decision making processes (e.g. Hinnings et al. 1974; Pfeffer et al. 1976; Hambrick and Snow, 1977; Beach and Mitchell, 1978; Tannenbaum and Cook, 1979; Billings et al.1980; Bass, 1983; Cook and Slack, 1984; Dutton et al.1983; Hitt and Tyler 1991).

A major conclusion stemming from this rather incomplete but largely helpful analysis, is that it seems that the field of strategic decision making is an area largely undercultivated where large scale, methodologically rigorous empirical research, integrating process and context is always welcomed.

Chapter 4

Research Focus

4.1. FOCUS OF THE RESEARCH

The main aim of the proposed research is to contribute to the pool of existing knowledge in the field of strategic decision making. The proposed research focuses on the way *Strategic Decisions (SDs)* are taken and the *factors influencing* selected characteristics of the *strategic Decision Making Process* (SDMP). It has been made clear in the previous chapters that we consider the decision as the unit of analysis rather than the particular firm. The discussion is largely based on Mintzberg et al. (1976), who define a **DECISION** as a *specific commitment to action* (more often a commitment of resources), and a **DECISION PROCESS** as a "set of actions and dynamic factors that begins with the identification of a stimulus for action and ends with a specific commitment to action".

More specifically, only **STRATEGIC INVESTMENT DECISIONS** (SIDs), are examined. By the term **SID** we define any decision implying a significant commitment of resources, having a profound impact on the firm as a whole, and on its long-term performance and viability (Barwise et al. 1986 a).

4.2. RESEARCH PROBLEM

The central concern of this study is **not only to identify and measure the major characteristics of the decision-making process but also to explore the linkages between the process of strategic decision making and the context in which these decisions are taken.**

Lewicki (1977) defines context as the combination of intraorganizational variables and some notion of organization environment, while Kervasdue and Kimberly (1979) provide a more extensive definition of context incorporating environmental, intraorganizational, and socioeconomic variables. Miller et al. (1988), try to encourage a broader definition of the term context, by viewing it as "the challenges and resources, economic as well as human, that surround an organization". In the coming analysis we follow Pettigrew (1990b; pp 10), who defines context as "not just a stimulus environment but a nested arrangement of structures and processes

where the subjective interpretations of actors perceiving comprehending, learning and remembering help shape process".

At a general level we will devote particular attention to the following research question:

DO THE CHARACTERISTICS OF STRATEGIC DECISION MAKING PROCESSES VARY IN DIFFERENT CONTEXTUAL CIRCUMSTANCES? AND IF SO, WHAT IS THE ROLE AND SIGNIFICANCE OF CONTEXT IN SHAPING DECISION PROCESSES?

4.3. THE ROLE OF CONTEXT IN SHAPING SID PROCESSES

A similar question was posed by Janis and Mann (1977) when they tried to anticipate from a theoretical point of view, the ways in which decisions are made and the factors influencing the process. Starting with the assumption that all the various ways of decision making (e.g. incremental, rational etc.) are in the repertoire of every decision maker they came up to a dilemma:

> Under what conditions are people most likely to adopt a nonvigilant, satisficing strategy as opposed to a more vigilant one? Under what conditions are people most motivated to devote the resources of time, energy, and money necessary to seek an optimizing solution? (Janis and Mann, 1977; p.40-41).

Paraphrasing the words of Janis and Mann one could ask: How do the characteristics of the decision making process, vary under different conditions? (e.g. environmental conditions, structural conditions etc.). An answer (although partial) to this question was attempted by Mintzberg (1977), when he argued that: "The process of strategy formulation may be thought of as the interplay among three basic forces:

(1) an *environment* that changes continuously but irregularly,

(2) an organizational operating system or *bureaucracy*,

(3) a *leadership* whose role is to mediate between these two forces.

In chapter three we have discussed the need for research in the area and have mentioned the various contextual domains which are found to influence decision processes. Probably what we mostly need is to integrate the above mentioned contextual domains into some type of framework of overall influence on SDMPs. Such a framework could come from the integration of two basic perspectives which have been developed in the field of strategic management; the **"environmental determinism-population ecology"** perspective and the **"free will-strategic choice"** perspective. According to the logic of the **environmental determinism** perspective, since an organization is an open system, its strategies seek the adaptation or matching between characteristics of the environment and those of the organization with the aim to survive and perform (Hofer, 1975; Aldrich, 1979; Bourgeois, 1984).

Hence, the strategy content and process is determined by the opportunities, threats, constraints and the other characteristics of the environment (e.g. industry growth rate, dynamism, concentration) and from the characteristics of the organization (e.g. size, resources, competencies). The role of top managers is minimized according to this logic to the combination of those techno-economic factors. Pfeffer and Salancik (1978) have proposed that organizations depend on the availability of critical resources to survive. Hannan and Freeman (1977), as well as Aldrich, (1979) go even further to propose a process of natural selection of species for organizations: the environment determines who will survive and executives have a minimal impact on corporate development.

Whereas the population ecologists consider top managers to be but passive agents in the determination of strategy and performance, the **"strategic choice"** perspective emphasizes the role of decision makers. Its logic centers on the fact that strategic choices of the organization have a large behavioural component and hence reflect the idiosyncracies of decision makers (Child, 1972; Bourgeois, 1984). Child (1972) argued that the values of dominant coalition members may have a more profound impact on decision processes than do the contextual variables articulated in the literature. Some recent works extending the arguments of March and Simon (1958) and Child (1972), support the contention that the role of "upper echelons" or "top managers" or "strategic leadership" is important enough to determine the strategy content and process (Hambrick and Mason, 1984; Miller and Toulouse, 1986; Hambrick, 1989). The cognitive characteristics, the values and the needs influence the decision-maker's interpretation of internal and external environment, their motives, vision and goals and their strategic decisions.

Romanelli and Tushman (1986) added a third model, which they called the **inertial model**. According to this view, organizational size and structure, initially determined by environmental and managerial forces, may constrain future strategic decisions. Thus, internal structure as well as size directly or indirectly affect strategy formulation and SDMPs. Moreover, since virtually all strategic initiatives require enough resources, **organization's slack resources** may be added as another important contextual element determining SID processes (Pfeffer and Salancik, 1978; Bourgeois, 1981).

In retrospect, it seems that what is needed is a research design which adequately takes into account and integrates the various contextual domains, which have been found to bear on SDMPs, and assesses the role and significance of each of them. Such a research should not stick on only one model (e.g. environmental determinism, strategic choice, inertial, resource), but should attempt to integrate several other contingent variables referred to in chapter 3 (e.g. decision characteristics, formal planning systems).

4.4. THE MODEL OF THE THESIS

Figure 4.1., based on previous discussion, presents an integrated model of the thesis. The central idea of the model has to a great extend been already analysed in previous sections. The figure simply integrates those thoughts into a structured model. To briefly describe it, the strategic decision making process is depicted in the center of the model as a 'black box' (Chakravarthy and Doz, 1992). Obviously, the way strategic decisions are made influences the strategic choices and actions made by the firm and again these choices and actions come to shape the realised strategy of the firm. On the lefthandside of the figure 4.1 we can see all the hypothesized contextual dimensions affecting the way those strategic decisions are shaped. Those dimensions actually belong to the following categories:

1. Characteristics of the SID itself,
2. External Corporate Environment,
3. Internal corporate environment (structure-systems),
4. Top management characteristics and personality,
5. Organizational Performance level,
6. Other company characteristics (e.g. size, field of activity, ownership).

A similar model was developed by Hambrick and Snow (1977). At this period of time they concluded that:

"The model .... has not been tested in its entirety; it has been constructed from empirical studies dealing with portions of the process. The model could be tested through studies involving in-depth field study methodologies in which interviews and archival evidence could be pieced together to provide chronologies and weightings of managers' values and perceptions of contextual elements bearing on strategic decisions. In addition, the contextual model highlights some of the specific relationships in the strategic decision-making process about which researchers know little. The effects of managerial values, internal power and influence patterns, and current performance on strategic decisions especially warrant additional conceptualization and testing. Evidence suggests that these are important factors in the strategic decision context facing the manager".

In the following few paragraphs a brief analysis of the hypothesized impact of each contextual dimension will be attempted. Chapters 6 to 11 will analyse in detail the relevant literature and advance and test specific hypotheses.

i. PERCEIVED DECISION CHARACTERISTICS

Significant interest has recently emerged in trying to understand decision making cognition (e.g. Schwenk 1985; 1986; 1988; Cowan, 1986; Dutton and Duncan, 1987; Haley and Stumph, 1989). Several research efforts focusing on *strategic problem formulation* (e.g. Lyles and Mitroff, 1980; Ramaprasad and Mitroff, 1984; Volkema, 1986; Lyles, 1987; Lyles and Thomas, 1988), on *problem recognition/identification* (Cowan, 1986; Delbecq and Van De Ven, 1971), or on *strategic issue diagnosis and management* (SIM or SID, e.g. Dutton and Duncan, 1987; Ansoff, 1980) have appeared in the international bibliography. Lyles and Thomas (1988) define strategic problem formulation as "*the process of sensing, gathering information about, and resolving the nature of strategic problems* while strategic issue diagnosis and management is defined by Dutton et al. (1983) as "*the activities and processes by which data and stimuli are translated into focused issues*".

This comparatively novel line of research contributes to the theory and research in organizational decision making. It contends that a great deal of what the traditional models of decision making (e.g.rational, incremental, political etc.) say, seems to have failed to adequately account for the significance of decision maker's cognition at the very early stages of decision making. It accepts that managers, as human beings may suffer from profound limitations e.g. information processing capacity limits, and biases towards action and cognition. Furthermore, it contends that several organizational and individual filters, may shape not only the way in which decision makers perceive and interpret strategic issues, but also the subsequent actions taken (Dutton et al. 1983; Milburn et al. 1983 a; b; Daft and Weick 1984; Hambrick and Mason, 1984; Ramaprasad and Mitroff, 1984; Thomas and McDaniel, 1990).

The underlying assumption behind the attempt to better understand how decision makers act, is that *understanding action in organizations depends on knowing how people interpret the organizational world around them*" (Dutton et al. 1989). For example, it is argued that the decision-making process is dependent upon the complexity of the decision (Fahey, 1981). Complex decisions, or decisions with

widespread impact on the organization, tend to attain a more rational/analytical approach to decision making. Similarly, actions taken when making strategic decisions motivated by **problems**, will be more rational than those taken in response to **opportunities**, (Fredrickson, 1985). Moreover the categorization of SIDs as **threats** or **opportunities**, significantly affects the decision making process followed (Butler et al. 1979; Dutton and Jackson, 1987). In the same vein, many writers have suggested that crises produce a centralization of authority (e.g. Herman, 1963; Hall and Mansfield, 1971; Billings et al. 1980). Many more similar hypotheses will be explored in chapter seven.

ii. CORPORATE ENVIRONMENT

There exists a voluminous body of literature on organizations and their environments, since it is more than obvious that environments play a pivotal role in the formation and evolution of organizations. The very essence of the open systems theory considers environment as one of the major sources of influence into all organizational processes (Daft and Weick 1984). Especially in the areas of strategic management and organizational theory, there is an increasing recognition of its importance. As Aldrich (1979, pp.61), put it "*environments directly or/and indirectly affect organizations through the process of making available or withholding resources and organizational forms can be ranked in terms of their efficacy in obtaining resources*".

Pinpointing some proven relationships, we may contend that such environmental characteristics as uncertainty, volatility, unpredictability and hostility influence the rationality-comprehensiveness with which decisions are made. Similarly, it is hypothesized that in dynamic environments enterprises are obliged to take quick, bold in many instances decisions, relying on the available amount of information, without making extensive search and analysis (Cyert and March, 1963; Mintzberg, 1973; Fredrickson and Mitchel, 1984;).

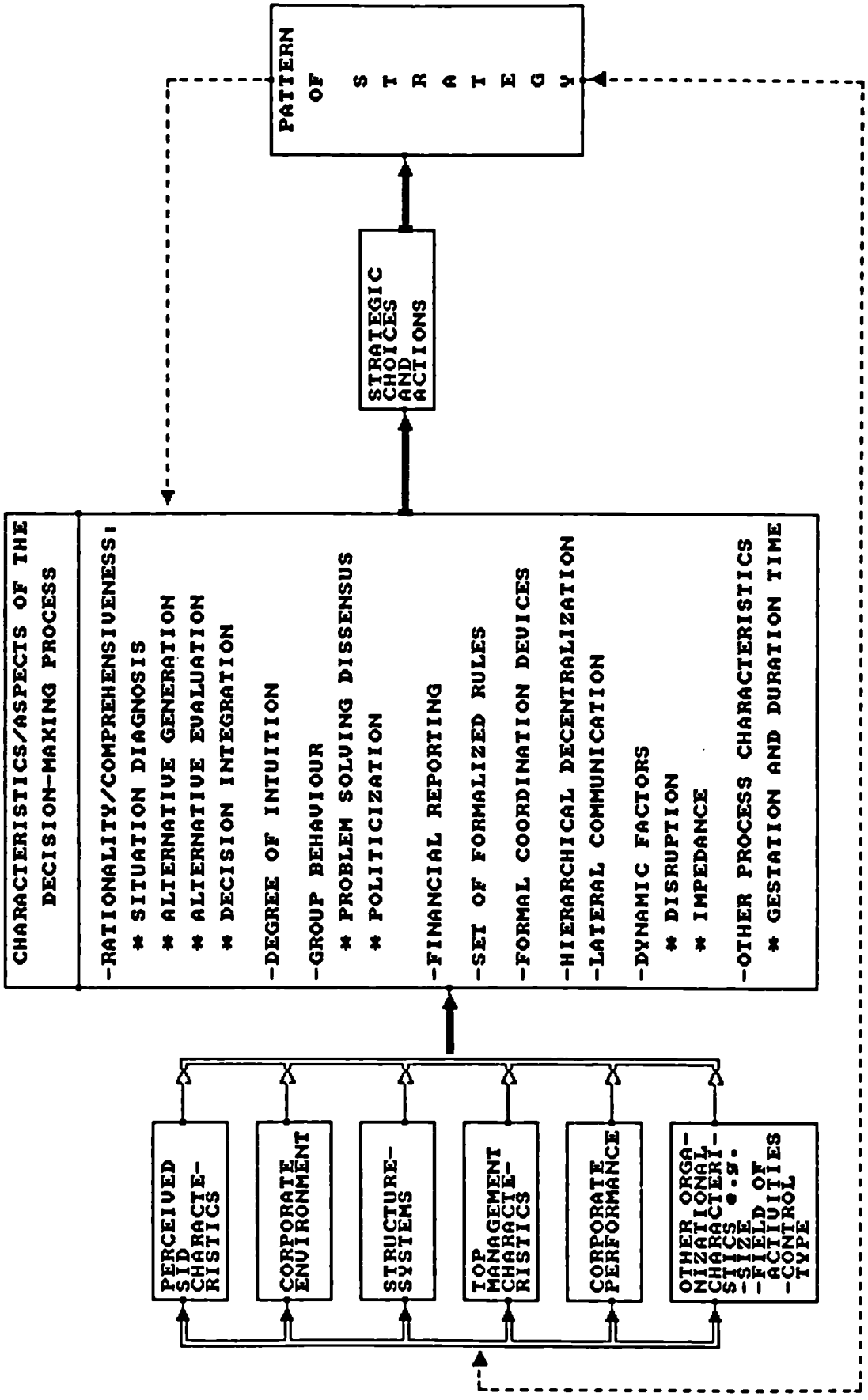

FIGURE 4.1: FACTORS INFLUENCING THE STRATEGIC INUESTMENT DECISION MAKING PROCESS

In the same vein, Lyles and Mitroff (1980) content that firms operating in comparatively stagnant environments tend to have a clear and unconfusing picture of events occurring. This implies that the external stimuli receive the same interpretation by different people, thus contributing to a consensus building on the nature of the problem and the way the decision making will have to proceed.

But it is worth noting that the opposite hypotheses have also been posed by other researchers (Carter, 1971; Bourgeois and Eisenhardt, 1988). They content that the greater the environmental turbulence, the greater the number of criteria which will be sought to quide the strategic decisions and the more detailed and rational the decision making process will be.

Certainly, it is worth further exploring the relationship between the environment and the characteristics of the SDMP, in order to see which of the two allegations is supported in the field of SIDs. Chapter eight deals with the role of corporate environment in SID making.

iii. INTERNAL STRUCTURE-SYSTEMS

The structure and systems of an organization to a great extent influence not only the flow of information between the layers of hierarchy, but also determine the nature and context of human interactions, specify the modes of coordination and allocate power and responsibility (Miller 1987; Bower 1970). Therefore one should expect both organizational structure and systems to be among the dominant factors influencing SID processes (Fredrickson 1986). More specifically, we may expect formal organization structure to heavily relate to rational decision making. Despite the apparent reasonableness of this argument, there exists no coherent body of research to support or reject it.

Fahey (1981) argues that there is a noticeable absence, in the decision making literature, of possible interactions between organizational structure/systems and the different phases or characteristics of the DMP. It is also worth mentioning, that Stein (1980) reported no statistical significant relationship between organizational structure and SDMP characteristics. For example Stein supported the view that:

".....very little structural variations were relevant at the top level of management. Whatever structural differences were markedly noticeable at the organizational unit level, they became greatly buffered when they reached the chief executive officer".

Although not solidly supported, this argument gives us another fruitful path of inquiry into some of the conflicting areas of literature. Chapter 9 deals with a component of internal structure, the formal planning systems (FPSs) and investigates their contribution to SID processes.

iv. TOP MANAGEMENT CHARACTERISTICS

Cyert and March (1963) were among the first who argued for the significance of managerial-behavioural factors in explaining decision making processes. This tradition was further continued by Child (1972) with his theory of strategic choice. But since then environmental and structural factors received great emphasis especially during the seventies while the significance of the very actors of strategy, i.e. the strategists remained rather unattended (Hambrick, 1988; 1989).

In the mid-eighties a dramatic shift in the research agenda took place. Hambrick and Mason (1984), with their influential paper on 'upper echelons' redirected the research in the area by stressing the importance of the empirical investigation of the role of top managers on the strategy content and process. It seems that managers are back in the strategy picture. Indeed, the current business press is replete with analyses of charismatic leadership and with stories on how CEOs make strategic decisions and bring about dramatic changes (e.g. Magnet, 1985; Lamb, 1987; Conger and Kanungo, 1988; Kotter,1988).

If strategic decisions incorporate a large behavioural component, then to some extent they reflect the ideology, values, attitudes of decision makers. With respect to these assertions we can hypothesize that "Different values, attitudes and ideologies of the management team may lead to different decision making processes and presumably to different decision outcomes" (Hambrick, 1984). This view has received significant support, and specific managerial characteristics (e.g. risk-taking behaviour, cognitive complexity, dogmatism) have been proposed to influence problem solving approaches (Taylor, 1975). It is interesting though, to note that the counter-argument has been also posed. According to Lyles and Mitroff:

"It is still not clear what influence managerial characteristics have on the organizational problem-formulation process. The results of the study indicate that these characteristics were not significant. This might indicate that the problem-formulation process is at an organizational rather than an individual level, in which case individual managers might not have a strong influence on a process which was affected by several or even many other people. Since there are strong reasons for expecting individuals to influence the problem formulation process, we hope that future studies will determine more precisely the relative influence of individual and organizational characteristics". (Lyles and Mitroff, 1980 pp 117).

Chapter 10 advances specific hypotheses and explores the association between TM characteristics and SID process characteristics.

v. CORPORATE PERFORMANCE

Theoretical speculations and empirical work has up to now validated the relationship between organizational processes, strategy and performance. Thus far, empirical results show that organizational processes directly influence performance. By way of contrast, it is also interesting to note that the inverse relationship has also been reported. Indeed, there is considerable evidence (Fredrickson, 1985), that performance influences SDMPs to a great extent. It is certainly worth further exploring Fredrickson's allegation. Using a controlled experiment he proved that actions of poor performers in strategic decision-making processes will be more comprehensive than those of excellent performers (Fredrickson 1985). Chapter 11 deals with the association between corporate performance levels and SID processes.

4.5. MAJOR RESEARCH OBJECTIVES

Having defined the research model, the next step would be to specifically define the major objectives of the present research. As has been stressed in chapters 2 and 3, large-scale, integrative empirical research having a decision orientation is largely needed. Thus, among the objectives of the present work is to contribute to the area by adopting a different methodological approach in comparison to related works. Chapter 5 further analyses methodological aspects of the thesis.

A second goal is to theoretical explore the salient characteristics which could adequately and reliably describe SID making processes. Chapter 3 reviewed the literature on strategic decision making and shortly presented the major models aiming to descibe SDMPs. Chapter 6 further explores the literature on SDM, theoretically reveals specific dimensions/aspects of SID processes, and empirically derives a number of salient process characteristics.

A third goal is to develop and test an operational framework of the contextual influence on the SDMP. Chapters 7 to 11 first formulate and validate dimensional representations of the relevant contextual domains (decision characteristics, environment, top management charactersitics, formal planning systems and performance levels). In each of these chapters the relevant research is analysed, specific hypotheses concerning the association of the respective contextual domain with the characteristics of the process are advanced and further tested.

Finally, the research aims to integrate the above mentioned contextual influence into an overall model and to test the relative significance of each contextual domain in determining strategic processes. Specific implications for theory and practice will be advanced. The above constitute the fundamental objectives of the thesis. By determining them we have set specific quidelines and avenues to be followed in questionnaire construction, literature review, statistical techniques used, theory building etc.

Chapter 5

Methodological Issues

This chapter deals with the methodological issues of the thesis. First, under the heading 'why SIDs', it analyses why SIDs are selected to be studied. In conjunction with this, the criteria for the selection of specific SIDs will be also dealt with in section 5.2. A section on whether future research should focus on specific types of SIDs follows. Section 5.4 evaluates the methodologies available to researchers working in the field of strategic decision making and section 5.5 analyses the adopted research approach. A section on population and sample illustrates the process followed to determine the target population and to select the sample. This is followed by section 5.7 dealing with other sampling issues. Section 5.8 further explores the sources of data and the paths followed to acquire them. The next two sections describe the rules followed in formulating the research instruments as well as their testing and improvement procedures. Sections 5.11 and 5.12 intend to give the reader a grasp of the questionnaire formation process, the rules followed and the reliability and validity thoughts prevailing the entire thesis. Finally, a brief description of the intended process of data analysis is presented in section 5.13.

5.1. WHY SIDs ?

As mentioned in chapter 4, only **SIDs** are studied, that is, decisions both implying a commitment of resources (human and financial) and having a significant impact on the firm as a whole, and on its long-term performance and viability. A number of authors have pointed out the importance of SIDs not only for the individual firm (e.g. Barwise et al., 1986a,b; Woolridge and Snow, 1990), but also for the allocation of resources in society (Cray et al. 1988). Typical examples of SIDs might be (Jemison 1984; Barwise et al. 1986a; b) investments in:

- major new products/services,
- markets,
- technologies,
- marketing,
- cost reduction,
- capacity expansion
- decisions to increase or reduce R&D investment;
- vertical integration decisions; and finally,
- joint ventures, acquisitions, or divestments

The thesis has chosen to focus attention on SIDs and not on other tactical and operational decisions of the enterprise, not only because there is a lack of large-scale empirical research (see sections 3.1.5 and 3.2), but also because SIDs offer certain advantages to prospective researchers. First, they are usually significantly bounded in time and thus can be easily tracked. This is extremely important since research needs to follow the decision process for a significant period of time prior to formal budgetary approval (Barwise et al. 1986a). Moreover, SIDs tend to be better documented than most strategic processes (Cray et al. 1988), thus making the task comparatively 'easier'. Finally, we do have some foundations on which to build. The proposed research aims to draw ideas and hypotheses from:

- aspects of what **decision making** and **organizational theory** say about decisions and determinants thereof,
- aspects of what **strategic management-strategic planning** say about strategy, strategy formulation approaches, and resource allocation methods,
- aspects of what **modern finance theory** says about capital investment decisions.

Despite the extensive work conducted in all these fields, theory development and testing has evolved almost in isolation. Indeed, financial economics concentrate on formal techniques for analysing investment decisions, completely ignoring the power-behavioural processes present in such processes (e.g. Marsh et al. 1988 b). It is also worth noting that only one of the large scale attempts cited in section 3.1.5 (Butler et al. 1992) focuses on SIDs. It seems that somewhat less attention has been directed at investigating how SIDs are made and the impact of various contextual factors on the SDMP.

5.2. CRITERIA FOR THE SELECTION OF SIDs

Probably one of the most critical tasks initially encountered by this research attempt was to determine certain criteria for the selection of SIDs. The question which has arisen was: how are we going to identify SIDs? Should we use such criteria

as percentage of annual budget devoted to the project, or should we use 'qualitative' criteria, such as importance towards achieving corporate goals, or top management direct involvement in the process? Almost all the researchers in the field of SDM seem to have preferred qualitative criteria. According to Stein:

"The distinction between strategic and non-strategic decisions becomes less clear at an empirical level. The contribution of a single decision to organizational strategy can be argued only from a subjective point of view. More appropriately, the terms strategic and non-strategic are useful to broadly distinguish between two extremes of a continuum, with an underlying scale that measures the strategic nature of a decision. ..... the operational criteria to determine whether a decision is strategic will be the relative importance, judged by top management, of the decision compared to all other decisions made by the organization" (Stein, 1980 pp 24).

Several other researchers have in the recent past attempted to study some aspects of SDMPs. All of them seem to share the same view with Stein by adopting a very broad definition of what SDs are. For example Jemison (1981), defines as strategic decisions, "those decisions that profoundly affect the success and destiny of the organization". Only a handful of others have tried to somewhat produce less qualitative definitions. One such example is the work of Henderson and Nutt (1980). In studying SIDs they selected as such "capital expansion projects that would increase the production capacity of firms or the service capacity of the organization. A capacity increase of 25% insured that the decision was viewed as having considerable strategic importance", (Henderson and Nutt, 1980 pp 374).

In the following section an attempt will be made to build a framework for SID identification, by integrating the criteria established by other researchers:

1. According to Chandler (1962), SDs are those decisions which **involve a commitment of large amounts of organizational resources** for the fulfillment of organizational goals and purposes through appropriate means,

2. The effects of SDs are **long-term** and **difficult to reverse** (Ackoff 1970, Pearce and DeNisi, 1983). The decision considers the whole organization as a unit of analysis (Shirley, 1982).

3. **Top management usually plays a critical role** in the decision making process (Lorange and Vancil 1977; Hofer and Schendel 1978),

4. SDs usually have a **profound impact on many aspects and functions** of the organization and influence its direction, administration and structure (Ackoff, 1970; Hambrick and Snow, 1977; Shirley, 1982; Cowan, 1991; Kriger and Barnes, 1992). In many cases **SDs involve strategic reposition or redirection** of the firm (Bourgeois and Eisenhardt, 1988). Moreover SIDs have an impact on its **long term performance** and viability (Barwise et al. 1986a, Fredrickson, 1985),

5. SDs are impinged upon by environmental forces which create **uncertainty about strategic issues**, and involve **high stakes** (Anderson and Paine, 1975; Bourgeois, 1980; Bourgeois and Eisenhardt, 1988). Moreover, they are directed toward **defining the organization's relationship to its environment** (Shirley, 1982; Cowan, 1991),

6. Usually, SDs are novel, **ill-structured, complex sets of interdependent problems** facing the organization (Bower, 1970; Mintzberg et al. 1976; Dutton et al. 1983; Schweiger et al. 1986; Bateman and Zeithaml, 1989).

As can be inferred from the preceding citations, in order to include a specific SID in our sample, it must fulfill the following criteria:

1. Involve **strategic repositioning or redirection** of the whole organization,
2. **Imply a Long term time span of effects,**
3. Imply **high stakes** and significantly **affect organizational performance,** (ex post definition),
4. Involve as **many organizational functions** as possible, and
5. The specific SID should be considered as **representative of 'major' decisions** taken by the firm.

A similar, although less exhaustive framework for identifying SDs was used by Dess and Robinson (1984).

5.3. SHOULD FUTURE RESEARCH FOCUS ON SPECIFIC TYPES OF SIDs?

The next methodological issue which had to be clarified, referred to the question whether the research should focus on a specific category (or a small number of categories) of SIDs. An equally plausible alternative was to let SIDs emerge in the context of specific enterprises during interviewing. This dilemma can be 'resolved' by

stating the advantages and disadvantages of either alternative. Advantages: Focusing on specific categories of SIDs we succeed in attaining a solid description of these SID processes. By tailor-making the research to the peculiarities and individualities of these decisions, we may gain a richer insight into the decision making process.

The counterpoints to these advantages, however, are several:

a. Suppose we focus on only a specific topic e.g. new product introductions. The first problem we may face, is that not all the new product introductions are "strategic". As Mintzberg has stated "No decision is inherently strategic; decisions are strategic only in context. The decision to introduce a new product may be a major event in a brewery, but hardly worth mentioning in a toy company" (Mintzberg et al. 1976; pp.60). Of course this problem can be remedied by introducing certain 'hurdle rates' that have to be met in order to consider a new product introduction as a SID.

b. Another confounding factor is that by choosing just one category of SIDs, we eliminate several important sources of variability. Therefore, we could face the possibility of being unable to detect some important sources of variability bearing on the process.

c. Finally, by focusing on a very narrowly specified subset of SIDs we are, to some extent, in direct contradiction with the stream of research on SDs which have emerged during the last two decades. As is evident from table 3.3, all the research efforts (with the exception of three cases), do not focus on a specific subset of SDs. On the contrary, in an attempt to generalize about the decision making process, they included different types of decisions into their final sample. After all, SDM is a universal phenomenon applicable to all kinds of enterprises (small and big, private and public, service and industrial).

Concluding these allegations, it seems reasonable not to focus on specific categories of SIDs, but let our chosen SIDs emerge in the context of specific enterprises during interviewing.

5.4. METHODOLOGIES AVAILABLE TO RESEARCHERS IN DECISION MAKING

Strategy research is notoriously difficult. Strategic issues are unique, context-specific, ambiguous, complex, on-going, and intertwined with implementation; (Barwise et al., 1986b). The fact that strategic problems have in the past been characterized as wicked, vexing, notorious, fluid, emergent, novel, openended, collective, consequential (Ackoff, 1974; Mintzberg et al., 1976; Dutton et al. 1983; Pennings, 1985), should make researchers studying strategic decision making very cautious in selecting their methodology.

Indeed, researchers of organizations have long wrestled with the problem of finding the best possible methodology. And in fact there is a great number of available research designs in the effort to approach and explain organizational processes (Bailey, 1982; Chakravarthy and Doz, 1992). They can either utilise survey research methods (e.g. questionnaires and/or interviews) or nonsurvey data collection techniques (e.g. experiments, observation, document study, simulation and games). In the following a short presentation of the advantages and disadvantages of each method will be attempted.

5.4.1. SURVEY RESEARCH METHODS

The term survey implies gathering of data or other relevant information from a sample or a specific population, usually by means of mailed questionnaires, personal interviews or telephone-calls.

i. Mailed Questionnaires

The mailed questionnaire method is very popular due to its considerable money and time saving. Moreover, it provides greater assurance of anonymity, and does not 'suffer' from the problem of interviewer bias. Among its major shortcomings is the low response rate, which may sometimes be as low as 10 percent, and the fact that if not properly designed they may produce biased information (Barwise et al. 1986a;b).

Furthermore, the non-respondents are generally not a random selection of the sample but have some biasing characteristics. Additionally, in the majority of the research instruments several questions may remain unanswered, thus reducing considerably the percentage of usable questionnaires. The major advantage of mailed questionnaires is that they facilitate assessments of causality, "thereby enhancing the opportunities for developing generalizable hypotheses and freeing the study from being tied to single case narratives" (Crum and Derkinderen 1986).

ii. Personal Interviews

One of the major advantages of interview studies is the ability they offer researchers to observe nonverbal behaviour and to assess the validity of the respondent's answers. A significant part of the research in business policy and O.B. chooses personal interviews as the primary method of data collection. This is true for several reasons, one of them being that by means of interviews researchers can ensure that all the questions are answered. Moreover, the interview approach permits the use of more complex and lengthy research instruments, and if properly designed can moderate such potential problems as ex post rationalization and ill-recall. Also, the interviewer can repeat a question and explain its meaning if it is not properly understood. Usually, studies based on interviews produce a higher response rate in comparison to other methods (e.g. mail surveys).

Among the major disadvantages of interview-based methodologies is the high cost they imply, the significant amount of time needed and the possible bias which the interviewer may introduce.

iii. Case Study Research

The overriding characteristic of case study research is its powerfullness as research method and the fact that, when properly applied, can offer a significant degree of reliability (Mintzberg et al. 1976). On the other hand, its major drawback lies in the fact that it is time consuming and demanding in human and financial

resources (Mintzberg et al. 1976). Other confounding characteristics are that case studies tend to focus on the what rather than on the why (Harrigan, 1983), they are context constrained, and their findings are usually not generalizable.

5.4.2. NONSURVEY RESEARCH METHODS

i. Experiments

Experimentation is an alternative way, although much different, to correlational analysis in establishing relationships between variables. Their major difference lies in the fact that the correlational study offers the researcher limited control over the research environment. On the contrary, researchers utilising experimental designs are present on the scene when data are collected and can manipulate the experimental environment. Among the major advantages of experiments are that they enable the researcher to study change over time by using longitudinal analysis. Presumably, the main problem in using experimentation is that it takes place in an artificially created environment and may not adequately reflect the circumstances under which decision makers operate in actual situations (O'Reilly, 1982). Indeed, decision makers in actual situations may be distressed, may confront extreme time pressure, may lack reliable information, or may even seek multiple and conflicting objectives (Mintzberg et al. 1976; Janis and Mann, 1977).

ii. Observation

The observational method is the technique through which data on nonverbal behaviour are collected. Its major advantage in studying decision making, over methodologies based on questionnaires lies in the fact that it allows an in-depth study of managers when making decisions, in their natural environment. Moreover, the results of this body of research offer the advantages of 'real-time analysis' (Barwise et al. 1986 a,b), meticulous attention to detail, relevance to business practice, and "the fact that their usually great level of detail enables the researcher to probe nuances of the strategic context and determine how management reacted to external stimuli" (Crum and Derkinderen, 1986).

The observation is neither as restrictive nor as artificial as either the survey or the experiment. Among the major disadvantages of observation are that (i) it is not easy to quantify observer's perceptions in comparison to respondents perceptions in survey research (ii) studies based on observation tend to use very small samples due to the enormous investment in time they require (iii) observer's selective perception and interpretation of observed behaviour may distort reality (iv) observer's ability to witness all the relevant aspects of the phenomenon in question is limited. Those disadvantages have forced a number of researchers to deliberately avoid clinical research, observation and extensive case studies as methods of research.

iii. Document Study

Another major source of data in studying decision making behaviour is the analysis of documents. By this term we mean any written materials that contain information about the phenomena studied. Rarely is document study used as the primary method in data collection about decision making behaviour. Usually it is used in parallel with other methods like interviews or case study research. The major disadvantage of documents is that they usually present an incomplete account of events occurred to the researcher, by revealing a rational view of decisions. Thus, seldom can they be taken at face value. Finally, this approach very often faces the problem of lack of reliable traces, or even of the existence of misleading evidence in the making of strategic decisions. This is reflected in the paucity of studies utilising document study as their primary method.

iv. Simulation-Games-Laboratory Experimentation

Simulations, games and laboratory experiments although much criticized for their artificiality are assuming an increasing importance in social sciences. Economy, and control offered to researcher are their major advantages. Among their disadvantages is that they very seldom deal adequately with contextual factors and, therefore, may lead to unsupported and often ill-grounded extrapolations.

5.5. ADOPTED RESEARCH APPROACH

In their excellent review of the strategic process research Huff and Reger (1986) stress the need for careful large scale surveys, unobtrusive measures and other methods not usually brought to bear within the stream of SDM. Moreover, in his response and commentary to Pettigrew (1985), L. Greiner (Pettigrew, 1985, pp 251) points out the scarcity of multimethods for validity checking or for insight addition and the excessive use of self-reported questionnaires. It is among the aims of the thesis to try some comparatively new ideas, not adequately used in the majority of research attempts, while capitalizing on existing knowledge.

Laboratory experimentation was not considered at all, due to the desire to study 'real' SIDs. Moreover, laboratory experiments often fail to deal adequately with contextual elements (Bouchard, 1976 p.364), therefore, making themselves not particularly suitable for the type of research pursued.

Direct observation was ruled out because of incompatibility with the basic aim of this research to provide quantitative results. The clinical research is too time and resource consuming, while at the same time does not provide statistical significant results and may not sustain broad generalizations. Concerning data base methods, there are two possible courses of action:

- data gathering through *mailed questionnaires* and
- *semi-structured or unstructured interviews and/or questionnaire completion.*

Despite the considerable time required, in a methodology based on multiple methods (semi-structured interviews, questionnaire completion, document inspection) and multiple data sources (e.g. multiple informants, diverse document sources and questionnaire completion), this type of data gathering approach was preferred in the course of this research. The length of questionnaires and the detailed analysis of SIDs followed prevented the study from using mail survey, and conduced in using the interview method. This implied several things. First, a significant number of

strategic decisions was studied. Second, each case study drew data from several different organizational sources. The principal source of data about organizational decision making stemmed from interviews and questionnaire completion by several major participants from various organizational levels. Those data referred not only to the firm and its environment but also to specific SIDs. Caution was exercised so that data from other sources (organizational records, informal observation etc.), could also be obtained when possible. Details about data acquisition can be found in section 5.8. The next two sections deal with sampling issues.

5.6. TARGET POPULATION-SAMPLING FRAME

Before deciding on the sampling frame, it is useful to examine the sampling frames used by other researchers in the field of SDM. In fact, most of them (refer to table 3.3) seem to have used more or less convenient samples, comprised of many different types of enterprises (industrial and service organizations, private and public, small and big). Obviously, their aim was to examine SDM in various contexts. Only a few of them (Axelson and Rosenberg 1979; Nutt, 1984) have chosen organizations from specific sectors e.g. universities or health & service organizations. In conclusion, the stream of empirical research neither seems to focus on specific categories of enterprises, nor can we find any indication about the size of target enterprises. According to them, SDM is a universal phenomenon applicable to all kinds of enterprises (small and big, private and public, service and industrial) and their central concern was to examine the process, irrespectably of type of enterprise or size.

On the contrary, in the course of this effort, it seemed reasonable to exercise some control on certain characteristics. Among the main goals, was to pay particular attention to sample design, by controlling for unwanted biases of size and type of company, and to achieve the desired variation. Small-sized enterprises were excluded from the sample so that some kind of size-homogeneity be reached. That is, only industrial enterprises with more than 300 employees were incorporated in the final sample. Moreover, very large, diversified multi-site corporations were also excluded.

The average size of the companies in the sample is 730 in terms of full-time employees. The final sampling frame is considered to be one of the strengths of the research design, not only because it is representative of Greek companies, which are small or medium-sized in their majority, but also because it differentiates itself from most of the existing research in SDM which usually examines large, diversified, multi-site, multi product corporations (see chapter 3).

We should stress that before selecting the industries studied a careful scrutiny of all the industrial sectors in Greece has been made (e.g. number of companies, relative size). The objective was to select those industrial sectors which accounted for a sufficient number of industrial establishments which could meet the selection criteria. The final sample was drawn from 3 different industrial sectors.

- **Food industry,**
- **Chemicals**
- **Textiles,**

These industrial sectors were selected with several criteria in mind. **First,** they range from traditional industries (e.g. textiles) to emerging (e.g. chemicals). Table 5.1 presents some summary statistics of the population and the sample. As can be seen the target population comprised 89 companies of which 38 finally participated in the survey. The mean response rate achieved (approximately 43%) is extremely high considering the type of research conducted and the fact that top management was asked to devote several hours of its time. Appendix 3 presents further data on the population and sample.

SECTOR	TARGET POPULA-TION	COMPANIES PARTICI-PATED	RESPONSE RATE	NUMBER OF SIDs STUDIED	PERCENT IN THE SAMPLE
1.FOODS AND DRINKS	38	16	42.1%	30	42.8%
2.CHEMICALS	16	11	68.8%	20	28.6%
3.TEXTILES	35	11	31.4%	20	28.6%
TOTAL	89	38	42.7%	70	100%

Table 5.1: Summary Statistics of Population and Sample

Second, companies operate under different environmental circumstances (e.g. competition, uncertainty) and face different threats and opportunities. **Third**, they have several differences with respect to management style. The final sample includes family owned businesses at the one extreme and professionally managed companies at the other. **Fourth**, the population includes both successful and ailing firms. **Finally**, having ownership in mind, there exist in the final sample both state controlled enterprises and private owned businesses. For example 34% of the SIDs studied came from subsidiaries of multinationals, 18% from state controlled enterprises and 48% from private companies with Greek majority shareholding.

In order to verify the randomness of the final sample, respondent and non-respondent firms were compared on the basis of three objective measures (number of employees, total assets and return on total assets). Results indicated no statistical significant differences between responding and nonresponding firms. Table 5.2. presents t-values and significance levels for the three variables used.

With the aim to further explore sample characteristics, table 5.3 presents a categorization of SIDs studied. As can be seen almost every possible SID category is included in the final sample. It is worth mentioning that decisions referring to such categories as new technologies (e.g. new product introductions, expansion of production equipment, building of new factories) are the three most popular categories in the sample. Next come decisions on takeovers and modernization of existing production equipment. Decisions referring to mergers and joint ventures, despite their popularity among researchers represent only 3.5% of the sample. It seems that in the Greek economic context mergers and joint ventures may not be as popular as in the U.K. or USA.

Table 5.4 adopts Hickson's et al. classification of SDs and attempts to compare the sample of the present thesis with the samples used by similar studies in the past. Despite the fact that none of the presented works focuses on SIDs (thus making the direct comparison rather inappropriate), there exist several points worth noting. First, as is evident from table 5.4 all studies experience an unequal number of decisions

falling in each category. Due to its nature, the study as expected, does not include decisions on personnels and inputs. Second, decisions referring to new technologies represent the highest proportion in all the three studies compared, followed by boundary and location decisions. Finally, decisions concerning new product introductions, as expected, account for almost 17% of the sample.

VARIABLE	t-VALUE	DEGREES OF FREEDOM	2-TAILED PROBABI-LITY
1.NUMBER OF EMPLOYEES	1.48	79	.144
2.TOTAL ASSETS (FOR THE MOST RECENT YEAR)	.96	79	.341
3.RETURN ON ASSETS (FOR THE MOST RECENT YEAR)	-.11	79	.911

Table 5.2: Differences Between Respondents and Nonrespondents

TYPE OF STRATEGIC INVESTMENT DECISION:	No.OF SIDs	PERCENTAGE IN THE SAMPLE
1. COMPANY BUYOUT	9	12.9 %
2. NEW PRODUCT INTRODUCTION	12	17.1
3. EXPANSION OF PRODUCTION EQUIPMENT	14	20.0
4. BUILDING OF A NEW FACTORY	14	20.0
5. COMPUTERIZED STORING FACILITIES	3	4.3
6. REORGANIZATION	1	1.4
7. INFORMATION SYSTEMS	4	5.7
8. MODERNIZATION OF PRODUCT.EQUIPMENT	7	10.0
9. MARKETING CHANNELS	1	1.4
10. MERGER	2	2.9
11. JOINT VENTURE	1	1.4
12. NEW COMPANY ESTABLISHMENT	2	2.9
TOTAL	70	100 %

Table 5.3: Types of SIDs studied

CATEGORIES OF STRATEGIC DECISIONS		PRESENT THESIS SUBTOPICS	PRESENT THESIS TOTAL	NUTT, 1984;	HICKSON et al 1986;	MINTZBERG et al. 1976;
TECHNOLOGIES	EXPANSION OF PRODUCTION EQUIPMENT	14/ (20%)				
	COMPUTERIZED STORING FACILITIES	3/(4.3%)				
	MODERNIZATION OF PRODUCTION EQUIPMENT	7/(10%)	24 (34.3%)	17 (23.3%)	23 (15.3%)	8 (32%)
REORGANIZATIONS			1 (1.4%)	4 (5%)	22 (15%)	----
CONTROLS			4 (5.7%)	16 (22%)	19 (12.6%)	2 (8%)
DOMAINS			1 (1.4%)	7 (9.6%)	18 (12%)	4 (16%)
SERVICES			---	15 (20.5%)	16 (10.6%)	5 (20%)
PRODUCTS			12 (17.1%)	---	12 (8%)	2 (8%)
PERSONNELS			---	7 (9.6%)	12 (8%)	2 (8%)
BOUNDARIES	COMPANY BUYOUT	9/ (12.9%)				
	MERGER	2/(2.9%)				
	JOINT VENTURE	1/(1.4%)	12 (17.2%)	---	11 (7.3%)	1 (1.4%)
INPUTS			---	5 (6.8%)	9 (6%)	---
LOCATIONS	BUILD A NEW FACTORY	14/ (20%)				
	ESTABLISH A NEW COMPANY	2/(2.9%)	16 (22.9%)	2 (2.7%)	8 (5.3%)	---

Table 5.4: Sample Comparisons Between Various Studies in Decision Making

* Numbers in parentheses represent percentages
** Modified from Hickson et al. 1986;

5.7. OTHER SAMPLING ISSUES

With respect to other matters, one salient theoretical issue deserves particular attention. This has to do with the number of decisions to be studied in each company. A large part of the literature views decision making processes as **patterns of behaviour** and not as single distinguishable deliberations of a corporate attitude. Several researchers have in the past argued that enterprises tend to follow consistent patterns of behaviour when having to deal with decisions of a clearly strategic nature (e.g. Miles and Snow, 1978; Weick, 1979; Fredrickson and Mitchell, 1984; Fredrickson and Iaquinto, 1989). They further contend that strategic decisions are made in a observably consistent pattern despite the fact that new leadership may emerge, or changes in the formation of the top management team may take place. Moreover, decision processes at a given point of time are expected to be similar to decision

processes several years later (Fredrickson and Iaquinto, 1989). A conclusion which may follow from this reasoning is that there is no need to study the endless number of strategic decisions, which have in the past formulated the corporate strategy. Instead, it may be sufficient to study a small number, or even one major decision. Provided that this line of argument is valid, we expect this one decision to accurately describe the way major decisions take place in the specific company.

Despite this, there is strong support for the opposing line of argument, which states that the way each strategic decision is made is influenced (among others), by the characteristics of the decision itself (e.g. Fredrickson, 1983; Fredrickson and Mitchell, 1984). Therefore, it might be more convincing and reliable if researchers could obtain evidence from more than one decision in each specific company. Following this line of argument two strategic decisions of an investment nature are studied in each of the companies conducted. A list of participating companies as well as the types of SIDs studied in each company is presented in Appendix 3.

5.8. DATA SOURCES-DATA ACQUISITION

As has been mentioned in section 5.5 the design of the whole research approach is based on semi-structured interviews and questionnaire completion with key participants in the DMP. The research design approximates what Eisenhardt (1989a;b) calls embedded design, since multiple levels of analysis are employed. The study included the following levels analysis: (1) in depth examination of individual SIDs, (2) inclusion of characteristics of the CEO and the top management team (3) objective and subjective performance considerations, (4) environmental and organizational assessment. The major data sources include:

- Initial CEO interview,
- Semi-structured interviews with key participants in the DMP,
- Questionnaire completions,
- Secondary sources (industry reports, internal documents, press cuttings, informal observation) when available.

The sequence of interviewing activities is depicted in figure 5.1. As is seen, the process is divided into three distinct phases. This first phase comprises all the pre-access activities, where two subactivities take place, aiming at: (i) securing access to the company and (ii) collecting published data concerning the company, its markets, strategy, financial position and recent significant investments.

The attempt to secure access to top management and if possible the CEO or the president was a particularly difficult, though much interesting, process. Several researchers have noted the severe difficulties which may be encountered in attempting to access 'managerial elites' (e.g. Pettigrew, 1992). Despite the difficulties the challenge remained and the need for more intensive effort was anticipated. Bearing this in mind, a list of the target companies was initially created.

The next step was to achieve some kind of "sponsorship". It has been argued that sponsorship usually affects respondent's willingness to cooperate in a research attempt by convincing him or her of the study's legitimacy and value. A kind of "sponsorship" was established by finding individuals who through their personal or institutional relationships, could offer me access to the target population's corporations. The list of potential "sponsors" included:

- all the familiar academics who had links with the "real world",
- all the consultants known to me directly or indirectly,
- the director of the Hellenic Management Association (EEDE),
- several other individuals having links with the industry,

Access to the CEO's was secured by direct phone-calls asking for an interview. A sample-call to a CEO named mr Tannes follows.

"Good morning mr Tannes, I am calling you in behalf of mr Mantes. My name is Vassilis Papadakis and I am a doctoral student at London Business School, England. Part of my dissertation is based on Greek companies and that is the reason why I am visiting Greece for a short period of time.

My thesis examines the way significant investment decisions have been made in the past. Since your company is in my sample, Mr Mantes (with whom I cooperate) adviced me to communicate with you hoping that you can find some time to contribute to my research effort. Mr Tannes, I communicate with you to ask for a meeting. I know that your available time is very limited, but would it be possible to have a short meeting any time this week?"

Of course phone calls varied considerably since various 'objections' were posed from call to call, and alternative 'strategies' were employed to persuade CEO's to cooperate. In most cases 'sponsorship' seemed to be very effective in gaining access, due to the very close relationships between the 'sponsor' and the CEO. Moreover, the legitimacy of the research effort was facilitated by the fact that I was a doctoral student at a University of the exterior conducting research in Greece (a rather rare attempt). This very fact decisively helped in gaining access, to very high levels in the hierarchy. Only in one case a more formal way of addressing letters to the CEO was deemed appropriate, because he could not be approached by telephone. Unfortunately in this single case, access was denied !! (see Appendix 3).

The **second phase** commenced as soon as access was secured. This phase represented the heart of the whole data collection process. Action was triggered with an initial interview with the CEO or the president. He was expected to provide us with information about the company, its environment, structure, strategy, top management characteristics, and other important organizational aspects. The information collection activity materialized with a self filling questionnaire (see appendix 2). Moreover, the CEO was asked to name the most critical investment decisions which have taken place in the recent 3-5 years. A list of decision topics similar to those appearing in table 5.4 was shown to the CEO to assist him in identifying possible SIDs. Despite this, in most cases SIDs could be easily recalled without aid.

It was made clear to the CEO that these investment decisions should have been of great importance to the enterprise as a whole, in terms of actions taken, resources committed, or precedents set (Mintzberg, et al. 1976). Clearly, it is an ex post search for SIDs, thus making their identification and selection much easier. More specifically, in order to identify specific SIDs, the criteria previously laid down in section 5.2 were used. If several SIDs satisfied our 'hurdle rates' it was left to the CEO to select two of them. There was no attempt to influence the CEO's selection. In cases where no SIDs were identified corporations were excluded from further examination

(see Appendix 3). In few cases only one SID was identified, since strategic decisions are usually made in sporadic, occasional fashion (Hambrick and Snow, 1977).

Moreover, the selection of SIDs was not based on the success or failure of the decision outcome. No such prerequisites were established. We may expect, however, the sample to be somewhat biased towards comparatively successful decisions, although there exist in the final sample some 'disastrous' decisions as well.

After the selection of two specific SIDs, CEO was requested to give a synopsis of each decision and at the same time name **all the key participants** (a similar methodology was used by Hickson et al. 1986).

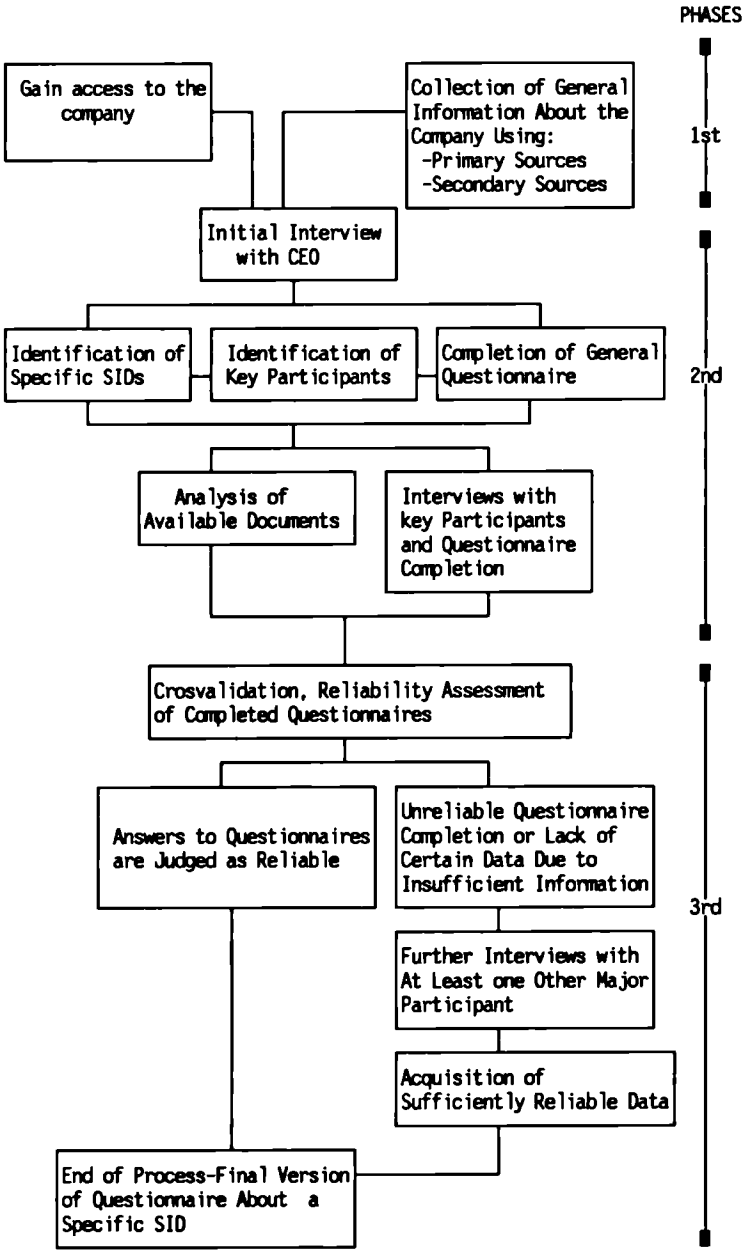

Figure 5.1: Data Collection Process

The second phase continued with semi-structured interviews with at least one participant in each SID. These participants had to be major informants of the whole process. Interviews typically lasted around 2 hours, but occasionally took as long as three, or more, hours. In many cases more than one interview with each manager was deemed necessary.

Following Bouchard's (1976) advice, the research followed the so called "funnel sequence". According to this, the interview typically started with a semi-structured discussion. The discussion was primarily based on a number of open-ended questions. Such an approach was preferred for the following reasons:

(i) It aided the manager to conceptually reconstruct the whole process and its major stages, together with other critical pieces of information prior to his answering the more specific (closed-ended) questions which followed.

(ii) Such a perspective also helped me to better comprehend the level of understanding of the respondent and to understand his/her conceptual language. Moreover, I started to visualise the process and to collect some qualitative information, personal views etc.

(iii) By answering spontaneously the initial open-ended questions, the respondent has committed himself to a certain "reality" concerning the making of the decision and thus it was much easier for me to make a validity check of responses on the closed-ended questions that followed. A number of sources (e.g. Dohremvend 1970; as quoted by Bouchard, 1976) argue that this type of approach to interviewing can enhance the validity of data, while minimizing potential bias.

After completing this part, interviewees were handled the first questionnaire designed to collect specific information about the process (it can be found in Appendix 1). At this point the second phase ended and we entered the **third and final phase**. This included the interpretation of the material collected. In cases where significant deviations were spotted feed-back was sought to clarify inconsistencies. In cases where respondents possessed insufficient information concerning the SID studied, additional managers-informants were interviewed. Moreover, caution was

exercised to cross-validate data and check for unreliable responses. After all necessary corrections had taken place, the final version of the questionnaire was ready.

Considering that 43 companies were approached (38 finally participated and 5 were finally excluded), that at least three persons were interviewed in each company, and that several managers were interviewed more that once, it is obvious that the total number of interviews conducted by far exceeds the number of 200, in a time period of more that 12 months. If we consider that about 2 months were needed to complete the testing of questionnaires and the initial case studies, the whole fieldwork lasted approximately 14 months. This implies a considerable amount of time and effort devoted, but provided me with detailed material and rich insight into the actual decision making processes followed in companies operating in Greece (for more details on the number of managers interviewed refer to appendix 3).

5.9. INSTITUTIONAL vs QUESTIONNAIRE MEASURES

Historically, researchers in their study of organizational phenomena relied on two basic measurement approaches. The first is based on information acquisition through available documents, interviews or published financial statements. It relies more on objective evaluation of organizational phenomena and is called the *objective or institutional approach* to organizational measurement. The second approach is primarily based on *perceptions* measured through a questionnaire. Usually quantitative responses to a number of items are aggregated and the final composite measure is used as an indicator of some composite variable (e.g. decentralization, formalization, performance).

Researchers have long wrestled with the dilemma of choosing the one method over the other (e.g. Downey et al. 1979; Boyd et al. 1993). Each approach has its own limitations. The questionnaire method has been criticized for generating biased information because it is based on subjective opinions of individuals (see Samuel and Mannheim, 1970). On the contrary, the institutional approach despite its acclaimed "objectivity" does not always capture reality. Reliance on formal documents or other

institutional sources may sometimes provide misleading information. Additionally, interviews if not carefully designed may be plagued by severe interviewer bias. Sathe (1978) proposes to avoid referring to the two sets of measures as "objective" and 'subjective' respectively. Instead, considering each method's potential for error the terms 'institutional' and 'questionnaire' should be used as descriptive labels.

The relationship between the two types of measures has been explored to some extent, mostly in the areas of organizational structure and performance. Several researchers have tried to find out whether institutional and questionnaire measures tap the same dimensions, or whether the one type of measurement is preferable over the other. Pennings (1973) used both approaches to measure dimensions of organizational structure. On analysing the intercorrelations between institutional and questionnaire measures of structure he found low convergence. He then concluded that these measures tap different latent dimensions of structure and thus should not be used interchangeably in research.

Ford (1979) and Sathe (1978) using somewhat different research designs more or less confirmed Penning's findings. Dess and Robinson (1984) reached the same conclusion by studying organizational performance measures. According to them, researchers should be cautious in making comparisons between studies in which different measures are used.

It should be stressed that none of the above cited research efforts supported the contention that institutional measures are preferable to questionnaire. Nor have they concluded that the one method is a convenient substitute for the other. This study, because of its exploratory nature uses both types of measures in its attempt to measure the contextual influence on strategic processes. Further analysis of the choice to use objective or subjective measures is made in the respective chapters.

5.10. QUESTIONNAIRE FORMATION

As was mentioned earlier, two research instruments were used in the course of this study. Full copies of both research instruments are presented in appendices 1 and

2. The first questionnaire measures the various SID process characteristics, while the second deals with the contextual domains influencing decision making processes.

Both questionnaires incorporate several constructs modified from well-known research efforts in the field of decision making or in related fields. For example modified questions drawn from Fredrickson's (1986) comprehensiveness constructs are employed, together with some constructs drawn from ideas developed from other landmark works (Mintzberg et al. 1976; Lyles, 1981; Dutton, 1986; Hickson et al. 1986). Moreover, several constructs measuring contextual dimensions were borrowed or adapted from various works in the field [e.g. Steers and Brauenstein's (1976) need for achievement scale, Khandwalla's (1977) competitiveness dimension]. The description of the various dimensions as well as the sources from which they were drawn are described in the respective chapters.

As can be seen from appendices 1 and 2, all dimensions are measured on five or seven-point Likert-type scales. Most of the questions are of a closed-ended format, allowing the respondent to answer items by indicating her/his perception on a five or seven-point interval scale. This type of questions offers respondents ease of completion, requires short response time, clearly specifies the frame of reference for the subject and enables the researcher to easily score and code responses.

The five or seven points on the answer scale were selected after a careful examination of the pertinent literature. If too few scale points are chosen the scale cannot capture the discriminating capacity the respondent may possess, thus resulting in a significant loss of information. The number of points on the answer scale must be dependent on the respondent's experience with this type of research and the complication of the topic under investigation. In general, researchers (e.g. Lissitz & Green, 1975) argue for the use of five or seven scale points in research. Following this line of argument both scales were used. The decision which one to prefer was decided upon the nature of the question and the detail of information that was desired. Moreover, when testing the questionnaire the respondent's reaction to the scale was also noticed. This helped in the final decision about the number of anchor points

suitable for each answer scale.

When constructing the scales two basic guidelines were followed. First, in all cases boxes were available so that respondents could easily tick their choice. Second, each box's precise meaning was clearly stated above it. Third, each box had a unique number ranging from 1 to 5 or 1 to 7 indicating that the scale was intending to measure on a continuum (thus approaching intervality). Cognitive psychologists (e.g. Tversky and Kahneman, 1981) have recently documented that the structuring of questions as well as their sequence influence the answers received. Finally, Bouchard's (1976) suggestions were taken into account during the formulation and sequencing of questions.

5.11. QUESTIONNAIRE TESTING PROCEDURES

After creating the first draft of both research instruments, they were subjected to the comments and criticism of other academics and fellow PhD students before testing them in a corporate context, studying actual SIDs. In total, four in-depth case studies in two industrial companies were conducted. They were drawn from the sectors of textiles and chemicals respectively. The two companies faced different threats and opportunities and differed in ownership status, the one being a subsidiary of a multinational and the other being a Greek-owned firm. There were also significant differences in management style and in the internal systems used. I was fortunate enough to have the unconditional support of top management in both companies. This enabled me to conduct a large number of interviews with almost every major participant in each decision process. Besides, I gained access to the files (capital proposal, business plan, memoranda of meetings etc). The material selected was invaluable for the purpose of my thesis and helped me to sharpen both questionnaires.

It is quite conceivable that there existed many differences between the four decision making processes and this very fact provided me with useful insight and some new ideas. After having completed the four case studies and having revised both

questionnaires, I started testing them with various managers inside both companies. Both questionnaires were modified by at least 40%. The principal source of modifications stemmed from the reactions of the managers interviewed. A good deal of effort has been devoted to understanding their reactions to each of the questions. I tape-recorded all the interviews and repeatedly listened to them afterwards.

a. The first questionnaire: The final version of the questionnaire is much shorter than the previous versions. It is only *14 pages* long, while the previous versions were much larger (about 22 pages). Second, I rephrased, simplified, or (in certain cases) entirely omitted several questions that could not be easily communicated. Despite the fact that the final version is much shorter it contains all the major elements plus some new ideas emerged from further literature review, case study experience or recommendations from my supervisor and others.

b. The second questionnaire: As far as the second questionnaire is concerned, there have also been several fundamental changes. The changes are in some cases as dramatic as those in the first questionnaire. Several unclear questions have been modified or dropped and the final version now amounts to exactly **10 pages.**

5.12. RULES FOLLOWED-RELIABILITY AND VALIDITY ISSUES

A study based on participant recall, though the dominant method of studying decision making processes, may suffer from the familiar and somewhat inevitable limitations characterizing such research approaches. Indeed, severe biases in the representation of reality may occur. These biases usually stem from either the interviewee or the interviewer. According to Huber and Power (1985) there are four basic reasons to which this infidelity can be attributed:

1. Informants may sometimes be motivated to provide inaccurate data. It is not uncommon to show a tendency to rationalize or simplify past actions (Lyles and Mitroff, 1980; Huber, 1985; Schwenk, 1985) in order to project an image of rational and efficient internal decision-making systems. It may sound as an exaggeration, but

strategic level managers may invent stories in order to appear knowledgeable and may inflate their significance while deflating the significance of others (Jervis, 1975).

2. The second source of inaccuracy in participant recall may be attributed to the cognitive and information processing capacity limitations of strategic level managers. They often suffer from memory failure, thus engaging in wishful thinking or showing an understandable tendency to please the interviewer by inventing actions which never took place (Duhaime and Grant, 1984). Additionally, according to Nisbett and Ross (1980) managers tend to attribute greater significance to vivid information than its objective content justifies, or to experience an inability to mentally retrieve the criteria employed in evaluating the decision (Stahl and Zimmerer, 1984). Another source of biased information is the attributional bias. By this term we define the tendency participants usually show, to attribute decision outcomes to appealing but rather inappropriate causes (Schwenk 1982) or to attribute favourable outcomes to actions they have taken and unfavourable ones to exogenous, uncontrollable factors.

3. Strategic decisions usually involve several persons in different hierarchical levels. This implies that the participants may possess partial or second-hand information. In their attempt to conceptually reconstruct decision processes they are not fully aware of, they unintentionally provide inaccurate responses.

4. Finally, the interviewer can also be an important source of bias. He sometimes tries to rationalize or explain in simple linear terms complex, non-rational, nonlinear phenomena (Duhaime and Grant, 1984). Moreover, interviewers may utilise inappropriate techniques to elicit valuable information.

In the course of this thesis, validity and reliability issues were given much thought even at the very early stages of the research planning. Several rules have been followed in an attempt to alleviate possible biases. These rules were initially established by Yin, (1984) and Huber and Power (1985), and were followed by a great number of researchers (e.g. Bourgeois and Eisenhardt, 1988).

First, all the discussions were recorded. This tactic enables the researcher to have direct access to the original discussion and pay attention to any part of it, which may

provide further insight into the intimacies of the decision making process.

Second, interview notes, impressions, remarkable points were given much attention, and were written down during the first 24 hours after the completion of the interview. This provided useful building blocks to improve my knowledge of the process.

Third, when possible, archival records documenting the process and its characteristics were collected. Obviously, in many instances they supported the questionnaire and interview data and enhanced their reliability.

Moreover, particular caution was exercised to minimize distortion and memory failure problems. This was attempted by selecting recently taken decisions (Mintzberg et al. 1976), by interviewing only major participants having an intimate knowledge of the process and by adopting the "funnel sequence" method (described in section 5.8) in conducting the interviews. Moreover, the attempt to include when possible in the interview schedule the sponsor of the whole project, that is the manager responsible for it, guaranteed higher levels of consistency and reliability.

To secure higher reliability levels, and to compensate for memory failures and distortions interview-derived information, when necessary, was cross-checked against other major participants recollections. As Huber and Power (1985) content, an interview with an additional participant usually "increases the researcher's understanding of the issue, either by offsetting other informants biases or by reducing errors through averaging or reconciling responses". This argument is in line with Phillips (1981) who argues that the monomethod, single-informant approach to measurement of organizational variables should be abandoned. Following these allegations particular care was exercised, to reconcile, when possible, interview data with other company sources available (e.g. documents, reports, minutes of meetings etc.), so as to formulate a more comprehensive view of the whole process, the politics behind it, etc.

Several other precautions were taken with the aim to enhance reliability levels. For example, the same questions were posed to all the participants and the same entry

and exit procedures were consistently utilised in each case (Yin, 1984; Bourgeois and Eisenhardt, 1988).

An attempt was also made to motivate informants to wholeheartedly participate in the research process. Since they were top level managers, financial incentives or similar rewards played a minimal role in making them cooperate (Huber and Power, 1985). Instead, they were more concerned about their self-development or the training of their own subordinates. For this reason several LBS's brochures referring to MBA degrees and special executive training courses offered, were distributed to them, something which proved to have helped a lot in gaining their subsequent full cooperation. The willingness and sincerity with which top managers participated in the research and the interest they showed during the interviewing process, provide a sufficient reason to believe in the face validity of their responses.

5.13. DATA ANALYSIS

As explained elsewhere, the objective of this research is to identify and measure the most significant characteristics of SID processes and to examine the way in which context is associated with the making of these decisions. Such a research approach is particularly recommended for fields of study which are still in the early stages of their development. According to Day et al. (1990) and Blair and Boal (1991), the field of strategy research is at such an early stage where theory testing and integration is needed. Such an approach is also in line with Van De Ven's (1992, pp 169) definition of the meaning of the process when designing research on the strategy process.

The study has employed two detailed questionnaires measuring process and content dimensions and is a multivariate attempt to unravel a complicated and dynamic set of relationships. It builds on a substantial literature in related fields, in which reliable findings have been obtained using a research design which systematically reduces an initially large number of variables derived from questionnaires.

The data analysis is divided into four consecutive phases. Figure 5.2 offers a diagrammatic depiction of the data processing activities. In the **first phase** descriptive statistics were used, both to verify that the SPSS/PC programme (Norusis 1990a;b) correctly read the research data, and to organize the responses. This intimate knowledge of the data is important for the subsequent stages of the research.

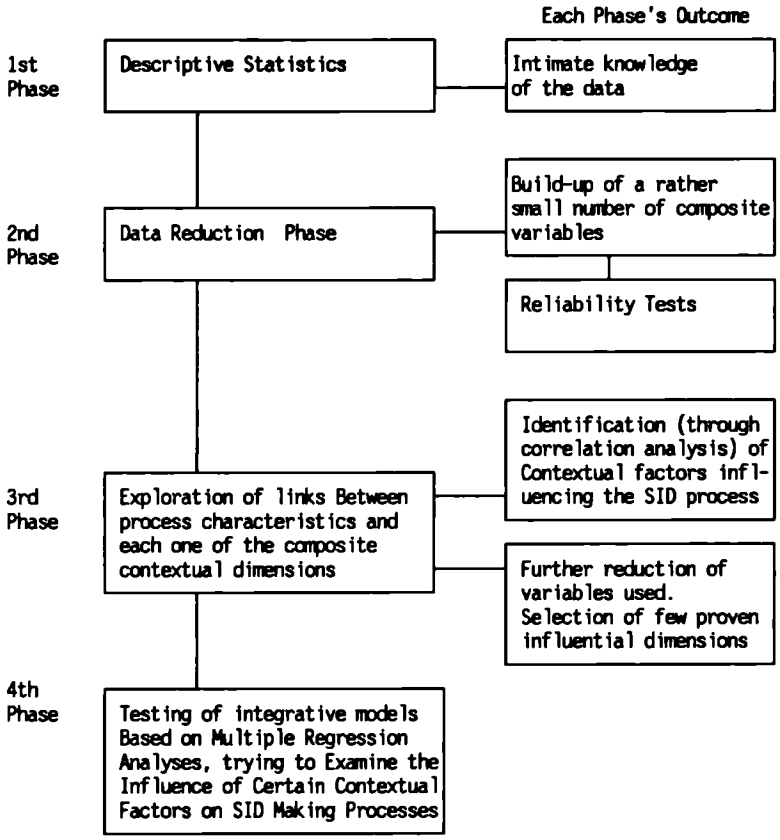

Figure 5.2.

Next, in **phase two**, an attempt will be made to reduce the data to a comparatively small, and meaningful set of composite variables. The questionnaires used in the course of this research, collect detailed information on company characteristics and SID processes. Bearing in mind the initial number of questions used, and the fact that 70 cases of SIDs are incorporated in the final sample, the need to reduce the number of variables by building composite variables is apparent.

The design of the research focuses on this task. Chapter 6 is an example of a successful data reduction process which resulted in nine dimensions characterizing SDMPs. It must be noted that, when possible, constructs (by the term construct we define variables consisting of more than one scales) already used elsewhere were preferred in designing the initial questionnaires. The virtue of such a choice is that these constructs have already been checked for their levels of reliability and validity and have subsequently been accepted by the majority of researchers in the area. The inclusion of widely recognized constructs into the survey was made possible by discovering them while reviewing the international bibliography, and sometimes by directly receiving them from the authors upon request (e.g. Fredrickson, Bourgeois, Eisenhardt).

By means of confirmatory factor analysis we can assure the reliability of the constructs used (reliability coefficients like Cronbach Alpha, split-half reliability coefficients are used). The same logic will be applied to all the contextual constructs used in the course of this study. Through this, the aim to compile a significant number of variables into a small set of meaningful and reliable contextual dimensions will be achieved.

The **third phase** of data analysis aims to establish, by means of correlation analyses, the association between **SID process characteristics and the characteristics of each contextual dimension.** This phase can be subdivided into five empirical parts, each dealing with the characteristics of one contextual dimension.

The final **fourth phase** aims to to integrate all the contextual dimensions into an overall model depicting the contextual influence on SDMPs. By means of regression models (chapter 12), the thesis attempts to detect not only the factors playing a significant role in the way strategic decisions are made, but also to assess their comparative significance against each other and their combinational effects on process characteristics. It is obvious that SID process dimensions are treated as 'dependent' variables, while contextual domains will be the 'independent' variables.

Chapter 6

Dimensions/Aspects of Strategic Investment Decision Processes

6.1.DIMENSIONS/ASPECTS OF STRATEGIC DECISION MAKING PROCESSES

In discussing the literature on strategic decision making, chapter 3 provided an outline of the major research efforts in the area, where a substantial body of research emerged in the recent two decades. Most of these research efforts attempt to describe the process as a sequence of steps, phases or routes* (e.g. Mintzberg et al. 1976; Janis and Mann, 1977; Nutt, 1976; 1984; Fredrickson, 1984). A comparatively small number of others adopts a narrow set of decision characteristics/aspects instead (e.g. Stein, 1981b; Miller and Friesen, 1983; Hickson and Associates, 1986; Miller, 1987; Lyles, 1987; Bourgeois and Eisenhardt 1988). They contend that the decision making process is far from being an iterative well defined and sequentially evolving set of activities.

Thus, instead of using step by step models of decision making they attempted to approach the phenomenon by creating different dimensions/aspects of the process and attaching variables to them. Such a framework provides an extensive characterization of the decision making process, and enables the researcher to categorize SIDs according to various dimensions (Van de Ven, 1992). Moreover, such an approach of assigning specific dimensions frees the study from being tied to single case narratives and synthesizes the character of the process comparatively. Finally, it enables the researcher to test several hypotheses concerning possible interrelationships between the dimensions of the decision making process and various contextual factors.

The design of this research does not aim to follow a rational sequential description of unstructured concepts. Instead, it **aims to take advantage of a number of generally accepted characteristics of the decision making process, while building on the premises of relevant literature arguing for the existence of certain steps in the process.**

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* Refer to section 3.1.4 for a presentation of various models on stages on decision making

Indeed, there have been several attempts trying to "dimensionalize" the process of making and integrating individual decisions. The vast majority of them found their way in the international bibliography during the 80's. One of the earliest integrated attempts belongs to the Bradford team (Butler et al. 1979). After studying the literature in the area they made a tentative classification of process characteristics into four unrelated dimensions (Table 6.1). The *first*, is the process occurrence and is comprised of such sub-dimensions as frequency and regularity of appearance. The *second* dimension characterizes the content of SDs and views them on the grounds of two basic sub-dimensions: consequentiality and equivocality. The *third*, and more conceptually interesting dimension focuses on the actions taking place during the process of making the decision. They proposed the subdimensions of scrutiny and centrality. The former examines the depth of analysis conducted, while the later deals with the centralization aspect present in all decision making processes. The final dimension deals with the efficiency of the whole process and establishes such criteria as rapidity and continuity.

Certainly, it is worth following the evolution of the significant Bradford studies. Seven years later after having concluded an extensive research, which lasted for more than a decade (Hickson et al. 1986), they redefined their proposed dimensions. They now adopt a three dimensional frame on which they view a decision process. The first dimension is termed **complexity** and describes the intricacies and difficulties surrounding the process. The second dimension focuses its interest on the **political aspect** everpresent in such processes (a dimension almost overlooked in the earlier attempt). Finally, the third dimension is comprised by several **unrelated process aspects** like duration, disruption, formality, negotiation etc.

TAYLOR and DUNNETTE,1974;	BUTLER et al. 1979;	FAHEY, 1981;	STEIN, 1981b;	LYLES AND MITROFF 1980;	ASTLEY et al. 1982;	FREDRICKSON, 1983;
■ PREDECISION PROCESSES - Amount of Information - Information Processing Rate - Item Rating Accuracy - Information Retention ■ DECISION POINT - Latency - Accuracy - Confidence - Flexibility	■ PROCESS OCCURRENCE - Frequency - Regularity ■ PROCESS CONTENT - Consequentiality - Equivocality ■ PROCESS ACTION - Scrutiny - Centrality ■ PROCESS PERFORMANCE - Rapidity - Continuity	■ FREQUENCY OF OCCURRENCE ■ DEGREE OF CRITICALNESS ■ INITIAL IMPETUS ■ INFORMATION GATHERING ■ NUMBER OF ALTERNATIVES ■ LENGTH OF TIME	■ NATURE OF ANALYSIS ■ NATURE OF SOLUTION ■ BREADTH OF SEARCH ■ FLEXIBILITY OF APPROACH ■ GROUP BEHAVIOUR ■ INNOVATION ■ STANDARDIZATION ■ INDIVIDUAL vs GROUP ■ PREVIOUS COMMITMENT	MANAGEMENT ATTITUDES TOWARD STRATEGIC PROBLEM FORMULATION: (1980) ■ RATIONALITY ■ NEED FOR INTUITION ■ SOLUTION CONCERN ■ ENJOYMENT ■ NEED FOR CERTAINTY ■ ETHICS LYLES & MITROFF,1985 ■ POWER ■ AVOIDANCE ■ CREDIBILITY ■ PRESSURE	■ SCRUTINY ■ NEGOTIATION ■ DISCONTINUITY ■ CENTRALIZATION ■ DURATION ■ OUTCOMES DUTTON et al. 1983; ■ RECURSIVENESS ■ RETRODUCTIVITY ■ HETERARCHY	■ Motive for Initiation ■ Concept of Goals ■ Relationship Between Means and Ends ■ Analytic Comprehensiveness ■ Integrative Comprehensiveness

HICKSON et al. 1986;	LYLES, 1987;	MILLER, 1987;	CRAY et al. 1988;	HAX & MAJLUF,1988;
■ COMPLEXITY ■ POLITICALITY OF INTERESTS - Pressure of Influence - Intervention - Imbalance - Contention of Objectives ■ PROCESS ASPECTS - Duration Process Time - Duration-Gestation Time - Disruption - Impedance - Formal Interaction - Informal >> - Negotiation Scope - Information Sources - Authority	■ SUBJECTIVE CRITERIA - Clarity - Politicality - Complexity ■ PROCESS CHARACTERISTICS - Degree of Inquiry - Centralization - Problem Definition - Consensus-Disensus - Information Collection	■ RATIONALITY - Analysis - Future Orientation - Explicitness of Strategy - Scanning of Environment ■ INTERACTION - Consensus vs Individual Decision Making - Bargaining ■ ASSERTIVENESS - Proactiveness - Risk Taking	■ SCRUTINY - Expertise - Disparity - Externality - Effort ■ INTERACTION - Informal Interaction - Formal Interaction - Scope for Negotiation ■ FLOW - Disruption - Impedance ■ DURATION - Gestation Time - Process Time ■ CENTRALITY	(PROCESS OF STRATEGY FORMULATION) ■ ROLE OF THE CEO ■ OPENESS AND BREADTH TO COMMUNICATE STRATEGY ■ DEGREE OF PARTICIPATION ■ AMOUNT OF CONSENSUS BUILT ■ EXTENT OF FORMAL PROCESSES USED ■ INCENTIVES PROVIDED FOR KEY PLANNERS ■ LINKAGE OF STRATEGY TO PAST ACTIONS ■ USE OF STRATEGY AS A FORCE OF CHANGE

EISENHARDT and BOURGEOIS, 1988;	MILLER,DROGE, TOULOUSE,1988	LANGLEY,1990;	COWAN, 1991;	BUTLER et al. 1992;	SCHILIT AND PAINE 1987;	GRINYER et al. 1986;
■ CONFLICT -Goal Conflict -Policy Conflict -Interpersonal Disagreement ■ POWER ■ ALLIANCE FORMATION	■ RATIONALITY ■ CENTRALITY Mallory et al 1983; ■ PROACTIVITY ■ HORIZON ■ SCAN ■ INTERACTION VOLUME ■ INTERACTION FORMALITY ■ STANDARDIZATION ■ CENTRALITY ■ DURATION	■ QUANTITATIVE CONTENT ■ LENGTH OF REPORT ■ TIME INPUT REQUIRED ■ NUMBER OF ALTERNATIVES CONSIDERED ■ COMPLEXITY OF THE METHODOLOGY	■ MULTIPLE CUES ■ INFORMAL INFORMATION ■ ORGANIZATIONAL GOALS ■ RULES AND POLICIES ■ MANAGEMENT STYLES ■ DIAGNOSIS ■ OBJECTIVITY ■ MULTIPLE PEOPLE ■ INVOLVEMENT ■ INFORMATION SEARCH ■ POLITICAL BEHAVIOUR ■ DISAGREEMENT/DEBATE ■ PRIORITY	■ COMPUTATION ■ JUDGEMENT ■ NEGOTIATION ■ INSPIRATION ■ DEFINITION ■ INFLUENCE ■ TIMING	■ INITIAL AWARENESS ■ GROUP ACTIVITY ■ CONFLICT ■ GOAL PRECISION ■ DURATION OF THE PROCESS	(Examination of Planning System Characteristics) ■ ANALYTICAL ROLE OF PLANNING ■ FORMALITY ■ STATUS ■ DECENTRALIZATION

Table 6.1: Research Efforts Using Dimensions/Aspects/Characteristics of Strategic Decision Making Processes Instead of Sequential Steps

Again, two years later the same team in another paper (Cray et al. 1988) appears to adopt a somewhat different set of dimensions (i.e. Scrutiny, interaction, duration, centrality, flow) which integrates ideas from the previous categorizations. Mallory et al. (1983) in another joint-effort paper adopted a richer categorization of decision making process figures. These different categorizations may on the one hand indicate a certain degree of inconsistency, but on the other hand pinpoint a crucial element, which is the fact that SDs are complex phenomena and can be viewed under many different perspectives.

The same "inconsistency" is also present in the work of Lyles and associates (Lyles and Mitroff, 1980; Lyles 1987) as well as the work of Miller (Miller, 1987; Miller et al. 1988). Different publications in the same decade view differently the characteristics of the process.

Except from the very influential Bradford studies several other efforts adopting a similar orientation appeared during the 80's. Table 6.1 clearly depicts most of them in a comparative way. I will only give the flavour of one or two of them and then attempt to focus on Fredrickson's important research effort. I will end this review by drawing some conclusions regarding the state of the art in the area.

One of the initial attempts to dimensionalize the process belongs to Stein (1981 a; b). Despite the fact that he is probably the only researcher who fully examined SDs in context, he adopted a narrow focus on selected process dimensions focusing more on process elements like **analysis**, **breadth of search**, and **standardization**, than on other subtle dimensions like **politicality** of interests, **power** relationships or **assertiveness**.

One of the most recent works belongs to Fredrickson (1983; 1984; 1985; 1986). In reviewing the literature on SDM, Fredrickson, (1983), drew heavily from Janis and Mann (1977) and Wrapp (1967) and identified six critical characteristics describing the process. He, then, attempted to prescribe how these characteristics are presented in rational and incremental decision making and classified them into the following dimensions:

1. **motive** for initiation,
2. concept of **choice**,
3. relationship between **means** (alternatives) and **ends** (goals),
4. **comprehensiveness in making** the decision (the degree to which the organization has tried to be exhaustive or inclusive in making this specific decision, Fredrickson, 1984 pp 402),
5. **comprehensiveness in integrating the decision.**

In studying strategic problem formulation Lyles and Mitroff (1980), resulted in an interesting set of process characteristics, involving both the 'traditional' dimensions of rationality, intuition, solution concern and some 'novel' dimensions like enjoyment, and ethics which have received very sparse, if any, conceptual and empirical treatment.

In summary, it is evident that SDMPs are not simply a matter of explicating and evaluating alternatives. Several different dimensions may adequately describe process characteristics. This makes obvious to the reader the difficulty involved in trying to classify SDs according to unrelated dimensions. On the other hand, such a framework enables researchers to adopt more innovative, and pathbraking methodologies in studying aspects of SDM. A study of table 6.1. makes apparent to the reader the multiplicity of dimensions/aspects proposed. Strategic processes entail not only social adjustment, bargaining and negotiations but also elements of rationality, duration, and organization-wide communications. A meaningful but relatively parsimonious categorization based on table 6.1 could result in the following indicative dimensions:

1. **Rationality/Comprehensiveness dimension:**

It is directly present as a solid dimension in the work of Lyles and Mitroff 1980; Fredrickson, 1983; Miller, 1987; Miller et al. 1988. Moreover, elements of rationality can be traced in most of the works presented in table 6.1. They can be found as *complexity of methodology* (Langley, 1989; 1990) *degree of inquiry* (Lyles, 1987), *scrutiny* (Astley et al. 1982; and Cray et al. 1988), *information gathering* (Taylor and Dunnette, 1974; Fahey, 1981; Cowan, 1991; Provan, 1991), and *information processing dimension* (Miller, 1989).

2.**Group Behaviour Dimension:**

-*Politicality* (March and Simon, 1958; Crozier, 1964; Pfeffer and Salancik, 1974; Butler et al. 1977/78; Wilson, 1982; Pettigrew, 1985; Hickson et al. 1986; Lyles 1987; Hendry, 1988; Shrivastava and Nachman, 1989; Butler et al. 1991),

-*Negotiation/Bargaining* (Pettigrew, 1973; Abell, 1975; Astley et al. 1982; Hickson et al. 1986; Cray et al. 1988),

-*Power* (Narayanan and Fahey, 1982; Provan, 1989)

-*Individual vs Group* (March and Simon, 1958; Stein, 1981b)

-*Consensus/Dissensus* (Miller, 1987; Lyles, 1987; Hax and Majluf, 1988)

3.**Centralization** (Child, 1973; Pugh and Hickson, 1976; Astley et al 1982; Mallory et al. 1983; Lyles, 1987; Miller 1987; Miller et al. 1988; Cray et al. 1988),

4.**Formalization/Standardization** (Mallory et al.1983;Grinyer et al. 1986),

5.**Disruption, Impedance, Speedups and other Dynamic Factors** (Mintzberg et al.1976; Cray et al. 1988; Hickson et al. 1986),

6.**Other Process Characteristics:**

-*Complexity of the Process* (Astley et al.1982; Hickson et al.1986; Lyles,1987),

-*Duration* (Vroom, 1973; Fahey 1981; Hickson et al.1986; Cray et al. 1988),

-*Risk Taking Behaviour* (Miller, 1987).

-*Need for Intuition* (Lyles and Mitroff, 1980; Butler et al. 1992).

-*Ethics* (Lyles and Mitroff 1980).

6.2. ADOPTED DIMENSIONS/ASPECTS OF SID PROCESSES

The current section addresses the issue of developing concepts reliably describing dimensions/aspects of SID processes, which can be applied across the various decisions of the sample. When designing this research most of the dimensions of SID processes appearing in table 6.1 were measured, since a process may be seen both as a 'bargaining zone' where competing interests occur and an arena in which there is room for rationality, hierarchy and other related notions. The following sections will focus on these dimensions/aspects.

i. THE RATIONALITY/COMPREHENSIVENESS DIMENSION

Undoubtedly, one of the most important (although highly criticized) dimensions characterizing any decision process is the rationality-comprehensiveness dimension. It is the central feature distinguishing between synoptic/rational and incremental processes, with a prominent role in the decision making literature (e.g. Steiner, 1969; Lindblom, 1968; Allison, 1971; Andrews, 1971; Vroom, 1973; Hart,1992) since rationality may be considered as synonymous to effectiveness. As Fredrickson and Mitchell (1984) contend:

"Although the comprehensiveness construct is just one measure of the extent to which an organization's strategic process approximates a rational model, its multifaceted nature makes it particularly valuable in understanding the strategic decision making".

As Lyles and Mitroff (1980) contend, despite its importance only a handful of **empirical studies** have attempted to operationalize the rationality dimension. For example, Lyles and Socrats (1975), as well as Lyles and Mitroff (1980) used a multi-dimensional construct operationalizing rationality as a component of three major dimensions: emotional involvement, intuition, and use of mathematical techniques.

In the same vein, Janis' (1985) research highlights several criteria for assessing the quality/rationality of decision making processes. According to him a process can be characterized as rational when certain criteria are met:

- it covers a wide range of possible alternatives,
- it takes considerably into account all the objectives sought,
- it evaluates carefully the costs and benefits from each alternative,
- it uses extensive search for information,
- it remains alert to any new information and does not hesitate to seek expert judgement concerning the issue on hand,
- it makes provisions for the implementation of the chosen course of action, devises contingency plans covering possible deviations from expected outcomes.

According to Lyles and Thomas (1988), good/rational problem formulations are based, among others, on such characteristics as valuable past experience of events, generation of multiple scenarios, strong discussions, action taking, tolerance of ambiguity, decentralized communication channels, and the ability to vary inquiry methods according to the nature of the problem.

Fredrickson (1984), devised perhaps the most elaborate construct to measure comprehensiveness-rationality of organizational decision making processes. He adopted a four-stage model including such stages as situation diagnosis, alternative generation, alternative evaluation and decision integration. For each stage he constructed additive variables measuring comprehensiveness on seven-point Likert-type scales. The characteristics distinguishing more rational from less rational processes were:

- *scheduled meetings* in each stage
- assignment of *primary responsibility* (one individual vs several participants)
- degree of *information seeking activities*
- degree of systematic use of *external sources* for information seeking
- number of *employees* directly involved
- extent to which *specialized consultants* were used
- years of *historical data review*
- *functional expertise* of people involved

Capitalizing on Fredrickson's research framework and based on the discussion of section 3.1.4, the thesis has adopted the following five stages: (i) the situation diagnosis stage, (ii) the alternative generation stage, (iii) the alternative evaluation stage, (iv) the making of the final decision, (v) the integration of the decision.

For each stage Fredrickson's eight rationality elements are measured, on a Likert type scale. Then the rationality elements for each stage are summed to construct five additive variables, each representing the rationality-comprehensiveness dimension of the respective stage. Each variable was then divided by the total number of items in the scale, so as to achieve scale homogeneity. Table 6.2. presents the way in which the rationality constructs for each stage in the decision making process were created. Moreover, the specific name of the variable used by the SPSS programme is presented together with the location of the respective variable in the questionnaires. We should note that both Fredrickson and Mitchell, (1984) and various other researchers who have used similar constructs (e.g. Smith et al. 1988; Wooldridge and Floyd, 1990; Bahaee, 1992), have provided adequate validity checks to justify the repeated use of these measures.

	STAGES IN THE DECISION MAKING PROCESS AND VARIABLES ASSIGNED TO EACH STAGE				
	SITUATION DIAGNOSIS	ALTERNATIVE GENERATION	ALTERNATIVE EVALUATION	MAKING OF FINAL DECIS	DECISION INTEGRATION
1.EXTEND OF SCHEDULED MEETINGS IN EACH STAGE	MeetDiag (P. 351,Q.1a)	MeetGen (P. 351,Q.1b)	MeetEva (P. 351,Q.1c)	MeetDeci (P.351,Q.1d)	MeetInte (P. 351,Q.1e)
2.ASSIGNMENT OF PRIMARY RESPONSIBILITY:	ResDiag (P.351, Q.2a)	ResGen (P.351, Q.2b)	ResEva (P.351, Q.2c)	ResDeci (P.351,Q.2d)	ResInte (P.351, Q.2e)
3.DEGREE OF INFORMATION SEEKING ACTIVITIES	InfoDiag (P.351, Q.3a)	InfoGen (P.351, Q.3b)	InfoEva (P.351, Q.3c)	——	——
4.DEGREE OF SYSTEMATIC SEARCH FOR INFORMATION FROM EXTERNAL SOURCES	ExteDiag (P.352, Q.4a)	ExteGen (P.352, Q.4b)	ExteEva (P.352, Q.4c)	——	ExteInte (P.352, Q. 4)
5.NUMBER OF EMPLOYEES DIRECTLY INVOLVED	MenDiag (P.352, Q.5a)	MenGen (P.352, Q.5b)	MenEva (P.352, Q.5c)	MenDeci (P.352,Q.5d)	MenInte (P.352, Q.5e)
6.EXTENT TO WHICH SPECIALIZED CONSULTANTS WERE USED	Con2Diag (P.352, Q.7a)	Con2Gen (P.352, Q.7b)	Con2Evad (P.352, Q.7c)	Con2Evad (P.352,Q.7c)	Con2Inte (P.352, Q.7d)
7.YEARS OF HISTORICAL DATA REVIEW	EthDiag (P.353, Q 8a)	——	EthEva (P.353, Q 8b)	——	——
8.FUNCTIONAL EXPERTISE USED IN EACH STEP (*)	SUM(EXPEDIAG) (P.353, Q.9b)	SUM(EXPEGEN) (P.353, Q 9c)	SUM(EXPEEVAD) (P.353, Q 9d)	SUM(EXPEEVAD (P.353,Q 9d)	SUM(EXPEINTE) (P.353, Q 9e)
NUMBER OF VARIABLES ADDED	8	7	8	5	6
NAME OF COMPOSITE VARIABLE RESULTED:	COMDIAG	COMGEN	COMEVA	COMDECI	COMINTE

Table 6.2. Extraction of the Rationality/Comprehensiveness Constructs

ii. FORMALIZATION/STANDARDIZATION OF THE PROCESS

Another characteristic emerged from the literature review is the degree of formalization of the process, or else the extent to which the management processes of the enterprise are explicit, usually compiled in written form. Indeed, organizations as social systems most of the time tend to introduce some type of formalization when having to cope with significant issues. This ensures alignment between various layers in the hierarchy or various units and functions in the organization. Formalization may take the form of:

1. A formal screening process which helps in deciding whether a specific investment decision should be further investigated (King, 1975a),
2. Written procedures, which guide decision processes and are strictly followed in making the final decision (Avlonitis, 1980),

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* Functional expertise variables for each stage in the process are composite variables, each created by adding the degree of expertise drawn from 5 different functional areas (marketing, production, engineering, finance and personnel). See question 9, page 353.

3. A formalized procedure which helps in the search for alternative courses of action (King, 1975 a).
4. Some type of standard form or document assisting management to reach a final decision (Avlonitis 1980),
5. Certain hierarchy of approval (e.g. a specific list of top executives) through which a proposal must proceed (King, 1975 a).
6. A specialized department which evaluates new investment projects.
7. Pre-determined rules and techniques for the evaluation of new investment projects (Avlonitis 1980),
8. Task forces, specially formed committees or liaison devices that exist to facilitate decision making (Miller, 1987).

We may remind the reader that in measuring the rationality/comprehensiveness dimension we modified the constructs utilised by Fredrickson (1984), since they have earned a widespread acceptance in the literature. On the contrary, the various elements of formalization/standardization have been derived from various authors and we believe that we should let a factor analysis examination reveal possible meaningful sub-dimensions.

In total seventeen Likert-type scales ranging from one to seven (where 1-absolutely false and 7-absolutely true) are factor analysed to result in a model revealing different dimensions of the formalization-standardization of the process. Interestingly, as shown in table 6.3 the model resulted in a three factor solution.

The first factor measures the degree of existence of a set of formalized rules followed during the process. The second, represents the existence of formalized ways to exchange ideas and finally the third factor, measures what Miller (1987) names as formal coordination devices, existing to help make the decision. Table 6.4 presents the scales used to extract the final standardization/formalization constructs and their location in the first questionnaire. The three finally created factors are principal components (and not additive variables), derived through the facility available in the SPSS/PC statistical package (Norusis, 1990b).

FORMALIZATION/ STANDARDIZATION CHARACTERISTICS	VARIABLE NAME USED FOR SPSS PROCESSING	FACTOR LOADINGS: (1) FACTOR 1: SET OF FORMALIZED RULES FOLLOWED	FACTOR 2: FORMALIZED WAYS TO EXCHANGE IDEAS	FACTOR 3: FORMAL COORDINATION DEVICES
WRITTEN PROCEDURE GUIDES PROCESS	(FORMPROC)	.84724		
FORMAL PROCEDURE TO IDENTIFY ALTERNATIVES	(FORMALTE)	.83807		
FORMAL SCREENING PROCEDURES	(INVESTIG)	.79636		
MINIMUM STANDARDS SET	(MINSTAND)	.71732	.35672	
FORMAL DOCUMENT GUIDES FINAL DECISION	(DOCUMENT)	.67653	.31835	
PREDETERMINED EVALUATION CRITERIA	(CRITERIA)	.64599		
PRE-ESTABLISHED TECHNIQUES FOR SID EVALUATION	(EVARULE)	.58453	.53318	
FORMAL DISCUSSION OF POSSIBLE ALTERNATIVES	(GENSCHED)		.81355	
BRAINSTORMING	(BRAINSTO)		.77063	
A SPECIFIC DEPARTMENT MAKES EVALUATION	(SPECDEPT)		.70662	
FORMAL MEETINGS AMONG TOP MANAGERS	(SCHEDUL2)	.34820	.59795	.27312
DELEGATION OF RESPONSIBILITIES	(RESPONSI)	.25958	.51292	.38422
HIERARCHY OF APPROVAL	(HIERAPRO)	.43719	.50283	
SPECIALLY FORMED TASK FORCES	(TASKFORC)			.90986
SPECIALLY FORMED INTERDEPARTMENTAL COMMIT.	(COMMIT1)			.89905
SPECIALLY FORMED LIAISON DEVICES	(LIAISON)		.29294	.76961
EIGENVALUE		6.83	2.00	1.48
PERCENTAGE OF VARIANCE EXPLAINED		42.7	12.5	9.3
CUMULATIVE PERCENTAGE EXPLAINED		42.7	55.2	64.5

Table 6.3 : Factor Analysis Results of Formalization/Standardization of the Process

(1) Factor loadings less than .25 are not reported

NAME OF FACTOR	LOCATION IN THE FIRST QUESTIONNAIRE (APPENDIX 1)	TOTAL NUMBER OF ITEMS	NAME OF FACTOR
1.SET OF RULES FOLLOWED	FORMPROC PAGE 359, Q.5., ITEM 4 FORMALTE PAGE 359, Q.5., ITEM 6 INVESTIG PAGE 359, Q.5., ITEM 1 MINSTAND PAGE 359, Q.5., ITEM 3 DOCUMENT PAGE 359, Q.5., ITEM 7 CRITERIA PAGE 359, Q.5., ITEM 2 EVARULE PAGE 359, Q.5., ITEM 10	7	FORMA1
2.FORMALIZED WAYS TO EXCHANGE IDEAS	GENSCHED PAGE 354, Q.2., ITEM 2 BRAINSTO PAGE 354, Q.2., ITEM 4 SPECDEPT PAGE 359, Q.5., ITEM 9 SCHEDUL2 PAGE 357, Q.1., ITEM 2 RESPONSI PAGE 359, Q.5., ITEM 5 HIERAPRO PAGE 359, Q.5., ITEM 8	6	FORMA2
3.FORMAL COORDINATION DEVICES	TASKFORC PAGE 357, Q.2., ITEM 2 COMMIT1 PAGE 357, Q.2., ITEM 1 LIAISON PAGE 357, Q.2., ITEM 3	3	FORMA3

Table 6.4. Extraction of the Formalization/Standardization Dimensions

iii. DEGREE OF REPORTING ACTIVITIES IN SUPPORT OF THE SID

Another important aspect of each decision making process is the degree of reporting and evalutative activities. During the recent 50 years we have witnessed substantial strides in both financial theory and practice in terms of advancing a number of techniques for evaluating investment projects (e.g. Weston and Brigham, 1981; Davis and Pointon, 1984; Sharpe, 1985; Franks et al. 1985). Moreover, extensive research has been conducted investigating the contribution of modern finance to investment decision making (Lorange, 1972; Pinches, 1982; Pike, 1989). A significant number of financial and other devices are available in the attempt of decision makers to evaluate SIDs. Such devices may, among others, incorporate:

1. **financial measures** (e.g. cash flows, payback, NPV, IRR).
2. **probabilistic assessment** of the range of possible results for one or more cash flows.
3. **detailed cost studies** of each one of the alternatives.
4. proforma **financial statements.**
5. **an explicit ranking of alternatives** (e.g. Stein, 1980).
6. **contingency plans** for possible occurrences.
7. the **assumptions** on which the evaluation was based.

Despite the significant emphasis given by finance on this point, it seems that such factors are seen to have less importance in 'real-world' decision making (King, 1975 a; Mintzberg et al. 1976; Pike, 1983; Marsh et al. 1988 b; Butler et al. 1991). It is worth quoting Butler et al. (1991) who contend that "*the emphasis in the capital budgeting literature on formal investment appraisal using discounted cash flow methods is misplaced. Equally apparent is the relatively low priority given to risk and uncertainty factors*" (Butler et al. 1991 pp402). The initial data analysis, based on descriptive statistics, corroborated this view. Nevertheless, it appears worth further exploring this dimension of SID processes.

Sixteen seven-point Likert-type scales are used to measure the extension of formal reporting activities. As shown in table 6.5, when factor analysed they resulted in two factors. The first factor incorporates variables relating to the *reporting on alternative ways of action.* For example, the factor is consisted of such variables as:

- direct comparison of alternatives (ALTECOMP)
- explicit ranking of alternatives (RANKING)
- estimation of each alternative's success probabilities (SUCCESS).

On the second factor load all the variables measuring *financial reporting activities.* This factor incorporates such variables as:

- use of Net Present Value (NPV) - Internal Rate of Return (IRR), or other financial devices to evaluate alternatives (NPVIRR)
- incorporation of proforma financial statements (FINSTATE)
- in-depth cost estimations of each alternative (COSTSTUD)
- incorporation of the decision into company-wide financial statements (COMPANAL)

REPORTING ACTIVITIES		FACTOR LOADINGS : * FACTOR 1: REPORTING ON ALTERNATIVE WAYS OF ACTION	FACTOR 2: FINANCIAL REPORTING
DIRECT COMPARISON OF ALTERNATIVES	(ALTECOMP)	.83675	.29415
EXPLICIT RANKING OF ALTERNATIVES	(RANKING)	.82921	
ESTIMATION OF EACH ALTERNATIVE'S SUCCES PROBABILITIES	(SUCCESS)	.79136	.25851
DEPARTMENTS WORKED OUT LIST OF ALTERNATIVES	(LISTALTE)	.75421	
RISK ANALYSIS-SPECIFIED ATTITUDE TOWARD RISK	(RISKATTI)	.73843	
CONTINGENCY PLANS	(CONTIPLA)	.72483	.35267
FEASIBILITY OF EACH ALTERNATIVE	(FEASIBIL)	.69119	.47071
PROBABILISTIC ASSESSMENT OF THE RANGE OF POSSIBLE RESULTS	(PROBABIL)	.65337	.49985
ESTIMATION OF EACH ALTERNATIVE'S CONSEQUENCES	(CONSIDE)	.62455	.55926
SENSITIVITY ANALYSIS	(SENSITIV)	.62121	.46261
USE OF NPV-IRR METHODS	(NPVIRR)		.86534
PROFORMA FINANCIAL STATEMENTS	(FINSTATE)	.26672	.86265
DETAILED LABOR REQUIREMENTS	(HYPOTHE)		.82659
EXPLICITNESS OF HYPOTHESES	(COSTSTUD)	.38130	.79509
DETAILED COST STUDIES	(COMPANAL)	.53882	.60145
INCORPORATION OF SID INTO COMPANYWIDE FINANCIAL PLANS	(LABOR)		.55678
EIGENVALUE		9.23	1.61
PCT OF VAR		57.7	10.1
CUM PCT		57.7	67.8

Table 6.5 : Factor Analysis of Reporting Activities in Support of the SID

* Factor loadings less than .25 are not reported.

NAME OF FACTOR	LOCATION IN THE FIRST QUESTIONNAIRE (APPENDIX 1)	TOTAL NUMBER OF ITEMS	NAME OF FACTOR
1.REPORTING ON ALTERNATIVE WAYS OF ACTION	ALTECOMP Page 356, Q.3., ITEM 6 RANKING Page 356, Q.3., ITEM 14 SUCCESS Page 356, Q.3., ITEM 13 LISTALTE Page 354, Q.2., ITEM 3 RISKATTI Page 356, Q.3., ITEM 10 CONTIPLA Page 356, Q.3., ITEM 4 FEASIBIL Page 356, Q.3., ITEM 3 PROBABIL Page 356, Q.3., ITEM 8 CONSIDE Page 356, Q.3., ITEM 5 SENSITIV Page 356, Q.3., ITEM 11	10	REPOR1
2.FINANCIAL REPORTING	NPVIRR Page 356, Q.3., ITEM 1 FINSTATE Page 356, Q.3., ITEM 9 HYPOTHE Page 356, Q.3., ITEM 2 COSTSTUD Page 356, Q.3., ITEM 7 COMPANAL Page 357, Q.1., ITEM 6 LABOR Page 356, Q.3., ITEM 12	6	REPOR2

Table 6.6. Extraction of the Factors Measuring Dimensions of Reporting

The two beforementioned factors are finally used to measure the extensiveness of reporting activities, the first measuring the *extent of reporting on alternative ways of action* and the second the *extent of financial reporting*. Especially the second, could also be interpreted as 'use of analytical techniques'. Table 6.6. presents the final reporting variables created and the location of the original scales in the first questionnaire. One might contend that both factors may be viewed as part of the degree of rationality characterising SDMPs. We believe, that both represent dimensions of rationality worthy of further exploration. Thus, we will introduce both variables into the final factor analysis model and let specific patterns emerge.

iv. DECENTRALIZATION / PARTICIPATION

Central to most accounts of SDMs is the degree of centralization-decentralization of the process (e.g. Child 1973; Butler et al. 1979; Astley et al. 1982; Lyles 1987; Cray et al. 1988; Miller et al. 1988). Recent conceptualizations of strategy formulation question the allegation that strategic decision making is a top management prerogative. For example, Burgelman (1983; 1988) views strategy as the outcome of internal corporate venturing, Mintzberg and Waters (1985) descibe strategy as a pattern in a stream of deliberate and emergent decisions and actions, Fredrickson (1984), recognizes that several individuals from various layers participate in strategic decision making, and Schilit (1987) measures the significance of middle-level managers' involvement.

Two forms of decentralization were taken into account in the course of the present research i.e. hierarchical decentralization and departmental participation (also found as lateral communication or cross-functional communication).

Hierarchical decentralization measures the extent of vertical decentralization of decision making during all the phases of the process, while lateral communication measures the extent of balanced participation of various departments in the decision making process. In measuring hierarchical decentralization the approach initially introduced by Tannenbaum (1968) was followed. It is based on the total amount of

participation of various hierarchical levels and departments in each of the five phases of the decision process, since each phase is likely to have a different level of centralization-decentralization (Grinyer et al. 1986). Five hierarchical levels were taken into account (i.e. Owner-Main shareholder, CEO, first level directors, middle managers, lower level managers). Responses were taken on a five-point Likert-type scale, anchored with '1'no involvement at this stage, to '5'active involvement and influence. By adding all the hierarchical layers for every stage in the process, five additive variables were obtained. Each of them measures the degree of hierarchical decentralization in the respective stage of the process. Each additive variable was then divided by five so as to obtain five composite variables ranging from 1-5.

In a similar vein, the degree of *lateral communication* is measured for five main departments (i.e. finance-accounting, production, marketing, personnel, and purchasing). More details about the final variables created, can be found in table 6.7. All items for both hierarchical and lateral communication were taken from the first questionnaire, appendix 1, page 358, question 3.

	STEPS IN THE DECISION MAKING PROCESS:				
LATERAL COMMUNICATION OR DEPARTMENTAL DECENTRALIZATION	SITUATION DIAGNOSIS	ALTERNATIVE GENERATION	ALTERNATIVE EVALUATION	MAKING OF FINAL DECIS	DECISION INTEGRATION
1.FINANCE-ACCOUNTING	A1	B1	C1	D1	E1
2.PRODUCTION AND EQUIVALENT DEPTs	A2	B2	C2	D2	E2
3.MARKETING DEPARTMENT	A3	B3	C3	D3	E3
4.PERSONNEL DEPARTMENT	A4	B4	C4	D4	E4
5.PURCHASING DEPARTMENT	A5	B5	C5	D5	E5
NUMBER OF VARIABLES INTO SCALE	5	5	5	5	5
NAME OF SCALE CONSTRUCTED	SUM(A1..A5)/5 DDECDIAG	SUM(B1..B5)/5 DDECGEN	SUM(C1..C5)/5 DDECEVA	SUM(D1..D5)/5 DDECDEC	SUM(E1..E5)/5 DDECINTE
HIERARCHICAL DECENTRALIZATION	SITUATION DIAGNOSIS	ALTERNATIVE GENERATION	ALTERNATIVE EVALUATION	MAKING OF FINAL DECIS	DECISION INTEGRATION
1.OWNER-MAIN SHAREHOLDERS	A1	B1	C1	D1	E1
2.CHIEF EXECUTIVE OFFICER	A2	B2	C2	D2	E2
3.FIRST LEVEL DIRECTORS	A3	B3	C3	D3	E3
4.MIDDLE MANAGERS	A4	B4	C4	D4	E4
5.LOWER LEVEL MANAGERS	A5	B5	C5	D5	E5
NUMBER OF VARIABLES INTO SCALE	5	5	5	5	5
NAME OF SCALE CONSTRUCTED	SUM(A1..A5)/5 HDECDIAG	SUM(B1..B5)/5 HDECGEN	SUM(C1..C5)/5 HDECEVA	SUM(D1..D5)/5 HDECDEC	SUM(E1..E5)/5 HDECINTE

Table 6.7. Extraction of the Decentralization Variables

v. GROUP BEHAVIOUR DIMENSION

Another major dimension/aspect characterizing SDMPs is the group behaviour dimension. Its importance has been well documented in the literature, because through the social structure of the organization people acquire the needed power and credibility to influence strategic decision making (e.g. Cyert and March, 1963; Bower, 1970; Quinn, 1978; Narayanan and Fahey 1982). The literature review part of this thesis has shed some light on the political model of decision making, the issues associated with the internal struggle for the acquisition and distribution of power and authority, and the effort by various sets of political actors to scew the outputs of decision making and get their positions accepted. The research instrument attempted to approach several behavioural-political aspects of decision processes by using a number of seven-point Likert-type scales measuring:

1. degree of *coalition formation* during the process. This measures the intrusion of divergent constelation of interests and the formation of various coalitions.
2. degree of *negotiation* among participants (Pettigrew, 1973; Abell, 1975; Mintzberg et al. 1976; Lyles and Mitroff,1980; Astley et al.1982; Hickson et al. 1986; Cray et al. 1988; Wensley et al. 1989),
3. *internal resistance* to the decision (Mintzberg et al. 1976),
4. degree of *disagreement on the proper solution* to the problem (Cowan, 1991; Eisenhardt and Bourgeois, 1988),
5. degree of *disagreement on the methodology* to find a solution to the problem (Butler et al. 1991),
6. degree of *disagreement on the objectives sought* by the decision (e.g. Patchen, 1974; Butler et al. 1991).

vi. OTHER PROCESS DIMENSIONS

Finally, several other dimensions measuring specific aspects of the process are used. They are:

1.Mintzberg et al. (1976) consider as significant characteristics of the process, what they call *dynamic factors*. Such factors may include, among others, poor coordination, emergence of new unexpected options, managerial turnover, speedups, feedback delays, comprehension cycles etc. Lyles (1981) made an excellent description of the cycles and recyles potentially encountered during the making of strategic decisions. She identified several causes of recycle, including

new events occuring, managerial turnover and stalling tactics. The thesis attempts to measure the extent of *process interruptions* (what Astley et al. 1982 call 'discontinuities') encountered from various dynamic factors. The extent of process interruptions is measured on a seven-point Likert-type scale ranging from 1='not at all' to 7='to a very great extent' (see page 360, B8, question no 1).

2. *Gestation time*, is defined as the time elapsed between the first recognition (what Lyles 1981 calls 'creeping awareness') of a potential SID , to the first reference to a deliberate action (Hickson et al. 1986; De Geus, 1988). Lyles (1981) reported that in three quarters of the companies in her sample strategic issues remained at the 'incubation' period for more than a year, while in several cases the issue was present for more than five years prior to taking any action. The results of the present study (table 6.8) show that on average the gestation process time lasted for 31 months (about 2.5 years). The gestation process time is an important variable since it indicates the ability of a company to sense and act on strategic issues.

3. Of particular interest to writers in decision making is another important characteristic of SID processes: the *duration process time* (e.g. Mintzberg et al. 1976; Fahey 1981; Astley et al. 1982; Hickson et al.1986; Odiorne, 1986; Schilit and Paine, 1987; Cray et al.1988; Sharp, 1990). Today's leaders are aware of the difficulties present in decision making. Odiorne marks the beginning of a remarkable slowdown in decision making since among others, "hundreds of people may have a foot on the brake while only one or two can operate the accelerator" (Odiorne, 1986; pp 34).

We follow Eisenhardt (1989a) and Hickson et al. (1986) and define duration process time as the number of months elapsed between the first reference to a deliberate action, to the time when a specific commitment to act was made (see first questionnaire, page no 348, question no 6). Both gestation process time and duration process time are according to Mintzberg et al. (1976) extremely important factors in studying strategic decision making processes and they will be further explored in the course of this study.

4.*Number of alternatives simultaneously considered* by management in making the decision (e.g. Fahey, 1981; Gemunden and Hauschildt, 1985; Langley, 1990; Judge and Miller 1991). The rational model assumes that all possible alternative ways of action are thoroughly analysed before the final choice is made. Indeed, the number of alternatives has a marked influence on the rationality of decision making, as is proven by Gemunden and Hauschildt, (1985). Despite this, there is enough evidence to support the allegation that usually no more than four alternatives are examined (Gemunden and Hauschildt, 1985) and in most cases only one alternative is subjected to in-depth analysis (Mintzberg et al. 1976). Indeed, managers usually draw ideas from their repertoire of experiences, are 'blinded' by a built-in tendency to look at existing ways of doing things, and usually retrieve a limited number of alternative courses of action (Mazzolini, 1980; Marmaras et al. 1992). Knowledge limitations, managerial experience, lack of time and reluctance to provide resources are among the possible factors determining the range of alternatives considered. Moreover, various authors have raised a concern that insufficient attention is being paid to the process of alternative identification since the number and quality of alternatives developed is among the significant factors influencing decision quality (Alexander, 1979).

Table 6.8 presents descriptive statistics of all the variables used to describe SID making processes. As is illustrated, the means of all the variables vary by .60 or more. This variance is large enough to allow statistically significant differences to emerge in subsequent data analysis.

6.3. FACTOR ANALYSIS OF SID PROCESS DIMENSIONS

Altogether, the dimensions/aspects of decision processes reported in section 6.2 are thirty. Undoubtedly, they provide a detailed categorization of strategic decision process characteristics, but their great number is a major obstacle to the objective of extracting meaningful results through a limited number of significant dimensions.

In an attempt to achieve parsimony in all those 30 dimensions and with the aim to reveal common patterns among them, all the aforementioned variables are factor analysed. Factor analysis certainly provides a means of reducing the number of variables without great loss of information. Moreover, it serves to identify the important qualitative distinctions in the data. Table 6.9 presents the results of factor analysis. Thirty variables are entered in the factor analysis model, which utilises varimax rotation method together with Kaiser normalization. By using eigenvalues greater than one, factor analysis results reveal the existence of nine meaningful factors. Scree test also corroborates the existence of nine orthogonal factors describing different dimensions of strategic decision making processes.

VARIABLE NAME	VARIABLE NAME USED BY SPSS	MEAN	STD DEV	MIN	MAX	NUMBER OF ITEMS
COMPREHENSIVENESS IN DIAGNOSIS	COMDIAG	3.17	.82	1.23	4.83	8
COMPREHENSIVENESS IN ALTERNATIVE GENERATION	COMGEN	3.19	.81	1.57	4.69	7
COMPREHENSIVENESS IN ALTERNATIVE EVALUATION	COMEVA	3.45	.81	1.38	5.00	8
COMPREHENSIVENESS IN MAKING THE FINAL DECISION	COMDECI	3.23	.87	1.28	4.84	5
COMPREHENSIVENESS IN INTEGRATING THE DECISION	COMINTE	3.25	.73	1.63	4.77	6
HIERARCHICAL DECENTRALIZATION IN DIAGNOSIS	HDECDIAG	2.75	.66	1.00	5.00	5
HIERARCHICAL DECENTRALIZATION IN ALTERN.GENER.	HDECGEN	2.57	.61	1.00	4.20	5
HIERARCHICAL DECENTRAL. IN ALTERN.EVALUATION	HDECEVA	2.74	.59	1.20	4.00	5
HIERARCHICAL DECENTRALIZATION IN FINAL DECISION	HDECDECI	2.90	.60	1.60	4.40	5
HIERARCHICAL DECENTRALIZATION IN INTEGRATION	HDECINTE	2.91	.59	1.60	4.40	5
LATERAL COMMUNICATION IN DIAGNOSIS	DDECDIAG	2.10	.60	1.00	3.40	5
LATERAL COMMUNICATION IN ALTERNATIVE GENERATION	DDECGEN	2.00	.54	1.00	3.60	5
LATERAL COMMUNICATION IN EVALUATION	DDECEVA	2.21	.57	1.40	3.80	5
LATERAL COMMUNICATION IN DECISION	DDECDECI	2.20	.71	1.00	4.20	5
LATERAL COMMUNICATION IN INTEGRATION	DDECINTE	2.51	.80	1.00	5.00	5
REPORTING ON ALTERNATIVE WAYS OF ACTION	REPOR1 *	.00	1.00	-1.84	2.25	10
FINANCIAL REPORTING ACTIVITIES	REPOR2 *	-.00	1.00	-2.15	1.80	6
SET OF FORMALIZED RULES TO BE FOLLOWED	FORMA1 *	-.00	1.00	-1.74	2.17	7
FORMALIZED WAYS TO EXCHANGE IDEAS	FORMA2 *	-.00	1.00	-1.93	2.29	6
FORMAL COORDINATION DEVICES	FORMA3 *	-.00	1.00	-1.33	2.71	3
COALITION FORMATION	COALITIO	3.30	1.88	1	7	1
SCOPE OF NEGOTIATION	NEGOTIAT	3.03	1.87	1	7	1
INTERNAL RESISTANCE	RESIST1	2.04	1.46	1	6	1
DURATION GESTATION TIME	GESTATIO	30.99	28.9	1	120	1
DURATION PROCESS TIME	SDMPTIME	11.09	13.8	1	84	1
DISAGREEMENT ON APPROPRIATE SOLUTION	AGRESOLU	2.90	1.82	1	7	1
DISAGREEMENT ON METHODOLOGY TO BE FOLLOWED	METHODOL	2.71	1.71	1	7	1
DISAGREEMENT ON THE OBJECTIVE SOUGHT BY SID	AGRPURPO	1.90	1.28	1	6	1
NUMBER OF ALTERNATIVES	NRALTERN	3.40	.97	2	7	1
EXTENT OF PROCESS INTERRUPTIONS	INTERRUP	3.50	1.73	1	7	1

Table 6.8 : Descriptive Statistics of Initial Process Variables Entered into Factor Analysis

* Variables marked with an asterisc represent factors (principal components)

Several methodological precautions were seriously considered when conducting this factor analysis. First, all the factor loadings are well above the criterion established by Kim and Mueller (1978), (which is +/-0.46), thus strengthening our confidence in the resulting factors. Moreover, the model appears to be particularly strong, by explaining 78.5 % of the total variance.

Several other statistical measures are considered with the aim to substantiate the reliability of resulting factors. One of the most important is the Bartlett's test of sphericity. It is used to test the hypothesis that the correlation matrix is an identity matrix with diagonal terms equal to one and off diagonal terms equal to zero. It can be seen from table 6.9. that the Bartlett test of sphericity is very large and the associated significance very small, so it appears unlikely that the population correlation matrix is an identity.

The Kaiser-Meyer-Olkin measure of sampling adequacy (MSA), is also computed. The MSA provides a measure of the extent to which variables belong together and are thus appropriate for factor analysis. According to Stewart (1981), the MSA is probably the best of the methods currently available to examine the appropriateness of a matrix for factoring. As can be seen from table 6.9 the MSA is near .70 which is very satisfactory.

Finally, taking into account the exploratory nature of the work, we followed Stewart's (1981) advise and conducted an oblique rotation for comparative reasons. As can be seen from table 6.10, the extracted factors are identical irrespective of rotation method. Factor loadings are also very similar,further supporting the orthogonality of the factors.

It is also worth mentioning that Lawley's and Maxwell's (1971) suggestion that the sample should contain at least 51 more cases than the number of variables entered into the model is marginally violated. Despite the comparatively medium-sized sample, examination of table 6.9 reveals a factor structure so in accord with expectations that it can be plausibly argued that our sample size was sufficient.

However, following Dess and Beard (1984), we may contend that sampling error has been minimized by achieving a sample approaching 45% of the actual population. Moreover, despite this violation the model showed remarkable stability of results when several variables were dropped and reentered, proving that results tend to behave in a consistent way giving the same factors.

In trying to comply with Lawley's and Maxwell's (1971) sample size rule, table 6.11 presents the results of a "reduced" factor analysis model, where selected process characteristics are entered. Again factor structure shows remarkable stability producing the same factors.

Surprisingly enough, despite the large number of variables entered, the model of table 6.9 resulted in just nine factors, all reflecting distinct, easily interpretable and internally consistent dimensions of strategic decision making processes. We explored several alternative ways of treating the data. For example, we used the respective facility provided by SPSS, in an attempt to reduce the number of factors resulted, since we recognized that the last three or four factors contributed only about 16% of the total variance explained. One idea was to 'cut' the last three factors of table 6.9 by forcing SPSS to produce seven or even six factors. A great number of ideas were explored and a great number of factor analyses were produced. Surprisingly, the factor structure did not change significantly and the resulting factors were still easily interpretable. Unfortunately, by this artificial elimination of factors we recognized that potentially useful information was lost. For example, such dimensions as duration-timing, formal coordination devices, and financial reporting were incorporated in the initial factors. Since we did not want to loose this remarkably clear and theoretically sound pattern of factors emerged in table 6.9, we preferred to adhere to the original model.

A final point to be discussed concerns the extent of intuition added to the whole process. This dimension may be seen as being opposite to rational decision making, although this is not necessarily always true, since even the most rational decisions may incorporate elements of intuition (e.g. Noel, 1989; Butler, 1991). For exploratory

reasons a composite variable consisted of four items measuring degree of intuition used during the various steps of the decision making process, was incorporated in various factor analysis models. Unfortunately, this composite variable was highly and negatively related to the variables measuring rationality and in various runs 'disappeared' into other rationality dimensions by loading high on the first factor. Thus, it was preferred not to use intuition as a separate dimension, despite its theoretical salience (e.g. Simon, 1987; Butler et al. 1992).

6.4.EXPLANATION OF FACTORS EMERGED

Each of the dimensions resulting in table 6.9 was given a specific name indicating the meaning of the variables loading on that factor. **Factor one**, incorporates six variables measuring *rationality/ comprehensiveness* of the five steps in the process, plus extent of formalized ways to exchange ideas. It is the main factor accounting for 44.6% of the total variance explained. Obviously it deals with the rationality/ comprehensiveness dimension of SID processes.

In **factor two** all five variables measuring *hierarchical decentralization* appear to load highly.

Factor three incorporates four out of the five variables measuring the degree of *lateral communication* plus the variable measuring the number of alternatives taken into account. It explains 9% of the variance and measures the degree of lateral communication. The appearance of a number of alternatives taken into consideration in the factor measuring lateral-departmental communication, may indicate the role and importance of various departments, or functional areas in contributing to SDM by proposing specific alternative ways of action. Indeed, if we adopt the view of Astley et al. (1982), that an organization's division of labour contributes to the development of 'local perspectives' within the organization, then the loading of the variable 'number of alternatives' on the departmental communication factor enhances the view that various 'local perspectives' and 'views of the world' are reconciled during the making of SIDs.

	FACTOR LOADINGS: *								
PROCESS CHARACTERISTICS	FACTOR 1: RATIONALITY	FACTOR 2: HIERARCHICAL DECENTRALIZATION	FACTOR 3: LATERAL COMMUNICATION	FACTOR 4: POLITICIZATION	FACTOR 5: PROBLEM SOLVING DISSENSUS	FACTOR 6: TIMING-DURATION OF THE PROCESS	FACTOR 7 SET OF FORMALIZED RULES	FACTOR 8 FORMAL COORDINATION DEVICES	FACTOR 9 FINANCIAL REPORTING
COMINTE	.83330								
COMEVA	.83300		.27937						
COMDIAG	.82939								
COMDECI	.82809	.25025							
COMGEN	.82547								
FORMA2	.72966							-.32808	
HDECEVA		.89253							
HDECDECI		.85729							
HDECGEN		.83189							
HDECINTE		.82111							-.27962
HDECDIAG		.80520							
DDECGEN	.27704	.30057	.80804						
DDECEVA	.38688		.71727						
NRALTERN			.65480	.27703			.26182		
DDECDECI	.45358	.32487	.64945						
DDECDIAG	.44337		.47559			-.29443			.34289
COALITIO				.86088					
NEGOTIAT				.75021					
RESIST1				.73912					
AGRPURPO					.87716				
METHODOL					.74850		-.34099		
AGRESOLU				.26457	.69463			-.25167	
SOMPTIME						.77502			
GESTATIO						.68402	-.28679	-.40541	
INTERRUP				.44243		.56257			
FORMA1							.74946		
REPOR1	.37961		.31055	.32035	-.27016		.54946		
FORMA3								.81266	
REPOR2	.42252								.61560
DDECINTE	.39544		.43180						-.54685
EIGENVALUE	9.26	3.13	2.70	2.03	1.74	1.34	1.23	1.11	1.01
PCT OF VAR	30.9	10.4	9.0	6.8	5.8	4.5	4.1	3.7	3.4
CUM PCT	30.9	41.3	50.3	57	62.9	67.3	71.4	75.1	78.5

Table 6.9 : Factor Analysis Results of Initial Dependent Variables

* Factor loadings less than .25 are not reported.
The varimax rotation method was used,
Kaiser-Meyer-Olkin measure of sampling adequacy (MSA=.68035)
Bartlett test of sphericity = 1563 significance of 0.00000
There are 58 (6.7%) off-diagonal of AIC Matrix > 0.09

	FACTOR LOADINGS: *								
PROCESS CHARACTE-RISTICS	FACTOR 1: RATIONALITY	FACTOR 2: POLITICIZA-TION	FACTOR 3: HIERARCHICAL DECENTRALI-ZATION	FACTOR 4: PROBLEM SOLVING DISSENSUS	FACTOR 5: TIMING-DURATION OF THE PROCESS	FACTOR 6: SET OF FORMALIZED RULES	FACTOR 7 FORMAL COORDINATION DEVICES	FACTOR 8 LATERAL COMMUNICA-TION	FACTOR 9 FINANCIAL REPORTING
COMINTE	.86578								
COMGEN	.82900								
COMDIAG	.82273								
COMDECI	.81719								
COMEVA	.78360								
FORMA2	.72028						-.36515		
COALITIO		.87842							
NEGOTIAT		.73589							
RESIST1		.71827							
HDECEVA			.88891						
HDECDECI			.87039						
HDECGEN			.84437						
HDECINTE			.84156						.28893
HDECDIAG			.82492						
AGRPURPO				.89035					
METHODOL				.73950		-.31900			
AGRESOLU				.68976			-.25162		
SDMPTIME					.79178				
GESTATIO					.66160	-.29080	-.38780		
INTERRUP		.38405			.53485				
FORMA1						.73240			
REPOR1	.26963	.30738		-.26511		.50840		.25386	
FORMA3							.82482		
DDECGEN								.83359	
DDECEVA		-.26045						.71982	
NRALTERN		.27276						.69968	
DDECDECI	.25738							.61252	
DDECDIAG	.32165				-.34378	-.25608		.42353	-.36146
REPOR2	.34323								.60855
DDECINTE	.29947							.39202	-.56295
EIGENVALUE	9.26	3.13	2.70	2.03	1.74	1.34	1.23	1.11	1.01
PCT OF VAR	30.9	10.4	9.0	6.8	5.8	4.5	4.1	3.7	3.4
CUM PCT	30.9	41.3	50.3	57	62.9	67.3	71.4	75.1	78.5

Table 6.10 : Oblique Factor Analysis Results of Initial Dependent Variables

* Principal Component Analysis (PCA) was used, together with **Oblique** Rotation (Oblimin) and Kaiser Normalization. Factor loadings less than .25 are not reported.

	FACTOR LOADINGS: *				
SELECTED PROCESS CHARACTERI-STICS	FACTOR 1 RATIONALITY	FACTOR 2 HIERARCHICAL DECENTRALI-ZATION	FACTOR 3 LATERAL COMMUNICA-TION	FACTOR 4 FINANCIAL REPORTING	FACTOR 5 FORMAL COORDINATION DEVICES
COMGEN	.84130				
COMINTE	.82455		.25532		
COMEVA	.81192		.28619	.29928	
COMDECI	.80451				.27121
FORMA2	.78684				-.33964
COMDIAG	.71891		.25783	.43330	
REPOR1	.61277		.31743	-.30170	
HDECEVA		.88514			
HDECGEN		.86000			
HDECINTE		.83639			
HDECDECI		.82472			
HDECDIAG		.78788			
DDECEVA	.27233	.26249	.80546		
DDECGEN		.34788	.75218		
DDECDECI	.38463	.38696	.70577		
FORMA1			.54485		
DDECDIAG		.25759	.51002	.50901	
DDECINTE	.43172	.33246	.50594	-.30801	
REPOR2	.26577			.75312	
FORMA3					.83609
EIGENVALUE	8.93	2.56	1.45	1.20	1.03
PCT OF VAR	44.6	12.8	7.2	6.0	5.1
CUM PCT	44.6	57.4	64.7	70.6	75.8

Table 6.11 : Confirmatory Factor Analysis with a Smaller Number of Process Characteristics

* Factor loadings less than .25 are not reported.

In the fourth factor three variables load highly. They measure the extent of coalition formation, the degree of negotiation taken place among major participants and finally the degree of internal resistance encountered. If we accept the definition of Hickson et al. (1986 pp 59) that politicality is "*the degree to which influence is exerted through a decision-making process upon the outcome*", then we should also accept that the delicate tension maintained between various stakeholders becomes more acute when negotiations among participants take place, coalitions are formed to support different views or internal resistance is explicated with the aim to influence the outcome of the decision making process. Thus, factor four is interpreted as measuring degree of *politicization* of *the* process.

Factor five incorporates three variables indicating *problem solving dissensus.* The rational-normative strategic management literature as well as the incremental-political perspective posits the importance of consensus, considering it among the major characteristics of strategy formulation and strategic decision making (Ansoff, 1965; Allison, 1971; Andrews, 1971). Often, strategic decision making is seen as a consensus-building process (Steiner, 1979; Nielsen, 1981; Hrebiniak and Joyce, 1984), and Japanese management style considers consensus building as a key element (Ouchi, 1981). The three items comprising the construct (i.e. disagreement on the objectives sought by the decision, on the proper methodology to follow and on the proper solution to the problem) more or less refer to the early stages of the decision process, where ideas are exchanged, opinions are expressed and the first seeds of a subsequent political process are planted. This explains the moderately high and positive correlation coefficient revealed between the dissensus factor and the politicization factor (see table 6.14). The problem solving dissensus construct, although not the same, seems to be opposite to what Hambrick (1981) calls 'strategic awareness' within top management teams, in the sense that it measures not the degree of agreement but of disagreement among managers. It appears that in cases where problem solving dissensus occurs at the early stages of the decision making process, one expects the whole process to experience high politicization. Furthermore, it would be very interesting to explore and contrast the relationship of these two seemingly related variables with the various contextual elements treated in the subsequent chapters.

It will be seen that **factor six** incorporates the two variables measuring the *duration of the process*, i.e. duration gestation time and duration process time. Together the two variables measure the duration-timing of the process from the initial awareness of an emerging SID to the end of the process.

The **seventh factor** incorporates two variables measuring the existence of a set of *formalized rules* to be followed and the extent of reporting on alternative ways of action (which again, can be explained as a type of formalism). The first variable loads

significantly higher than the second, and its factor loadings across factors show a much clearer pattern. Only one variable loads on **factor eight**. This variable explains 4% of the total variance and measures the extent of existence of *formal coordination devices*, which are an integral part of its organizational structure (e.g. Miller, 1989). Finally, **factor nine** is explained as the extent of *financial reporting* (use of financial techniques) during the making of the SID.

In summary, the factor analysis model resulted in a number of meaningful and independent factors showing a remarkable consistency of relating variables loading on the same factor. Factor loadings for each separate factor are very high, thus enhancing the reliability of the final model. Theoretical support to the resulting nine-factor model is provided by Camillus (1982). He developed a framework for reconciling the logical incrementalism and rational/synoptic schools of thought, and argued that three dimensions (the analytical, the interactive and the temporal dimension) adequately describe the process of strategic planning processes. The analytical dimension of strategic processes is adequately captured in this study by the constructs of rationality/comprehensiveness, financial reporting, set of formalized rules and formal coordination devices. Camilus' integrative dimension is captured by the constructs of hierarchical decentralization, lateral communication, politicization and problem solving dissensus. Finally, elements of what Camillus (1982) characterizes as the temporal dimension are captured by the dimension of duration and gestation process time (duration-timing).

The nine-dimensional framework adopted is similar to that of Cray et al. (1988). Indeed, the scrutiny dimension is captured by the rationality/ comprehensiveness and financial reporting dimensions, the interaction dimension is captured by the politicization and problem-solving dissensus dimensions, the centrality dimension is similar to our hierarchical decentralization and lateral communication dimensions, and finally the duration dimension is captured by both studies.

6.5. TREATMENT OF VARIABLES

There are three ways in which one can treat the factors resulting from a factor analysis model. The *first* and most commonly used is the creation of an additive variable by summing all the individual items loading on the factor and then averaging by the number of items in the scale. This can be done only when the addition is theoretically sound. Due to the very clear factor structure, and the very high Cronbach Alpha reliability coefficients resulting, this method is generally prefered in the course of this research (Cronbach, 1951; Cronbach and Meehl, 1955).

The *second* method is to use only the variable with the highest loading as representative of the factor. In the course of this research this method is used only in cases where one variable loads significantly higher than the others on the factor, and the rest of the variables are highly binded conceptually with this variable, so as not to loose important information. Finally, the *third* method is to create a factor out of the principal components, by using the respective facility provided by certain statistical packages like SPSS. This method was only used in creating the reporting and formalization variables of tables 6.3 and 6.5, but was not prefered in subsequent analysis due to the very clear structure of the factor analysis models.

More specifically, five out of the six variables loading on **factor one** measure rationality-comprehensiveness for a particular stage in the decision making process. These variables are highly correlated and exhibit considerable convergent validity. Following Fredrickson (1984), we created an additive construct measuring overall comprehensiveness by summing the five variables (addition of all the composite variables of table 6.2) and dividing the output by 5.

Factor two is treated as an additive variable by summing up all the variables measuring hierarchical decentralization in each step of the process and dividing the output by five. The same method is followed in **factor three** by summing the five variables measuring lateral communication and dividing by five. The variable measuring the number of alternatives taken into consideration was deliberately ommitted due to its very different measurement.

Factor four is translated into one variable by adding the three variables loading on this factor plus the scale measuring the degree of process interruptions experienced. Again, the output was divided by the number of items (i.e. four). A similar additive procedure is followed in factor five. In **factor six** only the first two variables measuring the gestation time and the process duration respectively, are added. The third variable (dynamic factors-process interruptions) is measured on a seven point Likert-type scale which is very different and cannot be validly summed to the other two. Table 6.12 presents the way in which factors four, five and six were transformed into additive variables.

	LOCATION IN THE FIRST QUESTIONNAIRE (APPENDIX 1)	MEASUREMENT OF INDIVIDUAL VARIABLES COMPRISING THE CONSTRUCT	NAME OF COMPOSITE VARIABLE
POLITICIZATION			
1.DEGREE OF COALITION FORMATION 2.DEGREE OF NEGOTIATION 3.INTERNAL RESISTANCE TO THE SID 4.DEGREE OF PROCESS INTERRUPTIONS EXPERIENCED	PAGE 359, Q.5 ITEM 13 PAGE 359, Q.5 ITEM 14 PAGE 360, Q.2 ITEM 8 PAGE 360, Q.B 8.1	ALL VARIABLES ARE MEASURED ON SEVEN POINT SCALES RANGING FROM (1)ABSOLUTELY FALSE TO (7)ABSOLUTELY TRUE [FIRST TWO ITEMS], OR FROM (1)NOT AT ALL TO (7)TO A VERY GREAT EXTENT [ITEMS 3 & 4]	POLITICI
PROBLEM SOLVING DISSENSUS			
1.DEGREE OF DISAGREEMENT ON THE PROPER SOLUTION 2.DEGREE OF DISAGREEMENT ON THE METHODOLOGY TO FIND A SOLUTION TO THE PROBLEM 3.DEGREE OF DISAGREEMENT ON THE OBJECTIVES SOUGHT BY THE DECISION	PAGE 350, Q.18 ITEM 1 PAGE 350, Q.18 ITEM 2 PAGE 350, Q.18 ITEM 3	ALL THREE VARIABLES ARE MEASURED ON SEVEN-POINT SCALES RANGING FROM (1) ABSOLUTELY FALSE TO (7) ABSOLUTELY TRUE	DISSENSU
PROCESS TIMING - DURATION			
1.DURATION GESTATION TIME 2.DURATION PROCESS TIME	PAGE 348, Question 5 PAGE 348, Question 6	BOTH VARIABLES ARE MEASURED IN NUMBER OF MONTHS	TIMING

Table 6.12. Extraction of Composite Variables out of Factors Four, Five and Six

In factor seven only the first variable was taken as representative of the factor because it loads significantly higher than the second item, and also seems to better represent formalization. Similarly, **in factor nine** the variable measuring financial reporting is taken as representative of the whole factor.

6.6. DISCUSSION

In summary, the study proposes that the process of making decisions of a strategic nature may be reliably described by nine dimensions/aspects. These provide an extensive, but by no means exhaustive, characterization of SID processes. Table 6.13 presents some summary statistics of the final dependent variables, together with the Cronbach Alpha reliability coefficients for each one of them. It is worth noting that with the exception of the duration-timing construct, reliability coefficients are extremely high, thus strengthening our confidence in the resulting dimensions. The seemingly low Cronbach Alpha reliability coefficient of the duration-timing variable does not raise any concern about the appropriateness of the construct, since it is composed of internally consistent variables measuring the number of months elapsed from the first recognition of a potential SID to the final committment to act. Moreover, our concern about the reliability is completely waived if we consider that the two variables are very broad, since they are measured in number of months. Finally, evaluating the 0.45 Cronbach Alpha for this construct we should bear in mind that since it resulted form the addition of two variables, it is within the acceptable range of 0.45-0.60 set by Van De Ven and Ferry (1979).

Overall, the nine resulting factors are found to be internally consistent and reliable. Reliability levels especially for the rationality construct are higher than those achieved by Fredrickson and other researchers (e.g. Fredrickson, 1984; Smith et al. 1988). Furthermore, despite the fact that the finally resulted variables tap dimensions of the same phenomenon (i.e. the strategic decision making process) as is evident in table 6.14 they do not experience very high correlation coefficients. Most of the process characteristics experience weak or moderately high correlation coefficients, all of which are in the expected direction. For example the formalization construct is positively and significantly related to the notion of rationality, an association argued by several researchers (e.g. Langley, 1989).

LABEL	VARIABLE	MEAN	STD DEV	MIN	MAX	ALPHA RELIABILITY (IF SCALE)	MEAN INTER-ITEM CORRELATION
RATIONALITY IN DMP STEPS	RATIONAL	3.26	.73	1.54	4.50	.9389	.7546
FINANCIAL REPORTING	REPOR2 *	-.00	1.00	-2.15	1.80	.9004	.6010
SET OF FORMALIZED RULES TO BE FOLLOWED	FORMA1 *	-.00	1.00	-1.74	2.17	.8928	.5433
FORMAL COORDINATION DEVICES	FORMA3 *	-.00	1.00	-1.33	2.71	.8831	.7157
HIERARCHICAL DECENTRALIZATION	HIERDECE	2.77	.54	1.36	4.04	.9268	.7170
LATERAL COMMUNICATION	DEPADECE	2.23	.56	1.35	3.80	.8738	.5806
POLITICIZATION	POLITICI	2.97	1.34	1.00	6.50	.7684	.4533
PROBLEM SOLVING DISSENSUS	DISSENSU	2.50	1.27	1.00	6.67	.7134	.4534
DURATION - TIMING OF THE PROCESS	TIMING2	42.07	35.48	3.00	168.0	.4523	.2922

Table 6.13: Descriptive Statistics of Final Dependent Variables

* Variables marked with an asterisk are factors (principal components) incorporated in the analysis

	1	2	3	4	5	6	7	8
1. RATIONALITY/ COMPREHENSIVENESS (RATIONAL)	1.00							
2. EXTENT OF FINANCIAL REPORTING ACTIVITIES (REPOR2)	.46***	1.00						
3. SET OF FORMALIZED RULES FOLLOWED(FORMA1)	.28**	.19	1.00					
4. FORMAL COORDINATION DEVICES (FORMA3)	.32**	.19	-.00	1.00				
5. HIERARCHICAL DECENTRALIZATION (HIERDECE)	.42***	.35**	.01	.34**	1.00			
6. LATERAL COMMUNICATION (DEPADECE)	.62***	.35***	.27*	.45***	.54***	1.00		
7. POLITICIZATION (POLITICI)	.31**	.10	-.11	.25*	.14	.07	1.00	
8. PROBLEM SOLVING DISSENSUS (DISSENSU)	-.01	-.12	-.14	-.00	.01	-.08	.27*	1.00
9. DURATION-TIMING OF THE PROCESS (TIMING2)	.10	.14	-.22*	-.09	.02	-.05	.19	.04

Table 6.14 : Correlations Among SID Process Dimensions

* SIGNIFICANT AT .05 ** SIGNIFICANT AT .01 *** SIGNIFICANT AT .001

Chapter 7

Association Between Project (SID) and Process Characteristics

7.1. INTRODUCTION

Chapter 7 presents the empirical results exploring the association between project (i.e. specific SID) and process characteristics. First, under the heading of 'short bibliographical review' an attempt will be made to pinpoint some of the trends of the literature on issue labeling and to identify gaps in the research. Furthermore, section 7.3 identifies the various SID characteristics-labels, commonly used by managers. The subsequent sections deal with the SID characteristics used in the course of this research, advance specific hypotheses on the association between SID characteristics and processes followed, and present and discuss the empirical results.

7.2. SHORT BIBLIOGRAPHICAL REVIEW

Managers, especially those at the top positions of organizations, are constantly bombarded by a tidal wave of ill structured situations events or trends. One of the most critical tasks they face is to assign meaning and categorize these events into comprehensible groups prior to taking any action. Indeed, significant interest has recently emerged in trying to understand managerial cognition (e.g. Schwenk 1985; 1986; 1988; Cowan, 1986; 1990; Dutton and Duncan, 1987; Haley and Stumph, 1989).

This comparatively novel line of research adds to the theory and research in organizational decision making. It contends that a great deal of what the traditional models of decision making (e.g.rational, incremental, political etc.) say, seem to only partially account for the significance of decision maker's cognition at the very early stages of decision making. It accepts that managers, as human beings may suffer from profound limitations e.g. information processing capacity limits, and biases towards action and cognition. Furthermore, it contends that several organizational and individual filters, such as cognitive frames, personal interests, limitations and anxiety of decision makers, group dynamics, may shape the way in which decision makers perceive and interpret strategic issues (Dutton et al. 1983; Milburn et al. 1983 a; b; Daft and Weick 1984; Hambrick and Mason, 1984; Ramaprasad and Mitroff, 1984; Starbuck and Milliken, 1988; Thomas and McDaniel, 1990).

Indeed, the existing literature offers significant confirmation of the idea that managers, in their attempt to better understand the world around them, tend to classify the vast array of problems and issues faced into certain categories according to the characteristics they posses, by means of assigning them linguistic labels (Mintzberg et al. 1976; Dutton and Jackson, 1987; Day and Lord, 1992). Such labels may include notions of opportunity/crisis, ambiguity, uncertainty, controlability etc.

Current research has proved that the same internal or external stimuli may get completely different interpretations from managers in different organizations or even within the same organization (Dutton and Jackson, 1987). The most important implication of this is that the categorization of an issue and the meaning attached to it, is probably a vital step, not only in interpreting the issue but also in triggering specific organizational responses. In other words, the way issues and decisions are perceived by top management may influence the information gathered, the alternatives considered, the stakeholders participating, and the arenas in which action takes place (Mintzberg et al. 1976; Stein 1981b; Dutton and Jackson 1987).

For example, it is assumed that when an issue is labelled as a crisis, actions taken and responses experienced will be completely different from the case where the decision is perceived as an opportunity (Milburn et al. 1983 b; Dutton 1986; Dutton and Jackson 1987; Jackson and Dutton 1988).

Despite these efforts, there still remain significant gaps in our understanding of the impact of decision labeling on subsequent organizational actions. With few exceptions (e.g. Dutton et al.1983; Fredrickson, 1985; Dutton, 1986; Dutton et al. 1989; Cray et al. 1991), the existing research has failed to provide an empirical framework for explaining how perceived SID characteristics may shape decision processes. Much of the literature remains speculative, and untested, while most of the empirical work done focuses on a narrow set of decision characteristics (e.g. crisis, opportunity), or on the influence of specific labels-characteristics on the early stages of issue identification and issue diagnosis. Dutton et al. (1983) as well as Dutton and Jackson (1987) stress the need for further empirical exploration.

7.3. IDENTIFICATION OF PERCEIVED SID CHARACTERISTICS

One of the most thorough recent research efforts examining decision characteristics belongs to the Bradford group of researchers (**Hickson and colleagues, 1986**). They view SDs as consisting of mainly four broad characteristics. *The first* (**rarity**) refers to the frequency with which decisions of the same nature arise in an organizations history. *The second* characteristic deals with the **consequences** the decision may imply for the whole company. More specifically, four aspects of consequences are examined i.e. the radicallity of consequences, the seriousness of consequences, the diffusion of consequences and the endurance of consequences. *The third* characteristic (**precursiveness**), deals with the extent to which the SID sets parameters for other decisions or actions within the company. Finally, *the fourth* characteristic examines the **complexity of involvements** present. This notion may account for the number and the diversity of interests involved and the openness of various alternatives to action.

Stein (1981b), introduced another structural dimension called "ramifications of a strategic issue". It attempts to distinguish between strategic decisions demanding a single solution and decisions that involve many interdependent parts requiring sequential-interrelated decisions. Another important characteristic is, according to Stein, a decision's perceived intensity. This is measured by its degree of importance, its degree of complication and its degree of influence on manager's own career.

Stein also introduced a third characteristic which refers to the judgement that managers usually make about the easiness with which a given issue can be solved. This judgement is hypothesized to have a direct influence on the formulation of the problem, the search for alternative courses of action and the political behaviour.

In a theoretical approach to decision characteristics, **Beach and Mitchell (1978),** divided them into two distinct groups: those *inherent to a decision problem* (i.e. unfamiliarity, ambiguity, complexity and instability) and those referring to the *environment of the decision* (i.e. irreversibility, significance, accountability, and time and money constraints).

Dutton et al. (1989), in a brief literature review classified the characteristics of strategic issues into four distinct categories: *the analytic dimensions*, and the dimensions of *issue content*, *issue action* and *issue source.*

Indeed, there is a large number of characteristics which can be attributed to a decision. By using Dutton et al. (1989) classification, table 7.1 sorts out most of the characteristics presented in the international bibliography, together with the sources from which they are drawn. Next we briefly describe the meaning of some of the most common decision characteristics appearing in table 7.1:

1. **Rarity-novelty** of the SID is the frequency with which similar decisions arise in the organization (Hage, 1980; DIO International Research Team, 1983; Hickson et al. 1986). The research adopts the meaning attached to this notion by Hickson et al. (1986), which implies that what is important in defining the term is not how often decisions of the same topic-category (e.g. new product introductions) occur, but how often decisions of the same nature (e.g. novel new product introductions) appear.
2. **Familiarity**, measures the degree to which the decision in question is not foreign to decision makers. On the contrary, they feel confident to posses the necessary problem-solving experience through involvement with problems of the same nature. This in turn, is expected to significantly influence the attitudes of managers towards strategic problem formulation and general strategic decision making (Taylor, 1974; Beach and Mitchell 1978; Marmaras et al. 1992)
3. **Magnitude of impact**: To what extent the consequences of the decision bear significantly upon organization e.g. on cost, profit, sales, product range, quality, etc. (e.g. Beach & Mitchell 1978; Stein 1981b; Schilit, 1987; Cray et al. 1991; Judge and Miller 1991; Schneider and De Meyer, 1991)
4. **Radicallity**: Are the consequences of the SID perceived to **radically** change things in the company? (Cray et al. 1991)
5. How far ahead in the **future** people perceive that the consequences of the decision will reach?

6. **Precursiveness**: To what extent the decision sets parameters for subsequent decisions?
7. Extent to which the SID is **part of another more important decision** taken in the past.
8. Usually strategic decisions are triggered by many stimuli, originating both from internal and external organizational sources. Mintzberg et al. (1976) reported one case where stimuli were accumulated and studied over a time period of 25 years prior to taking any deliberate action. Indeed, **frequency** and **clarity** of stimuli leading to the decision, may be important characteristics of SIDs worthy of further empirical examination (Mintzberg et al. 1976).
9. Studies of crises perception (e.g. Hermann, 1963) argue that **time pressure** (or immediacy) to take a decision and pressure exerted on the whole organization because of the decision, are among the most frequently cited dimensions of SDs. Dutton et al. (1989) reported that immediacy should be one of the most significant characteristics to be taken into account when managers sort out strategic issues.
10. **Uncertainty-ambiguity**, is according to Beach and Mitchell (1978) and Thompson (1967), the extent to which the SD is not clear to the decision makers, in terms of goals to be achieved, constraints posed, information to be collected, actions to be taken.
11. **Type of SID** (e.g. new product introduction, capacity expansion, acquisition).
12. **Consequentiality** of the decision measures how serious the consequences would be if something went wrong with the decision (Hickson et al. 1986; Butler et al. 1992). This notion is close to what beach and mitchell (1978) call **irreversibility** (i.e. the extent to which the outcomes of the decision are difficult to alter).
13. **Locus of an issue** (internal-external) is also considered as a characteristic significantly influencing not only the search behaviour, but also the readiness with which an issue was recalled by decision makers. According to Dukerich and Milliken (1987) internal issues stay resident in the manager's mind and can be recalled more easily than issues with an external locus.

14. Three of the most commonly used labels to which significant attention has already been paid, are those of **crisis**, **threat** and **opportunity**. (e.g. Janis and Mann, 1977; Stein 1981b; Dutton et al. 1989; Schneider and De Meyer, 1991). According to Hermann (1963) three dimensions could accurately describe a crisis situation: (i) it threatens high-priority values, (ii) offers a restricted amount of response-time, (iii) is a completely unexpected issue to the organization. Billings et al (1980) consider crisis situations as consisting of three major characteristics: (i) the perceived value of possible loss, (ii) the probability that loss is going to result, (iii) time pressure experienced. Stein (1981 b) considers as crises those situations in which a great amount of time pressure to reach an immediate decision is present and the solution is geared to the alleviation of present imperfections. Mintzberg et al. (1976) categorize decisions into a continuum whose two opposite ends are accurately depicted by opportunity and crises states respectively. They conceive various issues, starting as opportunities, moving through to problem states and finally when they are neglected by managers they may end up in crises.

15. **Instability** is "*the degree to which the criteria, goals and constraints of the problem change during and after the decision, particularly if those changes are difficult to predict*" (Beach and Mitchell, 1978).

16. Decision **Complexity** according to Beach and Mitchell, (1978) is a composite notion comprising several of the above mentioned terms and is explained by a number of different components (e.g. the amount of relevant information, number of alternatives, the number and diversity of criteria used, the degree to which future decisions may be influenced by the decision in question). Gemunden and Hauschildt (1985) attribute complexity such characteristics as perceived relevance, impact, uncertainty, time pressure and freedom. Finally, complexity has been well-documented by Thompson (1967) as lack of knowledge of cause-effect relationships and by Astley et al. as "*encompassing multiple unclear goals, is unprecedented and lacks criteria by which it can be evaluated*" (Astley et al. 1982 pp 365).

S I D C H A R A C T E R I S T I C S	SOURCE IN THE INTERNATIONAL BIBLIOGRAPHY
I.ANALYTIC DIMENSIONS	
1.ABSTRACTNESS-CONCRETENESS	Dutton et al. 1989; Schoemaker, 1993;
2.AGE OF ISSUE, ISSUE LIFE CYCLE	Dutton et al. 1989;
3.UNCERTAINTY, AMBIGUITY	Thompson,1967; Cohen et al. 1972; March and Olsen 1976; Beach and Mitchell 1978; Lyles and Mitroff, 1980;
4.COMPLEXITY	Beach and Mitchell 1978; Lyles and Thomas, 1988; Volkema, 1983; Astley et al. 1982; Cowan, 1986; Gemunden and Hauschildt 1985; Cray et al. 1991;
5.DECISION MAKER'S INTEREST	Dutton et al. 1989;
6.DIRECTION OF IMPACT (POSITIVE-NEGATIVE, GAIN-LOSS)	March and Olsen 1976; Mintzberg et al. 1976; Dutton et al. 1989; Jackson and Dutton, 1988;
7.DIVISIVENESS, LEVEL OF CONFLICT	Dutton et al. 1989;
8.FREQUENCY OF OCCURRENCE,	Dutton et al. 1989;
9.LOCUS (INTERNAL - EXTERNAL)	Dukerich and Milliken 1987; Lyles and Mitroff, 1980; Dutton and Jackson, 1987;
11.MAGNITUDE OF IMPACT	Beach & Mitchell 1978; Stein 1981b;Judge & Miller 1991 Schneider and De Meyer, 1991; Schilit, 1987; Sinha, 1990;
12.PREDICTABILITY	Dutton et al. 1989; Sabherwal and Grover, 1989;
13.FAMILIARITY,	Beach and Mitchell 1978; Taylor,1974; Astley et al.1982 Smart and Vertinski, 1977; Cowan, 1986; Marmaras et al. 1992; Cray et al. 1991;
14.PERVASIVENESS, SCOPE, SPECIFICITY	Dutton et al. 1989;
15.RARITY, NOVELTY (opp. FREQUENCY)	Butler et al. 1979; Hage 1980; DIO 1983; Smart and Vertinsky, 1977; Astley et al. 1982;
16.OPPORTUNITY - THREAT - CRISIS	Dutton and Jackson, 1987; Stein 1981b; Hermann 1963; Mintzberg et al. 1976; Billings et al. 1980; Dutton et al. 1989; Schneider & De Meyer, 1991; Hall & Mansfield 1971; Jurkovich, 1974; Milburn et al. 1983 a;b;
17.TIME PRESSURE, URGENCY, IMMEDIACY	Hermann 1963; Beach and Mitchell 1978; Schneider and De Meyer,1991; Dutton et al.1989; Dutton & Duncan 1987; Billings et al. 1980; Gemunden and Hauschildt 1985; Wright, 1974;
18.VISIBILITY	Dutton et al. 1983; Dutton and Jackson, 1987;
19.FUTURE IMPACT	Dutton et al. 1989;
20.STRATEGIC vs TACTICAL ISSUES	Dutton et al. 1989; Cowan, 1988;
21.STABILITY-INSTABILITY	Beach and Mitchell 1978;
22.IRREVERSIBILITY	Beach and Mitchell 1978;
23.ACCOUNTABILITY	Beach and Mitchell 1978;
24.MONEY CONSTRAINTS	Beach and Mitchell 1978;
25.SOLVABILITY	Stein, 1980; 1981b;
26.CONTROLLABLE-UNCONTROLLABLE	Jackson and Dutton, 1988;
27.HUMAN vs TECHNICAL	Cowan, 1988;
28.FEASIBILITY	Dutton and Duncan 1987;
29.RESPONSIBILITY	Dutton and Jackson 1987;
30.HOMOGENEITY	Sabherwal and Grover, 1989;
II.ISSUE CONTENT	
1.GEOGRAPHICAL REFERENT (INTERNATIONAL-NATIONAL) 2.ISSUE CONTENT (TECHNICAL,ECONOMIC, POLITICAL, SOCIAL)	Dutton et al. 1989;
II.ISSUE ACTION	
1.DECISION AS PART OF A LARGER DECISION (interconnectedness-ramifications precursiveness)	Stein 1981b; Dutton et al. 1989; Lyles & Thomas, 1988; Mallory and Cray 1982; Simon 1960;
2.EXPECTED PAYOFF FROM ACTION	Dutton et al. 1989;
II.ISSUE SOURCE	
1.EMERGENCE THROUGH FORMAL PLANNING SYSTEMS	Sinha, 1990;
2.CHOSEN vs EXTERNALLY INDUCED	Dutton et al. 1989;

Table 7.1 : SID Characteristics Reported in the International Literature

17. The **interconnectedness-interrelatedness**, dimension is accurately described by the extent to which the issue is significantly related with a number of other issues in the company (Stein 1981b; Lyles & Thomas, 1988; Dutton et al. 1989). According to Dutton (1986), interrelated issues derive more collective attention from various interests in the organization.
18. Degree to which SID **emerged through formal planning activities** (outcome of a deliberate strategic posture). It refers to the stage of project generation (e.g. looking for a project to fill a particular gap) and not the later stages of fitting the SID into the company's wider plans, before coming to a final go/no go judgement. Butler et al. (1991) reported a remarkable unanimity among managers about the considerable importance of achieving fit between the strategic decisions and business strategy. Contrary to the widespread belief (e.g. Rudden, 1982; Wind and Robertson, 1983) that SIDs are the outcome of a sound strategic plan, Marsh et al. (1988 b) reported that this is far from being self-evident. In the 'real world' specific SIDs may be the outcome of "a long and complex process of learning and exploration, involving extensive concern with operational details" (Marsh et al. 1988 b, pp 15). Thus, it would be useful to examine the possible association of the emergence of the SID with the subsequent processes followed.

7.4. SID CHARACTERISTICS USED

Most times perceptual rather than objective measures are used by the majority of researchers in the area, when trying to quantify SID characteristics. Very few studies have used objective measures, one of them being Judge and Miller's (1991) work where in quantifying a decision's importance-magnitude of impact the absolute value of the size of the investment divided by the total assets of the organization was used. In the course of this study perceptual measures of decision characteristics are used.

Section 7.3 presented an extensive list of decision characteristics reported in the international bibliography. Eighteen decision characteristics are used in the course of

the present effort. Table 7.2 presents the descriptive statistics and a short description of all the SID characteristics used, together their location in the first questionnaire.

In an attempt to achieve parsimony in the dimensions of SIDs used and reveal common patterns among them, all the aforementioned different variables were factor analysed. Certainly, factor analysis provides a reliable means for reducing the number of variables without great loss of information and serves to identify significant distinctions in the data. The results of factor analysis are presented in table 7.3. Varimax rotation method together with Kaiser normalization were followed and seven meaningful factors resulted. Scree test (Cattell, 1966) also confirmed the existence of seven factors describing different dimensions characterizing SIDs.

Several methodological precautions were taken into account when conducting the factor analysis. First of all Lawley's and Maxwell's (1971) suggestion that the sample should contain at least 51 more cases than the number of variables entered into factor analysis was met. Additionally, all the individual characteristics exhibit factor loadings well above the conservative criterion of +/-0.46 established by Kim and Mueller (1978). The high percentage of variance explained by the factor model (72.9%) together with the significant contribution of each individual factor increase the reliability of the resulted factors.

It is also worth noting that all the factors reflect distinct, internally consistent patterns underlying dimensions characterizing SIDs. A specific name is assigned to each factor based on the interpretation of the variables loading. As can be seen from table 7.3, five variables load on factor one. These variables measure radicallity of changes because of the SID, effect of SID on corporate strategy, extent to which SID set parameters for subsequent decisions, extent of SID's impact on several areas in the company (this is a composite variable), and finally seriousness of consequences if something with the decision went wrong.

STRATEGIC INVESTMENT DECISION CHARACTERISTICS	OPERATIONALIZATION	LOCATION IN FIRST QUESTIONNAIRE (APPENDIX 1)	MEAN	STD DEV	No.OF ITEMS IN SCALE
1.FREQUENCY* (FREQ1) (oppos.of RARITY)	One five-point Likert-type scale measuring how frequently decisions of the same nature arise. It is the reverse of variable RARITY	Page 348 Question No.7	2.84	.94	1
2.FAMILIARITY (FAMILIAR)	One five-point Likert-type scale measuring the extent to which the company is familiar with handling decisions of this nature	Page 348 Question No.8	3.60	.94	1
3.MAGNITUDE OF IMPACT ** (IMPACT)	Composite variable consisting of eight five-point Likert-type scales measuring how much widespread the decision's effect were on: 1.profit 2.quality of products-services 3.production 4.cost 5.sales 6.market share 7.call for changes 8.organizational adjustment	Page 349 Question No.12 items 1 to 8	3.29	.75	8**
4.RADICALLITY OF CHANGES (RADICAL)	One five-point Likert-type scale measuring the extent to which the decision changed things.	Page 348 Question No.9	3.76	.79	1
5.PRECURSIVENESS (PRECURSI)	One five-point Likert-type scale measuring the extent to which the decision set parameters for subsequent decisions	Page 349 Question No.14	3.69	.97	1
6.SID AS PART OF ANOTHER DECISION (PARTSID)	One five-point Likert-type scale measuring the extent to which the decision was part of another more important decision taken in the past	Page 349 Question No.16 Item No.1	2.46	1.43	1
7.NATURE OF THE SID -CRISIS ELEMENT (CRISIS)	One five-point Likert-type scale measuring on a continuum the extent to which the decision was considered as an opportunity-problem-crisis	Page 350 Question No.17 Item No.1	2.51	1.34	1
8.FREQUENCY OF STIMULI (STIMUFRE)	One seven-point Likert-type scale measuring the frequency of stimuli leading to the decision	Page 350 Question No.18 Item No.5	5.84	1.09	1
9.CLARITY OF STIMULI (STIMUCLA)	One seven-point Likert-type scale measuring the clarity of stimuli leading to the decision	Page 350 Question No.18 Item No.6	6.19	.67	1
10.THREAT OF POSSIBLE LOSS (LOSSTHRE)	One seven-point Likert-type scale measuring the degree of threat of possible financial loss	Page 350 Question No.18 Item No.7	3.57	1.56	1
11.TIME PRESSURE (TIMEPRE)	One seven-point Likert-type scale measuring the degree of time pressure to make the decision	Page 350 Question No.18 Item No.11	4.64	1.62	1
12.PRESSURE ON THE ORGANIZATION (ORGAPRE)	One seven-point Likert-type scale measuring the pressure on the organization because of the decision	Page 350 Question No.18 Item No.9	4.24	1.86	1
13.UNCERTAIN NATURE OF THE DECISION (SIDUNCER)	One seven-point Likert-type scale measuring the extent to which the company was obliged to redefine its criteria, goals and constraints due to the decision's uncertain nature	Page 350 Question No.18 Item No.8	2.59	1.47	1
14.UNCERTAINTY ABOUT ACTIONS TO BE TAKEN(ACTIONUN	One seven-point Likert-type scale measuring the extent of uncertainty about the actions to be taken	Page 350 Question No.18 Item No.10	2.63	1.59	1
15.UNCERTAINTY ABOUT INFORMATION TO BE COLLECTED (INFOUNCE)	One seven-point Likert-type scale measuring the extent of uncertainty concerning the information to be collected.	Page 350 Question No.18 Item No.12	2.11	.96	1
16.EMERGENCE THROUGH FORMAL PLANNING SYSTEMS (STRATSID)	One five-point Likert-type scale measuring the extent to which the SID emerged through formal planning systems (outcome of a deliberate strategic posture)	Page 348 Question No.4,	3.81	1.08	1
17.SERIOUSNESS OF CONSEQUENCES (SERIOUS)	One five-point Likert-type scale measuring the seriousness of consequences if something with the decision went wrong	Page 349 Question No.11	3.46	.99	1
18.SID's INFLUENCE ON CORPORATE STRATEGY (SIDSTRA	One five-point Likert-type scale measuring the extent to which the decision influenced business strategy	Page 349 Question No.15	3.51	.93	1

Table 7.2 Descriptive Statistics and Reliability Measures of SID Characteristics used

* Words in parentheses indicate the name of the variable used in the statistical analysis conducted.
** Impact is a composite variable. Its Cronbach Alpha reliability coefficient is .80.

As regards to the first factor, all five variables loading highly measure the **"magnitude of impact"** of SID on the whole company. The study has chosen to use the composite variable measuring the extent of SID's impact on several areas in the company, as the variable better approximating this notion. This composite variable consists of the following eight five-point Likert-type variables, measuring the impact of SID on the following organizational areas: (i) profit, (ii) quality of Products/services, (iii) total production, (iv) cost, (v) sales, (vi) market share, (vii) call for changes in existing programs (e.g. sales, production) (Delbecq, 1974), (viii) organizational adjustment required to serve the decision (Delbecq, 1974).

Two variables load on factor 2, measuring frequency and clarity of stimuli leading to the decision. This factor measures the presence of **clear and frequent stimuli** leading to the commencement of the decision process.

Factor three, indicates the **uncertainty** surrounding the decision. This may take the form of uncertainty about actions to be taken, general uncertainty surrounding the SID, or uncertainty concerning the information to be collected.

Factor four, indicates the **extent of pressure** exerted either on the organization or the time pressure felt by the participants in the SID.

The fifth factor measures the **frequency of occurrence/familiarity**. Three variables load highly on this factor. The first is the reverse of the rarity of the SID (i.e. frequency of occurrence), the second is the familiarity of the SID to the company and the third the extent to which the SID was part of another major decision.

Two variables load on factor 6. The first measures the extent to which the SID is perceived as a crisis situation, as opposed to an opportunity situation, and the second measures the threat of financial loss. Smart and Vertinsky (1984) expressed the view that a crisis situation is defined as an unexpected event that threatens major corporate goals and offers a limited response time. Billings et al. (1980) consider crisis situations as consisting of three major characteristics: (i) the perceived value of possible loss, (ii) the probability that loss is going to result, (iii) the time pressure experienced.

Following the definition of crisis provided by Smart and Vertinsky (1984) and Billings et al (1980), one might expect that all the variables loading on factors four and six, should form a separate factor measuring the extent of perceived crisis. Here, however, results show that they form two separate and positively correlated factors (see table 7.4). We may assume that the sixth factor stresses the crisis content of the decision, while the fourth measures pressure, not translated by managers as necessarily involving threat/crisis of large magnitude. The contention expressed by Milburn et al. (1983a), that crisis is not necessarily combined with a threat or negative outcome, but may also imply time pressure or pressure to take advantage of an opportunity, is interpreted as supporting the emergence of two separate factors.

Finally on factor seven only one variable loads. This variable measures the extent to which the SID **emerged through some type of formal planning effort**. The specific variable is very important in many aspects. First, it loads highly (factor loading .87) on just one factor and no one else. Second, the factor explains a significant portion of the overall variance explained (almost 6%) and scree tests consistently indicated the existence of this variable as an independent factor. Finally, this specific variable has up to now received no empirical treatment in the international bibliography. Only Sinha (1990), has recently tried to approach the contribution of planning systems on the formulation and implementation of decisions. Thus, it seems worth exploring its impact on the processes followed.

Table 7.4 provides descriptive statistics, reliability coefficients (Cronbach, 1951) and intercorrelations among the resulting composite decision characteristics. All composite variables resulted by adding the respective scales loading on the same factor and averaging by their number. Results reveal the following interesting associations between independent variables:

a. the greater the magnitude of impact of the decision the more possible it is that the decision emerged through some type of formal planning effort. This corroborates the popular view which stresses that much of the strategy and decision making emerges through formal planning systems.

b. The exercise of time pressure and pressure on the organization is associated with decisions involving crisis and decisions implying a significant magnitude of impact.

c. emergence through formal planning seems to have a negative association with perceptions of uncertainty.

As is evident from table 7.4, all the associations are in the expected direction and all bivariate correlation coefficients among SID characteristics are comparatively low (lower than 0.42), thus revealing no unwanted extremely high correlations.

7.5. ASSOCIATION BETWEEN SID CHARACTERISTICS AND SID MAKING PROCESSES

This section attempts to theoretically approach the association between project and process characteristics. Certain hypotheses are advanced, based on relevant literature in the area. What should be stressed, though, is that given the exploratory nature of this chapter and the very sparse conceptual and empirical treatment of the inter-relationships investigated, several hypotheses advanced are rather speculative and deserve further testing.

i. Magnitude of Impact

As Stein (1980b) suggested, a decision's **magnitude of impact** is one of the major explanatory variables of decision making behaviour. It may be conjectured that decisions with widespread impact on the organization, tend to be taken in a more rational/analytical mode (Fahey,1981). Again, SIDs with widespread impact on the organization may be expected to follow more formalized processes including financial reporting procedures. This contention is further supported by the empirical findings produced by Sinha (1990), which show that when decisions are perceived to be of importance, formal strategic planning systems are extensively utilised and formal analysis is conducted both in formulating and in implementing the decision.

SID CHARACTERISTICS:	FACTOR LOADINGS: *						
	FACTOR 1: MAGNITUDE OF IMPACT	FACTOR 2: STIMULI	FACTOR 3: UNCERTAINTY	FACTOR 4: PRESSURE	FACTOR 5: FREQUENCY-FAMILIARITY	FACTOR 6: THREAT/ CRISIS	FACTOR 7: SID AS A RESULT OF FORMAL PLANNING
SIDSTRA	.77720						.44978
RADICAL	.77123						
IMPACT	.76373						
PRECURSI	.75099				.27588		
SERIOUS	.62404					.30076	
STIMUFRE		.80607					
STIMUCLA		.69309					
SIDUNCER			.80712				
ACTIONUN		-.38425	.60411				
INFOUNCE		-.46884	.51445				
TIMEPRES				.91503			
ORGAPRES	.33571			.73377			
PARTSID					.73023		.32859
FREQ1	-.35696				.66629		-.37472
FAMILIAR			-.35774		.58540	.34467	
CRISIS						.86605	
LOSSTHRE		.26206	.30692		.34642	.67834	
STRATSID							.86619
EIGENVALUE	3.76	2.53	1.89	1.62	1.22	1.08	1.02
PCT OF VAR	20.9	14.1	10.5	9.0	6.8	6.0	5.7
CUMUL. PCT	20.9	35.0	45.4	54.4	61.2	67.2	72.9

Table 7.3 : Factor Analysis Results of SID Characteristics

* Alpha factoring method was used, together with Varimax Rotation and Kaiser Normalization.
Factor loadings less than .25 are not reported.
Kaiser-Meyer-Olkin Measure of Sampling Adequacy = .688
Barlet Test of Sphericity = 424 Significance = .00000

Dutton (1986) contends that issues with high interconnectedness (and it follows logically that issues with great magnitude of impact imply high interconnectedness with other relevant issues) attract more collective attention as various parties would like to contribute. More contribution may mean greater hierarchical decentralization. Moreover, when management anticipates that the SID is going to influence several organizational functions it is very possible to involve in the process all the affected departments, thus resulting in higher lateral communication.

DECISION CHARACTERISTICS	MEAN	STD DEV	CRONBACH ALPHA	No. OF ITEMS	CORRELATION COEFFICIENTS 1	2	3	4	5	6	7
1.MAGNITUDE OF IMPACT (IMPACT)	3.29	.75	.8055	8	1.0						
2.THREAD/CRISIS (CRISIS3)	3.04	1.26	.6765	2	.09	1.0					
3.STIMULI (STIMULI)	6.01	.74	.5528	2	.28*	.28**	1.0				
4.UNCERTAINTY (UNCERT2s)	2.44	.98	.5645	3	-.16	.01	-.27*	1.0			
5.FREQUENCY (FREQUEN)	2.97	.80	.5416	3	.03	.13	-.10	-.25*	1.0		
6.PRESSURE (PRESSURE)	4.44	1.53	.7016	2	.33**	.30**	.07	.03	.05	1.0	
7.EMERGENCE THROUGH FORMAL PLANNING	3.81	1.08	—	1	.42***	.10	.17	-.30**	.20*	.13	1.0

*p<.05 **p<.01 ***p<.001

Table 7.4: Correlations, Means, Standard Deviations and Reliability Coefficients of SID Characteristics

Lyles and Thomas (1988) argue that strategic problems may cause varying views about the proper ways in which they should be resolved. To extend this argument we might expect that a SID's magnitude of impact would be positively associated with politicization, as it seriously affects the various stakeholders involved.

Moreover, a SID having a significant magnitude of impact is very probable to lengthen the decision making process, because the consequences of such a decision are greater and often difficult to reverse (Hickson et al. 1986; Judge and Miller 1991). Based on the above the following tentative hypotheses will be advanced:

H(p) A,1,. The greater the SID's magnitude of impact on the whole organization the more rational approach to decision making is to be expected.

H(p) A,2,. The greater the magnitude of impact of the decision on the whole organization, the more formal reporting will be present, together with more formal coordination devices.

H(p) A,3,. The greater the SID's magnitude of impact the more hierarchical decentralization and lateral communication are expected to be found.

H(p) A,4,. The greater the SID's magnitude of impact, the greater the politicization and dissensus evident in the decision making process.

H(p) A,5,. The greater the SID's magnitude of impact, the larger its process duration.

ii. Opportunity-Threat-Crisis

The underlying assumption behind the categorization of an issue as a crisis, threat or opportunity, is that managers tend to react in a completely different manner when having to respond to an opportunity situation than when having to cope with a crisis (Mintzberg et al. 1976; Dutton, 1986; Nutt 1984; Stein 1981b). The hypothesized different responses shape the processes followed during the making of the decision (Butler et al. 1979; Dutton and Jackson, 1987; Schneider and De Meyer, 1991).

Jackson and Dutton (1987), indicated that opportunities have clear positive connotations, while threats/crises are seen as negative issues. When facing an opportunity, managers believe that they deal with positive issues, which imply possible gains, are comparatively easy to resolve, and offer them choice whether to act or not. More importantly, managers feel that they are qualified to deal with opportunity issues. On the contrary, threats are seen as involving possible personal loss from acting, and their resolution seems unlikely to happen. Several other factors may constrain managerial actions and lower the perception of control, thus making them feel not sufficiently qualified to deal with these issues.

As Dutton (1986) argues, centralization of authority is the expected outcome of crises, since two opposite forces clash. First, managerial elites undertake the responsibility of the whole effort to divert the crisis. Second, middle managers feeling that the issue might be 'too heavy' for them to deal with, voluntarily quit. This is not

altogether unexpected since usually crisis situations involve high personal stakes, and career implications for those dealing with them. Hermann (1963) introduced the term 'contraction of authority' to describe the shift of power to higher levels in the hierarchy together with the reduction in the number of managers participating in crisis processes.

On the contrary, when decision makers label issues as opportunities, involvement in the process of resolution will be greater and participation will take place at lower levels of the organization, compared to when issues are labeled as threats (Dutton and Jackson, 1987).

Extending this argument, many writers have supported the view that crises lead to what Burns and Stalker (1961) called 'mechanistic shift'. This implies centralization of authority, tighter control and more restricted flow of information (e.g. Hermann, 1963; Hall and Mansfield, 1971; Billings et al. 1980; Milburn et al. 1983 b). Support to this argument was offered by Staw and associates (1981), in their study of threat-rigidity situations.

In the same vein, Fredrickson (1985) attempted, by using two different samples consisted of students and managers, to establish links between decision motive (e.g. problem, opportunity, crisis) and rationality of the process. His major hypothesis was that actions taken in decisions labelled as **problems/crises**, will be more rational than those taken when decisions are labelled as **opportunities**. Moreover, he expected managers to demand more explicit analysis and give greater emphasis on alternative generation and evaluation.

Results pertaining to the student group generally supported the hypotheses raised, but the group of experienced managers appeared to be relatively unaffected by decision motives. These rather unexpected results were attributed to the fact that managers probably tend to behave as coalition members and to adjust their opinions and actions more to the values of the dominant coalition than to the stimuli raised from opportunity, threat or crisis situations.

In general, one might argue that when adversity looms everyone might want to interpret and explain the situation in as rational a manner as he/she is able to. Moreover, top management is likely to protect its illusion of control and meaningfulness of action in the eyes of both internal and external stakeholders by relying on more rational reactions. Such a behaviour is likely to result in multiple explanations and argumentations about the issue and the alternative ways of action, and thus, lead to more rational decision making (Chaffee, 1985; Dutton, 1986).

Furthermore, in its attempt to become rational, management may demand deeper financial reporting (since crises usually involve the possibility of a significant financial loss), but at the expense of formality, since during crises we expect formal rules to get relaxed, or even abandoned.

Finally, crisis situations will usually intensify conflicts among participants and foster political behaviour, since, pre-crisis political attitudes are heightened during the resolution of the crisis (Hermann, 1963). Indeed, the emergence of a crisis most of the time calls into question the efficacy with which the dominant coalition has acted in the past to preserve organizational interests, and threatens the power-base of managerial elites (Dutton, 1986). It is not at all unexpected to witness what Hermann has called 'factionalism' (i.e. various units or departments favour opposite views about the proper reaction to the SID)

From the previous analysis the following hypotheses are advanced:

H(p) B,1, SIDs loading higher on the crisis component will tend to follow more rational/comprehensive approaches to decision making than SIDs labelled as opportunity situations.

H(p) B,2 Crises situations will tend to attain more extensive formal financial reporting procedures.

H(p) B,3 When decision makers label SIDs as threats/crises involvement in the process will be limited and participation will take place at higher levels of the organization, thus resulting in less hierarchical decentralization and lateral communication.

H(p) B,4 The larger the crisis content of a decision the less likely is it that group behaviour will be homogeneous. We expect crises to result in greater politicization and problem solving dissensus.

H(p) B,5 The larger the crisis content of a decision the less likely it is that formalized rules will be followed.

iii. Stimuli

When all possible SID characteristics were factor analysed (see table 7.3), clarity and frequency of stimuli leading to the decision resulted in a distinct factor. Unfortunately, the existing body of theory and research provides us with insufficient information about the impact of the various stimuli leading to a decision, on the processes followed. We may hypothesize, though, that when the stimuli leading to the commencement of a decision process are frequent, clear and unambiguous, the process is likely to be more rational and perhaps to experience less politicization and less problem solving dissensus, as time smooths out disagreements. This may be attributed to the fact that stimuli may cause early resolution of conflict, resulting in the same interpretation by various participants, thus eventually contributing to consensus building and to less political behaviour.

Moreover, we may expect that processes triggered by clear and unambiguous stimuli to reach a final decision within a comparatively short time period, thus resulting in less gestation and duration process time. But these are nothing more than plausible speculations. Thus, we will let the results reveal possible interrelationships instead of arguing for speculative associations.

iv. Frequency of Occurrence/Familiarity

Frequency of occurrence/familiarity of an issue are also important characteristics. Managers usually search for familiar ways of acting, based on their previous experience. A positive previous experience with an issue might reopen 'tried and true' decision routes, since solution attempts and their positive or negative

outcomes are cognitively stored and retrieved when needed (Taylor, 1975). Mintzberg et al. (1976) classified strategic problems into four categories (given, ready-made, custom-built and modified) with respect to the degree of effort devoted to arrive at a solution. Hence, when a strategic issue is considered familiar, decision makers search in their available repertoire of solutions and use standard solutions that have been developed in the past.

It is not clear what relationship is expected to be found between frequency/familiarity of a SID and the rationality of the subsequent processes. By one line of reasoning familiarity may be associated with less rational approaches to decision making (Marmaras et al. 1992). According to this reasoning, in cases of familiar SIDs the search for information and for alternative ways of action is likely to be more narrow and specific, thus contributing to less rational decision making. On the other hand familiarity with the issue in question may facilitate the identification, the intelligence, the search for alternatives and the choice of the best solution, thus contributing to more rational decision making processes. Sabherwal and Grover (1989) assume that frequency/familiarity might favour the use of either rational/analytical or political/bargaining modes of decision making.

Although there exists no consensus as to the impact of frequency-familiarity on the rationality of the processes followed, consensus has been emerging on its impact on the standardization, and formalization of the process (e.g. Astley et al. 1982). Decisions occurring frequently are expected to set up standard and routine decision making procedures (Astley et al. 1982), since the formal structure already build from previous strategic decisions of the same nature is there for managers to use. On the contrary, when companies have to deal with novel issues they usually exhibit little reliance on formal analytical techniques despite the fact that such techniques may be available to them (Burgelman 1983). Instead, unique projects are likely to experience innovative, informal processes.

Frequency/familiarity facilitates the problem-formulation process and may help in eliminating problem solving dissensus during the initial stages of the decision

making process. Finally, we expect frequency/familiarity to bear fairly directly upon the duration/timing of the process. It seems sufficient to state that frequent/familiar SIDs may guide the process into ready-made solutions, with effect the significant reduction of the duration of the process (Mintzberg et al. 1976; Sabherwal and Grover, 1989).

The following tentative hypotheses will be advanced for further testing:

H(p) D,1,. When issues are familiar to the organization (e.g. arise at frequent intervals), less rational analysis is expected to be used.

H(p) D,2,. When companies deal with familiar issues greater formalization and more reporting activities take place.

H(p) D,3,. Familiar decisions tend to be delegated and thus to attain more decentralized decision making processes.

H(p) D,4,. The more frequent/familiar an issue is, the more probable it is that less time will be needed to reach a final decision.

v. Pressure

When analysing the results of table 7.3, the emergence of factor four (pressure) was interpreted as supportive of the view that crises are not necessarily conceptually binded with negative connotations (as factor 6 implied), but may be associated with time pressure or pressure on the organization to take advantage of an opportunity. In that sense factor four was interpreted as being similar to factor six (refer to table 7.4 for corroboration of the statistical significant positive association between the two) but assumed that they may have certain differences as to their content and intensity of impact. Nevertheless, accepting the definition of crisis given by Billings et al. (1980), we may admit that both factors, despite their differences in content, express dimensions of a threat/crisis situation. Their positive association enhances this allegation. Thus, we might expect that both crisis and pressure situations will experience the same pattern of associations to process characteristics, with qualitative rather than substantive differences.

vi. Uncertainty

As previously mentioned SIDs, among others, are usually characterized by a high component of uncertainty (Pfeffer et al. 1976). This uncertainty may take the form of general uncertainty surrounding the decision, or uncertainty about actions to be taken or information to be collected. It should be made clear that the factor taps the dimension of uncertainty surrounding the SID and not, for example, the perceived environmental uncertainty (PEU) present in the corporate environment. The latter has attracted the attention of empirical research and chapter eight deals, among others, with the association between PEU and SID making processes. We should also add that uncertainty surrounding a SID and PEU are two variables sharing a positive though insignificant relationship.

Lyles (1981), based on case evidence raised the assumption that uncertainty about the definition of the problem may raise politicality in the problem formulation process. Indeed, when differences in opinions exist about the actions to be taken and information to be collected one may expect to find both a divergence of opinions during the initial stages of problem formulation, and a surge of political activities during the issue resolution process, unless a subsequent consensus is achieved.

Thompson (1967 pp 134) contends that in cases where uncertainty emerges managers act in an 'inspirational' manner, by making obsolete any formal reporting systems usually followed. According to this view, it is not altogether unexpected to find 'non-decision' processes in extreme cases. In such cases one can only speculate that high uncertainty about the decision may, contrary to rational expectations, result in more intuitive processes, together with use of less reporting activities and less formalized rules. Astley et al. (1982), are in line with this view, by assuming that in situations where existing structure cannot cope with an issue, the routine is bypassed and the decision is directed to the top layers of the organization, thus resulting in less formality, less reporting and higher centralization.

Based on previous discussion the following tentative hypotheses will be tested:

H(p) F,1,.SIDs surrounded by uncertainty will result in less rational processes.

H(p) F,2,. In making uncertain decisions fewer rules are expected to be followed together with less financial reporting activities.

H(p) F,3,.SIDs surrounded by uncertainty result in more centralized processes.

H(p) F,4,.SIDs surrounded by uncertainty will raise political debates as well as problem solving dissensus.

vii. SID as a Result of Formal Planning

The final factor resulting from the factor analysis model of table 7.3 refers to the extent to which a SID is a result of a deliberate strategic posture or not. This occurs when the SID emerged through some type of formal planning activities of the company and not through ad hoc informal channels. King (1983) was among the first to recognize that much of the strategic decision making is made outside the formal planning systems. On the contrary, important decisions are taken by top managers, based on intuition, personal judgement etc. As previously mentioned, to the best of our knowledge, it is the first time that the impact of this variable on decision processes is explored. It might be interesting to speculate on expected associations.

By definition, SIDs emerging from formal planning are likely to attain more broad hierarchical participation and lateral communication. It is interesting to note that SIDs seen as mission related tend to attract the attention of management (Dutton et al. 1989). Following this reasoning we may expect that the more a SID is a direct result of any type of planning activities, the more rational and formal the process will be. This in turn may imply that less politicization together with less problem solving dissensus will be evident. We will let the empirical results to reveal possible significant associations.

Table 7.5 gives a summary of hypotheses about the association between process and decision characteristics. The signs +/- indicate an expected positive or negative association between variables, while questionmarks indicate unclear expectations.

	PROCESS CHARACTERISTICS								
DECISION CHARACTERISTICS	RATIO-NALITY	FORMAL FINANCIAL REPORTING	SET OF FORMAL RULES	FORMAL COORDIN. DEVICES	HIERARCH DECENTRA LIZATION	LATERAL COMMUNI CATION	POLITICI-ZATION	PROBLEM SOLVING DISSENSUS	TIMING
1.MAGNITUDE OF IMPACT	+	+	?	+	+	+	+	+	+
2.THREAD/CRISIS	+	+	—	?	—	—	+	+	?
3.STIMULI	?	?	?	?	?	?	?	—	—
4.FREQUENCY	—	+	+	+	+	+	?	?	—
5.PRESSURE	?	?	?	?	?	?	+	+	?
6.UNCERTAINTY	—	—	—	?	—	—	+	+	?
7.EMERGENCE THROUGH FP	+	+	+	+	+	+	+	—	?

Table 7.5: Summary of Hypotheses about the Association Between Process Characteristics and Decision Characteristics

7.6. CORRELATIONS-DISCUSSION OF RESULTS

Table 7.6 presents the correlation results between decision characteristics and the characteristics of the processes followed. Pearson correlation coefficients provide a gross indication of the degree of association between the two. A quick inspection of table 7.6, reveals that in total 28 out of the 63 relationships provide statistical significant associations, at a level of 5% or less. That is, about 45% of the total relationships are statistical significant at a level of $p<.05$ or less. Moreover, 10 correlation coefficients out of 28 (16% of the total number of relationships) provide statistical significant results at level of $p<.001$ or better. In general, the results tend to confirm a significant association between project and process characteristics, supporting most of the previously advanced hypotheses.

Magnitude of Impact

We may start the analysis of the results by examining the association between SID's magnitude of impact and the characteristics of the process followed. Five correlation coefficients seem to provide highly statistical significant results. The greater the **magnitude of impact** of the SID, the more rational the decision making process is expected to be and the greater the financial reporting.

Moreover, SIDs with greater magnitude of impact result in more hierarchical decentralization and lateral communication. Especially lateral communication seems to be highly correlated with magnitude of impact. The results corroborate with Fahey (1981). Overall, they support hypotheses **H(p) A,1,2,3.**

Surprisingly, there seems to be no statistical significant relationship between the magnitude of impact and such dimensions as politicization and/or problem-solving dissensus. Especially problem solving dissensus appears to have a small though insignificant negative association with decision's magnitude of impact. This may implies that sizable decisions do not necessarily result in what Astley et al. (1982) call 'cleavage' of interests at the initial steps of the process.

Although the association between perceived magnitude of impact and duration process time is positive, as expected, the findings provide weak statistical support, at a level of significance of $p<.10$. This does not corroborate previous research (Hickson et al. 1986; Judge and Miller 1991) suggesting that magnitude of impact is associated with slower, more deliberate and time consuming decision making processes.

It is also worth noting the negative (though insignificant) association between magnitude of impact and set of formalized rules followed. This may mean that in very important SIDs and despite the fact that certain formal coordination devices are provided, the process does not necessarily follow formal paths. This may again imply that when the magnitude of impact on the whole organization is high, companies seem to follow extensive financial reporting activities and form coordination devices to tackle the issue, but they may tend to bypass any formalized rules during the process.

PROCESS CHARACTERISTICS	DECISION CHARACTERISTICS						
	MAGNITUDE OF IMPACT	THREAT-CRISIS	STIMULI	UNCER-TAINTY	FREQUENCY-FAMILIARITY	PRESSURE	EMERGENCE THROUGH FORMAL PLANNING
RATIONALITY/ COMPREHENSIVENESS (RATIONAL)	.42***	.22*	.08	-.15	.11	.28**	.43***
EXTENT OF FINANCIAL REPORTING ACTIVITIES (REPOR2)	.36***	.30**	.14	-.26*	.20*	.29**	.47***
SET OF FORMALIZED RULES FOLLOWED (FORMA1)	-.02	-.10	-.10	-.26*	.20*	.12	.38***
FORMAL COORDINATION DEVICES (FORMA3)	.20*	.18	-.07	.02	.26*	-.08	.23*
HIERARCHICAL DECENTRALIZATION (HIERDECE)	.38***	.07	.19	-.03	.18	-.08	.35**
LATERAL OR CROSS-FUNCTIONAL COMMUNICATION (DEPADECE)	.62***	.06	.16	-.14	.22*	.11	.47***
POLITICIZATION (POLITICI)	.07	.22*	.02	.36***	-.17	.10	-.03
PROBLEM SOLVING DISSENSUS (DISSENSU)	-.09	.16	.11	.54***	-.19	.21*	-.28**
TIMING OF THE PROCESS (TIMING2)	.16	.01	.29**	.03	-.28**	.02	-.03

Table 7.6 : Correlations Between Process and Project Characteristics

* p<.05 ** p<.01 *** p<.001

Threat/Crisis

As far as **threat/crises** situations are involved, the results of table 7.6 predominantly support three allegations. In threat/crises situations not only more rational decision processes appear to be followed, but also they tend to be supported by formal financial reports and the issue in question may become a vehicle for the political battles among participants. It is also worth noting that crisis situations seem to elicit more formal financial reporting activities within the company, as the highly positive correlation coefficient reveals.

The correlation coefficients between both hierarchical decentralization and lateral communication and the extent of crisis are positive though insignificant. This result appears counterintuitive, since several researchers (e.g. Dutton 1987) supported the contention that crises tend to produce a centralization of authority. Unfortunately, the empirical results do not seem to verify this relationship. Hermann (1963) offered a potential explanation to such an apparently counterintuitive result. He reported that the relationship between crisis and decentralization of authority is curvilinear. Thus, under situations which are characterized as "mild crises" one may observe decentralization of authority and more lateral communication. On the contrary, when crises become acute authority centralization is certainly found. Further investigating the descriptive statistics of the variable measuring the extent of perceived crisis, we may see that the variable is measured on a five-point scale and has a mean of 2.51 which implies rather moderate crises.

Lanzetta (1955) as well as Milburn et al. (1983 b), lend credence to such insights by reporting that although centralization was the immediate outcome of crises, the actual intermediate response was decentralization of authority. This may be explained by the fact that if we admit that the source of vital information is middle management, centralization deprives top management of extremely useful data. Furthermore, Lanzetta goes one step further to suggest that when the crisis begins from the outside, then decentralization is very appropriate.

Finally, despite the fact that this is at odds with what conventional managerial wisdom (e.g. DeGeus,1988) would propose, empirical results have showed no statistical significant relationship between the extent to which a SID is considered as a crisis and the timing (gestation and duration) of the process.

Pressure

Results of table 7.6 indicate that SIDs exerting pressure on the whole organization attend more rational processes together with formal financial reporting. In parallel, SIDs of this nature put strain on the process of resolution of the issue, thus resulting in higher problem solving dissensus. However, a different although not significant pattern of interaction emerged between degree of pressure and lateral communication. It seems that although not supported, decisions exerting pressure may experience a less hierarchically decentralized process.

A more in-depth examination of table 7.6 leads us to several conclusions. As argued in the previous sections, two of the examined decision characteristics, i.e. crisis component and amount of pressure exerted, are related. But crises situations may affect the decision making process differently than pressure situations. As is evident from table 7.6 crisis situations may lead to higher politicization of the whole process of issue resolution, despite the fact that at the initial stages of the decision, problem solving dissensus may not be significant. On the contrary SIDs exerting pressure may produce some initial problem solving dissensus among participants but they do not necessarily lead to higher politicization. It may be that despite the initial dissensus among decision makers, the tension relaxing mechanisms of the dominant coalition may take effect and mitigate political activities. This can be achieved either by successfully diverting the pressure or by other 'negative control mechanisms' as self-censorship, direct pressure to members who question procedures or illusion of superiority of unanimity (Smart and Vertinsky, 1977).

Stimuli

Clarity and frequency of stimuli which lead to a SID provided us with just one statistical significant relationship: a negative coefficient with decision duration/timing. This, however, happens to be counterintuitive, in the sense that it indicates that the more clear and frequent the stimuli are, the more time consuming the process will be. No other statistically significant associations have emerged, probably indicating that this variable may not bear on the SID making process.

Uncertainty

Based on the results of table 7.6 we may also argue that in **uncertain** situations the following are evident. First, higher politicization together with higher problem solving dissensus may take place. Both results are statistical significant at a level of $p<0.001$ or lower, thus showing a very strong relationship. This can be justified because in situations where uncertainty prevails, "heated" discussions and contradicting interests are expected to be found.

Moreover, results support the hypothesis that in situations where high uncertainty of actions to be taken and of information to be collected exists, rigid rules and typical processes may be ignored or bypassed. Indeed, results show that lower formalization of the process as well as fewer typicallities concerning financial reporting activities obtain.

Although most of the relevant literature (e.g. Hermann 1963) supports the existence of a negative association between uncertainty and decentralization, empirical data failed to provide a statistical significant confirmation of such a relationship. Correlation coefficients are insignificant and negative. This may suggest that lateral communication and hierarchical centralization may not be related to uncertainty.

Frequency

If we examine the influence of the **frequency/familiarity** on the processes followed we may contend, at a 5% level of significance, that issues appearing more frequently tend to be resolved comparatively more quickly (negative correlation coefficient), tend to attract interests from various departments in the company (correlation coefficient statistical significant at $p<0.05$ level) and also tend to result in more formalized processes together with more financial reporting formality.

Results support (though at a 10% level of significance), that frequent/familiar issues tend to experience less political activities and less problem solving dissensus. This may be attributed to the fact that familiar issues tend to follow formal, established procedures within the company, and usually cause less challenge and "heated" discussion among participants. Moreover, it is not surprising to find out that familiar issues may not establish strong links with more rational approaches to decision making. Despite the fact that the correlation coefficient is positive, it does not support the view expressed by Marmaras et al. (1992) that familiarity leads to less rational processes. Finally, results confirm the allegation that frequent decisions are taken in a comparatively short time period.

Emergence through formal planning

And last but by no means least comes the examination of the association between SID's emergence through some type of formal planning activities and the characteristics/aspects of the process followed. Results offer strong support to the contention that when SIDs are the outcome of a deliberate strategic posture, far less dissensus concerning the solution of the problem may occur (negative pearson coefficient significant at $p<0.01$). Moreover, SIDs of this nature tend to attain more rational processes together with more extensive financial reporting. It is according to our hypotheses that SIDs of this nature also involve more interests both from various departments and from various levels in the hierarchy. Indeed, results indicate that both hierarchical decentralization and lateral communication are experienced.

7.7. CONCLUSIONS-IMPLICATIONS

To summarize, the above results seem to provide support to the following relationships:

(i) SID's magnitude of impact, extent of crisis, amount of pressure, and emergence through some type of formal planning, are associated with more intensive use of rational-analytic processes.

(ii) More extensive financial reporting activities take place when SIDs have great magnitude of impact, appear comparatively frequently, are a result of formal planning activities and exert pressure on the organization. Again, when SIDs are perceived as involving threat/crises, more financial reporting activities obtain. On the contrary less formal reporting activities take place in cases of high uncertainty as regards action and information.

(iii) Decentralization (hierarchical and lateral communication) occurs when the SID's magnitude of impact is extensive, when SIDs of the same nature take place at frequent intervals and finally when SIDs are the outcome of deliberate strategic planning.

(iv) Two major characteristics contribute to higher politicization: the extent to which an issue is perceived as crisis and the extent to which the SID involves high uncertainty.

(v) More problem solving dissensus is evident when we deal with uncertain situations and when SID exerts pressure on the organization. On the contrary, less problem solving dissensus appears when the SID is the outcome of formal planning activities.

(vi) Finally, frequency of occurrence/familiarity contributes to quicker decisions.

In conclusion, the results of this chapter, though exploratory in nature, do provide empirically supported insights into the association between perceived decision characteristics and decision processes followed. Results show particularly strong relationships, confirm the majority of the hypotheses advanced, and allow us to contend that SID characteristics and process characteristics are inextricably linked.

Policy Implications

What becomes evident from the above mentioned, which corroborates with much of the existing research, is that the perceived characteristics attributed to strategic decisions, to a significant extent may determine decision-maker's responses to issues and trigger cognitive and motivational processes that direct the process into predictable paths. This once again stresses the significance of what Pfeffer suggested when he claimed that the management of language, and in particular issue labeling, has symbolic as well as instrumental value (Pfeffer, 1981).

Several important implications of the aforementioned can be explored, the most important of which being that "management can actively manipulate the meaning of strategic issues and subsequent organizational responses by making certain issue attributes salient" (Dutton and Jackson, 1987 pp 85). Moreover, organizations should direct attention to the manner in which strategic issues are categorized within the organization by top managers. Understanding categorization and labeling of issues, may help in understanding subsequent organizational responses (Cowan, 1988).

First, paying attention to Strategic Issue Management (SIM) systems, top management should recognize their vital importance in interpretating various issues, since what may seen as a threat by a specific SIM system may be seen as an unmatched opportunity by another. If we accept the position that 'knowledge is power', people involved with such functions as SIM systems, or environmental scanning units may act as 'gatekeepers' who filter information and may play a vital role not only in issue interpretation but also in controlling the information collected, the alternatives generated, and the arenas in which action takes place (Dutton and Ottensmeyer, 1987).

Moreover, boundary scanning and SIM systems may act as filters who direct information to the appropriate individuals or groups in the company, by judging who is likely to deal more effectively with it (Aldrich, 1979; Dutton and Jackson, 1987). For example, knowing that the handling of crisis is likely to be a 'top management prerogative', while the management of opportunities is likely to involve middle

managers as well, they could 'sell' crisis related information to 'strategic elites' and opportunity related information to middle managers.

Second, top management may 'manipulate' the information provided from SIM systems to serve its own goals. For example, Dutton et al. (1989) reported a case where managers when trying to encourage interest in an issue called it an opportunity, while when they wanted to dampen interest called it a threat. This is explained by the understandable human tendency to avoid involvement in threat/crises issues which may jeopardize their career. On the contrary, it is expected that in such situations managers may choose to let others tarnish their reputations or carry the burden of a wrong decision.

Moreover, based on the strong negative association between problem solving dissensus and the extent to which a SID is the outcome of formal planning processes, which emerged from our data, we may speculate that managers may attempt to eliminate dissensus by launching very important commitments of resources through the available planning processes, thus securing more hierarchical decentralization and lateral communication, together with more rational and formalized approaches.

Additionally, based on the strong positive relationship between politicization and uncertainty we may speculate that by presenting issues as clear and unambiguous, management may achieve to eliminate political conflicts and problem solving dissensus among participants.

Third, extending the role of SIM systems to planning systems as well, we ought to refer to what Dutton and Jackson, (1987,pp 80) contend:

"The role of formalized systems in labeling and categorizing strategic issues should not be underestimated. Formal planning and environmental scanning systems act to codify the interpretation of issues and to perpetuate their initial categorization. Thus, although the categorization of issues by individual decision makers may be modified over time, the crystallization of issue categorizations in bureaucratic processes makes issue reclassification less likely. It is assumed that the initial categorization of a strategic issue as a threat or an opportunity persists over time, leaving the question of how frequently issues are reclassified for future research.

Fourth, a further important implication for SIM systems designers is that since it has been empirically verified in this chapter that perceived project characteristics influence the subsequent processes followed, one might argue that the design of strategic issue diagnostic systems or boundary spanning systems should be tailored to different types of issues.

Lastly, but perhaps most important, if we accept the argument that different managers not only tend to attend to different strategic issues, but also tend to attach quite different meaning to these issues, then the area of strategic management and management training should probably have to formally recognize this potential bias and modify both current theory on managerial cognition and action, and current management training programmes.

These are only a few of the possible policy implications stemming from the results. Undoubtedly more empirical research is needed in the area before any solid conclusions can be drawn. Most of the literature on managerial cognition focuses attention on the structure of cognition, while there is a lack of large scale empirical research examining the impact of context on strategic decision making processes (Dutton, 1986; Dutton et al. 1989). Therefore, it may prove fruitful to examine the impact of other contextual elements such as corporate environment, structure, top management characteristics and to assess the comparative influence of each one of them on the processes followed.

The present chapter has supported the contention that perception of SID characteristics is significantly associated with managerial action. What is also needed is empirical research to broaden our understanding about what causes the same internal and external stimuli to acquire different interpretations. The recent work of Thomas and McDaniel (1990), arguing that the strategy and the information processing capacity structure play a vital role in issue interpretation, sheds some light and paves the way for further empirical research in the area.

Chapter 8

Association Between Environmental Characteristics and SID Processes

8.1. INTRODUCTION

This chapter explores the association between SID process characteristics and various dimensions of corporate environment. As background, section 8.2 reviews a small number of major research efforts on environmental characteristics, which the thesis aims to replicate and extend. Section 8.3, presents the various environmental dimensions utilised in the course of this study. Our intent is to develop a more elaborate typology of environmental dimensions, and to test the existing body of constructs available in measuring organizational environments. Section 8.4 explores the literature on the impact of corporate environment on SDMPs and advances specific hypotheses. Section 8.5 presents and discusses the results of correlation analysis. Finally, section 8.6 discusses their implications for strategic decision making.

8.2. LITERATURE ON ENVIRONMENTAL CHARACTERISTICS

A succession of conceptual models have been constructed to describe the relationship between the enterprise and its environment. It would be two space and time-consuming to in-depth analyse the literature in the area of environmental analysis and classification. Instead in the following few paragraphs the results of five representative works will be examined, a brief comparative analysis between them and the rest of the literature in the area will be attempted, and the major characteristics and limitations of existing research will be pinpointed.

Among the first who tried to classify organizational environments were **Emery and Trist (1965)**. Based on the degree of interconnectedness and change present in the environment they produced a classification of organizational environments into the following four taxonomies arranged in ascending order of change and uncertainty: (i) *the placid, randomized environment* (in which goals are relatively stable and randomly distributed), (ii) *the placid, clustered environment* (in which some type of clustering takes place), (iii) *the disturbed-reactive environment* (in which more than one similar companies exist in the same task environment) and finally, (iv) *the turbulent fields* (characterized by dynamic processes and rapid changes).

A few years latter **Duncan (1972),** produced one of the most significant works in the area. By distinguishing between internal and external environments, he attempted to identify the major environmental characteristics influencing the *Perceived Environmental Uncertainty (PEU)* experienced by decision makers. The internal environment refers to the forces operating within a given organization, while the external environment refers to all aspects being outside it. The next step was the creation of two major dimensions. The first, the *simple-complex* dimension deals with the degree to which the environment comprises of few in number and similar in nature components or of a large number of heterogeneous components. The second, the *static-dynamic* dimension indicates the degree to which the factors of the decision unit's internal and external environment remain the same over time or are in a continuous process of change.

After making an exhaustive review of the relevant literature, **Aldrich (1979),** produced the following six environmental dimensions: (i) environmental *capacity* (conceived as the relative level of resources available within the enterprise's domain), (ii) environmental *homogeneity* (the degree of similarity between various elements of the population), (iii) environmental *stability* (measured by the degree of turnover in the environmental elements), (iv) environmental *concentration-dispersion* (the degree to which resources are evenly distributed over the range of the environment or concentrated in particular locations), (v) domain *consensus-dissensus* (the degree to which other organizations dispute or recognize an organization's claim to a specific domain), (vi) environmental *turbulence* (the degree to which environments are being disturbed by increasing environmental interconnection).

Dess and Beard (1984), conceptualized environments both as sources of information and as a pool from which companies draw resources. Accepting Aldrich's (1979) six environmental dimensions as a starting point and using industry-level data, they managed to reduce, by means of factor analysis, a great number of objectively measured environmental characteristics into a set of three dimensions i.e. muniference, dynamism, and complexity. *Muniference* is seen as the extent to which

growth and stability can be sustained by the environmental forces. *Dynamism* is defined as the rate of change that is hard to predict and that boosts uncertainty faced by decision makers. *Complexity* is seen as the "heterogeneity of a range of an organizations activities" (Child, 1972).

Achrol and Stern (1988), extended Aldrich's (1979) taxonomy by adopting seven perceptual environmental dimensions. These are: (i) environmental *diversity* (the degree of dissimilarity between various elements of the population), (ii) environmental *dynamism* (the rate of unpredictable change in the environment), (iii) environmental *concentration* (the degree of concentration of market resources to the hands of few organizations), (iv) environmental *capacity-muniference* (the richness of the environment, or else the extent to which the environment can assure sustained growth and permit the organization to generate enough slack resources), (v) environmental *interconnectedness* (the linkages among relevant organizations), (vi) environmental *conflict* (the level of abnormal competitive stress) and, (vii) environmental *interdependence* (the sensitivity to moves made by competitors).

The above described five research works cover a time frame of more than three decades. For reasons of parsimony, the attempt was to describe a tiny but representative fraction of the existing body of research and to highlight some of the major dimensions characterizing corporate environments. From a casual inspection of the various dimensions proposed, some of the potential limitations of research in the area become evident right from the outset. We will quote Dess and Rasheed (1991) in their attempt to elucidate some of the limitations inherent in the analysis of corporate environments:

"environment remains a loosely defined concept that has led to three interrelated problems: namely, (a) a lack of consensus as to the relevant dimensions of the environment, (b) disagreement concerning how these dimensions should be measured, and (c) uncertainty as to the effects each dimension has on organizational strategies, structures, processes, or outcomes. (Dess and Rasheed, 1991 pp 701).

The forthcoming few paragraphs will analyse the first two issues raised, while section 8.4 will deal with the third.

i. LACK OF CONSENSUS AS TO THE RELEVANT DIMENSIONS

A striking point characterising the above examined research efforts is that each of them adopts a quite different set of dimensions describing organizational environments. In fact they offer a range of almost 17 different dimensions. To extend and support this argument, table 8.1 presents in chronological order 22 of the relevant research efforts. What is evident from this table is not only the significant development characterising the area, but also the fact that every research uses its own peculiar elements.

For example, there seem to be some very popular and widely used characteristics such as *perceived environmental uncertainty* (e.g. Lawrence and Lorsch, 1967; Duncan, 1972; Downey et al. 1975; Bourgeois, 1978), *muniference/hostility* (e.g. Khandwalla 1977; Aldrich, 1979; Miller and Friesen, 1983; Dess and Beard 1984; Achrol and Stern 1988; Keats and Hitt 1988; Castrogiovanni 1991), *complexity* (e.g. Thompson 1967; Child 1972; Jurkovich 1974; Tung 1979; Lindsay and Rue 1980; Stein 1981 b; Dess and Beard 1984; Keats and Hitt 1988; Sharfman and Dean 1991), *dynamism* (e.g. Miller and Friesen 1983; Dess and Beard 1984; Achrol and Stern 1988; Sharfman and Dean 1991).

Except from these characteristics there exists a number of others which are peculiar to individual research efforts. For example Jurkovich (1974), in his attempt to build a core typology of organizational environments identified the dimensions of (i) *routineness or nonroutineness* of problems-opportunities offered by the environment, (ii) extent of *organized-unorganized* sectors representing the easiness with which an organization can come to grips with them, and (iii) *directness-indirectness* of the various sectors to a specific organization. Others, like Bourgeois and Eisenhardt (1988), adopted the dimension of environmental *velocity* to describe turbulent environments.

Another point worth looking at, is that there exists a great number of different terms which are used to describe closely related or even identical environmental characteristics. For example:

a. *heterogeneity* is seen as the degree of perceived dissimilarity between various elements of the population (Thompson, 1967; Aldrich, 1979; Miller and Friesen, 1983; Achrol and Stern, 1988) or as the range of an organization's activities (Child, 1972), or as "the differences in competitive tactics, customers tastes, product lines, channels of distribution etc across a firm's respective markets" (Miller and Friesen 1983). Moreover, heterogeneity seems to be very close to what Jurkovich (1974) defines as *complexity* (i.e. the range of activities relevant to an organization), or to what Achrol and Stern (1988) define as *diversity* (i.e. the degree of perceived dissimilarity between various elements of the population).

b. the *dynamism* dimension has often been mentioned as *instability* (e.g. Aldrich, 1979; Keats and Hitt, 1988), *change rate* (Jurkovich, 1974), *or turbulence* (Aldrich, 1979). For example Miller and Friesen (1983) define *dynamism* as the rate of change and innovation in the industry, as well as the uncertainty or unpredictability of the actions of competitors and customers. *Instability* is, according to Stein (1981 b) the degree of socioeconomic and technological change faced by the company. Bourgeois and Eisenhardt (1988), by the term "*high velocity environments*" characterized environments where "changes in demand, competition and technology are so rapid and discontinuous that information is often inaccurate, unavailable or obsolete" (1988; 816). The term velocity is very similar to environmental dynamism except that high velocity implies discontinuous change.

c. the *muniference* dimension (Khandwalla, 1977; Dess and Beard, 1984; Keats and Hitt, 1988) has often been referred as *capacity* of the environment (e.g Aldrich, 1979; Achrol and Stern, 1988), *richness* (e.g Aldrich, 1979), *illiberality* (e.g. Child, 1972), *hostility* (Miller and Friesen, 1983) or even *restrictiveness* (e.g. Stein, 1981 b). Various other labels such as resource scarcity, resourcefulness, or industry attractiveness have been used alternatively, enhancing the conceptual ambiguity.

NAME OF THE RESEARCHER/(s)	ENVIRONMENTAL DIMENSIONS USED:
1.EMERY & TRIST,1965;	-Placid,Randomized -Disturbed,Reactive -Placid,Clustered -Turbulent Fields
2.LAWRENCE and LORSCH, 1967;	-Uncertainty -Dynamism -Diversity
3.THOMPSON, 1967	-Homogeneity/Heterogeneity -Stability/Dynamism
4.CHILD, 1972;	-Illiberality -Variability -Complexity
5.DUNCAN, 1972;	-P.E.U. (Perceived Environmental Uncertainty -Simple/Complex -Static/Dynamic
6.JURKOVICH, 1974;	-Complexity -Change Rate -Routineness-nonroutineness -Stability-Instability -Organized-Unorganized
7.KHANDWALLA,1977; and 1976;	-Competition -Muniference -Technological Change
8.PFEFFER and SALANCIK,1978;	-Concentration -Interconnectedness
9. BOURGEOIS, 1978;	-Uncertainty
10. ALDRICH, 1979;	-capacity (Reach/lean) -Concentration-Dispersion -Homogeneity-Heterogeneity -Domain Consensus -Stability-Instability -Turbulence
11.TUNG, 1979;	-Complexity -Movement -Routineness of Problem/Opportunity States -Perceived Environmental Uncertainty (Duncan,1972)
12.STEIN, 1981 b;	-Volatility -Competitive Pressure -Heterogeneity/Complexity -Restrictiveness -Stability
13.SNYDER and GLUECK, 1982;	-Environmental Volatility
14.MILLER and FRIESEN, 1983;	-Dynamism/Uncertainty -Heterogeneity -Hostility
15.DESS and BEARD 1984;	-Muniference -Complexity -Dynamism
16.SMART and VERTINSKY 1984;	-Turbulence -Predictability -Accuracy -Routinization -Dependency -Simplicity
17.GRINYER, BAZZAZ, and ARDEKANI, 1986;	-Stable Market Environment -Vulnerability of Core Technology -Corporate Need for Coordination and Control -Rate of Product and Technological Change -Mutual Dependence
18.ACHROL & STERN, 1988;	-Dynamism -Concentration -Capacity (Muniference) -Diversity -Conflict -Interconnectedness -Interdependence
19.BOURGEOIS & EISENHARDT, 1988;	-High Velocity
20.KEATS and HITT, 1988;	-Muniference -Complexity -Instability
21.BUTLER, 1991;	-Openness -Variability -Ambiguity -Heterogeneity -Uniqueness -Interdependence
22.SHARFMAN and DEAN, 1991;	-Complexity -Competitive Threat

Table 8.1. Chronological Representation of Research Efforts Dimensionalizing Environmental Characteristics

In summary, it seems that much of the empirical research in the area has failed to unambiguously conceptualize organizational environment and the elements comprising it. Achrol and Stern (1988) note that despite the voluminous literature existing mostly in developing taxonomies of organizational dimensions, the systematic specification and testing of the structure of organizational environments has attracted very little empirical validation. Researchers focus on a few dimensions at a time while ignoring other potentially more significant. The previously attempted review of various environmental dimensions clearly indicated that environments are multifaceted and thus only by using a multidimensional typology is it possible to approach the phenomenon. Finally, the use of a great variety of concepts and constructs seems to have made the comparison of results across research efforts a particularly difficult exercise (Sharfman and Dean 1991).

ii. MEASUREMENT OF ENVIRONMENTAL DIMENSIONS

Another significant issue revolves around the debate on how the chosen dimensions should be measured. The adoption of objective vs perceptual measures of corporate environment is one of the major dilemmas in the area (e.g. Boyd et al. 1993). This perspective has led to a flurry of empirical research works utilising either objective measures (e.g. Tosi et al 1973; Dess and Beard,1984; Keats and Hitt, 1988; Sharfman and Dean 1991) or subjective measures (e.g. Starbuck, 1973; Khandwalla 1977; Miller and Friesen, 1983; Javidan, 1984; Miller,1987; Dutton and Jackson 1987).

Proponents of the objective view believe that each organization is embedded within a given environment which develops independently of the single organization. The proponents of the perceptual view still believe that environment remains real but argue that information processing limitations and incomplete knowledge of decision makers force them to adopt views of environment possibly different from its objective characteristics. As Child (1972) and Hambrick and Snow (1977) argue, the critical link between corporate environment and organization is the perception of the former adopted by key decision makers, perception which in turn influences their choices.

Both empirical and theoretical studies have not yet reached a consensus on whether it is the objective environment itself or the perceived environment that determine organizational processes. Probably, both have an impact, but several research efforts (e.g. Tosi et al. 1973) have argued for lack of association between the two. Moreover, several writers have noted the failure of empirical work to consistently compare perceptual and objective measures (e.g. Tosi et al. 1973; Boyd et al. 1993).

Anderson and Paine (1975 p 831) contend that in strategy formulation and in strategic decision making one should rely more on perceptions of environment than on objective properties. Indeed, it is possible companies acting within the same objective environment to have markedly different perceptions of environmental characteristics (e.g. change, PEU). Others may perceive continuous change and others stable environments (Starbuck, 1973). Thus, the reactions to the same environmental challenges are expected to be very different.

These apparently contradictory approaches to measuring environmental characteristics must be taken by researchers as a warning signal of the difficulties inherent in studying organizational environments (Boyd et al. 1993).

8.3. OPERATIONALIZATION OF FINALLY CHOSEN ENVIRONMENTAL DIMENSIONS

The present research assumes that environments are neither munificent nor hostile, but they are simply perceived differently by key decision makers. Decisions and actions are not influenced by environmental dimensions not recognized by managers, but instead responses are expected to vary according to the perceptual image of the environment created in the mind of the decision maker and not according to what actually exists. Hence, in the course of this study, definitions of various environmental dimensions are measured using perceptions of top managers. This is in line with Boyd et al. (1993), who argue that researchers studying decision making may benefit more from the use of perceptual measures.

Since considerable consensus appears to have been emerging among researchers to, more or less, adopt Aldrich's categorization of environmental phenomena, the present research intends to follow this trend, but at the same time benefit from a number of previous works (e.g. Achrol and Stern, 1988; Khandwalla, 1977). Table 8.2 briefly describes the finally adopted environmental dimensions.

As is evident from both table 8.2 and the preceding literature review four concepts/characteristics of the environment seem to prevail. These are: the *environmental heterogeneity* (or else complexity, diversity), the *dynamism* (or else instability, velocity, speed of change, turbulence), the *hostility* (or else capacity, illiberality, richness-restrictiveness), and finally the *PEU.*

(i) Heterogeneity: A number of different constructs have been utilised in the past in an attempt to operationalize heterogeneity-complexity. Khandwalla (1976), for example, used a perceptual construct measuring diversity in markets, customers, products and services. Stein (1981 b) used two scales measuring the number of significant competitors and the diversity of markets, customers, products-services, production methods etc. altogether in one scale. The present study adopts Miller and Friesen's (1983) construct of environmental heterogeneity (see table 8.2. for its operationalization and reliability levels).

(ii) Dynamism: Stein (1981b) operationalized dynamism as a composite variable consisted of three items measuring influence of technical personnel in significant decisions, intensity of competition for technical manpower and rapidity of technical, economic and cultural change. We adopted the operationalization used by Achrol and Stern (1988), who define dynamism as the degree of perceived unpredictable change in the environment (refer to table 8.2 for its operationalization and reliability levels).

(iii) Hostility: In the course of this study Khandwalla's (1977) operationalization was preferred (see table 8.2). This construct views hostility as adequately described by three dimensions i.e. environmental riskiness, stressfulness and dominance over the company.

(iv) Perceived Environmental Uncertainty (PEU): Duncan (1972) has probably developed the most comprehensive measure of PEU by describing it as bearing three major components: the lack of information concerning the determinants of the decision situation, the lack of information concerning the outcome of the decision and finally the instability to declare by assigning probabilities how environmental forces may influence the success or failure of the decision.

Bourgeois (1978) used a modified version of Duncan's construct and treated PEU as one of the various environmental characteristics. Bourgeois studied strategic decisions, but used only the external organizational components of Duncan's instrument, omitting the internal ones. This study, as can be seen from table 8.2, is based on Bourgeois modified version of Duncan's construct, using only 6 of his initially adopted 12 factors, as presented in page 366 of the second questionnaire. The adoption of a more parsimonious set of factors was deemed more appropriate, because managerial time is always at a premium.

(v) Competitiveness: Dastmalchian (1986), measured market competition by adding CEO's evaluations of price, quality, delivery and innovation as competitive forces, measured on three-point scales. Stein (1981 b) also used a construct consisted of three different elements of competition (i.e. competition in promotion, quality and price) to measure competitive pressure. The present study adopted Khandwalla's (1977) index of competitive pressure as is presented in table 8.2.

Attention also focused on the reliability of the constructs measuring environmental dimensions. Two statistics are important in evaluating the internal consistency of each construct (i) the mean inter-item correlation coefficient and the Cronbach Alpha reliability coefficient. A very low mean interim coefficient implies the existence of a broad construct with limited reliability, while a very high one suggests that some elements of the construct may be redundant. Table 8.2 presents the mean inter-item correlation coefficients and the Cronbach Alpha reliability coefficients for each construct.

ENVIRONMENTAL DIMENSIONS	OPERATIONALIZATION *	LOCATION IN THE SECOND QUESTIONNAIRE (APPENDIX 2)	VARIABLES DERIVED FROM:	No.OF ITEMS IN SCALE	MEAN INTER-ITEM CORREL.	CRONBACH ALPHA
1.ENVIRONMENTAL HETEROGENEITY (or else complexity, diversity)	Composite variable consisting of four five-point Likert-type scales measuring significant differences between the products/services offered in relation to (i) customers' buying habits (ii) the nature of competition (iii) market dynamism (iv) market uncertainty.	Page 365 Question No.10 items 1 to 4	Miller & Friesen, 1983;	4	.60	.86
2.ENVIRONMENTAL DYNAMISM (or else instability, velocity, speed of change, turbulence)	Composite variable consisting of eight distinct measures referring to three derived subconstructs (1) dynamism in marketing practices (2) competitor dynamism and (3) customer dynamism. Each scale was measured in a seven point Likert-type scale ranging from 1 (no change to 7 (very frequent changes)	Page 365 Question No.9, Items 1 to 8	Achrol & Stern 1988;	8	.35	.81
3.ENVIRONMENTAL MUNIFERENCE-HOSTILITY	Composite variable consisting of three five-point Likert-type scales measuring the degree of environmental (1) riskiness (2) stressfulness and (3) dominance over the company	Page 365 Question No.8 Items 1 to 3	Khandwalla, 1977;	3	.43	.69
4.PERCEIVED ENVIRONMENTAL UNCERTAINTY (P.E.U.)	$PEU_j = \sum_{i=1}^{n_j} \frac{I_i * (A_i + P_i)}{n_j}$ j=component considered (e.g. customer supplier) n_j=No.of factors within component j I_i=Importance of Factor i A_i=Information Adequacy on factor i P_i=Predictability of factor i's reaction to firms decisions	Page 366 The final variable was based on all the questions.	Modified from Duncan, 1972; and Bourgeois 1978;	Due to the nature of the construct no interim analysis can be performed.		
5.INDEX OF COMPETITIVE PRESSURE	Composite variable consisted of: a.Four five point Likert-type scales measuring the perceived intensity of competition in (1) price (2) product characteristics (3) promotion and distribution and (4) procurement of inputs b.Four other five point Likert-type scales measuring the degree of importance of each of the above mentioned types of competition NOTE: The final index of competitive pressure was extracted by multiplying the intensity of each form of competition by the rating of its importance. The four numbers resulted were aggregated and the outcome was divided by 20 in order to result in one index ranging from 1 to 5.	Page 364 Question No.7, Items 1 to 4.	Modified from Khandwalla, 1977;	Due to the nature of the construct no interim analysis can be performed.		

Table 8.2 Environmental dimensions utilised in the course of the study

* All composite variables were averaged by the number of scale-items in the construct so as to result in constructs ranging from 1-5.

The competitiveness index was computed by multiplying the intensity of each form of competition by the rating of its importance. Thus, this index, did not lend itself to interim reliability analysis. Reliability coefficients for the remaining dimensions ranged from .69 to .86, which by any standard are more than satisfactory.

Table 8.3 presents the descriptive statistics and pearson correlation coefficients among environmental variables. As expected, there exist some intercorrelations among environmental variables. Their examination seems to give us some interesting statistical significant results, all being in the expected direction, and none of them is unduly high (all correlation coefficients are below .43).

ENVIRONMENTAL DIMENSIONS	MEAN	STD DEV	1	2	3	4	5
1. HETEROGENEITY (Heterog)	2.7143	.9347	1.0000 P= .				
2. DYNAMISM (Dynamism)	3.1679	.8652	.4365 [1] P= .000 [2]	1.0000 P= .			
3. HOSTILITY (Hostili)	2.9381	.7406	-.1725 P= .077	-.3200 P= .003	1.0000 P= .		
4. UNCERTAINTY (Uncert2e)	2.5143	.5184	.2179 P= .035	.3339 P= .002	-.0690 P= .285	1.0000 P= .	
5. COMPETITIVENESS (Competit)	2.5200	.8395	.0379 P= .378	.3658 P= .001	-.1895 P= .058	.1167 P= .168	1.0000 P= .

Table 8.3. Descriptive Statistics and Intercorrelations among Environmental Variables

[1] (Correlation Coefficient) [2] (Level of Significance)

8.4. ASSOCIATION BETWEEN ENVIRONMENTAL DIMENSIONS AND PROCESS CHARACTERISTICS

A significant body of literature exists on the impact of organizational environment on various organizational processes. A number of these research efforts attempts to relate the nature of the environments to the content of strategies followed (e.g. Lindsay and Rue, 1980; Bourgeois 1980a), or to the characteristics of long range planning systems (e.g. Lindsay and Rue, 1980; Javidan 1984; Grinyer et al. 1986). But significant criticism (e.g. Miller and Friesen, 1983; Sharfman and Dean, 1991; Dess and Rasheed, 1991) has been levelled at this body of work for the little attention which it has devoted in finding out possible linkages between dimensions of corporate

environment and the process or outcomes of strategy making. If we consider that only through effective strategy making processes it is possible to arrive at meaningful and appropriate strategies, we come to the conclusion that particular emphasis should be devoted to exploring potential linkages between the process of strategic decision making and environment. The rest of section 8.4 will concern itself with this exploration based on the five environmental characteristics adopted in section 8.3.

A. RELATIONSHIP BETWEEN ENVIRONMENTAL HETEROGENEITY AND SID PROCESS CHARACTERISTICS

Rationality-Financial Reporting

Lindsay and Rue (1980), examined the impact of various environmental characteristics on the comprehensiveness-completeness of FPSs. They found out that as environmental heterogeneity/complexity increases one would expect the development of more complete long range planning processes. In the same vein, Khandwalla (1976) reported that managers who perceive their corporate environment as complex tend to employ more comprehensive strategies. This may be attributed to the fact that companies create the necessary internal processes to deal with environmental diversity. To extend their argument, one might also expect that more heterogeneous environments may also lead to more thorough analysis in SDM in order to account for the diverse constituencies in the environment (Smart and Vertinsky, 1984). Miller and Friesen (1983), by comparing groups of successful and unsuccessful companies reached the conclusion that relatively to poor performers, successful firms are expected to show a positive association between increases in environmental heterogeneity and increases in analysis in decision making.

A similar pattern of association is expected to be found between heterogeneity and extent financial reporting. According to Jurkovich (1974) the complication caused by environmental heterogeneity coupled with the limited processing capacity of organizations and persons leads to the creation of specialized units dealing with information collection and processing. Consequently they argued that higher

environmental heterogeneity is expected to be associated with more elaborate financial analysis and related reporting systems.

A significant number of researchers in the area (e.g. Child 1972; Bobitt and Ford, 1980; Keats and Hitt, 1988; Sharfman and Dean, 1991) also argued for the existence of close linkages between environmental complexity and role specialization, claiming that the monitoring of a highly heterogeneous environment increases the need for greater role specialization, and requires the development of specialized knowledge within the company with the aim to manage interdependencies. It seems to follow logically that if environmental heterogeneity results in the creation of specialized knowledge within the company, we may argue that more formal financial reporting will also be an outcome of environmental heterogeneity.

Thus, the following hypotheses may be advanced:

H(p) A,1,. Companies operating in heterogeneous environments will tend to resort in higher rationality when making decisions of a strategic nature.

H(p) A,2,. Companies facing heterogeneous environments are expected to use more advanced financial reporting systems when making SIDs.

Set of Formalized Rules-Coordination Devices

According to Aldrich (1979 pp 66) a corporate environment characterized by great heterogeneity may not reward standardized ways of action. Very recently, Sharfman and Dean (1991), argued that in heterogeneous-complex environments companies resort in fewer standardized rules and favour the presence of a more relaxed internal structure. Smart and Vertinsky (1984) also argued that environments characterized as highly routine stimulate the development of formalized operating procedures. In line with the reasoning laid out above, the following proposition might be set forth:

H(p) A,3,. Greater environmental heterogeneity is expected to be negatively associated with both rule formalization and use of formal coordination devices.

Hierarchical Decentralization-Lateral Communication

A central assumption of the study of Lindsay and Rue (1980) was that environmental heterogeneity may be associated with more hierarchical decentralization, more lower-levels involvement and generally use of 'open systems approaches' in planning and decision making. Empirical results also corroborated their assumption as far as larger companies were involved. On the contrary smaller enterprises appeared to experience a negative association between environment and hierarchical decentralization. This may be attributed to the fact that smaller enterprises may not have clear hierarchical structures.

In the same vein, Bobbitt and Ford (1980) suggested that environmental heterogeneity exerts a significant influence on the structuring of an organization, thus resulting in the development of specialized knowledge and decentralized decision making authority.

Miller and Friesen (1983), studied the effects of various environmental forces on strategy making behaviour. Their research results broadly suggested that an increase in perceived environmental heterogeneity is expected to complicate the administrative task, thus resulting in subsequent changes in structure (e.g. more lateral communication), rather than to modify the depth of analysis (e.g. rationality) in strategy making. It seems reasonable to hypothesize that greater environmental heterogeneity will imply greater contribution and more responsibility from various departments, thus resulting in greater lateral communication (Miller and Friesen, 1983).

The previous discussion provides the foundations for specifying the following hypotheses.

H(p) A,4,. Environmental heterogeneity is expected to be positively associated with hierarchical decentralization when deciding on SIDs.

H(p) A,5,. Environmental heterogeneity will be positively associated with lateral communication.

Politicization - Dissensus

Environmental complexity, in general, may induce different group members to adopt different tactics in deciding on the solution to a given problem. Indeed, as the work of Dess and Origer (1987) and Bourgeois (1980a;b) revealed there is an inverse relationship between environmental complexity and consensus on organizational goals, since complexity gives rise to more possible points of conflict among top managers and makes consensus more difficult to achieve. Aldrich (1979, pp 66), lent credence to this view by arguing that heterogeneity in an enterprise's environment may lead to intraorganizational conflict. These patterns may suggest the following hypothesis.

H(p) A,6,. Higher heterogeneity in the corporate environment may tend to increase problem solving dissensus as well as political debates during the making of SIDs.

B. RELATIONSHIP BETWEEN ENVIRONMENTAL DYNAMISM AND SID PROCESS CHARACTERISTICS

Rationality-Financial Reporting

Despite the large number of research efforts that attempt to elucidate links between environmental dynamism and rationality of decision making processes, results of this body of research are rather fragmented and contradictory. For example, there is one stream of research (e.g. Cyert and March, 1963; Mintzberg, 1973; Anderson and Paine, 1975; Nutt, 1976; Fredrickson, 1984; Fredrickson and Iaquinto, 1989; Hart, 1992) which contends that companies operating in stable environments more or less follow rational-comprehensive processes in making and integrating strategic decisions. According to this line of thought, incremental processes are more suitable for companies operating in unstable environments. Stein (1981 b) also hypothesized that companies operating in highly dynamic environments may tend to employ both less extensive search and less explicit analysis of alternatives.

The argument behind this contention is that strategists usually find it difficult to resort in formal financial analysis, in depth study, and rational processes when having to deal with unstable, high velocity environments characterized by information scarcity, and rapid change. Instead, they are obliged to take quick, bold decisions in many instances, relying on the available amount of information. In the same vein, companies operating in stable environments rarely face significant opportunities and thus when having to deal with such a situation they employ more rational processes.

Unfortunately, there remains much confusion and contradiction in the literature, and no consensus has emerged. A relatively recent line of inquiry has cast doubt on the validity of these hypotheses. For example, the results obtained by Grinyer et al. (1986), in a study of long range planning processes, are not interpreted as supportive of the above mentioned stream of inquiry. They found out that stable market environments were not associated with more comprehensive planning processes. A similar pattern of interaction was reported by Bourgeois and Eisenhardt (1988). By studying strategic decision processes in high velocity environments they concluded that effective firms follow the rational model in decision making. They argued convincingly that: "as the speed of environmental change accelerates, effective executives deal with their extremely uncertain world by structuring it. This is done by employing a thorough analytic process" (Bourgeois and Eisenhardt, 1988; pp 826). Jurkovich (1974 pp 390) seems to share the same view, arguing that in dynamic environments companies attempt to reduce unpredictability in order to achieve a more complete picture of the situation. This can usually be achieved by means of internal systems contributing to more rational/analytical decision making.

Another relatively recent work has lent credence to the above mentioned argument. Miller and Friesen (1983) found that good performers tended to show more positive correlations between increases in environmental dynamism and increases in formal analysis. This was attributed to the fact that companies adapt themselves to the growing challenges posed by dynamic environments by seeking a greater number of criteria to guide strategic decisions, by searching for more detailed information and

thus by making more rational decisions. We should also mention Khandwalla (1976), who lends credence to this line of thought by arguing that managers who perceived the environments in which their companies operated as dynamic, were using more comprehensive or multifaceted strategies. Finally, a surprising lack of any statistical significant relationship was reported by Smith et al. (1988).

The previous research has, indeed, produced apparently conflicting results regarding the directionality of the relationships in question. In the course of this research the results of the second line of research will be adopted, thus assuming that: **H(p) B,1,.** Higher environmental dynamism will be associated with more rational processes and with more financial reporting activities.

Formalized Rules-Coordination Devices

Aldrich (1979) suggested that environmental stability favours the development of formal-standardized sets of routines for dealing with organizational issues. Keats and Hitt (1988) also suggested that firms operating in unstable environments developed a simpler structure, based on low diversity, and high relatedness among organizational units.

Still a different wave of pertinent research (e.g. Sharfman and Dean, 1991) contrary to expectations reported that environmental dynamism produced a positive and statistical significant relationship with the use of written rules. This was attributed to the fact that firms operating in volatile environments may sometimes be expected to respond with rigidity to external threats and develop formal written rules, procedures, coordination devices (Sharfman and Dean 1991; Bourgeois et al. 1978). Despite the apparently conflicting concepts outlined above, we may risk to support the hypothesis that:

H(p) B,2,. Higher environmental dynamism will be positively associated to use of written rules, and to the existence of coordination devices.

Hierarchical Decentralization

The effect of environmental dynamism on the centralization-decentralization of SDMPs is subject to contrasting interpretations. As Grinyer et al. (1986) contend, environmental stability favours the delegation of authority to lower levels in the hierarchy, during the planning process. On the contrary unstable-dynamic environments limit decision making to the ranks of higher-level managers, thus resulting in centralization of planning and decision making. This takes place not only because in dynamic environments such issues are critical to the viability of the company (thus contributing to centralization), but also because the speed of decision making is of vital importance (thus only involvement of the most senior executives may be deemed as necessary).

On the contrary, Burns and Stalker (1961), reported that dynamic environments favour the participation and the flow of information among organizational layers, thus resulting in greater decentralization. Jurkovich (1974 pp 389) seems to share the latter view, by arguing that under unstable conditions "subordinates demand more responsibility in the form of contributing opinions". Thus, we may hypothesize that:

H(p) B,3,. Dynamic environments will be positively related to hierarchical decentralization when making SIDs.

Lateral Communication

Child (1972) has introduced the term environmental variability to describe environments characterized by frequent and irregular changes. According to him, the more the variability experienced, the more lateral communication is expected to take place, in order to support a flexible and adaptive structure. This variability dimension seems to be closely related to our dynamism-instability construct. Thus, extending Child's argument we may hypothesize that:

H(p) B,4,. Environmental dynamism is associated with more lateral communication during decision making.

Politicization-Dissensus

Lyles and Mitroff (1980) as well as Lyles and Thomas (1988) contend that firms operating in comparatively stagnant environments tend to have a clear and unconfusing picture of events occurring. This implies that the external stimuli receive the same interpretation by different people, thus contributing to consensus building and to less political activities on the nature of the problem and the way the decision making will have to proceed.

Dess and Origer (1987) argued for an inverse relationship between environmental dynamism and consensus on organizational goals. Jurkovich (1979 pp 390) also reported that the potential for conflict is expected to be higher in environments characterized by rapid change and unpredictability. Despite the apparently conflicting evidence we are inclined to adhere to the second line of thought and hypothesize that:

H(p) B,5,. Dynamic environments will tend to result in greater politicization during the making of strategic decisions.

H(p) B,6,. Dynamic environments are expected to be associated with higher dissensus among participants.

Gestation and Duration time

Environmental dynamism has also been claimed to influence the speed of decision making. Here, research has consistently shown that there is a positive relationship between speed of decision making and environmental dynamism (e.g. Judge and Miller, 1991). Fredrickson (1984) corroborates these findings by showing that successful firms in unstable environments seem to make decisions quickly without significant attempt to integrate them into an overall strategy. Stein (1981 b) also hypothesized that rapid change-instability is expected to lower the gestation and duration time. These lead us to hypothesize that:

H(p) B,7,. A negative association is expected to be found between environmental dynamism and gestation and duration process time.

C. RELATIONSHIP BETWEEN ENVIRONMENTAL HOSTILITY AND SID PROCESS CHARACTERISTICS

Rationality-Financial Reporting

Miller and Friesen (1983) reported that successful firms in their sample tended to show more positive relationship between increases in environmental hostility and increases in depth of analysis conducted during strategic decision making. Moreover, it is worth mentioning that Miller and Friesen also found that when adversity loomed, unsuccessful firms experienced a panic reaction and considerably reduced the level of analysis conducted. Stein (1981 b), in his attempt to describe hostile environments introduced the term 'environmental restrictiveness'. He then reported that as the environmental restrictiveness increased, companies tended to show less extensiveness in their search for alternative ways of action. In line with the research laid out above, we might hypothesize that:

H(p) C,1,. Environmental hostility may be negatively associated to rationality and financial reporting activities.

Rule Formalization -Coordination Devices

In environments characterized as hostile it may be expected that along with lack of rational analysis and financial reporting activities, we may also witness the lack of rule formalization as well as the inexistence of coordination devices in the making of SIDs. Thus, the following tentative propositions might be set forth:

H(p) C,2,. Environmental hostility may be negatively associated with formalized rules and coordination devices.

Hierarchical Decentralization-Lateral Communication

A structural consequence of environments characterized as hostile may be a tighter centralization in decision making and a restrained flow of information between various departments, thus leading to both hierarchical centralization and

minimized lateral communication. This view is supported by Child (1972) in analysing environmental illiberality, a term which closely relates to the notion of hostility examined here. Thus, we may hypothesize that:

H(p) C,3,. Environmental hostility may cause tighter hierarchical centralization and may minimize lateral communication.

Politicization-Dissensus

Dess and Beard (1984) offered strong support to the contention that munificent environments function as a means of conflict resolution. On the contrary, Dess and Origer (1987), argued that organizations competing in munificent environments face fewer resource constraints and therefore managers are offered the discretion to pursue divergent goals. In so doing they are expected to strengthen a positive relationship between environmental muniference and dissensus. Stein (1981 b) also hypothesized that environmental restrictiveness (synonymous to hostility) is expected to unite management attitudes and views during the making of strategic decisions. However, his empirical results did not support this hypothesis. It seems that effects can be either way, and thus no specific hypothesis is advanced.

Duration -Timing

Despite the lack of empirical data on the association between environmental hostility and duration-timing of SID processes logic suggests that in order not to face the possibly grave consequences of inadequate responses to hostile environments companies may be expected to make SIDs more rapidly. But one could also support the opposite line of argument by assuming that companies operating in hostile environments may be reluctant to quickly decide on strategic decisions thus resulting in delayed decision making. We will let the empirical results reveal possible statistical significant associations.

D. RELATIONSHIP BETWEEN ENVIRONMENTAL UNCERTAINTY and SID PROCESS CHARACTERISTICS

Rationality - Financial Reporting

Milliken (1987) supported the opinion that when managers are confronted with uncertainty they normally spend more time and resources on scanning and forecasting. In general one might use the same arguments advanced in previous sections for environmental heterogeneity. Thus, the following proposition might be set forth.

H(p) D,1,. Perceived environmental uncertainty (PEU) may be positively related to rationality and financial reporting activities.

Set of Formalized Rules-Coordination Devices

Burns and Stalker (1961), as well as Hage and Aiken (1967), were among the first to contend that companies operating in environments characterized by low uncertainty face decisions having a more or less routine nature and thus the information gathering and processing needs are expected to be rather limited. Such a context favours the development of specific rules and procedures, thus allowing for a greater standardization and formalization of decision processes. On the contrary, environments characterized by high uncertainty require more flexible, novel and ill-structured processes in making and integrating strategic decisions. This implies that standardization and formalization are expected to be kept at a minimum (Keats and Hitt, 1988). These patterns may suggest that:

H(p) D,2,. Environmental uncertainty is expected to be related to less formalized rules and procedures during the making of SIDs.

Hierarchical Decentralization-Lateral Communication

When PEU increases, greater participation in decision making (both hierarchical and lateral) is to be expected. This happens because the approaches followed in resolving strategic issues under circumstances of high perceived uncertainty, are rather novel and ill-structured, thus calling for a variety of different approaches.

H(p) D,3,. Higher PEU will be associated with more hierarchical decentralization and lateral communication.

Politicization-Dissensus

Environments characterized by low uncertainty-unpredictability usually tend to present clear and unconfusing stimuli to decision makers. This implies that external phenomena are expected to get the same interpretation by participants in the decision making process, minimizing the potential for political behaviour and dissensus (Lyles and Mitroff, 1980; and Lyles and Thomas 1988). On the contrary, high PEU is expected to be associated with more politicization and problem solving dissensus.

H(p) D,4,. Higher PEU may result in higher politicization and more problem solving dissensus among participants.

E. RELATIONSHIP BETWEEN ENVIRONMENTAL COMPETITIVENESS AND SID PROCESS CHARACTERISTICS

Rationality-Financial Reporting

In their comparative study of managerial practices in five different countries, Negandhi and Prasad (1971), proposed that intensive market competition contributes to the development of more comprehensive long-range planning systems. Stein (1981 b) also hypothesized that if competitive pressure is intense, decision makers cannot afford the costs of taking a wrong decision, thus pursuing more explicit financial analysis and more extensive search for alternatives. But the empirical results provided by Stein, did not support this hypothesis. Coefficients of association

although in the correct direction did not provide any statistical significant relationships between competitive pressure and either explicitness of analysis or extensiveness of search. Nevertheless, the following tentative hypothesis will be advanced:

H(p) E,1,. Competitive pressure may be associated with more rationality as well as more extensive financial reporting in the making of SIDs.

Formalized Rules-Coordination Devices

In situations of high environmental competitiveness firms should recognize the need to adapt and respond to challenges. Thus, one might expect that in environments characterized by competitive threat, firms are expected to resort to fewer rules and formal procedures. Sharfman and Dean (1991) advanced a similar hypothesis, but surprisingly their empirical results produced an insignificant correlation between *presence of rules* and competitive threat while producing an unexpected highly positive and significant correlation among the *use of written rules* and the competitive threat faced.

Pfeffer and Leblebici (1973) hypothesized a positive association between competition in the environment and internal coordination and control devices. This was attributed to the fact that in cases of highly competitive markets companies cannot afford the luxury to make strategic mistakes. Hence, they develop coordination and control devices to minimize this possibility. Despite the apparently conflicting concepts outlined above, we may suggest that:

H(p) E,2,. Environmental competitiveness is expected to be associated with the existence of fewer formalized rules and coordination devices when making SIDs.

Politicization-Dissensus

Dastmalchian (1986) reported that increased environmental competition produced a more favourable climate and closer relationships between managers, thus resulting in lower politicization and in the development of an atmosphere of

responsiveness and creativity. On the contrary, Stein (1981 b) hypothesized that increased competitive pressure is expected to influence decision makers behaviour in the direction of more heterogeneous behaviour, and create a more politicized atmosphere. But his final research results did not statistically verify his contention. Despite this, we are inclined to adopt the latter view and hypothesize that:

H(p) E,3,. Higher environmental competitiveness may be associated with more politicization and probably more problem solving dissensus during the making of SIDs.

Gestation and Duration Time

Despite the lack of empirical data on the association of environmental competitiveness and duration of SID processes, logic suggests that enterprises in order to take advantage of opportunities and achieve an edge over competitors, may be inclined to quickly decide on issues of a clearly strategic nature. Thus, we may expect that:

H(p) E,4,. Competitive environments may favour the shortening of decision processes and conduce to more snapshot decision processes.

SUMMARY OF HYPOTHESES ON THE ASSOCIATION BETWEEN ENVIRONMENT AND SID PROCESSES

The preceding discussion has (i) synthesized research pertaining to the association between environmental characteristics and strategic decision making processes, (ii) highlightened the sometimes inconclusive or even conflicting results appeared in the area and (iii) advanced specific hypotheses to be tested.

Table 8.4 offers a summary of hypotheses about the association between process and environmental characteristics. The signs + / - indicate expected positive or negative associations between variables, while questionmarks indicate unclear expectations about possible relationships.

8.5. CORRELATIONS - DISCUSSION OF RESULTS

Table 8.5 presents the correlation results between environmental characteristics and the characteristics of the processes followed. Given the nature of the variables, Pearson correlation coefficients provide a means for establishing the degree of association between the two. A quick inspection of table 8.5, reveals that in total 16 out of the 45 relationships provide statistical significant associations, at a level of 5% or less. That is, about 35% of the total relationships are statistical significant at a level of $p<.05$ or less. The specific relationships suggested are in line with our hypotheses, with some minor exceptions. More specifically:

	ENVIRONMENTAL CHARACTERISTICS				
SID PROCESS CHARACTERISTICS	HETERO-GENEITY	DYNAMISM	HOSTILITY	UNCERTAINTY	COMPETITION
1.RATIONALITY	+	+	−	+	+
2.FINANCIAL REPORTING	+	+	−	+	+
3.SET OF FORMAL RULES	−	+	−	−	−
4.FORMAL COORDINATION DEVICES	−	+	−	−	−
5.HIERARCHICAL DECENTRALIZATION	+	+	−	+	?
6.LATERAL COMMUNICATION	+	+	−	+	?
7.POLITICIZATION	+	+	?	+	+
8.PROBLEM SOLVING DISSENSUS	+	+	?	+	+
9.GESTATION AND DURATION TIME	?	−	?	?	−

Table 8.4.: Summary of Hypotheses about the Association Between Process Characteristics and Environmental Characteristics

Rationality-Comprehensiveness

Regarding the degree of **rationality-comprehensiveness** of strategic decision making processes, significant positive effects were found for environmental heterogeneity and dynamism, while a strong negative association was obtained between rationality and environmental hostility. On the contrary, perceived environmental uncertainty (PEU) and degree of competitiveness failed to produce statistical significant results.

The strong positive relationship between heterogeneity and rationality is in line with relevant research arguing that heterogeneous environments may drive companies to create the appropriate internal analytic processes in their attempt to deal with the challenge of diversity (e.g. Khandwalla, 1976; Lindsay and Rue, 1980; Miller and Friesen 1983).

As mentioned in the hypotheses generation section of this chapter, there exists a significant debate concerning the association between rationality in decision making and degree of dynamism in the environment. The resulting positive association offers strong support to the line of thought which claims that when managers are confronted with dynamic environments characterized by rapid change, they concentrate their efforts in trying to structure and control their world. This is achieved by employing more thorough, analytic processes and multifaceted strategies (e.g. Khandwalla, 1976; Bourgeois and Eisenhardt, 1988), or by trying to achieve a more complete picture of the situation through introduction of planning systems (e.g. Jurkovich, 1974; Miller and Friesen, 1983).

Concerning the companies in the sample, it is true that most of them (especially those in the foods and drinks as well as in the chemicals) due to the European integration and the 1992 challenge, faced in the recent years increasingly dynamic environments, characterized by rapid change in the elements comprising dynamism (e.g. changes in marketing practices, competitor dynamism and customer dynamism). Results support the opinion that they reacted by being more rational when making SIDs.

On the contrary, results indicate that environmental hostility may have a significant negative interaction with analytical/rational processes. This is in line with our hypotheses, which argue that when companies consider their environments as hostile they tend to show a panic reaction and considerably reduce the levels of analysis in their decision making.

The final two environmental characteristics (uncertainty and competitiveness) do not seem to produce any statistical significant results. Correlation coefficients, especially for the competitiveness dimension, are rather weak and provide no support to the contention that intensive market competition is associated to more rational decision making.

Financial Reporting

Only one out of the five pearson coefficients relating environmental characteristics with **financial reporting** provide statistical significant results. This significant coefficient indicates that environmental dynamism is associated with more extensive financial reporting activities. The other four relationships between financial reporting and heterogeneity, hostility, PEU and competitiveness, though in the correct direction, do not produce any statistical significant results.

Set of Formalized Rules

Particularly strong seem to be the effects of corporate environment on the existence of **a set of formalized rules** guiding the process. Except from the "odd" positive associations between formalized rules and environmental heterogeneity and uncertainty, which deviate from our hypothesis, all other correlation coefficients are in the expected direction.

In particular, there is a positive association between environmental dynamism and set of formalized rules. As discussed in the hypotheses section, there are two opposite views on the interaction between formalization and dynamism. The results lend support to the view of Sharfman and Dean (1991), and Bourgeois, (1978) who contend that firms operating in volatile environments may try to respond to the change rate by trying to structure their internal world through introduction of formal, written rules and procedures.

	P E R C E I V E D	E N V I R O N M E N T A L :			
	HETEROGENEITY (HETEROG)	DYNAMISM (DYNAMISM)	HOSTILITY (HOSTILI)	UNCERTAINTY (UNCERT2e)	COMPETITIVENESS (COMPETIT)
RATIONALITY/ COMPREHENSIVENESS (RATIONAL)	.2464 [1] P= .020 [2]	.2048 P= .045	-.2815 P= .009	.1066 P= .190	-.0137 P= .455
FINANCIAL REPORTING (REPOR2)	.1280 P= .146	.3002 P= .006	-.1887 P= .059	.0364 P= .382	-.0650 P= .296
SET OF FORMALIZED RULES (FORMA1)	.3239 P= .003	.2959 P= .006	-.2819 P= .009	.2166 P= .036	.0176 P= .443
FORMAL COORDINATION DEVICES (FORMA3)	-.1240 P= .153	.1774 P= .071	.0183 P= .440	.1260 P= .149	-.0114 P= .463
HIERARCHICAL DECENTRALIZATION (HIERDECE)	.0670 P= .291	.0748 P= .269	.0470 P= .350	.0709 P= .280	-.1524 P= .104
LATERAL COMMUNICATION (DEPADECE)	.1593 P= .094	.3439 P= .002	-.3160 P= .004	.3036 P= .005	.1055 P= .192
POLITICIZATION (POLITICI)	.0331 P= .393	-.0641 P= .299	-.0897 P= .230	.0590 P= .314	-.1422 P= .120
PROBLEM SOLVING DISSENSUS (DISSENSU)	-.2060 P= .044	-.2744 P= .011	.1071 P= .189	.2977 P= .006	-.1970 P= .051
GESTATION AND DURATION PROCESS TIME (TIMING2)	.0085 P= .472	-.1452 P= .115	-.0212 P= .431	-.1749 P= .074	-.2823 P= .009

Table 8.5. Correlation Results Between Environmental and SID Process Variables

[1] (Correlation Coefficient) [2] (Level of Significance)

It is also interesting to note the significant positive relationship between formalization and environmental heterogeneity, which comes in direct contradiction with what Aldrich (1979) and Sharfman and Dean (1991) content about the existence of a more relaxed structure and the presence of fewer written rules when the environment appears to be heterogeneous-complex. One possible interpretation of this apparently unexpected correlation may come if we extend Sharfman and Dean's (1991) argument for environmental dynamism, and hypothesize that as firms in dynamic-volatile environments introduce formalization in order to structure their changing world, the same may take place in heterogeneous environments.

Furthermore, two other relationships bear attention, due to the highly statistical significant results they provide. Both the negative association between environmental hostility and formalization, and the positive association between PEU and formalization are statistical significant at a level lower than 5%. From these two associations only the first is consistent with relevant literature pointing out that companies operating in hostile environments require more flexible, novel and ill-structured procedures in making and integrating decisions of a strategic nature (e.g. Burns and Stalker, 1961; Keats and Hitt, 1988). The positive association between PEU and formalized rules is rather unexplainable.

Finally, market competition failed to produce any statistical significant relationship with formalization, despite the suggestions of the relevant literature (e.g. Sharfman and Dean, 1991) which states that companies operating under intense competition cannot afford to make a wrong decision, which may offer competitors an edge. Hence, they resort in explicit analysis and extensive search for alternatives.

Formal Coordination Devices

The existence of **formal coordination devices** does not seem to bear any association with the characteristics of corporate environment. All correlation coefficients are in the expected direction, as hypothesized, but are statistically insignificant. It seems that the existence of such devices may be more a matter of size of the organization and sophistication of internal structure, than of the characteristics of corporate environment. Chapter 12 (the final integrative chapter) will attempt to shed further light into potential associations.

Hierarchical Decentralization-Lateral Communication

Despite the fact that the association between environmental characteristics and both **hierarchical decentralization and lateral communication**, is not very strong (only three out of ten correlation coefficients are statistical significant), the direction of correlation coefficients are in line with our hypotheses and could stimulate further discussion. For example environmental heterogeneity, dynamism and uncertainty (although not statistical significant) seem to contribute to more hierarchical decentralization, an indication which is in line with the suggestions of Bobbitt and Ford (1980), and Burns and Stalker (1961). On the contrary, results for hostility and competitiveness appear rather inconclusive, providing weak negative or positive signs.

As regards to lateral communication, results indicate a positive association with heterogeneity, dynamism and uncertainty. These results corroborate the prevailing view that heterogeneity, dynamism and uncertainty in the environment act as catalysts and contribute to more lateral communication among various departments (Child, 1972; Miller and Friesen 1983).

On the contrary, environmental hostility shows a negative association with lateral communication. In particular, results offer support to the hypothesis that lateral communication is expected to be suppressed in hostile environments. As far as environmental competitiveness is concerned results are statistically insignificant.

Political Behaviour - Dissensus

Another set of interesting relationships revolves around the notions of **political behaviour and problem solving dissensus** and their association with the adopted environmental characteristics. As presented in table 8.5, three out of the ten possible relationships provide statistical significant, results.

Contrary to our hypotheses, it was somewhat surprising to find that heterogeneity, dynamism and competitiveness are negatively related to political behaviour and problem solving dissensus. Empirical results offer statistical significant evidence that both environmental heterogeneity and environmental dynamism lead to less problem solving dissensus in decision making. Moreover, correlation coefficients between competitiveness on the one hand and politicization and problem solving dissensus on the other hand (although nearly statistically significant), have a negative sign indicating that competitiveness tends to be associated with less political behaviour and more consensus among managers.

These results are in direct contradiction with the prevailing view that in dynamic or heterogeneous environments managers tend to perceive differently the various environmental stimuli, thus contributing to the creation of a political atmosphere and to more dissensus during decision making (Aldrich, 1979; Jurkovich, 1979; Lyles and Mitroff, 1980; Stein, 1981b; Dess and Origer, 1987; Lyles and Thomas, 1988).

Despite the apparent reasonableness of the prevailing view, we are inclined to adopt the opposite view expressed by Dastmalchian (1986). This quite 'erratic' view contends that increased environmental competition or dynamism, instead of acting like a catalyst separating managers, may act as a 'binding glue' which favours the development of a climate supporting cooperation and closer relationships, in order to confront with changing environments and increased competitiveness. Indeed, our data seem to lend credence to this view. This argument is further supported by the positive relationships revealed between dynamism and heterogeneity on the one hand and lateral communication on the other hand.

A second set of interesting relationships shows a positive association between politicization and problem solving dissensus and such environmental dimensions as hostility and uncertainty. In particular the empirical results support our hypotheses that uncertainty about the environment is related to higher politicization and higher problem solving dissensus. The results are in line with pertinent empirical research claiming that munificent environments function as a means of conflict resolution and are expected to lower politicization and dissensus (Stein, 1981 b; Dess and Beard, 1984; Dastmalchian, 1986).

Overall, the results show that there is a tendency of dynamic, heterogeneous and competitive environments to lower politicization and dissensus, while hostile and uncertain environments tend to enhance both politicization and dissensus.

Gestation and Duration Time

The final characteristic of SDMPs is the gestation and duration time. Only one correlation coefficient provided statistical significant results. All the other relationships, except from the relationship between dynamism and timing, proved to be very small and insignificant. Overall, table 8.5 suggests that only environmental competitiveness contributes to quicker decision processes, while the relationship between dynamism and timing is in the correct direction though insignificant. Both correlations are in line with our hypothesis, and with the relevant literature claiming that companies in competitive and/or dynamic environments tend to take quick decisions (Stein, 1981 b; Fredrickson, 1984; Judge and Miller, 1991). Mintzberg et al. (1976) contend that in competitive and hostile environments a researcher should expect to find a greater incidence of speedups and delays. One may hypothesize that in highly competitive environments managers may want to overcome the competitors by taking quick and in some instances bold decisions. Of course, in several other situations managers may want to 'buy time' in order to monitor the developments in a hostile or even dynamic environment, thus resulting in lengthier decision making processes. This fact may offer an explanation for the inconclusive results.

8.6. CONCLUSIONS - IMPLICATIONS

In conclusion, the results of the present study do provide some insight into the association between environmental dimensions and process characteristics. Moreover, they suggest that environmental characteristics can be significant predictors of SID making processes. In general terms, the results of this chapter suggest that the following relationships hold true:

(i) The existence of more heterogeneous and/or dynamic environments favour rational decision making, together with more financial reporting and more rule formalization. On the contrary, hostile environments contribute to less comprehensive decision making, less formality, and presumably less financial reporting activities.

(ii) the results concerning decentralization and environment are rather inconclusive. What becomes evident is that environmental dynamism and uncertainty favour lateral communication, while the effect of environmental hostility on lateral communication is rather detrimental. It seems that as far as hierarchical decentralization is concerned, the external control model does not receive much support. It remains in chapter 12 to test the comparative influence of various contextual factors on the centralization of the process and see whether the external control model achieves greater significance.

(iii) More consensus on problem solving is achieved under heterogeneous or dynamic environments, while environmental uncertainty is associated with more political behaviour and more problem solving dissensus.

(iv) Finally, only competitive pressure is associated with shorter decision making processes.

Some broad implications of potential importance to theory development in SDM may be drawn from these results. **Firstly**, results establish that the characteristics of SID processes are systematically related to a number of environmental factors.

Secondly, the chapter attempted to contribute to the theory in the area, since several researchers in the recent past (Miller and Friesen, 1983; Dutton, 1985; Langley, 1990; Dess and Rasheed 1991; Sharfman and Dean, 1991) have contended that there is no coherent theory on the impact of environment on strategic decision making processes. The results prove that different perceptions of environmental dimensions affect differently the characteristics of the processes followed, when making decisions of a strategic nature. The relationships found could lead to a much richer and integrated framework of the interaction between environment and decision processes. The very few counterintuitive results should not be considered as 'noise' or 'errors', but as diagnostic information that could further efforts to integrate various perspectives and to stimulate further research in the area.

It should be stressed, however, that the relationships examined, the hypotheses advanced and the results obtained, may suffer from the same limitations from which most of the research in the area suffers. These limitations have to do with the conflicting results evident in the area and ultimately with the lack of conceptual clarity about the meaning and interrelationships of environmental variables. According to Dess and Rasheed (1991), the conflicting results can be attributed to (i) incorrect hypotheses (ii) inadequate measures (iii) non-representativeness of the sample or (iv) a combination of the first three reasons.

A promising line of further research could consider the development of a generally accepted and unambiguous conceptualization of the environment as well as the development of a set of environmental dimensions in order to eliminate the fragmentation and contradiction. It is not important whether they will be objective, perceptual or mixed as long as they meet the previous criteria. Research along these lines would help to remove the doubt cast on the efficiency and practical usefulness of this body of theory and inquiry.

Chapter 9

Association Between Formal Planning Systems and SID Processes

9.1. INTRODUCTION

The literature on strategic planning is replete with studies arguing that formal planning systems (FPSs) are essential tools for managers, since they are designed with the aim to improve managerial decision making and contribute to more rational decision making (e.g. Kudla, 1976; Armstrong, 1982; Langley, 1988; Pike, 1989; Duncan, 1990). Mintzberg (1981) articulated this line attributing to planning four tentative characteristics: planning as future thinking, as programming, as integrated decision making, and finally as a formalized procedure and articulated result. This argumentation, together with the conventional management wisdom that planning significantly contributes to strategic decision making, may lead us to support the existence of a close link between FPSs and SID processes.

But the opposite line of argument also exists, understating the contribution of FPSs to strategic decision making. It has been convincingly argued that much of the actual decision making may take place outside formal planning systems (e.g. Hall, 1973; King 1983; Sinha, 1990), since it is managers who make strategic decisions and not FPSs. Hall (1973) was among the first to contend that most of the formal planning models do not seem to significantly influence the actual strategy formulation processes. This mismatch, he argued, may be attributed, among others, to such factors as: ill-grounded views about the process of strategic planning, inadequate consideration of the role of a model in the planning process, disassociation of FPSs from the arenas in which actual decision making takes place, irrationality of managers, inadequate 'institutionalisation' of FPSs, and finally an overarching emphasis on normative, theoretical frameworks, rather than on the actual processes of strategy formulation.

More recently Sinha (1990) validated the assumption that CEO or top management may make important decisions outside FPSs or without taking into account the input from FPSs. Empirical testing, generally supported the argument that the way FPSs were used, were not seen as indispensable by top managers. Based on this, Sinha argued that formal planning tends to be concerned more with the

administration of the planning process, than with shaping decision making processes and actual decision behaviour within the firm.

This apparent contradiction in the literature is far from being resolved. Indeed, despite the plethora of normative studies which take as granted the linkages between FPSs and strategic decision making processes, the area is almost devoid of large scale, empirical research providing specific quantitative results. With few exceptions (e.g. Sinha 1990; Foster 1986), empirical research has been scanty. Identifying relationships between dimensions of FPSs and characteristics of the process of making SIDs would be an interesting and potentially fruitful line of research in this rather unexplored area.

The present chapter aims to shed some light into the association between certain key dimensions of FPSs and the characteristics describing strategic investment decision processes. The chapter is organized as follows: sections 9.2 and 9.3 deal with the nature and dimensions of FPSs and make a quick review of the literature on FPSs, while section 9.4 briefly evaluates the literature on planning. Section 9.5 specifies the finally chosen planning dimensions. Next comes a theoretical examination of the association between FPSs and SID making processes. Finally, sections 9.7 and 9.8 report the empirical results and discuss on the conclusions and implications.

9.2. NATURE AND DIMENSIONS OF FPSs

Armstrong (1982 pp 198) defines the term **Formal Planning System (FPS)** as "*an explicit process for determining the firm's long-range objectives, procedures for generating and evaluating alternative strategies, and a system for monitoring the results of the plan when implemented*". Bazzaz and Grinyer (1981) identified the following seven types of contributions of FPSs in an organization: problem awareness, identification of strengths and weaknesses, information and communication, resource allocation, coordination and control, morale and industrial relations, and quantification.

Ramanujam et al. (1986) and Ramanujam and Venkatraman, (1987), developed a more elaborate classification of FPS characteristics i.e. system capability, functional coverage, use of analytical techniques, resources given to planning, attention to internal facets, attention to external facets and finally, resistance to planning. Two years later, Langley (1988) identified four roles of FPSs: public relation role, information providing role, group therapy role (communication of strategic vision and participation in it by various managers), and finally direction and control role.

In general, formal planning is seen by various researchers (e.g. Chambers 1984; Ramanujam and Venkatraman, 1987; Veliyath and Shortell, 1993) as a multi-dimensional set of activities serving multiple of objectives, which acts as a integral framework within which decision making takes place. Despite that, empirical research for reasons of convenience usually utilised a rather simplistic classification of firms into planners and non-planners.

Table 9.1 attempts a representation of selected research works appeared in the literature, together with the types of dimensions used by each of them. For reasons of space conservation no thick descriptions of this body of research are to be attempted. Instead, more attention will be devoted to delineating the various clusters of research.

9.3. RESEARCH STREAMS ON FPSs

The existing body of empirical work on FPSs can be divided into the following research streams: (i) examination of the research question of whether formal planning leads to superior performance, (ii) exploration of the impact of corporate environment (e.g. PEU, hostility) and other contextual dimensions (e.g. age of the firm, size, divisionalization, diversification) on FPSs, (iii) association between the content of strategy and FPSs, (iv) association between FPSs and strategic decision making processes, (v) finally, integrative research incorporating several contextual elements. The following paragraphs will briefly analyse each of these streams of research:

i 'Does Planning Lead to Superior Profitability?'

Much of the empirical research on planning systems revolves around the question of whether 'planning pays' (Ansoff et al. 1970). In other words, this research stream strives to find out whether the existence of FPSs contributes to the achievement of superior profitability. A very helpful analysis of the literature on FPSs and performance was initially attempted by Armstrong (1982). He concluded that empirical results in 10 out of the 15 studies supported the contention that planning leads to superior performance.

NAME OF THE RESEARCHER/(s)	CHARACTERISTICS OF FORMAL PLANNING SYSTEM (FPS)
1.LORANGE and VANCIL, 1977;	Creativity and Control
2.GRANT and KING 1979;	Reliance on Analytical Techniques
3.MINTZBERG, 1981;	-Future thinking -Programming -Integrated Decision Making -Formalized Procedure and Articulated Result
4.BAZZAZ and GRINYER, 1981;	-Problem Awareness -Identification of Strengths and Weaknesses -Information and Communication -Resource Allocation -Coordination and Control -Morale and Industrial Relations -Quantification
5.LINDSAY and RUE 1980;	-Planning Completeness -Planning Review Frequency -Planning Process Development -Immediacy of Goals -Planning Time Span -Open Systems Use
6.KING, 1983;	Resources Provided for Planning
7.ROBINSON and PEARCE II, 1983	Planning Formality Scale
8.JAVIDAN, 1984;	-Extensiveness of long-range planning effort -Decision Making Horizon -Value of Long-range Planning
9.RHYNE, 1985; and 1986;	-Planning Openness -Planning Horizon
10.RAMANUJAM et al. 1986;	-Use of Techniques -Functional Coverage -Attention to Internal Facets -Resistance to Planning -Attention to external Facets -Resources Provided to Planning
11.LANGLEY, 1988;	-Public Relation Role -Information Providing Role -Group Therapy Role -Direction and Control Role
12.SINHA, 1990;	-Contribution to Formulation and Implementation of Decisions
13.POWELL, 1992;	-Planning Skills
14.Veliyath and Shortell, 1993;	-Planning Implementation -Staff Planning Assistance in Strategic Planning -Market Research Competence -Key Personnel Involvement -Innovations of Strategies

Table 9.1. Chronological Representation of Selected Research Efforts on Formal Planning System Characteristics/Roles

Overall, an analysis of the current literature on the planning-performance relationship provides mixed and controversial results. A significant part of this research stream corroborates the hypothesized positive association between planning and performance (e.g. Ansoff et al. 1970; Ramanujam et al. 1986; Rhyne, 1986; Bracker and Pearson, 1986; Pearce et al. 1987), thus strengthening the argument that formal planning is an effective method in the attempt to improve financial performance. On the contrary, another part has failed to verify a statistically significant relationship (e.g. Kudla, 1980; Robinson and Pearce II 1983) or even reported a surprising negative relationship (Fulmer and Rue, 1974). Thus, the establishment of a relationship between FPSs and performance remains highly speculative, and open to debate.

ii Research on Planning and Context

Another line of inquiry (e.g. Lindsay and Rue 1980) focuses on the examination of external environment, and enterprise characteristics such as firm size, and age as contingent variables that have to be considered in designing long range planning systems. Findings, in general corroborate the existence of a strong positive relationship between environmental uncertainty and planning among large organizations, but failed to support the same association for the population of small firms (e.g. Lindsay and Rue, 1980).

Boulton et al. (1982) based on the constructs developed by Lindsay and Rue (1980), attempted to assess the impact of environmental characteristics (specifically PEU and PE) on the completeness of the long range planning process. Overall, they found that PEU moderates the relationship between environmental characteristics and industry groupings but does not significantly affect strategic planning. This line of research is continued by Javidan (1984), who states that PEU does not significantly influence long-range planning activities. On the contrary, the influence of PEU seems to be moderated by the perceived value of long range planning and the perceived need for internal change.

Grinyer et al. (1986) were among the first who attempted to relate the planning systems characteristics with a significant number of contextual variables within which the FPSs operate. They reported that size, environmental hostility, diversification and divisionalization are associated with various planning dimensions, but vulnerability of the core technology is the most important single determinant of corporate planning processes. Surprisingly, two years earlier in a similar study Javidan (1984) reported that size had no significant impact on long-range planning.

Generally, this body of research seems to provide very interesting though equivocal results concerning the association between environment and other contextual variables on FPSs.

iii Research on Planning and Content of Strategy

This body of research has indeed received very sparse empirical treatment. Pearce et al. (1987), one of the few who examined the association between grand strategy and planning formality reported results that indicate no significant differences in planning formality among the planning groups adopted.

iv Research on Planning and SDM Processes

As has been stressed in the beginning of this chapter, conventional management wisdom, that formal planning contributes to decision making, may lead us to support the existence of a close link between planning and decision making. Otherwise, far less empirical attention has been directed towards the actual linkages between FPSs and strategy formulation or strategic decision making processes (Nahavandi and Malekzadeh, 1993). Section 9.6 of the present chapter further sheds some light into this association and discusses the serious questions which have been raised about the usefulness of FPSs for strategic decision making (e.g. Armstrong 1982; King 1983; Sinha 1990). But regardless of which argument one accepts, one might be tempted to ask whether FPSs contribute at all to the making of SIDs, and if so which dimensions of decision making processes are influenced by the existence of FPSs.

v Integrative Research

Robinson and Pearce (1988), as well as Nahavandi and Malekzadeh (1993), acknowledged the lack of integration of research pertaining to FPSs and attempted to bridge this gap by simultaneously examining such factors as content of strategy followed, planning sophistication and corporate performance. Results broadly verified the hypothesis that firms with high-to-moderate sophisticated FPSs, which at the same time followed a consistent strategic orientation, tended to perform high. But planning does not seem to act as a panacea since FPSs sophistication does not enhance performance of firms with inconsistent or unsupported strategies (Robinson and Pearce, 1988). Several other research efforts (e.g. Rhyne, 1985) attempt to integrate such elements as corporate environment, planning sophistication, information systems and to advance our knowledge concerning the matching of various contextual factors influencing FPSs.

9.4. EVALUATION OF THE LITERATURE ON PLANNING

The previously attempted brief review of the planning literature, indeed, persuades the reader about the existence of some apparently confusing and contradictory results. This explains why this body of research has attracted severe criticism on various grounds.

First, severe criticism has been leveled at the poor theoretical grounding, the inappropriate and simplistic operationalization of variables measuring planning systems characteristics, and the use of constructs not having sufficient discriminating power (e.g. Kudla, 1980; Robinson and Pearce, 1983; Ramanujam and Venkatraman, 1987; Powell, 1992). Indeed, the initial wave of empirical research in the area (e.g. Fulmer and Rue, 1974; Kudla, 1980; Lindsay and Rue 1980) limit their efforts in classifying firms into two or three categories according to whether they are planners or non-planners or whether they engage in no formal planning, some formal planning or sophisticated planning. Wood and Laforge, (1981) were among the first who attempted to use more sophisticated scaling procedures (i.e. Guttman Scales) in their attempt to operationalize planning formality.

Second, the research has also been criticized for insufficient attention to various contextual factors (e.g. inter-industry differences, and market conditions) moderating the planning performance relationship (Kudla, 1980; Robinson and Pearce, 1988)

Third, it seems that sampling frames were biased towards large firms (Lindsay and Rue, 1980; Robinson and Pearce, 1983)

Fourth, only performance data are usually taken into consideration (Armstrong, 1982). On the contrary, other issues which emerge of greater potential importance to the organization are rather neglected in the literature. For example, Langley (1988) and Rhyne (1986), have noted that there is a remarkable lack of research emphasis on the roles FPSs really play within organizations and the extent to which they contribute to strategy formation and to strategic decision making.

Finally, it can also be alleged that most of the existing research does not establish any form of causality. Is it formal planning that leads to better performance, or is it the slack resources available to good performers that favour the development of formal planning systems? (Armstrong, 1982; Rhyne, 1986).

9.5. SELECTED DIMENSIONS OF FPSs

As noted by several authors (e.g. Chambers 1984; Ramanujam et al. 1986; Ramanujam and Venkatraman, 1987) FPSs should be seen as multi-dimensional, serving a number of objectives and acting as an integral framework within which decision making takes place. The present exploratory in nature study, however, will deliberately limit attention to only three dimensions and their interrelations with SID processes, rather than exploring all possible dimensions.

The first intends to measure the **degree of development of formal planning** within the company. It does so on five of the most popular domains of planning: production, sales, procurement, budget, and long range business plan. More specifically, it measures the existence of forward planning in each of these areas by means of five-point Likert-type scales (table 9.2). The scales are tailormade, taking into account the reality of the Greek business context and the possibility that a

number of the FPSs studied might be rather rudimentary. Indeed, we expected to find a number of companies in our sample where no formal planning effort takes place, as well as cases where extensive planning is conducted covering almost every domain of business activity. The measurement scale in this particular dimension ranges from '1' for companies which do not prepare a respective written plan to '5' when the time frame of the specific plan exceeds 3 years.

The second dimension considers the **depth with which selected analyses** may take place in the course of the formal planning effort (if any). The study uses a composite construct consisting of seven items, in a scale ranging from '1' (not at all analysed) to '7' (analysed in great depth). Items include demand analysis, alternative growth scenaria, SWOT analysis etc. Refer to table 9.2 for an explanation of the operationalization of the variable and the presentation of the variables used.

STRUCTURAL DIMENSIONS	OPERATIONALIZATION	LOCATION IN THE SECOND QUESTIONNAIRE	VARIABLES DERIVED FROM:	No.OF ITEMS IN SCALE	MEAN INTER-ITEM CORREL.	CRONBACH ALPHA
1.DEVELOPMENT OF FORMAL PLANNING OR PLANNING HORIZON	Composite variable consisting of four five-point Likert-type scales measuring the time frame (if any) covered by the following formal plans produced in written from: 1. production plan 2. sales plan 3. procurement plan 4 budget 5. long range business plan. The scale ranges from '1' we do not prepare such a written plan to '5' the time frame exceeds 3 years.	Page 368 Question No.16 items 1 to 5	Ideas expressed by Mintzberg, 1981; Quinn, 1980a; Rhyne, 1986; Lindsay and Rue, 1980; Javidan,1984; Kudla, 1976; Paine & Anderson,1977	5	.467	.814
2.DEPTH OF ANALYSIS IN PLANNING	Composite variable consisting of seven distinct seven-point scales measuring the depth with which the following analyses take place in the long range planning effort (if any): (1) parameters influencing demand (2) alternative growth scenaria (3) parameters influencing cost (4) strategic choices and alternative solutions (5) business risk (6) threats and opportunities (7) strengths and weaknesses. The scale ranges from '1'not at all analysed to '7'analysed to great depth	Page 368 Question No.17 Items 1 to 7	Key Supporting Literature: Hofer and Schendel,1978 Grant and King, 1979; Rhyne, 1985;	7	.87	.979
3.FORMALIZATION IN PLANNING	Composite variable consisting of seven five-point scales ranging from '1'strongly disagree to '5'strongly agree. The scales measure extent of: (1) formal functional area planning (2) active departmental participation (3) formulation of quantified goals (4) formalization of company objectives (5) existence of planning group or department (6) development of a favorable planning climate, and (7) existence of detailed action plans	Page 368 Question No.18 Items 1 to 7	Adapted from Wood and Laforge,1981;	7	.525	.886

Table 9.2. Dimensions of FPSs utilised in the course of this study

Finally, the third dimension refers to the **formalization of the planning effort.** It has been suggested by various researchers (e.g. Grinyer et al. 1986) as one of the most prominent characteristics of FPSs. The specific construct used, is adapted from the work of Wood and Laforge (1981). It measures the corporate planning formality, by means of Guttman scales. This offers the advantage of assuring better reproducibility and consistency of the measures, compared to other scaling methods (Wood and Laforge, 1981; Pearce et al. 1987). The specific scale has been extensively used and its appropriateness for use in manufacturing firms has also been confirmed (Pearce et al. 1987; Robinson and Pearce, 1988). We have adopted only seven of the initial eighteen dimensions proposed by Wood and Laforge (1981). These seven dimensions were preferred because they refer more to the long-term planning conducted rather than to short term budgeting practices. When factor analysed the seven dimensions produce only one factor, further verifying the appropriateness of the modified scale used.

As is shown in table 9.2 the finally constructed scales for the selected FPSs dimensions achieve high reliability levels. Moreover, as shown in table 9.3 all three dimensions of FPSs are highly correlated with an average Pearson correlation exceeding 0.8. This means that the three constructs used may measure dimensions of FPSs with high covariance, i.e. all exist in similar degrees in a firm.

	MEAN	S.D.	PLANNING HORIZON	DEPTH OF ANALYSIS	PLANNING FORMALITY
PLANNING HORIZON (FORPLANS)	3.1171	.7275	1.0000 P= .		
DEPTH OF ANALYSIS (DEPANAL)	3.4143	1.9803	.7988 [1] P= .000 [2]	1.0000 P= .	
PLANNING FORMALITY (PLANCLIM)	3.0347	1.1328	.7954 P= .000	.8585 P= .000	1.0000 P= .

Table 9.3 : Intercorrelations Among Planning Variables

[1] (Correlation Coefficient) [2] (Level of Significance)

9.6. HYPOTHESES

a. FPSs and Dimensions of Rationality, Reporting and Formality

As has been mentioned in the beginning of this chapter strategic planners view FPSs as essential tools for managers, since they are designed with the aim to contribute to more rational decision making (e.g. Kudla, 1976; Armstrong, 1982; Langley, 1988; Duncan, 1990). Moreover, it is alleged that one of the main contributions of the FPSs is towards increased creativity and control (Lorange and Vancil, 1977). This may be partly achieved by emphasizing future thinking, integrated decision making and formalized procedures (Mintzberg, 1981). Planning systems through their control and monitoring orientation are expected to be positively associated with more formal reporting activities (Grant and King, 1979; Mintzberg, 1981). In the same vein, Grinyer et al. (1986 pp 8) content that FPSs may experience positive associations with reporting and control activities. Moreover, there is enough evidence suggesting that formal planning systems may be also associated with more rule orientation during the making of strategic decisions.

Thus, in cases where FPSs are characterized by a long time-span, depth of analysis and formalization, the decision-making process in SIDs may be expected to be characterized by more rationality, more financial reporting activities and more extensive use of formal rules. At first, this may sound as a tautology, since by definition FPSs are expected to experience strong positive associations to all the above mentioned characteristics SID processes. But if we accept the view that much of the actual decision making may take place outside FPSs, then we may pursue the opposite line of reasoning, arguing for lack of association or for a weak association between dimensions of FPSs and SID processes.

Based on the above, the following tentative hypotheses are advanced.

H(p) 9.1,. FPSs dimensions are positively associated with more rational decision making processes.

H(p) 9.2,. FPSs dimensions are positively associated with financial reporting and rule formalization, during SID making.

b. FPSs and Decentralization-Lateral Communication

Another alleged contribution of FPSs to SIDs is by fostering greater participation. Quinn (1980a) based on a study of 10 large firms concluded that the most important contribution of FPSs was on influencing the process, by creating a network of information sharing and communication, and by imposing a future orientation. Indeed, FPSs are often used by various organizational actors as a vehicle through which ideas are articulated, a vision to the future is communicated, and personnel development is accelerated (Kudla, 1976; Bazzaz and Grinyer, 1981; Tregoe and Tobia, 1991). Thus, it is not surprising to contend that the existence of FPSs may foster participation and decentralization within the company (Kudla, 1976; Bazzaz and Grinyer, 1981), since organizational actors are expected to view FPSs as means through which they could effectively 'sell' ideas and visions and influence decision making (Langley, 1988).

H(p) 9.3,. FPSs will foster hierarchical decentralization and lateral communication during SID making.

c. FPSs and Political Behaviour-Dissensus

Another set of interesting questions revolves around the association between FPSs and political behaviour in SID processes. Langley (1988) raised the assumption that the planning process may be seen not only as a rational-analytic way to formulate plans and visions but also as a political-social process, where various stakeholders participate. If managers perceive planning systems as a means through which personal views are communicated, political aspirations take effect, corporate change is accelerated, and a congealing of ideas occur (Rhyne, 1986), then we might contend that formal planning may be associated with higher levels of political activities, since in cases where FPSs act as open fora we might expect that the political dimension will come into full play.

On the contrary, since FPSs may draw internal boundaries within which political actors operate, it is expected that problem solving dissensus, especially at the initial stages of the strategic decision making, will be reduced. That is, a negative association is expected to be found between FPS characteristics and problem solving dissensus. Robinson and Pearce (1988) lend credence to this view by arguing that comprehensive strategic planning acts as a monitor of consistent organizational behaviour. This may in turn mean that conflicting objectives especially at the initial stages of decision making may be minimized or that a better initial coordination is expected to be achieved.

Of course there exists the opposite line of thought, arguing that the initial stages of the decision making process are crucial in the subsequent actions taken and resources committed (Dutton et al. 1983; Thomas and McDaniel, 1990). Given the importance accorded to the shaping of the decision in its initial stages one should expect a positive association between planning characteristics and problem solving dissensus, since every stakeholder is expected to 'skew' the output of the initial stages in his/her preferred direction. In view of this dichotomy, we will let the empirical data reveal possible interrelationships. Based on the preceding arguments, we will only advance the following hypothesis.

H(p) 9.4,. FPSs are expected to foster political behaviour during the making of SIDs.

d. FPSs and Decision Duration

There is no literature on the expected association between FPSs and speed of decision making. One line of reasoning postulates that since FPSs contribute to more rational decision making then all the available information may be analysed more in-depth, alternative scenaria may be build, formal documents may be produced etc. This again, leads us to argue that FPSs may cause a delay in making SDs.

An opposite line of thought could argue that since FPSs may lead to systematic-effective decision making, it may also lead to more shortened, though still rational,

decision processes. We will let the empirical results to reveal possible interrelationships.

9.7. CORRELATIONS - DISCUSSION OF RESULTS

Table 9.4 presents the correlation results between FPSs characteristics and the characteristics of SID processes. Given the nature of the variables used, Pearson correlation coefficients provide the proper statistical technique for establishing the degree of association. A quick inspection of table 9.4, reveals that in total 16 out of the 27 relationships provide statistical significant associations, at a level of 5% or less. That is, about 60% of the total relationships are statistical significant at a level of $p<.05$ or less. Overall, results support the view that FPSs are strongly associated with the making of strategic decisions. The specific relationships found are in line with our hypotheses. More specifically:

Regarding the degree of *rationality-comprehensiveness* of strategic decision making processes, significant positive effects were found for all three dimensions of FPSs. The strong positive relationship between rationality and FPS's characteristics is in line with theoretical speculations arguing that FPSs are primarily designed with the aim to contribute to more rational/comprehensive decision making (Kudla, 1976; Armstrong, 1982; Langley, 1988; Duncan, 1990).

Moreover, all three correlation coefficients between FPSs characteristics and *financial reporting* proved to be statistical significant. This indicates that the examined FPSs characteristics are associated with more extensive project specific or SID specific financial reporting activities.

Particularly strong seem to be the effects of planning characteristics on the existence of *a set of formalized rules* guiding the process of strategic decision making. All correlation coefficients are positive and in the expected direction. Also, the existence of *formal coordination devices* seem to relate significantly with the characteristics of FPSs. All correlation coefficients are in the correct direction and two out of the three are statistically significant.

The association between FPSs characteristics and both *hierarchical decentralization and lateral communication*, appears to be quite strong (four out of six correlation coefficients are statistical significant), and the direction of correlation coefficients are in line with our hypotheses and could provide interesting suggestive evidence. An examination of table 9.4 reveals that FPSs significantly contribute to higher lateral communication, i.e. communication among various departments in the organization.

As regards to hierarchical decentralization, results indicate a positive although not always statistical significant association with dimensions of FPSs. Only the planning formality dimension provides statistical significant confirmation of the hypothesized relationship. at a level lower than $P<.05$. This result corroborates the prevailing view that planning systems may act as catalysts by fostering greater hierarchical decentralization (Kudla, 1976; Quinn, 1980a; Langley,1988; Tregoe and Tobia, 1991).

Another set of interesting results revolves around the notions of *political behaviour and problem solving dissensus* and their association with the adopted FPSs characteristics. As presented in table 9.4 only one out of the six possible relationships provide statistical significant results. Despite this, the direction of the association raises several interesting research questions.

First, empirical results offer statistical significant evidence to the positive association between the constructs of planning formality and politicization of the decision making process. The correlation coefficients between politicization on the one side and depth of analysis and planning horizon on the other, although not statistical significant, are in the same direction. This association is in line with the widely announced view that planning, through greater participation and more open exchange of ideas, may positively associate with overall political behaviour (Rhyne, 1986; Langley, 1988).

Second, it was somewhat surprising to find that FPSs characteristics seem to be negatively related to problem solving dissensus. Indeed, all three coefficients between dimensions of FPSs and problem solving dissensus are negative though marginally insignificant, indicating that FPSs tend to lower the dissensus during the initial stages of the decision making process. We should remind the reader that the problem solving dissensus construct consists of three scales measuring the degree of agreement on the proper solution to the decision, the proper methodology for developing a solution and on the objective sought by the decision. By examining in greater detail this result, we come to the conclusion that when a strategic decision is under examination it seems that the existence of FPSs leads to increased consensus on the methodology, the objectives and the appropriate solution. This is in line with Robinson and Pearce (1988) who contend that FPSs act as a monitor of consistent organizational behaviour. We should stress that this may be true concerning the boundaries within which decision makers act, the framework within which organizational actions takes place, but as far as the whole process of decision making is concerned, results corroborate the view that overall FPSs lead to greater political activity (Langley, 1988).

Finally, surprisingly little, is revealed by the association of FPSs to the *duration* of SDs. None of the three correlation coefficients in table 9.4 provided any statistical significant coefficients, but it is interesting to note the consistently negative although insignificant association between dimensions of FPSs and duration-timing of the process. This association warrants further empirical attention since it may point to a tendency of FPSs to speed the making of SIDs, e.g. by providing a framework against which SIDs are easier to evaluate.

	FORMAL PLANNING SYSTEMS (FPSs) CHARACTERISTICS		
SID PROCESS CHARACTERISTICS	PLANNING HORIZON	DEPTH OF ANALYSIS	PLANNING FORMALITY
RATIONALITY/ COMPREHENSIVENESS (RATIONAL)	.5565 [1] P= .000 [2]	.5367 P= .000	.5859 P= .000
FINANCIAL REPORTING (REPOR2)	.2494 P= .019	.2446 P= .021	.2393 P= .023
SET OF FORMALIZED RULES (FORMA1)	.3818 P= .001	.5192 P= .000	.3365 P= .002
FORMAL COORDINATION DEVICES (FORMA3)	.1684 P= .082	.2168 P= .036	.2734 P= .011
HIERARCHICAL DECENTRALIZATION (HIERDECE)	.0913 P= .226	.1392 P= .125	.2494 P= .019
LATERAL COMMUNICATION (DEPADECE)	.4628 P= .000	.4897 P= .000	.5515 P= .000
POLITICIZATION (POLITICI)	.1408 P= .123	.1382 P= .127	.2126 P= .039
PROBLEM SOLVING DISSENSUS (DISSENSU)	-.1222 P= .157	-.1642 P= .087	-.0621 P= .305
GESTATION AND DURATION PROCESS TIME (TIMING2)	-.0596 P= .312	-.0677 P= .289	-.0272 P= .412
Mean	3.1171	3.4143	3.0347
Standard Deviation	.7275	1.9803	1.1328

Table 9.4 : Correlations Between FPSs Characteristics and SID Process Characteristics

[1] (Correlation Coefficient) [2] (Level of Significance)

9.8. CONCLUSIONS - IMPLICATIONS

Strong associations are found between certain attributes of the system employed in forward planning, and the decision-making process used in handling strategic choices. Specifically, the FPS of each enterprise is characterised on three dimensions: the time-span covered, the depth of analysis and the extent of formalization. In place of the vague assertion encountered in the literature, that much of important decision-making may occur outside FPSs, the research shows that where the enterprise's planning system is relatively formal, the decision-making process in a SID was relatively systematic (mainly characterized by rationality, strong lateral communication, and systematic reporting). Despite the fact that Pearson correlation coefficients as well as the nature of the variables used do not allow us to jump into causal inferences, we may risk to speculate that especially decisions of a clearly strategic nature may tend to be the focal point of FPSs and to receive much support from them. This, again, may imply that FPSs exercise a selectivity in their contribution to decisions, by contributing more to strategic decisions than to tactical or operational ones. A similar assertion has been raised by Sinha (1990).

The main implication of our empirical results for planners (provided that we assume some type of causal linkage between FPSs and SID processes), is that they verify their important role in influencing the making of SIDs. We should stress for one more time that this significant influence does not necessarily mean that FPSs produce strategy, but results indicate that they may influence the way in which strategic decisions are taken, and thus to an extent, strategy itself (Mintzberg et al. 1976). Indeed, by influencing SID-specific formal reporting activities, coordination devices and lateral communication, FPSs seem to act as input to strategic decision making. Again this finding does not necessarily mean that FPSs act as a substitute for strategy making. Certainly, they can be of value to management as they contribute to more rational decision making and provide "a forum for announcing, selling, negotiating, rationalizing and legitimizing strategic decisions" as well as a forum for " input into and communication of strategic visions" (Langley, 1988 pp 49).

Need for Further Research

As pointed out by several researchers (e.g. Sinha 1990; Foster 1986; Armstrong, 1982; Langley, 1988; Rhyne, 1986; Powell, 1992) the field of strategic management has been characterized by an overarching emphasis on exploring the impact of formal planning systems on financial performance. On the contrary, it is time to start examining the process benefits of planning (Ramanujam and Venkatraman, 1987) and to explore the role of formal planning systems on the making of decisions (Sinha,1990 pp 480) or even look beyond simple statistics and examine the impact of planning systems on strategy formulation (Langley, 1988).

The empirical findings of this chapter indicate that there exists a fruitful line of inquiry in the exploration of the possible impact of FPS on the strategic decision making. We believe that future research should direct its attention to examining whether specific planning characteristics as those analysed here or other, are associated with specific SID process characteristics, and whether one can influence the decision making by manipulating various FPS characteristics.

Moreover, future research might also pay attention to whether specific FPSs characteristics contribute more or less to specific categories of SIDs like modernisation of production facilities, or major new product introductions (Sinha, 1990). Our sample was rather small to deal reliably with such distinctions in the present research.

Chapter 10

Association Between Top Management Characteristics and SID Processes

10.1. INTRODUCTION

The present chapter investigates the role and significance of the strategic choice model in SID making. As has been stressed in chapter 4, the strategic choice model emphasizes the role of decision makers and centres around the fact that strategic choices incorporate a large behavioural component and hence reflect the idiosyncrasies of decision makers (March and Simon, 1958; Child 1972; Bourgeois 1984; Noel 1989). The chapter follows three primary aims: first to conduct a brief literature review on the 'upper echelons' perspective, second to advance specific hypotheses concerning the association between top management characteristics and SID making processes, and third to test these hypotheses and discuss the empirical results.

10.2. LITERATURE REVIEW ON TOP MANAGEMENT

Is not within the primary objectives to in-depth analyse the relevant literature, since the research on leadership is vast and ever expanding by drawing and integrating aspects from various disciplines, like sociology, organizational behaviour, cognitive psychology, political studies, agency theory, and game theory (Hambrick, 1989; Pettigrew, 1992). Instead, attempt will be made to selectively delve into theory and research on top management, and to delineate the major **streams of research** characterizing the area without becoming submerged in vast theoretical debates.

Several terms have been used in the past to describe these actors and the process through which change emerges. Such terms include *top management*, (e.g. Bantel and Jackson, 1989; D'Aveni, 1990; Mazzolini, 1980; Shrivastava, 1986), *managerial elites* (Hage and Dewar, 1973; Pettigrew, 1992), *decision makers or dominant coalition* (Cyert and March, 1963; Child, 1972; Norburn and Birley, 1988), *upper echelons* (Hambrick and Mason, 1984), *strategic leadership* (Hambrick, 1989; Shrivastava and Nachman, 1989), *executive team* (Fredrickson and Iaquinto, 1989). In the course of this efforts these terms will be used interchangeably to describe top management teams.

Pettigrew (1992) divided the literature on managerial elites into six broad categories: (1) interlocking directorates, (2) study of boards and directors, (3) chief executive compensation (4) chief executive selection and succession (5) the composition and correlates of Top Management Teams (TMTs) (6) studies of strategic leadership, decision making and change. The present thesis concerns itself with streams 4,5 and 6 which center around the characteristics of individual managers and TMTs and are trying to relate them to various other organizational processes and outcomes. In order to take a closer look at the developments in these three streams we will attempt to reclassify them into seven sub-streams. The following few paragraphs will attempt to pinpoint their major characteristics.

i. TM and Corporate Strategies

This line of research centres around the content of strategies and examines the extent to which top management personality and demographic characteristics are associated with specific organizational strategies (e.g. Gupta and Govindarajan,1982; Miller and Toulouse, 1986; Gupta, 1986; Finkelstein and Hambrick, 1990), or deliberate strategic change (e.g. Greiner and Bhambri, 1989). It is largely based on the premise that different strategies pose different task demands. Thus, in order to successfully implement specific strategies, companies need to hire managers with appropriate personalities, skills, values and competencies (Gupta and Govindarajan, 1982; Leontiades, 1982; Gupta, 1984).

For example, Miller and Toulouse, in an empirical investigation of 97 firms, revealed that CEO's flexibility may be associated with niche strategies, CEO's need for achievement (NACH) with marketing oriented strategies and CEO's locus of control with strategies of product innovation. Finkelstein and Hambrick (1990) revealed that TMT tenure is associated with persistence in the content of strategies followed, and reduction in the use of novel or unique strategies.

This research path has been further preoccupied with the issues of whether and how a company can select the appropriate managers to implement given strategies, what are the needed managerial qualities (e.g. personality traits, skills, behaviours) to successfully implement a given corporate mission (e.g. Szilagyi and Schweiger, 1984; Gupta, 1986; 1984), and finally whether companies instead of selecting managers who fit strategies use the alternative method of internal management development (e.g. Kerr and Jackofky, 1989).

ii. TM and Innovation

The focus of this research stream is innovation and personality properties which foster innovation within organizations (Hage and Dewar, 1973; Keller and Holland, 1978; Miller and Toulouse, 1986; Bantel and Jackson, 1989; Romano, 1990). Miller and Toulouse (1986) reported that specific CEO characteristics (e.g. internal locus of control) may be associated with the pursuit of more innovative product strategies. Keller and Holland, (1978) reported that personality characteristics and not demographic characteristics were associated with innovative behaviour, and Hage and Dewar (1973) found that the values of the TMT are more important predictors of innovation than the values of the CEO alone, both being statistically significant. Khan and Manopichetwattana (1989) in studying small firms reported no correlation between innovation and locus of control (LOCON).

In an effort to explain the relative significance of various antecedents of innovation Meyer and Goes (1988), found that demographic characteristics of top managers (i.e. education, tenure) generally were not as important predictors of innovation's assimilation as were other contextual variables, and variables pertaining to characteristics of the specific innovation. Finally, Bantel and Jackson (1989) reported that executive educational levels were positively associated with organizational innovation. Undoubtedly, this is an interesting research stream in which substantial research is under way.

iii. TM and Performance

This stream of theory and research is mainly an extension of the research on fit between managers and strategies; it posits that organizational processes and outcomes (e.g. choices, performance levels) may be predicted and attributed, among others, to the characteristics of top managers (e.g. Child, 1974; Gupta and Govindarajan, 1982; Begley and Boyd, 1986; Norburn, 1986; Norburn and Birley, 1988; Eisenhardt and Schoonhoven, 1990). One of the first attempts in the area belongs to Lieberson and O'Connor (1972). They supported the argument that leadership has but limited effect on organizational indicators such as profits, due to inertial forces. Two years later (Child, 1974) reported weak relationships between managerial variables and organizational performance, but attributed this to inadequacies in the measurements or in the choice of variables which were investigated.

From then on a significant stream of research efforts attempted to discard this hypothesis and re-emphasize the role of upper echelons. For example, Gupta and Govindarajan (1982) attempted to explore the impact of risk behaviour, tolerance for ambiguity and experience background on the overall corporate performance. Hambrick and Mason (1984) advanced specific hypotheses concerning the impact of CEO's level of education, age, experience, functional track and financial position on corporate performance. Norburn and Birley (1988), reported that managerial demographic characteristics to some extent predicted performance variations within industries and across industries. Begley and Boyd (1986) attempted to associate specific personality dimensions with financial performance but with rather poor results. Finally, Finkelstein and Hambrick (1990) proved that organizations with long-tenured TMTs exhibited organizational performance closely adhering to industry average. Others have examined the association between performance and such characteristics as TMT's consensus, tenure, heterogeneity and structure (e.g. Murray, 1989; Priem, 1990). In general, despite some inconclusive evidence research supports the contention that **top managers do make a difference.**

iv. TM and Organizational Structure

Focusing on CEO personality dimensions this stream attempts to associate managers with specific structural configurations and prove that personality may be among the major determinants of organizational structure (Miller and Droge, 1986; Miller and Toulouse, 1986).

To give but a few examples, Miller and Toulouse (1986) provided empirical support to the contention that CEO flexibility is expected to be associated with more informal structures, and CEO need for achievement with more formal-sophisticated structures. Furthermore, Miller and Droge (1986), found that CEO's NACH was strongly associated with organizational centralization, formalization and integration.

v. TM and Strategic Decision Making Processes

If we adopt the view of Shrivastava and Nachman (1989), that strategic leadership emerges in strategic decision-making processes, where the process becomes the vehicle for individuals and groups to shape organizational strategies, then it seems extremely important to further explore the association between characteristics of the strategic leadership and the process.

Unfortunately, to the best of our knowledge very few empirical research efforts exist (e.g. Stein, 1981a; b), attempting to offer quantitative support to the hypothesized linkages between top management characteristics and *decision making processes of a clearly strategic nature.* Almost two decades ago Taylor and Dunnette (1974) recognized the existence of limited knowledge on the association between decision maker characteristics and decision making processes, and attributed this to the difficulties of assessing multi-stage processes and decision characteristics. Indeed, the literature on organizational decision making, especially during the seventies, has been remarkably devoid of models which incorporate the impact of personality into the process (Mc Millan, 1980; Hambrick, 1988; 1989).

Among the recent research efforts in this stream is the work of Fredrickson and Iaquinto (1989) which explores the impact of executive team tenure on strategic decision making processes, and the work of Miller and Toulouse (1986) relating several personality characteristics to various decision making dimensions like analysis, liaison devices etc.

Using a scenario approach to decision making and based on the Jungian typology Nutt (1986 b; c), provided support to the hypothesis that decision style of top executives influences choices in simulated action taking. Section 10.4 further explores the association between selected TM characteristics and SID processes and advances specific hypotheses.

vi. Integrative Research

Recently we have seen enough evidence of a deeper research interest on the existence of variables moderating the relationship between top management characteristics and organizational processes and outcomes. Such efforts include for example the search for the impact of setting variables (e.g. structure, environment) on the association between top management characteristics and performance (Gupta and Govindarajan, 1982; Hambrick and Mason, 1984). Recently, Finkelstein and Hambrick (1990) examined the role of managerial discretion as a potential moderator of the association between executive characteristics and organizational outcomes, with very encouraging results.

Overall, we may argue that research on upper echelons has obtained a considerable momentum. Significant research is currently on the way and it seems that upper echelons have already started to receive a fair share of attention in the strategic management literature (Eisenhardt and Schoonhoven, 1990).

10.3. COMMONLY USED MANAGEMENT CHARACTERISTICS

As previously mentioned, a significant number of characteristics have been used in the attempt to approach and quantify managerial elites. For example, Hambrick

and Mason (1984) emphasized the need to shift attention to such observable managerial *demographic characteristics* as age, tenure, functional background, education, socioeconomic roots, financial wealth, and ownership position. They stressed the lack of empirical literature and considered the use of demographic measures as more suitable to personality characteristics especially during the initial steps of this emerging research stream. Weick (1969 pp.31-32) layed his emphasis on what he called 'observable individual behaviours' to encourage the use of demographic variables in the study of top managers. Again, Pfeffer (1983) emphasized the theoretical and empirical value of demographic measures over such aggregated perceptual measures as commitment, conflict, aspiration levels etc. In general, demographic variables are seen as possessing the necessary qualities to influence various intervening variables and processes and to prescribe organizational outcomes (e.g. Norburn and Birley, 1988).

By contrast, Lawrence (1991) puts into dispute Pfeffer's view about the validity of demographic characteristics in predicting organizational processes and outcomes, and considers such an attempt as quite simplistic, because it "moves researchers further and further away, both empirically and theoretically, from the actual mechanisms underlying observed relationships" (Lawrence, 1991; pp 21).

Further support to Lawrence's view is offered by Haley and Stumpf (1989), who argued that demographic characteristics of top managers such as age, education, experience, and socioeconomic status, despite their objectivity and ease of acquisition, are not likely to directly influence decision making processes. They viewed *personality dimensions* as much better predictors of decision making behaviour, since they make individuals to express a different behaviour in gathering information, generating and evaluating alternatives.

Indeed, several research efforts (e.g. Miller et al. 1982; Sturdivant et al. 1985; Miller and Droge, 1986) have provided sufficient evidence that personality variables, borrowed from related areas, may be considered as especially useful in predicting both business level strategies and decision making processes. Dutton and Jackson

(1987), went one step further to propose specific personality characteristics (e.g. locus of control) that might influence SDMPs. In general, a number of personality measures such as risk proneness, tolerance of ambiguity, NACH, leadership style, have been proposed as suitable for studying decision making (e.g. Gupta, 1984; Begley and Boyd, 1986; Miller et al. 1988; Sabherwal and Grover, 1989; Langley, 1990).

Finally, Jungian personality typologies are considered as providing the ground on which to build theories between managerial cognitions and strategic decision making (Nutt, 1986 b,c; Haley and Stumpf, 1989; Sabherwal and Grover, 1989). Their major advantage over single personality dimensions is that they provide a more integrated method in assessing 'strategic elites'.

On the other hand personality measures have been accused for being too much time consuming and since managerial time is usually at a premium, top managers may be reluctant to participate in psychological batteries (Hambrick and Mason, 1984).

Table 10.1 presents a number of research efforts using various top management characteristics. Such characteristics include *team heterogeneity* (e.g. Hambrick and Mason, 1984; Wiersema and Bantel, 1992), *team size* (Hage and Dewar, 1973), *team tenure* (Meyer and Goes, 1988; Fredrickson and Iaquinto, 1989; Usdiken, 1992), *team continuity* (Fredrickson and Iaquinto, 1989), *top management awareness* (Hambrick, 1981) *level of education* (Keller and Holland, 1978; Hambrick and Mason, 1984; Wiersema and Bantel, 1992; Usdiken, 1992), *skills-experiences* (Gupta and Govindarajan, 1982; Gupta, 1984), *personalities* (Budner, 1962; Rotter, 1966; Eysenck and Wilson, 1975; Steers and Brauenstein, 1976; Sturdivant et al. 1985; Miller and Toulouse, 1986; Miller and Droge, 1986; McCrae et al. 1986; Hodgkinson, 1992), *values* (Hage and Dewar, 1973; Palmer et al. 1981), *cognitive styles* (Taylor and Dunnette, 1974; Nutt, 1986 b,c; Hurst et al. 1989; Haley and Stumpf, 1989; MacCrimmon and Wehrung, 1990), *organizational familiarity* (Gupta, 1984),

In summary, it seems that two different types of measures are commonly used to assess TM: (i) demographic characteristics and (ii) personality characteristics. Again, these measures may be applied to CEOs or individual members of the TMT.

NAME OF THE RESEARCHER (s)	VARIABLES UTILISED
1.BUDNER, 1962;	-Tolerance of Ambiguity
2.ROTTER, 1966;	-Locus of Control
3.RIZZO, et al. 1970;	-Role Conflict -Role Ambiguity
4.EYSENCK, and WILSON, 1975;	-Achievement Orientation -Risk Attitude
5.STEERS and BRAUENSTEIN, 1976;	-Need for Achievement -Need for Autonomy -Need for Affiliation -Need for Dominance
6.KHANDWALLA, 1977;	-Company's Risk Taking Philosophy
7.HAYNES et al. 1978;	-Type A Behaviour
8.NIGHTINGALE, 1981;	-Attitude towards Change -Commitment to the Organization
9.ETTLIE, and O' KEEFE, 1982;	-Innovativeness
10.MILLER and TOULOUSE, 1986;	-Flexibility of Personality -Internal Locus of Control -Need for Achievement
11.HALEY and STUMPF, 1989; and HURST et al. 1989;	Jungian Personality Types
12.GUPTA and GOVINDARAJAN, 1982;	-Risk Propensity -Experience Background -Tolerance for Ambiguity
13.FREDRICKSON and IAQUINTO,1989;	-Executive Team Tenure -Level of Team Continuity
14.GUPTA, 1984;	-Organizational Familiarity -Willingness to take risk -Industry Experience -Self vs Other Directedness -Functional Background -Interpersonal Orientation
15.McCLELAND, 1961;	-Need for Achievement
16.STURDIVANT et al. 1985;	-Conservatism
17.BEGLEY and BOYD, 1986;	-Need for Achievement -Tolerance of Ambiguity -Locus of Control -Type A Personality -Risk Taking Propensity
18.TAYLOR and DUNNETTE, 1974;	-Age -Dogmatism -Experience -Risk taking Propensity -Intelligence -Cognitive Complexity -Motivation -Vocational Interests -Personality traits
19.McCRAE, R.R. et al., 1986;	-Neurotisism -Agreeableness -Extraversion -Conscientiousness -Openness
20.JACKSON, 1976;	Contains a Number of Personality Characteristics Including -Anxiety -Risk Taking -Conformity -Breadth of Interest -Self Esteem -Value Orthodoxy -Innovation -Tolerance -Social -Responsibility -Value Orthodoxy Participation
21.MacCRIMMON and WEHRUNG, 1990;	-Risk Return -Business Utility -Debt Gambling -Risky Assets
22.KHAN and MANOPICHETWATTANA,1989	-Locus of Control -Education -Years at Firm -Age
23.SCHNEIDER and DeMEYER, 1991;	-Age -International Experience -Years of Education -Years Abroad -Years of Experience
24.PRIEM, 1990;	-TMT Homogeneity -TMT Processes -TMT Structure
25.BANTEL and JACKSON, 1989; and WIERSEMA and BANTEL, 1992;	-TMT Age -TMT Heterogeneity -TMT Tenure -Higher Academic Training -TMT Education
26.HODGKINSON, 1992;	-Locus of Control

Table 10.1. Indicative Top Management Characteristics Reported in the International Bibliography

10.4. OPERATIONALIZATION OF FINALLY CHOSEN MANAGEMENT CHARACTERISTICS

The recent stream of research triggered by Hambrick and Mason (1984), in its attempt to achieve better results, initiated a new approach to studying strategic elites by focusing on *the whole TMT* instead of individual managers. There exists, till now, rather limited empirical evidence as to whether it is the CEO or the TMT which better predicts organizational processes and outcomes (Hambrick, 1988). Hage and Dewar (1973), reported that the characteristics of the TMT (the elite as they named it) as a whole, are better predictors of innovation compared to characteristics of individual managers. Cyert and March (1963) also argued about the influence of the dominant coalition on corporate goal structure.

Thus, we need to focus on a number of significant characteristics that can accurately describe both CEO and TMT personality. Hage and Dewar (1973) identified three different ways in which one may approach characteristics of the dominant actors in organizations. The first is to measure the characteristics of the leader alone, the second to measure the characteristics of the 'strategic elites' (e.g. TMT) and the third to measure the characteristics of the 'value climate' (i.e. values of the dominant coalition usually participating in SDM, irrespective of position in the chain of command). The thesis will attempt to measure all three categories of characteristics despite the fact that the attempt to approach the characteristics of the real dominant coalition is a quite complicated task posing further methodological and other problems.

Both *personality* and *demographic* characteristics will be used. Moreover, various constructs will be used to measure both *CEO* characteristics and characteristics of the *top management team*. This will help us find out whether it is the CEO, the top management team or both that play an important role in the making of strategic decisions. The research by no means aims to develop comprehensive new measures of personality. Instead, attempt will be exercised to select broadly used dimensions.

i CEO's Personality Characteristics

Several personality characteristics have been used in the past in an attempt to reliably measure managerial personality. Miller and Toulouse (1986), and Miller and Droge (1984) have chosen CEO's flexibility, CEO's need for achievement, and CEO's LOCON because they have been found to be strongly associated with organizational processes and outcomes. Four CEO personality characteristics are incorporated in the present work: NACH, tolerance of ambiguity, LOCON, and risk attitude.

NACH is, according to several writers, one of the basic characteristics positively associated with entrepreneurial success (Mc Cleland 1961; Gough, 1976). In the course of this study Steers and Braunstein's (1976) scale is used (see table 10.2 and the second questionnaire) not only because it requires minimal completion time by subjects but also because the authors of the original study have shown that the instrument exhibits acceptable levels of discriminant, predictive and convergent validity, as well as reasonably high levels of test-retest reliability and internal consistency.

A seven-point Likert-type scale was preferred with options categories ranging from (1) never to (7) always. The response format reflects an active attitude towards decision making and personal goal setting. The six items selected for the scale provided a coefficient Alpha of 0.70, which is highly acceptable given the type of measure, and is comparable to the coefficients obtained from other studies (e.g. Steers and Braunstein, 1976; Begley and Boyd, 1986).

The risk attitude is among the major personality dimensions and is found to be associated with various strategic configurations. Risk attitude is a psychological disposition of individuals to show varying degrees of risk taking behaviour. In the course of this study fifteen, five-point Likert-type scales measuring disagreement/agreement were drawn from the Jackson's Personality Inventory (1976; 1977) and from Eysenk and Wilson (1975). Particular care was exercised to select items approximating the reality of business situations and represent what Jackson et al. (1972) call 'monetary risk'. Cronbach Alpha reliability coefficient for the resulting

construct is 0.73 (refer to table 10.2), which is marginally lower than the respective reliability coefficient reported by Jackson (1977).

The characteristic **locus of control (LOCON)** expresses an individual's perception of how much control he is able to exert over the events of his life. LOCON is among the most popular measures of personality and is of major significance in understanding the nature of learning processes in different kinds of situations. The internal person believes that the consequences of his behaviour stem from his own efforts, while the external believes that the events of his life are beyond his control and attributable to chance or fate (Rotter, 1966). Nine items (including two fillers) drawn from the original Rotter scale were used and some minor modifications were attempted so as to focus on business issues rather than general life events (refer to table 10.2 and the second questionnaire). Alpha reliability coefficient was a rather moderate .50.

The final personality characteristic is **tolerance of ambiguity**. It expresses the ease with which a person deals with ambiguity. The nine items used were drawn from Budner (1962). Again, reliability obtained from the scale is moderately high (see table 10.2), but comparable to the alpha coefficients reported by other research efforts (e.g. Budner, 1962; Begley and Boyd, 1986).

ii CEO's Demographic Characteristics

Several observable demographic characteristics have been reported as reliably describing characteristics of 'managerial elites'. Such characteristics include tenure, number of years in the same position, age, functional background, experience, educational status, socioeconomic roots and financial position (e.g. Keller and Holland, 1978; Pfeffer, 1983; Volkema, 1983; Hambrick and Mason, 1984; Finkelstein and Hambrick, 1990). *Education* is considered as particular important since recently Hitt and Tyler (1991), found that the type of academic education influenced the modes of strategic decision making followed. *Tenure* has also been proved to have a profound influence on organizational processes and outcomes (e.g. Finkelstein and

Hambrick, 1990). The present research has used three variables (i) length of service in the company (number of years with the company), (ii) length of service in the same position (number of years in the same position) and (iii) level of education.

TOP MANAGEMENT CHARACTERISTICS:	OPERATIONALIZATION AND SOURCES OF VARIABLES:	LOCATION IN SECOND QUESTIONNAIRE	No.OF ITEMS IN SCALE	CRONBACH ALPHA
1.CEO's NEED FOR ACHIEVEMENT (NACH)	Steers and Brauenstein, 1976; and Eysenck and Wilson, 1975;	Pages 369-370 Question No.28 items 1 to 6	6	.70
2.CEO's RISK PROPENSITY	From Jackson's Personality Inventory (3 out of 8 items) and Eysenck and Wilson's Risk Propensity Scale (12 items)	Page 370 Question No.29 Items 1 to 15	15	.73
3.CEO's INTERNAL LOCUS OF CONTROL	Modified from Rotter, 1966;	Page 371 (1) Question No.30 Items 1 to 7,10	7	.50
4.CEO's INTOLERANCE for AMBIGUITY	Modified from Budner, 1962;	Pages 371-372 Question No.31 Items 1 to 9 (2)	9	.56
5.CEO's NUMBER OF YEARS WITH THE COMPANY	Ideas drawn from: Pfeffer, 1983; Hambrick and Mason, 1984; Fredrickson and Iaquinto, 1989;	Page 369 Question No.24	1	—
6.CEO's NUMBER OF YEARS IN THE SAME POSITION	Ideas drawn from: Pfeffer, 1983; Hambrick and Mason, 1984; Fredrickson and Iaquinto, 1989; Donaldson and Lorsch, 1983;	Page 369 Question No.25	1	—
7.CEO's LEVEL OF EDUCATION	Ideas drawn from: Hambrick and Mason, 1984; Haley and Stumpf, 1989; Keller and Holland, 1978;	Page 369 Question No.26	1	—
8.TOP MANAGEMENT's AGGRESSIVE PHILOSOPHY	Adapted from Khandwalla, 1977;	Page 372 Question No.32 Items 1,4,5	3	.70
9.TOP MANAGEMENT TEAM's LEVEL OF EDUCATION		Page 369 Question No.23	1	—

Table 10.2. Operationalization and Reliability of Top Management Characteristics [3]

1. Items 8,9 on page 371 of the second questionnaire are according to Rotter (1966) fillers, and hence are not used in the construction of the scale.
2. Item 10, on page 372 of the second questionnaire was omitted for reliability reasons.
3. All composite variables were averaged by the number of items in the scale, so as to result in scales ranging from 1-5 or 1-7.

iii TMT Characteristics

This research adopts two variables in order to approach this rather complicated issue. The first, attempts to measure the *degree of aggressiveness of what Hage and Dewar (1973)* call 'behavioural elite group' (i.e. the CEO and all those participating in major decisions). The second, approaches the level of education of what Hage and Dewar (1973) name as formal elite.

The first variable was drawn from Khandwalla (1977), and Stein (1980) and attempts to measure the attitude of the TMT as a whole and not the attitude of the CEO alone. Khandwalla, by using a six-item scale attempted to measure top management's inclination towards risk. Stein (1980) also attempted to measure top management's aggressive behaviour by means of a construct partly drawn from Khandwalla. This construct approached aggressiveness as a component of active search for new opportunities, strong emphasis on innovations and diversification of products and services.

In the present research top management's aggressiveness was measured by a scale comprised of three items. The first item measures top management's innovative behaviour, the second the degree of 'undo-the competitors' attitude, and the third the top team's risk propensity. When factor analysed the three items provide one factor explaining 62% of total variance. The variable measuring innovative attitude loads significantly and is followed by 'undo the competitors' attitude and by risk seeking behaviour of top management. The combination of these three items is explained as top team's *aggressive attitude* towards innovation, competitors, and investments. The reliability of the resulting three-item scale (Alpha=.70), is considered as very satisfactory (Van De Ven and Ferry, 1979).

The second variable is an objective one and attempts to capture the percentage of managers, down to the level of departmental heads, who are *university graduates.* Pettigrew (1992) refers to the question of how one can determine the members of the TMT. Is top management consisted by the executives on the board of directors, or the two highest executive levels, or the team consisted of the players participating in crucial decision making? In operationalizing this variable, we followed Hage and Dewar (1973) and considered only the CEO and departmental heads as participants in the TMT.

Table 10.3 presents the intercorrelations among TM characteristics. As is shown the various dimensions selected do not experience high correlation coefficients. This may mean that the nine variables selected tap different managerial dimensions.

	TOP MANAGEMENT CHARACTERISTICS								
	CEO'S PERSONALITY CHARACTERISTICS				CEO's DEMOGRAPHIC CHARACTERISTICS			TOP MANAGEMENT TEAM's CHARACTERISTICS	
	1	2	3	4	5	6	7	8	9
1. CEO's NEED FOR ACHIEVEMENT (NACH)	1.0000 [1] P= . [2]								
2. CEO's RISK PROPENSITY (RISKY)	-.0130 P= .458	1.0000 P= .							
3. CEO's INTERNAL LOCUS OF CONTROL (LOCON)	-.1163 P= .169	.3822 P= .001	1.0000 P= .						
4. CEO's INTOLERANCE OF AMBIGUITY (INTOLERA)	.0314 P= .398	-.2651 P= .013	-.3626 P= .001	1.0000 P= .					
5. NUMBER OF YEARS WITH THE COMPANY (YEARCOMP)	-.0728 P= .275	-.2568 P= .016	-.1539 P= .102	.2643 P= .014	1.0000 P= .				
6. YEARS IN THE SAME POSITION (POSITION)	.1439 P= .117	.0155 P= .449	.0736 P= .272	.0647 P= .297	.5941 P= .000	1.0000 P= .			
7. CEO's LEVEL OF EDUCATION (EDUCAT)	.0543 P= .327	.1689 P= .081	-.0341 P= .390	-.2187 P= .034	-.3937 P= .000	-.3456 P= .002	1.0000 P= .		
8. PERCENTAGE OF UNIVERSITY GRADUATES	-.4270 P= .000	.1880 P= .060	.0016 P= .495	-.0851 P= .242	-.0045 P= .485	-.1368 P= .129	.1702 P= .080	1.0000 P= .	
9. TOP MANAGEMENT TEAM'S AGGRESSIVE PHILOSOPHY	.1193 P= .163	.4360 P= .000	.1827 P= .065	-.0976 P= .211	.0082 P= .473	.1105 P= .181	.1557 P= .099	.2088 P= .041	1.000 P= .
MEAN	2.150	3.138	.787	2.984	18.142	8.742	3.357	85.014	3.352
STANDARD DEVIATION	.627	.563	.195	.544	10.252	7.653	.885	16.611	1.176

Table 10.3 Intercorrelations Among Top Management Characteristics

[1] (Correlation Coefficient) [2] (Level of Significance)

10.5. ASSOCIATION BETWEEN TM CHARACTERISTICS AND SID PROCESSES

As has been mentioned in the beginning of this chapter, if strategic decisions incorporate a large behavioural component, then to some extent they may reflect the ideology, values, and attitudes of decision makers. With respect to these assertions we can hypothesize that different values, attitudes and ideologies of managerial elites may lead to different decision making processes and to different decision outcomes (Hambrick and Mason, 1984).

Despite the reasonableness of this argument, it is interesting to note that the counter-argument has also been posed. For example, Lieberson and O'Connor (1972), provided support to the contention that leadership, due to inertial forces, has but limited effect on organizational indicators such as profits. Several theoretical papers argue that in larger organizations the impact of CEO upon organizational variables may be minimal (e.g. Hall, 1980; Hannan and Freeman, 1977) Further empirical support is provided by Lyles and Mitroff. They argue that:

" It is still not clear what influence managerial characteristics have on the organizational problem-formulation process. The results of the study indicate that these characteristics were not significant. This might indicate that the problem-formulation process is at an organizational rather than an individual level, in which case individual managers might not have a strong influence on a process which was affected by several or even many other people. Since there are strong reasons for expecting individuals to influence the problem formulation process, we hope that future studies will determine more precisely the relative influence of individual and organizational characteristics". (Lyles and Mitroff, 1980).

Finally, Stein (1980; pp 332) lends empirical support to this view by contending that: "*it seems that leadership does not constitute a meaningful contextual domain influencing strategic procedures*". But one should exercise great cautiousness in accepting the view that management characteristics may not play an important role in shaping SDMPs. Nevertheless, the contribution of Lyles, Mitroff and Stein is considered as important because it provides an alternative approach to the 'upper echelons' perspective.

The following paragraphs will attempt to analyse the literature with respect to the adopted management characteristics and advance specific hypotheses.

10.5.1. CEO PERSONALITY CHARACTERISTICS AND SDMPs

i. Need for Achievement (NACH) and SDMP

According to several writers the *need for achievement (NACH)* is one of the basic characteristics positively associated with entrepreneurial success and superior performance (e.g. Mc Cleland 1961; Begley and Boyd, 1986). Moreover, it has been shown to have very broad consequences for decision making modes. Miller and

Toulouse (1986) argued that CEOs with high NACH are dominated by a desire to influence and control the context in which they operate. Thus, they prefer to act upon and not to react to significant organizational issues. Following this line of reasoning we may hypothesize that being in dominance they will exert their influence and power to carefully monitor and analyse strategic issues, thus resulting in an analytic/rational mode of decision making.

Moreover, CEOs characterized by high NACH are expected to require control over the organization, better monitoring of performance and coordinated actions (Miller and Droge, 1984). This again, may favour more formalized ways of decision making, and more financial reporting activities. In their attempt to achieve coordination and control high achievers will favour organizational specialization and offer a significant role to formal coordination devices (Lawrence and Lorsch, 1967; Miller and Toulouse, 1986).

Another consequence of such a dominant personality may be the centralization of authority, in the hands of the CEO or a small team of decision makers (Miller and Droge, 1984; Miller and Toulouse, 1986). Such a centralized management provides adequate information to the CEO and makes him feel in absolute control.

Following this line of reasoning, we may also speculate that CEO domination over organizational issues is expected to minimize politically riven decision-making together with problem solving dissensus. Finally, decisions may be expected to be taken fairly quickly, resulting in less decision duration (Miller and Toulouse, 1986).

The previous discussion provides the foundations for specifying the following hypotheses:

H(p) 10,1,. CEO's characterized by high need for achievement are expected to influence SIDs in the direction of more rationality and financial reporting activities.

H(p) 10,2,. CEO's with high NACH will be involved in more centralized processes (both hierarchical centralization and lack of extensive lateral communication).

H(p) 10,3,. CEO's characterized by high NACH will minimize politicization and dissensus in decision making and contribute to shortened decision duration.

ii. Risk Attitude

The *risk attitude* measures the willingness of a CEO to take risks. This personality characteristic is considered to be among the most important in predicting organizational processes and outcomes (Gupta, 1984; Gupta and Govindarajan, 1982; Nahavandi and Malekzadeh, 1993), although empirical results were sometimes inconclusive or even insignificant (e.g. Brockhaus, 1980).

Taylor and Dunnette (1974) in their examination of individual decision maker attitudes, reported that high risk taking propensity was typical of individuals who made rapid decisions. Extending this finding to organizational decision making we may hypothesize that CEOs characterized as risk takers may influence the process in the direction of more rapid decision making. Moreover, risk prone executives may be based on limited search when making decisions of a strategic nature, be reluctant to delegate decision making authority and generally be based on intuition, instead of rational analysis.

Of course there also exists an opposite line of argument which argues that risk takers do not necessarily rely on limited evidence. Taylor and Dunnette (1974) reported that risk takers were found to extract as much value as possible from the normally limited search for information they conducted. Due to the inconclusiveness of the available research, instead of advancing specific hypotheses we will let the results reveal possible significant associations.

iii. Locus of Control and SDMP

One of the most widely used personality dimensions (Jennings and Zeithaml, 1983) is the extent of perceived internal/external control or else *locus of control.* LOCON has been mostly used to predict organizational performance (e.g. Brockhaus, 1982; Begley and Boyd, 1986; Miller and Toulouse, 1986) as well as innovative behaviour (Durand and Shea, 1974; Brockhaus, 1975; Miller and Friesen, 1982) providing consistently positive relationships. Despite its extensive use in the relevant research, it has been accused of not adequately capturing the sequential and

processual elements in decision making (Haley and Stumpf, 1989).

It has been found that CEO's with an internal locus of control are more likely to favour decentralization in decision making and more organic structures (Runyon, 1973; Miller and Toulouse, 1986). They may also engage in more proactive strategies and more planning and rational decision making (Miller et al. 1982). This again may imply the lack of extensive formal rules to be followed during the making of strategic decisions (Miller and Toulouse, 1986). This hypothesis may be further supported by the fact that internal executives have been found to be more resilient in their behaviour (Begley and Boyd, 1986), thus favouring more relaxed, less formalized processes.

Begley and Boyd (1986) reported that external locus of control was found to be associated with powerlessness. Reversing this line of reasoning we may contend that internal CEOs will have much power within the organization, which again is expected to function as a mechanism of minimization of political behaviour within the company. Hence, we expect companies having CEO's with higher internal locus of control to experience less problem solving dissensus in attacking strategic issues and less politicized SID making processes. This hypothesis is further supported by the work of Goodstadt and Hjelle (1973) who reported that externals are more likely to utilise a coercive power base, while internals were more likely to rely on persuasive forms of power. In line with the research and reasoning laid out above, the following propositions might be set forth:

H(p) 10,4,. Internal CEO's are more likely to favour rational decision making processes, together with more financial reporting activities.

H(p) 10,5,. Internal CEO's are expected to favour the existence of more organic structures and less formal rules.

H(p) 10,6,. Internal CEO's are more likely to favour decentralization (both hierarchical and departmental).

H(p) 10,7,. Internal CEO's are more likely to exercise their persuasive power and minimize dissensus and political behaviour in SID processes.

iv. Intolerance of Ambiguity

Tolerance of ambiguity expresses the ease with which a person deals with ambiguity. The opposite, intolerance of ambiguity, is the tendency of decision makers to perceive ambiguous situations as threatening (Budner, 1962). This characteristic is considered to be among the major personality characteristics predicting organizational processes and outcomes since the way a manager deals with ambiguous information may, in turn, distort not only the process but also the outcome in a case of a SID. A person characterized by a high tolerance of ambiguity is expected not only to be able to cope with novel, ill-structured SIDs, but also to seek novelty and ill-structuredness. CEO's tolerance of ambiguity has been found to favour the strategies of innovation, since these incorporate and create ambiguity (Gupta and Govindarajan, 1982).

Intolerance of ambiguity has been also associated with stereotypic categorization of novel stimuli. The views of rigid-intolerant persons are often undifferentiated from situation to situation and since they are not prone to recast their response repertoire, they recognize fewer possibilities for action (Begley and Boyd, 1986, pp 155).

Intuitively, it would follow that when an intolerant CEO is confronted with an ambiguous situation (such as a SID), his anxiety level would increase. To reduce this anxiety, he might seek as much information as possible (Phillips et al. 1983). This will lead him to conduct rational analysis, to seek as much financial information as possible and to delegate power and responsibility to others so that they can provide assistance. Since very little is known about the actual strategic behaviour of top managers with high or low tolerance of ambiguity, we will let the empirical results reveal possible important relationships instead of engaging in speculative assumptions.

10.5.2. CEO's DEMOGRAPHIC CHARACTERISTICS AND SDMP

i. CEO's Tenure (Years of Inside Service and Years in the Same Position)

Based on the 'socialization' argument advanced by Thompson (1967), and Tushman and Romanelli (1985), we may argue that the longer time executives stay with a company the more likely it is that they start getting inculcated in the company's way of thinking and acting. This management longevity fosters a shared understanding of issues by managers, a common vocabulary, a reliance on 'true and tried' decision practices and the like (Cyert and March, 1963; Staw et al. 1981; Katz, 1982). Indeed, organizational tenure has been found to be associated with higher commitment to the status quo and to the values of the firm, as well as with reluctance to change (Staw and Ross, 1980).

CEO's tenure may also have a profound impact on the communication patterns with subordinates, favouring standardized ways of communication (Katz 1982), and developing greater levels of social integration and more effective patterns of communication (Wiersema and Bantel, 1992). Over time, TMT members become adept at getting or sharing input and facilitating productive debates and discussions (Zenger and Lawrence, 1989; Wiersema and Bantel, 1992). Moreover, based on the theory of CEO discretion (Finkelstein and Hambrick, 1990), one may hypothesize that through the years he/she will try to form a TMT of his/her choice thus minimizing political debates and dissensus. In the same vein, O'Reilly et al. (1989) showed that tenure homogeneity was positively related to social integration at a TMT level, which again implied less politicization.

Such a climate of common beliefs among managers that evolves through time, except from the possible positive effects that may come from more decentralized, participative decision making, may also function in a detrimental way by becoming a substitute for thought in strategic decision making (Tushman and Romanelli, 1985). This again may imply that, unless there exists an extremely efficient TMT, management tenure may be associated with less rational-comprehensive decision making processes and restricted information processing (Katz, 1982).

Indeed, tenure either in the company or in the CEO position has been assumed to relatively limit the perspectives of executives. As Hambrick and Mason (1984; pp 200) contend:

"executives who have spent their entire careers in one organization can be assumed to have relatively limited perspectives. In extreme cases where the entire top management team has risen solely through the organization, it is likely that it will have a very restricted knowledge base from which to conduct its limited search".

Recently, Miller (1991), found that firms with long-tenured CEOs were less likely to have produced strategies and structures which successfully matched environmental requirements. It is also possible that through the years the dominant coalition enlarges and incorporates more decision makers from various functions, thus resulting in greater hierarchical decentralization and lateral communication, at least among departmental heads.

Contrary to these arguments, Fredrickson and Iaquinto (1989), based on empirical data from two different industries, supported the opposite line of argument. They found that change in executive team tenure as well as the level of TMT's continuity were positively and significantly associated with change in comprehensiveness for both industries. These results seriously questioned the applicability of various theories of organizational socialization (Thompson, 1967) and group decision making (Janis, 1972) in the context of SDM, and suggested that several theories have to be refined and reconceptualized before they can be applied at the strategic apex.

The previous discussion provides the foundations for specifying the following hypotheses:

H(p) 10,8,. CEO's tenure may be associated with less rational SID processes, and less financial reporting activities.

H(p) 10,9,. CEO's years of inside service may be associated with more hierarchical decentralization and lateral communication.

H(p) 10,10,. CEO's tenure may be associated with less politicization and dissensus in making strategic decisions.

ii. CEO's Level of Education

Level of education as a demographic characteristic is seen as an indicator of a person's cognitive preferences and values. The specific variable has also been used in the past as a variable attempting to explain organizational performance, the amount of innovation and the receptivity to new ideas (e.g. Keller and Holland, 1978; Hambrick and Mason, 1984; Bantel and Jackson, 1989; Romano, 1990). Only a handful of studies on education examine the impact of the amount of education on SDMPs.

Hambrick and Mason (1984) believe that the major impact of a well-educated CEO might be in the formation of the dominant coalition by placing in managerial positions educated managers. The correlation coefficients among TM variables presented in table 10.3 further support this argument by revealing a statistical significant relationship between CEO's education level and percentage of top managers being university graduates.

High levels of education are found to be associated with high capacity for information processing and more analysis and search for information (Schroder et al. 1967; Dollinger, 1984). Thus, it is assumed that the higher the CEO's level of education the more rational-comprehensive decision making processes are expected to be found. This may be attributed to the fact that well educated managers are found to demand more detailed information in resolving issues (O'Reilly, 1982). This may further imply that education might tend to positively associate with need for more financial reporting, more coordination devices, and probably more participation. Further extending this line of argument, we may expect well educated CEO's to be more powerful, thus minimizing political behaviour and dissensus when making strategic decisions.

But we should mention the opposite line of findings (Nutt 1986 b) which reports that executive educational level has a modest effect on decision making, by lowering the perception of risk and enhancing the project adoption rate.

Thus, the following propositions might be set forth:

H(p) 10,11,. The higher the CEO's level of education the more we expect to witness rationality, financial reporting activities and formal coordination devices in making strategic decisions.

H(p) 10,12,. Well educated CEOs are expected to foster hierarchical decentralization and lateral communication.

10.5.3. TMT CHARACTERISTICS AND SDMPs

i Top Team's Level of Education

The same arguments and hypotheses with those advanced when examining CEO's level of education may be advanced for the level of education of the TMT, but here we expect the associations to be much stronger since a team of well educated executives will be oriented toward organizing and rationalizing (Hambrick and Mason, 1984), and show an inclination toward innovativeness and strategic change (Wiersema and Bantel 1992).

When top managers are well educated we expect to find a professional team which again may, according to Hambrick and Mason (1984; pp 201), have a profound effect on the "administrative complexity and sophistication (thoroughness of formal planning systems, complexity of structures, coordination devices, budgeting detail) of firms". Moreover, well-educated managers may be expected to show higher levels of knowledge and ability to perform better, thus contributing to more rational approaches to decision making and more creative solutions to complex problems (Bantel and Jackson, 1989).

The existence of many well educated executives may also represent multiple sources of power and expertise, possibly having varying views about organizational phenomena. Thus, we may expect well educated individuals to heavily bear on the process of SID making in an attempt to skew the outputs of the process in their preferred direction, thus causing politicization. A counterargument to this would be that a TMT consisted of well-educated managers may be efficient enough to quickly reach the optimal solution, thus minimizing political processes.

Several studies (e.g. Wagner et al. 1984; Michel and Hambrick, 1992) support the contention that TMT homogeneity aids communication and collaboration and may be positively associated with consensus in the making of strategy. The greater the percentage of managers who are university graduates, the higher the homogeneity of the TMT concerning this allegedly important demographic characteristic. Thus, irrespectively of the degree of political behaviour during the process of SID making, we may expect to witness less problem solving dissensus among strategic elites as to the basic objectives sought by the specific SID. These patterns may suggest the following:

H(p) 10,13,. The greater the percentage of university graduates within TM ranks the more we expect to witness more rationality and more financial reporting activities in making strategic decisions.

H(p) 10,14,. Well educated TMTs are expected to foster broader hierarchical and departmental participation.

H(p) 10,15,. TMTs consisted of well educated managers are expected to encounter more political activities in the making of SIDs.

H(p) 10,16,. Well educated TMTs will experience less dissensus in SID making.

ii TMT's Aggressive Philosophy

Intuitively, one may be tempted to link TMT's aggressive philosophy towards competitors, innovative actions and risky projects with bold actions based on intuition and limited search. On the contrary, an aggressive TMT is hypothesized (e.g. Stein, 1980) not only to make more explicit analysis of alternative ways of action, but also to take advantage of more rational analysis and more financial reporting during the making of SIDs.

To follow an aggressive strategy top management may need all the available information. If we consider that middle management and individual departments are particularly good sources of specialized information it is obvious that top managers may want to take advantage of such sources. This again may imply greater

hierarchical decentralization and lateral communication. The creation of a formal structure capable of providing the needed information may be among the primary objectives. Thus, an aggressive philosophy may be positively associated with the existence of some type of formal structure to aid decision making.

Moreover, in order to achieve its offensive goals, management may seek to keep political debates and destructive problem solving dissensus at a minimum. As Stein (1980) contends, aggressive top management will tend to dominate group processes, resulting most frequently in consensus behaviour and less politicality on the part of decision making groups.

Finally, aggressive TMTs are expected to utilise every source of sustainable competitive advantage. Shortened decision processes, which do not lack rationality at the same time, may offer top management the competitive edge to overcome competitor's actions and to dominate the market. Thus, we may expect aggressive behaviour to be associated with less decision duration.

The concepts outlined above suggest many propositions. Five of these are:

H(p) 10,17,. Aggressive management behaviour is expected to be associated with more rational analysis and more financial reporting activities.

H(p) 10,18,. Aggressive management behaviour is expected to be associated with the existence of formalized rules when making SIDs.

H(p) 10,19,. Aggressive TMT attitude is expected to be associated with more hierarchical decentralization and lateral communication.

H(p) 10,20,. Aggressive management behaviour is expected to be associated with less politicization and problem solving dissensus.

H(p) 10,21,. Aggressive management behaviour is expected to be associated with shortened SID processes.

10.6. CORRELATIONS - DISCUSSION OF RESULTS

Table 10.4 presents the correlation results between top management characteristics and the characteristics of the processes followed. Given the nature of the variables used, Pearson correlation coefficients provide the proper means of establishing the degree of association between the two groups. A quick inspection of table 10.4 reveals that in total 15 out of the 81 relationships provide statistical significant associations, at a level of 5% or less. That is, about 19% of the total relationships are statistical significant at a level of $p<.05$ or less. At first sight it seems that empirical data establish a rather weak association between the two groups of variables. Because the research evidence provides support for some hypotheses while not doing so for others, it is important that the results be carefully interpreted for both managerial and future research purposes. It therefore seems reasonable to analyse separately CEO's personality characteristics, CEO's demographic characteristics and TMT's characteristics.

i CEO's Personality Characteristics

As is evident from table 10.4 CEO's personality characteristics appear to be particularly loosely related to variables describing SID making processes. Only two out of thirty-six possible associations proved to be statistical significant at al level of 5% or less. In particular, none of the three hypotheses advanced for NACH has been confirmed by our empirical data. All correlation coefficients proved to be insignificant. Also note the general absence of significant correlations between CEO's locus of control and SID processes.

Concerning CEO's risk attitude, only one relationship is supported by empirical data. This relates to the tendency of risk-prone CEO's to favour lateral communication among various departments during the decision making processes. Surprisingly, this comes in direct contradiction with the prevailing view that risk takers are normally associated with personally received, rapid decisions (Taylor and Dunnette,1974). Moreover, as has been expected risk prone CEOs are associated with less formalized rules (statistical significant relationship at $p<.10$).

Finally, intolerance of ambiguity produces only one statistical significant association and this happens to be counterintuitive. More specifically CEO's intolerance of ambiguity appears to be negatively associated with the existence of formal coordination devices.

In general, results indicate that CEO's personality characteristics are rather weak predictors of SID making behaviour. Despite the existence of a few significant associations we cannot take them at face value. There is always the possibility, since we do not witness any significant pattern in the associations, (only 6% of the possible associations proved significant) that these few statistical significant relationships are due to chance.

ii CEO's Demographic Characteristics

It can be noted from table 10.4 that several significant associations exist between CEO's demographic characteristics and SID processes. As far as the rationality notion is concerned, it seems that neither tenure, nor CEO's level of education play an important role. Thus, hypotheses *H(p) 10,8, and 10.11* do not receive empirical support.

On the contrary, we may contend at a 10% level of significance that CEO's number of years in the company may be associated with less financial reporting activities (thus offering partial support to the second part of H(p) 10,8). Similarly, CEO's level of education appears to be positively associated (at a 10% level of significance) with more financial reporting activities. Also note the general absence of significant correlations between rule formalization and either tenure or level of education.

	TOP MANAGEMENT CHARACTERISTICS								
	CEO'S PERSONALITY CHARACTERISTICS				CEO's DEMOGRAPHIC CHARACTERISTICS			TOP MANAGEMENT TEAM's CHARACTERISTICS	
SID PROCESS CHARACTERISTICS	CEO's NEED FOR ACHIEVEMENT	CEO's RISK PROPENSITY	CEO's INTERNAL LOCUS OF CONTROL	CEO'S INTOLERANCE OF AMBIGUITY	No.OF YEARS WITH THE COMPANY	No.OF YEARS IN THE SAME POSITION	LEVEL OF EDUCATION	PERCENTAGE OF TOP MGRs UNIVERSITY GRADUATES	TMT'S AGGRESSIVE PHILOSOPHY
RATIONALITY/ COMPREHENSIVENESS	-.0249 [1] P= .419 [2]	.1409 P= .122	.1330 P= .136	-.1470 P= .112	.0812 P= .252	.1114 P= .179	.1068 P= .189	.3903 P= .000	.3920 P= .000
FINANCIAL REPORTING	-.1496 P= .108	.1185 P= .164	.0619 P= .305	-.1528 P= .103	-.1592 P= .094	-.0651 P= .296	.1954 P= .053	.2532 P= .017	.2624 P= .014
SET OF FORMALIZED RULES	.1399 P= .124	-.1583 P= .095	.0002 P= .499	.0592 P= .313	.0498 P= .341	-.1010 P= .203	-.0436 P= .360	.1931 P= .055	.2580 P= .016
FORMAL COORDINATION DEVICES	.0913 P= .226	.0887 P= .233	-.0433 P= .361	-.3682 P= .001	.0625 P= .304	.2202 P= .033	.2443 P= .021	.0376 P= .379	.1788 P= .069
HIERARCHICAL DECENTRALIZATION	-.1234 P= .154	.0615 P= .307	-.0753 P= .268	-.0333 P= .392	.3748 P= .001	.3634 P= .001	-.1498 P= .108	-.0049 P= .484	.2043 P= .045
LATERAL COMMUNICATION	-.0003 P= .499	.2291 P= .028	.0221 P= .428	-.1681 P= .082	.1160 P= .169	.1886 P= .059	.0980 P= .210	.2225 P= .032	.6197 P= .000
POLITICIZATION	-.0581 P= .316	-.1198 P= .162	-.0778 P= .261	-.1024 P= .200	-.0102 P= .467	.0731 P= .274	-.0727 P= .275	.2147 P= .037	-.0946 P= .218
PROBLEM SOLVING DISSENSUS	-.0760 P= .266	-.0236 P= .423	.0263 P= .414	-.1829 P= .065	.0288 P= .406	.0800 P= .255	.0049 P= .484	-.1377 P= .128	-.0678 P= .288
GESTATION AND DURATION PROCESS TIME	-.0180 P= .441	.0650 P= .297	.1552 P= .100	-.1122 P= .177	.1243 P= .153	.0790 P= .258	-.1333 P= .136	-.0840 P= .245	-.1832 P= .064

Table 10.4 Correlations Between Top Management Characteristics and SID process Characteristics

[1] (Correlation Coefficient) [2] (Level of Significance)

Two particular relationships raise some issues that bear further discussion. First, it emerges from the data that CEO's tenure is strongly associated with the existence of more formal coordination devices to help in making specific SIDs. This result is in line with what Katz (1982) argues about the association of tenure with standardized ways of communication. Second, CEO's level of education has also been found to be

associated with the existence of formal coordination devices. This again, is in line with Hambrick and Mason (1984) who argue about the formal establishment of the dominant coalition, as well as with Schroder et al.(1967) and Dollinger (1984).

Perhaps the most noteworthy finding concerning CEO's demographic characteristics is the consistency with which tenure is associated with more hierarchical decentralization. This is in line with the argument that CEO's tenure has a profound impact on the communication patterns with subordinates, favouring standardized ways of communication (Katz 1982), and fostering greater decentralization, and more effective patterns of communication and input sharing (Wiersema and Bantel, 1992). Results concerning lateral communication support the same association but at a 10% level of significance. On the contrary, CEO's level of education does not seem to bear any association with any form of decentralization during decision making.

Finally, political behaviour, dissensus and decision duration do not seem to experience any consistent association with CEO's demographic characteristics.

iii TMT Characteristics

We have so far examined the association between CEO's characteristics and SID processes, with rather poor results. On the contrary, if we focus on TMT characteristics, it seems that the whole picture is reversed. Indeed, nine out of the eighteen possible relationships provide statistical significant results at least at a 5% level of significance. Again, if we consider statistical significance at a level of 10% the percentage of significant associations approximates 70% of all possible relationships. This is perhaps the most noteworthy finding visible in table 10.4, indicating the vital importance of the TMT as a whole in the formation and making of SIDs.

In particular, TMT's aggressive philosophy appears to be strongly associated with rationality, financial reporting, as well as rule formalization and to some extent with the existence of formal coordination devices. Thus, hypotheses *H(p) 10,17*, and *H(p) 10,18*, receive support at least at a 10% level of significance.

Another noteworthy finding is that top team's aggressive philosophy is associated with both hierarchical decentralization and lateral communication when deciding on SIDs. The lack of any relationships between top team's aggressive philosophy and political behaviour is rather surprising. The correlation coefficient although in the correct direction is insignificant.

A final noteworthy association exists between TMT's aggressive behaviour and decision duration. As is seen from table 10.4 aggressiveness is associated (at a 10% level of significance) with shortened decision duration. This association is in line with our hypothesis and supports the contention that the pursuit of competitive advantage, when linked with aggressive behaviour, is expected to be associated with quicker decision making processes, which do not lack rationality.

Concerning TMT's level of education the results reveal some interesting relationships. As has been hypothesized the percentage of university graduates in TM ranks appears to be strongly associated with rationality, financial reporting, as well as rule formalization and to some extent with the existence of formal coordination devices. Thus, H(p) 10,13, advanced is supported. These findings are in line with Hambrick and Mason (1984), Wiersema and Bantel (1992) and Bantel and Jackson (1989). Another noteworthy finding is that TMT's level of education is positively associated with more lateral communication, as well as with more politicization during the making of SIDs. If we adopt the assumption that expertise resulted from formal education brings power, then the existence of many well educated managers in the top management team may imply a division of knowledge and power, which again may be associated with higher politicization.

10.7. CONCLUSIONS - IMPLICATIONS

The main thrust of the present chapter has been to examine the extent to which certain characteristics of the CEO and the TMT are likely to be associated with specific decision making behaviour. According to Gupta (1984), the crucial question is not *whether* managers matter but *how much* do they matter. The results of the present research supported the view that *individual managers* viewed under two different conceptual lenses (i.e. personality characteristics and observable demographic characteristics) do not seem to be significantly associated with the way SIDs are made.

The emerged lack of significant association between specific CEO personality characteristics and SID processes is not surprising. Several other studies (e.g. Phillips et al. 1983) have also reported that neither locus of control nor tolerance of ambiguity affected behaviour towards the use of such contextual variables as communication networks. The findings of this research are also in line with Schneider and DeMeyer (1991), who reported that individual demographic characteristics do not seem to play a significant role in affecting both interpretation and responses to strategic issues.

On the contrary, results do not seem to be in line with Miller and Toulouse (1986) who have argued that CEO personality characteristics, are related to aspects of strategic decision making processes. The findings also differ from those of Norburn and Birley (1988), who contend that age, years of experience and function influence risk-attitude, innovativeness and corporate performance. This emerging lack of association may be plausibly explained by the fact that in larger organizations CEOs and other influential actors do not perform in absolute freedom. They rather act within the constraints and limitations posed by the setting in which they operate. Indeed, in larger organizations power and influence may escape from the hands of a single organizational actor and may be shared to a number of executives, all of which form the dominant coalition.

This again may imply that we should be extremely cautious when arguing on the impact of personality and/or demographic variables on SDMPs. Initial correlation results indicate that such characteristics do not seem to provide a reliable base for explaining actual strategic decision making behaviour.

The theory concerning the association between managerial demographic characteristics and performance is based on the assumption that managers directly influence the making of strategic decisions, which in turn may shape the content of strategy and that strategies ultimately may affect corporate performance. Instead of studying all these complex relationships most of the researchers in the area simply associate CEO's characteristics with performance, or innovativeness (e.g. Khan and Manopichetwattana, 1989). Results, are rather equivocal.

Based on the results of this chapter, we see that there exists no significant association between the characteristics of individual managers (e.g. CEO) and SID processes. This again may question the soundness-appropriateness of the above mentioned chain of relationships. One then may be tempted to ask whether it is fruitful to explore such complicated relationships, and infer causal and direct relationships. This research by no means intends to negate the significance of the contribution made by various research efforts in the area. It merely aims to highlight the numerous difficulties and caveats in untangling and identifying the determinants of corporate processes and outcomes. Moreover, we should not jump into quick conclusions before analysing the results of chapter 12, which integrates all the contextual domains into a number of regression models.

On the contrary the particularly strong association between TMT's characteristics and SID processes lends itself to various explanations. **First**, results support *the upper echelons* perspective of Hambrick and Mason (1984), and Hambrick, (1988) who content that the characteristics of the elite inner circle are more important than those of the CEO or any other individual manager in predicting strategic decision processes. Thus instead of examining individual managers' characteristics research should be directed at examining the characteristics of TMTs.

Indeed, our data seem to imply that in todays rapidly changing conditions strategic decision making tends to be a shared effort and not a one-man show. Similar results were obtained by Gupta (1988), who suggested that a stronger relationship with strategy will be found if top management teams, rather than individual managers or CEOs, are analysed. Moreover, results corroborate with recent empirical research efforts (e.g. Norburn and Birley, 1988; Bantel and Jackson, 1989; Murray, 1989) suggesting that TMT characteristics outweigh CEO characteristics in predicting organizational processes, innovativeness, performance etc.

Results also lend empirical support to the small-sample clinical research performed by Barwise, Marsh and Wensley (e.g. Barwise et al. 1986 b; Marsh et al. 1988 b) in large diversified corporations. They have stressed the fact that top management is not just a ritual when SIDs are made. On the contrary, top management directly intervenes in the process by questioning assumptions, testing for commitment, setting limits and deadlines, imposing project-specific criteria, appointing managers and protecting its interests. In that sense the TMT should be the focus of subsequent research in the area.

Second, the results of this investigation directly question a part of the empirical literature (e.g. Lieberson and O'Connor, 1972; Hannan and Freeman, 1977; Lyles and Mitroff, 1980; Stein, 1980) which contends that leadership variables account only for a relatively small fraction of the explanation of actual decision behaviour, and that leadership does not constitute a very useful dimension contributing to the explanation or prediction of the selection of a strategic decision approach. The results of the present chapter suggest that TMT may decisively influence the direction of firms through their strategic decision making processes.

Third, this chapter provides encouragement to those interested in pursuing the 'upper echelons' perspective introduced by Hambrick and Mason (1984). We found that certain TMT characteristics, as opposed to characteristics of individual managers, are associated with SID processes. To the extent that these results can be

generalized for various contexts, a fruitful line of inquiry would be to focus our attention on TMTs instead of limiting our scope of effort on individual managers. This approach has recently received much thought (e.g. Gupta, 1986; Eisenhardt and Schoonhoven, 1990).

Finally, it should be pointed out that despite the very interesting relationships revealed in this chapter, one should be very cautious in establishing any form of causality, since results are based on cross-sectional data and no direction of causality can be supported.

10.8. NEED FOR FURTHER RESEARCH

Concluding this chapter we would like to point out several ideas. *First*, in the beginning of this chapter we have delineated research in the area. Particularly we have stressed the lack of large-scale empirical research examining the association between top management characteristics and SDMPs, since the majority of research concerns itself with tactical decision making, or with performance implications of TM characteristics. A systematic attempt to map the relationships between CEO or TMT characteristics and SID making processes offers a potentially fruitful direction for research, which will help to better understand how important decisions are made and, hopefully, how they can be made more effectively.

Second, it should also be noted that this chapter has focussed on only a few variables describing the association between CEO and top management with SID making processes. The use of alternative personality and/or demographic characteristics, probably more suitable in examining SID making processes, might produce different results and merits further systematic empirical examination. The formation of multidisciplinary research teams in studying top teams has also been suggested (Hambrick 1989).

Chapter 11

Association Between Business Performance and SID Processes

11.1. SIGNIFICANCE OF THE PERFORMANCE NOTION

Undoubtedly corporate performance is in itself a complex and multidimensional phenomenon which dominates the strategic management theory and practice (Dess and Beard, 1984). One may examine performance by using three different lenses: i.e. theoretical, empirical and managerial. Both performance and effectiveness are at the centre of strategic management **theory** (e.g. Hambrick and Snow, 1977; Cameron and Whetten, 1983). **Empirically**, the majority of researchers consider performance as the ultimate criterion and the end test of every new concept and theory developed (Keats, 1988). For example, Schendel and Hofer (1979), suggested that theories of all kinds focusing either on process or on content issues should deliberately seek to explain differences in performance. Finally, there is no need to underscore the importance of performance for **managers** since performance is the usual basis for their evaluation.

11.2. BRIEF LITERATURE REVIEW ON PERFORMANCE

A selective review of the current literature may persuade us about the role and significance of Business Economic Performance (BEP) in the strategy area. More specifically, a large number of research works attempts to investigate performance in relation to:

a. Strategy: (e.g. Snow and Hrebiniak, 1980; Phillips and Buzzel, 1983; Anderson and Zeithaml, 1984; Pearce et al.1987). According to Hambrick (1980), BEP is the most frequently used dependent variable in research on the content of strategies. A typical question in this stream of research is: what are the recommended strategic postures which lead to superior performance?.

b. Planning: (e.g. Robinson and Pearce 1983; Rhyne, 1986; Robinson and Pearce, 1988). A typical question might be: Does planning pay?. Chapter 9 has explicitly dealt with this stream of research.

c. Strategy formulation: (Miller, 1987; Dess, 1987) This stream of research, usually normative in nature, suggests ways to formulate strategy with the aim to enhance performance.

d. Structure: To what extent, if at all, does organization structure influence performance? or is it performance which influences structure? These are among the major research questions found in this research stream. Results are supportive of the close association between structure and performance, although there seems to be no single link between the two, since several intervening variables (e.g. strategy, environment) may act as moderators (Pugh, 1973; Bobbitt and Ford, 1980; Lenz, 1981; Prescott, 1986).

e. Environment: By assuming that organizations are both products of their environment and agents of change in their environment (e.g. Lenz, 1981), this line of research attempts to link performance with various environmental characteristics and to investigate possible interrelationships (e.g. Burns and Stalker, 1961; Bourgeois, 1985; Keats and Hitt, 1988).

f. Leadership: This area of research focuses on the question of whether leaders have any impact at all on corporate performance (Norburn, 1986; Thomas, 1988). Chapter 10 has analysed the results of this line of research.

g. Finally, several other individual research efforts deal with the association between performance and such notions as market share (e.g. Buzzell and Gale, 1987). Even more complicated relationships such as **strategy-strategy formulation-performance**: (e.g. Miller, 1989), **strategy - planning - performance**: (e.g. Robinson and Pearce, 1988) have been examined. This stream of research (e.g. Lenz, 1981), attempts to integrate and evaluate findings drawn from various research traditions on the determinants of organizational performance, or to decompose the determinants of organizational performance into broad sets of factors (e.g. Hansen and Wernerfelt, 1989).

To summarize, the above mentioned streams of research corroborate the allegation that performance has been at the focus of both strategy content and strategy process research. Strategy content researchers usually link competitive and/or resource positioning to performance, while process researchers seem somewhat less preoccupied with performance considerations. Such considerations nevertheless are

evident because if strategy making processes are faulty, performance is likely to be impaired (Schendel, 1992). In that sense the notions of strategy content, strategy process and performance seem inextricably linked.

Despite the dominant role of BEP in strategy research, with the exception of few empirical studies (e.g. Fredrickson and Mitchell, 1984; Bourgeois and Eisenhardt, 1988; Eisenhardt 1989a) there exists no significant body of research examining the association between performance & decision making processes based on individual strategic decisions (e.g. SIDs). According to Schendel (1992), it would be a challenge to suggest whether specific processes are linked to good or bad performance not only ex post but also ex ante. The aim of this chapter is to shed theoretical light into these linkages, test specific hypotheses and present some quantitative evidence.

11.3. ISSUES ON PERFORMANCE MEASUREMENT

The literature in the area, among others, raises two major issues that bear further discussion. The first pertains to the lack of consensus as to the relevant dimensions of performance that should be used in empirical investigations, and the second pertains to the adoption of objective vs subjective performance measures.

i. Lack of Consensus as to the Relevant Dimensions

Despite the fact that performance is the most critical and most frequently employed variable in strategy research (e.g. Hambrick and Snow, 1977), its theoretical aspects have not been adequately developed and tested (Keats, 1988). Strategy research has up to now showed a preference on the narrow domain, termed as BEP (Venkatraman and Ramanujam, 1987), or Organizational Performance (OP, Dess and Robinson, 1984), but little agreement has yet emerged on how it should be measured (Cameron and Whetten, 1983; McCrory and Gerstberger, 1992). Table 11.1 presents a number of research efforts together with the performance measures which they have used. A quick look at table 11.1 makes apparent the use of a great number of different performance measures, ranging from pure financial measures to measures of overall effectiveness. It also indicates that sales growth, profit growth, ROI, ROA ROS, and

other conventional referents of performance, are among the most widely used measures, although enough criticism has been recently leveled against them (e.g. Chakravarthy, 1986).

NAME/(s)	VARIABLES USED	
1.ANSOFF et al. 1970;	-Sales -Earnings -Earnings/Share -Total Assets -Earnings/Equity -Dividends/Earnings	-Dividends /Share -Stock Price -Debt/Equity -Common Equity -Earnings/Total Equity -P/E Ratio
2.ARGENTI, 1976;	-Working Capital/Total Assets -Retained Earnings/Total Assets -Earnings Before Interest & Taxes/Total Assets -Market Value of Equity/Book Value of Total Debt -Sales/Total Assets	
3.BOURGEOIS,1978	-ROI -Growth in Capital -Growth in Net Earnings	-Growth in EPS -Growth in Profit Margin
4.CHRISTENSEN & MONTGOMERY, 1981;	-Sales Growth -Risk Adjusted Return -Return on Invested Capital	-Growth in Earnings Per Common Share -Return on Assets -Return on Equity
5.GUPTA, 1982;	-Sales Growth Rate -Market Share -Operating Profits -Profit/sales ratio -Cash Flow from Operations	-Return on Investment (ROI) -New Product Development -Market Development -R&D Activities -Cost Reduction Programs -Personnel Development
6.MILLER AND FRIESEN, 1983;	-Growth in sales -Growth in ROE	
7.WOO AND WILLARD, 1983;	-Return on Investment -Return on Sales -Growth in Revenues -Cash Flow/Investment -Market Share -Market Share Gain -Product Quality Relative to Competitors -New Product Activities Relative to Competitors	-Direct Cost Relative to Competitors -Product R&D -Process R&D -Variations in ROI -Percentage Point Change in ROI -Percentage Point Change in Cash Flow/Investment
8.DESS AND ROBINSON,1984;	-Sales Growth -Net Income Growth	-ROI -ROA
9.CHAKRAVARTHY, 1986;	-Cash Flow/Investment -Sales / Total Assets -R&D / Sales -Market to Book Value	-Working Capital /Sales -Dividend Payout Ratio -Sales per Employee -Debt /Equity
10.PEARCE et al. 1987;	-After Tax return on total Assets -After-Tax return on Total Sales -Firm Total Sales Growth over past 5 Years -Overall Firm Performance/Success	
11.ROBINSON and PEARCE II, 1988 and 1983;	-Profit Margin -Return on Assets	-Loan Growth -Return on Equity
12.GRINYER et al. 1988;	-Average Operating profit margin for a five-year period -Average Return on Total Assets for a five year period -Growth of Real Sales for a five-year period, standardized by average Sales for the Period -Average Annual Change in Exports/Sales for a five-year Period	

Table 11.1. Selected Research Works Utilising Various Performance Measures.

ii. Objective vs Subjective Measures

Another significant issue revolves around the debate on how the chosen dimensions should be measured. The adoption of objective vs perceptual measures of corporate environment still is a major dilemma. This perspective has led to a flurry of empirical research works utilising either **objective** (e.g. Robinson and Pearce, 1983; Daft et al. 1988), or **subjective** (e.g. Pearce et al. 1987; Robinson and Pearce, 1988; Wooldridge and Floyd, 1990) measures of performance.

Dess and Robinson (1984), as well as Robinson and Pearce (1988), evaluated the correspondence between objective and subjective assessments of performance and reported that the two approaches produced closely related results. Therefore, both studies concluded that perceptual evaluations are convenient substitutes for objective data whenever accurate objective data are unavailable.

In a third study, Venkatraman and Ramanujam (1987), examined the convergence between two different approaches to measuring performance. Results corroborated the existence of a strong convergence between objective and perceptual measures. They concluded that researchers should not treat any one particular method as superior over the other, and that perceptual measures of BEP tend to be much more reliable than most organizational researchers believe.

11.4. OPERATIONALIZATION OF FINALLY CHOSEN PERFORMANCE DIMENSIONS

The incorporation of elements of organizational effectiveness in a research studying strategic decision making processes might be a challenging task and a fruitful line of research (e.g. Connolly et al. 1980; Hoy et al. 1984; Cameron, 1986; Lewin and Minton, 1986). Despite this, for the purposes of this thesis we deliberately decided to adopt a narrow focus on BEP.

Both objective and subjective evaluations of performance will be explored in an attempt not only to test a broader scheme for studying alternative approaches to measuring BEP, but also to examine the degree of convergence between the two

approaches. Thus, we set out to measure notions of BEP drawn from 'factual' reports (e.g. P&L accounts) and from perceptual assessments and evaluations made by the CEO.

Especially subjective assessment of performance enables researchers to collect data that are in the format required (e.g. direct comparison of performance to that of major competitors, or estimation of performance levels relatively to stated organizational goals). Perceptual assessment of performance by the CEO allegedly provides reliable results since the CEO is not expected to show serious functional bias (Huber and Power, 1985, Venkatraman and Ramanujam, 1987).

i. Subjective Performance Measures

Venkatraman and Ramanujam (1986; 1985) proposed a threefold classification of performance. At the centre lies the focus on what they call **financial performance** measures. In this category they incorporate both growth indicators (e.g. sales growth) and profitability indicators (e.g. return on assets, return on equity, earnings per share). Despite the 'unease' one may feel about mixing growth measures with pure financial measures, the adoption of such a framework implies the acceptance of the dominance of the outcome-based financial goals in the overall firm goal-structure.

The second layer represents a broader conceptualization of performance. It incorporates elements of **operational performance** (e.g. market-share, new product introduction, product quality) and represents an attempt to depart from the 'black box' approach to performance and broaden the framework by taking into account key success factors that might eventually influence financial performance. These, however, may be 'means' to the end-goal achievement. Finally, the third layer extends itself to the sphere of **organizational effectiveness**, which includes various dimensions of performance beyond those of goal achievement.

In the course of this research we employ several dimensions of BEP, providing indications of corporate preparedness. Financial performance provides an indication of past and present organizational ability to adapt or to meet overall goals, while

operating performance indicates an organizations' ability to proact and transform itself in the face of various external challenges (Keats and Hitt,1988). Although it is not within the primary aims of this work to extend itself beyond the boundaries of financial performance, in an attempt to enrich our framework, we will incorporate two elements of operational performance (i.e. market share, new product introductions). Market share as well as increase in market share are considered to be among the major determinants of profitability (Buzzell et al.1975;Anderson and Zeithaml, 1984).

Six dimensions of perceived performance are finally incorporated in this research, i.e. **operating profits, return on assets** (ROA), **market share, increase in market share, profit growth** and **revenue growth.** Several other dimensions of corporate effectiveness are included in page 373 of the second questionnaire (e.g. innovativeness, ability to attract managerial talents), but since we deliberately decided not to extend our investigation beyond the limits of BEP, they are not included in our framework.

The CEO was requested to evaluate corporate performance for each of the six finally adopted elements of performance, not in absolute terms but **relatively to major competitors.** Such a framework for assessing performance was also used by Dess and Robinson (1984) and Robinson and Pearce (1988) with satisfactory results. Moreover, the CEO was requested to evaluate the **importance** of each of those elements for her/his company. In operationalizing the performance variables, each performance element was multiplied by its perceived importance so as to take into account its relative significance. Such an operationalization has received much credit (e.g. Miller and Toulouse, 1986) since it takes into account the specific goal-structure of the firm in relation to perceived corporate performance. Thus, each of the six resulting performance elements was computed as follows.

$$\begin{bmatrix}\text{Combined Perceived}\\ \text{Performance}\\ \text{Concerning Element i}\end{bmatrix} = \begin{bmatrix}\text{Perceived Performance}\\ \text{on Element i}\\ \text{Relative to Competitors}\end{bmatrix} \times \begin{bmatrix}\text{Perceived Importance}\\ \text{of Element i}\\ \text{for the Company}\end{bmatrix}$$

Conceptually, the six weighted elements form three distinct dimensions of performance. The first two elements (operating profits and ROA) represent the **profitability** dimension. Revenue growth and profit growth are expected to form the **corporate growth** dimension. Finally, market share and market share increase constitute the **relative market position** dimension. Such an 'enlarged' framework departs from pure financial evaluations of performance and is in line with recommendations advanced by various researchers (e.g. Keats, 1988).

A related framework was proposed by Woo and Willard (1983). In their attempt to dimensionalize performance they used 14 indicators and produced a fourfold classification of organizational performance. Dimensions included profitability, relative market position, change in profitability and cash flow and finally growth in sales and market share. The authors concluded that measures of profitability despite their limitations are important measures of organizational performance. This framework resembles our adopted framework since our data provided three dimensions measuring profitability, relative market position and corporate growth.

In the same work (Woo and Willard, 1983), it has also been found that the profitability factor explained the higher factor magnitude (17.7 percent of the variance) and significantly exceeded the importance of the second factor, notably relative market position which explained 10.7 percent of the variance. Results are similar to our results and stress the fact that financial performance is an essential dimension to the comprehensive representation of performance.

To summarize, three additive scales were created. The first, measures corporate **profitability** and was created by summing the combined perceived performance elements of operating profits and return on assets. The second, measures **relative market position** and was created by summing the combined perceived performance elements of market share and market share increase. Finally, the third dimension measures **corporate growth** and was created by summing the combined elements of perceived growth in revenues and growth in profits. All three dimensions theoretically ranged from 2-50. Thus, each was divided by 10 so as to obtain a continuous scale

ranging from approximately zero to 5. The resulting three dimensions provided very high Cronbach Alpha reliability coefficients, ranging from 0.85 to 0.87 (refer to table 11.2).

ii. Objective Performance Measures

In addition to the subjective performance measures, several objective BEP measures are incorporated. As can be seen from page 373 of the second questionnaire (appendix 2) the financial data collected offer us access to a rich data-base. Two of the most popular measures of BEP are **return on Assets (ROA)** and **Growth in sales** (Dess and Robinson, 1984; Hambrick and Schecter, 1983; Grinyer et al. 1988).

ROA is viewed as an operational measure of the efficiency of a firm with regard to the profitable use of its total asset base (Ansoff, 1965; Bourgeois, 1980 b), and is probably the most consistent measure of profitability across the sample of manufacturing firms in the study. Similarly, growth in sales provides another significant measure of BEP reflecting the extent of 'fit' between the organization and its environment (Hofer and Schendel, 1978). It is frequently stressed that sales growth is among the primary managerial objectives. Apart from these, two other objective measures were also considered. These are: **return on sales (ROS)** and **growth in profits.**

ROA and ROS were averaged for five years (1985-1989), to decrease the chance of a one-year aberration influencing results (Daft et al. 1988). The 5-year average not only seems appropriate but also is consistent with previous strategy studies (e.g. Grinyer et al. 1988; Christensen and Montgomery, 1981; Hansen and Wernerfelt, 1989). Similarly, percentage change in growth in sales and growth in profits over a five-year period is also computed (similar measures were used by Fredrickson, 1984).

Another consideration was to control for industry variability in performance measures, since previous research (e.g. Beard and Dess, 1979) has provided reliable evidence that the industrial sector significantly influences variations of profitability

across firms. Since three different industrial sectors are represented in the sample, it seemed appropriate to control for sectoral influences. This was achieved by dividing each of the adopted BEP measures by the mean value of the respective sector. A different but similar approach was used by Venkatraman and Ramanujam (1987) who subtracted from each firm's ROA the average industrial sector ROA.

Table 11.2 presents the intercorrelations between performance variables. As is expected the various measures are correlated since they tap dimensions of the same phenomenon, but the correlation coefficients are not unduly high.

	1	2	3	4	5	6	7
1. PERCEIVED GROWTH (GROWTH7)	1.0000 [1] P= . [2]						
2. PERCEIVED PROFITABILITY (PERPROF7)	.6812 P= .000	1.0000 P= .					
3. PERCEIVED MARKET SHARE (MARSHAR7)	.5616 P= .000	.3898 P= .000	1.0000 P= .				
4. RETURN ON ASSETS (ROA_SECT)	.3714 P= .001	.5731 P= .000	.3008 P= .006	1.0000 P= .			
5. RETURN ON SALES (ROSALE_S)	.2638 P= .014	.4601 P= .000	.1932 P= .055	.9463 P= .000	1.0000 P= .		
6. GROWTH IN PROFITS (GRPROF_S)	.3599 P= .001	.3192 P= .004	.2618 P= .014	.1218 P= .158	.0924 P= .223	1.0000 P= .	
7. GROWTH IN SALES (GRSALE_S)	.4323 P= .000	.2927 P= .007	.5043 P= .000	.1068 P= .189	.0865 P= .238	.2703 P= .012	1.0000 P= .
MEAN	3.01	3.04	3.33	.9965	.9873	1.286	1.00
STANDARD DEVIATION	1.10	1.08	1.15	3.386	5.582	5.38	.599
CRONBACH ALPHA	.85	.876	.86	—	—	—	—

Table 11.2 Intercorrelations Between Performance Variables

[1] (Correlation Coefficient) [2] (Level of Significance)

11.5. ASSOCIATION BETWEEN BEP AND SID MAKING PROCESSES

The following paragraphs review the literature on the process-performance association and advance specific hypotheses.

i. Performance and Rationality-Financial Reporting

The association between performance and comprehensiveness-rationality in SDM has attracted enough theoretical attention. Hambrick and Snow (1977) advanced a model of interaction between current and past performance and strategic decision making processes. At this period of time (end of the seventies) they reported that the effects of performance on strategic decision making (and vice-versa), were not well articulated and the existence of insufficient evidence prevented the creation of specific theories.

Management practice suggests that high levels of performance provide sufficient resources beyond what is needed for business transactions (e.g. to pay suppliers, hire managers, cover short term liabilities). Those excess resources which allow an organization to successfully adapt to internal or external pressures for changes, have been called *slack resources* (Bourgeois, 1981; pp 30). Previous research has claimed that slack resources may foster organizational stability in tough times (Cyert and March, 1963), may facilitate innovativeness and creative behavior (Bourgeois, 1981), or may even positively influence strategic risk taking behavior (Baird and Thomas, 1985).

Unfortunately, little consensus has emerged as to the role of performance on SDs. Conventional wisdom suggests that high levels of performance are expected to produce enough resources to help in the making of better, more rational decisions, based on extensive information search and elaborate analysis. Again, better financial performance has been said to be associated with the use of more information processes (Grinyer and Norburn 1977/78; Dess and Origer 1987).

Empirical confirmation of a positive relationship has also been provided by Smith et al. (1988). They found that for both small and larger firms, comprehensive decision making consistently out-performed less comprehensive. Finally, a series of publications on hospital integration strategies (e.g. Morrisey et al. 1990; Blair et al. 1990), found that comprehensive strategy formulation processes contributed to increased success with hospital strategic ventures.

If we adopt this line of reasoning we may hypothesize that good performers are expected to make more rational decisions. However, as Fredrickson (1985; pp 824) argues:

"firms usually do not use slack generated by excellent performance to pay the costs of seeking optimal solutions; instead resources are absorbed as sub-optimal decisions are made. This phenomenon may help explain why managers in historically successful firms sometimes make a series of what appear to be inadequately considered, intuitive decisions that in combination have significant negative consequences".

Three decades ago, Cyert and March (1963) reached the same conclusion, i.e. that superior performance is expected to lower the intensity with which organizations will 'search' for and analyse information. In the same vein Bourgeois (1981), Litschert and Bonham (1978), March and Simon (1958), have also suggested that slack resources offer organizations the 'luxury' of being able to resort on more 'satisficing', and suboptimal decision making behavior. The above arguments lead us to hypothesize that excellent performance may be associated with less rational decision making.

Of course research has produced a variety of explanations of the issue. For example, it seems to follow logically that poor performance does not provide sufficient resources. This lack of basic funds is expected to exert pressure on management during the making of decisions of great importance. Indeed, a wrong decision may drive the firm out of business. Thus, since management has less margin for erroneous decisions they may have strong incentives to follow rational-comprehensive processes (Cyert and March, 1963; Bourgeois and Eisenhardt, 1988). As Fredrickson (1985) suggests, managers of poorly performing firms may hire consultants, seek advice from various sources, and conduct extensive financial analyses. Such actions are taken with

the expectation that a successful decision may positively influence performance levels. Fredrickson, (1985) by means of a controlled experiment has reached the conclusion that actions of poor performers in strategic decision-making processes will be more comprehensive than those of excellent performers (Fredrickson 1985). Following this stream of reasoning one may hypothesize that the actions of poor performers during the making of strategic decisions will be more rational than the actions of excellent performers.

Further advancing of the performance-rational decision making linkage was attempted by Fredrickson and Mitchell, (1984), Fredrickson (1989), Fredrickson and Iaquinto (1989). Their major conclusion was that comprehensive decision processes are expected to result in superior performance in a stable environment, while a noncomprehensive process, with its speed and flexibility, is expected to have a similar effect in an unstable environment. Thus, according to this view environment moderates the rationality-performance relationship.

Contrary to what Fredrickson and his colleagues contend, Bourgeois and Eisenhardt (1988), studying strategic decision making processes in high velocity environments, reached the opposite conclusion. They contend that in high velocity environments, the more analytic the strategic decision making process, the better the performance of the firm. The authors explained this relationship arguing that the stress caused by fast-paced environments forces managers to order their world by using rational processes in identifying goals, setting priorities, collecting information, and generating and evaluating alternatives in order to gain a sense of control.

If one attempts to recapitulate the above mentioned results one certainly cannot reach a firm conclusion. Research seems to have produced apparently contradictory results and no consensus seem to have yet emerged. Despite the apparently conflicting concepts outlined above, we may advance the following tentative proposition for empirical testing:

H(p) 11,1,. Superior performance will be associated with more rational decision making processes, together with more financial reporting activities.

ii. Performance and Formalization-Coordination Devices

Another interesting association exists between SID process formalization and performance. Chapter 9 has shed some light into a similar relationship (i.e. planning formalization and performance) and concluded that despite the research suggesting a positive association the establishment of an unambiguous positive relationship between planning formalization and performance is highly speculative and open to debate.

If we adopt a decision making perspective instead of a planning perspective we may point out that a number of studies have reported that higher financial performance may be associated with the use of more formalized information processes as well as the use of informal channels (Grinyer and Norburn 1977/78; Dess and Origer 1987). Thus, the following tentative proposition might be set forth for empirical testing:

H(p) 11,2,. Higher performance is associated with more formalization in the making of SIDs.

iii. Performance and Decentralization

Recent conceptualizations of strategic decision making processes (e.g. Burgelman, 1983; Mintzberg and Waters, 1985; Schilit, 1987) have stressed the importance of participation, especially of broader middle level management involvement in SDM. In examining the impact of broader participation in the budgetary process, Govindarajan (1986), reported that greater participation contributes to managerial performance in high-uncertainty environments, but hampers performance in low uncertainty environments.

For the sake of argument we should also note that numerous considerations, (i.e. information leaking, need for rapid response, potential political conflicts) have been said to limit the desirability of broader involvement, and that strategy most of the time has to remain vague with limited involvement of other than top managers (Wrapp, 1967; Vroom and Yetton, 1973; Quinn, 1980 a; Wooldridge and Floyd,

1990). Despite this argumentation, our knowledge about the possible effects of broader participation on organizational performance still remains limited (Bourgeois and Eisenhardt, 1988; Wooldridge and Floyd, 1990).

We assume that greater participation (especially by middle managers) may have a direct and positive impact on corporate performance by triggering two parallel mechanisms. The first mechanism implies that the involvement of more people in SID making increases the level of consensus on strategy among managers, produces a common understanding of the joint task, creates a climate of shared effort, and facilitates smooth implementation of SIDs. The expected smooth implementation vitally contributes to higher performance (Wooldridge and Floyd, 1990). On the other hand, minimal involvement of employees other than 'strategic elites' in the SID making process has been found to create severe implementation problems, and even to produce events of sabotage (Guth and MacMillan, 1986).

The second mechanism posits that in todays rapidly changing environment, management's ability to sense the emergence and meaning of various challenges encountered, is a critical strategic capability. Unfortunately, most of the time managers, as human beings, may suffer from profound limitations being less and less able to fully understand the world around them. The contribution of other managers, especially middle managers may be of significant importance since they act as monitors of information. Moreover, they are usually the first who sense potential threats and opportunities in their own particular domains (Pascale, 1984), and sometimes act as internal corporate venturers (Burgelman, 1983). Thus, strategy in successful firms may, to an extent, be more a product of a shared effort, or a pattern in a stream of major decisions (Mintzberg et al. 1976), than a one man deliberation.

The results presented by Bourgeois and Eisenhardt (1988) are interpreted as supportive of the above mentioned arguments. They have reported that the more power to make strategic decisions is delegated to the functional and divisional executives, the higher the performance of the firm. On the contrary the existence of emasculated managers was associated with low performance. The previous discussion

provides the foundations for specifying the following two hypotheses:

H(p) 11,3,. Greater hierarchical decentralization in the making of SIDs is expected to be associated with superior performance.

H(p) 11,4,. Greater lateral communication in the making of SIDs is expected to be associated with superior performance.

iv. Performance and Politicization-Dissensus

Consensus is the agreement of all parties to a group decision. Conventional wisdom supported by much of normative literature on SDM, posits that firms follow a number of sequential steps in formulating strategy. This evolutionary process suggests that firms prescribe corporate objectives before searching for alternative ways of action. Such a process attributes great significance to the homogenization of perceptions and to goal consensus, which is assumed to be critical to economic performance (Bourgeois, 1985).

Despite the profound importance attributed by normative literature to the performance-consensus association, it seems that this relationship has not received enough empirical investigation (Dess, 1987; Dess and Origer 1987; Priem, 1990).

Child (1974 pp 9) was among the first who proposed that homogeneity among the members of the TMT as to the major objectives, contributes to higher performance. In a similar vein, Bourgeois (1981) argues that organizational slack functions as a source of conflict resolution. After all, when the company follows a 'winning track' everyone prefers to be identified with the winner and there is less place for political activities and long debates over goals and priorities (Dess, 1987).

Similarly, a high level of consensus is expected to lead to higher performance "because during periods of resource scarcity a 'unified direction' for the organization becomes of primary importance" (Dess, 1987; pp 266). A significant number of studies (e.g. Bourgeois, 1980 b; Hrebiniak and Snow, 1982) corroborated the existence of a positive relationship between top management team consensus and organizational performance.

But we should mention that the opposite line of argument has also been posed. It has been found that a high degree of internal consensus may lead to disfunctional outcomes such as reduced receptivity to information which contradicts the views of the dominant coalition, despite the fact that such information may be vital for the quality of the final decision (Whitney and Smith, 1983). Thus, the pressure for consensus postulated by normative approaches to SDM may produce negative results.

For example, investigating the performance-consensus relationship, Grinyer and Norburn (1977-78) reached the conclusion that the highest performing firms experienced a negative association between performance and consensus. Thus, they hypothesized that high levels of cohesiveness may be disfunctional and that disagreement among members of the TMT may be an internal strength associated with superior performance. In a similar vein, DeWoot et al. (1977-78) using a sample of Belgian firms found that in successful firms there existed a positive relationship between dissensus and performance. In the same vein, Schweiger et al. (1986), using an experimental design found that case recommendations and assumptions were of significantly higher quality when generated under conflict (dialectical inquiry or devil's advocate), than when generated under consensus. Finally, contrary to the above mentioned streams of results, Wooldridge and Floyd (1990) reported no significant association between consensus and organizational performance.

This excursion into the performance-consensus research has convinced us about the existence of conflicting results. This may be attributed to differences in units of analyses, to differences in methodologies and research questions (Dess and Origer, 1987), or even to the nature and stage of the strategic process which may affect the scope, content and degree of consensus (Wooldridge and Floyd, 1989). More interestingly, a possible lack of any significant association may be attributed to the coexistence of two opposite effects. Which of the two dominates will show in the positive or negative results found by empirical testing. Insignificant results may mean that the two effects practically cancel out. Thus, the following two tentative

propositions might be set forth:

H(p) 11,5,. Low performance will be associated with more political activities.

H(p) 11,6,. High problem solving dissensus during the making of SIDs will be associated with low performance levels.

v. Performance and Decision Duration

Previous analysis of the research on SDM has presented evidence of conflicting results. The relationship between decision speed and performance is not an exception. Two major perspectives attempt to predict this association. The first suggests that the pursuit for greater rationality, which aims at superior performance, may slow SID making processes. The rational model, (despite its alleged superiority in considering more alternative ways of action, seeking more information sources, and pursuing more extensive analysis), may require more time to arrive at a decision. Thus, indirectly the higher performance, which is supposed to be achieved by rational decision making is associated with more duration-time of SID making processes (Janis, 1972; Mintzberg, 1973; Nutt, 1976; Schweiger et al. 1986).

The second perspective posits that rationality does not necessarily imply more time-consuming decision processes. Hence faster decisions which at the same time may be characterized by high degree of rationality would be associated with higher levels of performance. More specifically, Eisenhardt (1989a) and Bourgeois and Eisenhardt (1988) supported a tenuous although much interesting contention, that there exists a positive relationship between BEP and decision speed in high velocity environments. This may happen in cases where top managers learn to act quickly but comprehensively in their attempt to improve their firms financial position (Bower and Hout, 1988; Judge and Miller, 1991). Judge and Miller (1991) attempted to explore this linkage across various corporate environments and found that fast strategic processes are not associated with superior profitability. On the contrary, when they divided their sample according to industrial sector they witnessed a strong positive relationship between speed and performance in high velocity environments,

thus corroborating the hypothesis advanced by Eisenhardt (1989a). Despite, the apparently conflicting concepts outlined above we may suggest that:

H(p) 11,7,. Superior BEP is not associated with faster strategic decision making processes.

11.6. CORRELATIONS - DISCUSSION OF RESULTS

Table 11.3 presents the correlation results between BEP and SID process characteristics. Pearson correlation coefficients provide a gross indication of the degree of association between the two. A quick inspection of table 11.3, reveals that 23 out of the 63 relationships (i.e. about 37% of the total relationships) provide statistical significant associations, at a level of 5% or less. Moreover, 6 correlation coefficients (10% of the total number of relationships) provide statistical significant results at a level of $p<.001$ or better. In general, the results reveal the existence of a notable association between SID process characteristics and performance, suggesting that the hypotheses advanced have received a considerable amount of support. More specifically:

i. Performance and Rationality-Financial Reporting

Both rationality and extent of financial reporting seem to be highly associated with superior performance. More specifically, seven out of the 12 correlation coefficients provided statistical significant results at a level of significance of 5% or less. Four more correlation coefficients provided statistical significant results at a level of 10%. Overall, the empirical results support a strong positive association between BEP and rationality, the perceived measures of performance being more correlated to rationality than their objective counterparts.

Results seem to corroborate the stream of research suggesting that high levels of performance are expected to produce enough resources to help in the making of better, more rational decisions, or that more rational decisions may lead to better performance (Grinyer and Norburn 1977/78; Dess and Origer 1987; Smith et al.

1988). On the contrary, results seem to reject the opposite school of thought suggesting that superior performance may lower the extent with which organizations engage in rational decision making (March and Simon, 1958; Cyert and March, 1963; Bourgeois, 1981).

	PERCEIVED PERFORMANCE MEASURES			OBJECTIVE PERFORMANCE MEASURES ADJUSTED FOR INDUSTRIAL SECTOR			
SID PROCESS CHARACTERISTICS	CORPORATE GROWTH	CORPORATE PROFITA-BILITY	RELATIVE MARKET POSITION	RETURN ON ASSETS	RETURN ON SALES	GROWTH IN PROFITS	GROWTH IN SALES
RATIONALITY/ COMPREHENSIVENESS	.2422 [1] P= .022 [2]	.2576 P= .016	.2167 P= .036	.1916 P= .056	.1630 P= .089	.2299 P= .028	.0721 P= .277
FINANCIAL REPORTING	.2679 P= .012	.2634 P= .014	.1659 P= .085	.1997 P= .049	.1136 P= .175	.1870 P= .061	-.0134 P= .456
SET OF FORMALIZED RULES	.2666 P= .013	.4367 P= .000	.2958 P= .006	.0137 P= .455	-.0622 P= .304	.2426 P= .021	.0894 P= .231
FORMAL COORDINATION DEVICES	.0520 P= .335	-.0389 P= .375	.0488 P= .344	.0322 P= .396	.0222 P= .428	-.0225 P= .427	-.0285 P= .408
HIERARCHICAL DECENTRALIZATION	.1194 P= .162	.2265 P= .030	.0088 P= .471	.3694 P= .001	.3620 P= .001	-.0523 P= .334	-.0593 P= .313
LATERAL COMMUNICATION	.4222 P= .000	.3729 P= .001	.3630 P= .001	.2464 P= .020	.1991 P= .049	.1008 P= .203	.2315 P= .027
POLITICIZATION	-.0619 P= .305	-.0503 P= .340	-.1982 P= .050	-.0633 P= .301	-.0492 P= .343	.1493 P= .109	-.2429 P= .021
PROBLEM SOLVING DISSENSUS	-.0653 P= .296	-.0082 P= .473	-.1406 P= .123	.0499 P= .341	.0669 P= .291	.0868 P= .237	-.1033 P= .197
GESTATION AND DURATION PROCESS TIME	-.0957 P= .215	-.1274 P= .147	-.2453 P= .020	-.0096 P= .469	.1261 P= .149	.1305 P= .141	-.0878 P= .235

Table 11.3 Correlations Between Performance Variables and SID Process Characteristics

[1] (Correlation Coefficient) [2] (Level of Significance)

Considering the results of this later stream, the emerging strong positive associations in the present research may be viewed as 'odd' or unexplained. An explanation may be sought in the *idiosyncrasies of the Greek industrial context;* we

may argue that the emerging close process-performance linkage does not imply a direct association; it may simply mean that high performers are 'offered the luxury' to invest in better planning and other internal systems, attract more managerial talents and thus in the medium or long-term be able to make more rational decisions, characterized by extensive financial reporting. On the contrary, poor performers may lack these slack resources, may underinvest in internal systems and may resort in pure intuition, or may use partial information in the making of SIDs. Moreover, poor performance may not allow respective firms to hire expensive professional managers and to invest in internal systems. This is a tentative argument since no direction of causality can be supported.

ii. Performance and Formalization-Coordination Devices

Results reveal that rule formalization, especially when subjective measures of performance are used, seems to be highly correlated to superior performance. On the contrary, objective BEP measures provided only one statistical significant relationship.

The other variable, formal coordination devices seems to be unrelated to BEP. This challenges us to sustain that the role of liaison committees and other coordination devices may not be as critical as postulated in contributing to higher performance. Perhaps, these devices may be more relevant to large multi-divisional companies than to companies similar to those of our sample.

iii. Performance and Decentralization

Both dimensions indicating greater participation seem to be highly associated to superior performance. It is noteworthy that results indicate a consistently positive relationship between the two. More importantly, nine out of twelve possible coefficients proved statistical significant at a level of 5% or less.

Empirical results lend credence to the view that broader participation and enhanced middle management involvement in strategic decision making contributes to superior performance (e.g. Burgelman, 1983; Mintzberg and Waters, 1985; Schilit, 1987; Bourgeois and Eisenhardt, 1988). Moreover, the correlation coefficients are about the same magnitude as those observed by Wooldridge and Floyd (1990). Thus, one may conclude that there is significant support for the hypothesis that both hierarchical decentralization and lateral communication in SID making are positively associated with organizational performance. Especially, lateral communication appears to show a particularly strong association.

But results should not be interpreted as supportive of the inappropriateness of the autocratic decision making style (e.g. Vroom and Yetton, 1973) for making snap decisions. As Bourgeois and Eisenhardt (1988) suggest, effective firms should be able to utilise both decentralized and centralized decision making styles simultaneously, in their pursuit for superior performance through improved strategic decision making.

Especially, in the Greek economic context which is dominated by a significant number of rather small industrial settings, the average strategic decision making process may be more centralized than in other countries, providing room to entrepreneurial actions. Support to this contention is provided by Schneider and DeMeyer (1991), who report that usually Latin European managers prefer more centralized and formalized processes. Results, however, suggest that it pays for Greek entrepreneurs to move to more decentralized configurations.

iv Performance and Politicization-Dissensus

In contrast to the previously presented associations, no significant pattern of associations between performance and politicization-dissensus is evident. Despite the normative assumptions of an alleged positive association, empirical results appear inconclusive. In particular, only two of the possible 12 correlation coefficients are statistical significant, those for growth and market share. Both coefficients point to a negative association between the degree of internal political activities and market

share as well as growth. The remaining correlation coefficients provide either weak positive or weak negative associations.

These two associations indicate that companies having high market share appear to face less politicized decision processes. Considering objective performance measures also less politicization is found for companies with the highest growth in sales. The question is whether satisfactory growth together with market dominance act as mechanisms eliminating politicization.

The results are similar to those of Wooldridge and Floyd (1990) and imply that the specific association may be more complex than believed, since several intervening variables may moderate the performance-dissensus relationship.

v. Performance and Decision Duration

Empirical results, with the exception of one negative association provide no significant associations between decision duration and performance. Only market share appears to be significantly associated with quick decisions. Could this mean that superior market position relative to competitors is a characteristic of snap decision makers? This is difficult to postulate since the rest of the associations appear to provide weak positive or negative signs.

Overall,results seem to support neither the line of thought which posit that fast strategic decision-making is associated with superior profitability (Eisenhardt, 1989a), nor the line of thought that slow-rational processes are associated with profitability. On the contrary, results corroborate Judge and Miller (1991), arguing that if we do not take into account differences in corporate environments and/or other intervening variables, the timing of SID processes is not associated with superior performance.

11.7. CONCLUSIONS - METHODOLOGICAL ISSUES- EXTENSIONS

In conclusion, the results of the present chapter do provide some insight into the association between BEP and SID process characteristics. In particular, they suggest that higher performance is strongly associated with (i) more rational decision making

processes, characterized by extensive financial reporting activities, (ii) more rule formalization during the making of SIDs, (iii) broader participation both in terms of departments and in terms of hierarchical levels. The remaining process characteristics (i.e. formal coordination devices, politicization, problem solving dissensus, and duration process time) provide some interesting correlations with individual performance measures, but overall are not significantly associated with performance. These may be less relevant characteristics of SIDs, as regards effect on performance.

A major question stemming from the results is whether the present research design 'legitimizes' us to draw **causal inferences**. The research design has measured performance over a five year period and the specific SIDs studied took place at about the end of this period. This may empower us to argue that since performance was given at this period of time, it is the performance which has influenced the decision making processes and not the other way around. The fact that we study SIDs having substantial medium or long-term impact on various aspects of performance, further strengthens our position.

But despite the apparent reasonableness of such an argument we have offered a flavour of the complex network of interdependent elements in which words as 'cause' and effect should be approached with extreme caution. For example one may argue that SIDs last for several years and thus they may follow processes prescribed several years before the duration process time (as we define it) has started. Thus, our results are subject to the usual debate of causality versus association. The answer substantially depends on the model chosen for interpretation of results. One should be careful in assigning directionality to such bivariate associations. The results of this chapter should be interpreted as an effort to shed some light into the process-performance relationship since only partial and disjointed patterns have up to now emerged on how decisions affect the BEP or vice-versa (Hambrick and Snow, 1977; Fredrickson, 1984; Eisenhardt, 1989a).

A second issue concerns the **moderators of the process-performance** relationship. Previous research (e.g. Lenz 1980), suggested that corporate

performance derives from a constellation of diverse factors such as environmental, structural, managerial etc. For example Dess (1987), in studying the consensus-performance relationship, argued that one of the major limitations of current research in the field is:

"....the tendency to disregard the heterogeneity of the environments in which organization managers make their strategic decisions. The conflicting results obtained in previous field studies on the relationship between consensus and performance may be partially due to samples consisting of firms facing different industry environments. Selection of a sample which is heterogeneous with respect to a characteristic that affects the phenomena of interest poses a threat to statistical conclusion validity. That is only by controlling for characteristics (i.e. industry context) believed to inflate the variance explained in regression analysis can we be confident that negative results reflect the rejection of a theory" (Dess, 1987; pp 261).

In the same vein, Judge and Miller (1991) reported no statistical significant relationship between decision speed and performance for their total sample. But when they controlled for differences in corporate environment they witnessed an impressive positive association for companies operating in high velocity environments. Similarly, Priem (1990) proposed TMT homogeneity and structure as antecedents to the consensus performance relationship. This chapter concerns itself with simple associations, but chapter 12 intends to control for a number of the potential elements of influence on SID processes (e.g. environmental, organizational, managerial).

A third point for discussion pertains to the **conflicting results** between performance and other organizational variables. For example, one can find many reports arguing for the inexistence of a relationship between consensus and performance, as well as other reports supporting a negative or a positive one. This variability may be attributed to the lack of commonality of performance measures across studies (Keats, 1988) and to differing methods like field studies or laboratory experiments (Bourgeois and Eisenhardt, 1988).

One of the most noticeable points regarding the results of this chapter is that **subjective performance measures seem to provide better results** by being more highly correlated to characteristics of SID processes than objective measures. This

may be due to the fact that three different industrial sectors are represented in the final sample, and the adjustment of the objective measures with industry averages may not control adequately for industry effects.

The better results provided by subjective measures may be attributed to the fact that they are designed with the aim to measure the relative significance of each performance dimension to the specific company. Indeed, strategic management researchers have long stressed the existence of multiple, often conflicting organizational goals, and the potential impact of top management's self interest (Bettis, 1981). The subjective measures take into account the corporate goal structure, while objective performance measures do not, and this may explain why subjective measures of performance provided better results that their objective counterparts.

We should also stress the fact that perceived performance measures converge with objective measures, thus enhancing our belief that the results are valid and not a methodological artifact (Bouchard, 1976 pp 268). Results also strengthen our belief in the validity of the adopted perceptual measures and corroborate the contentions of various researchers (e.g. Dess and Robinson 1984; Venkatraman and Ramanujam 1987; Robinson and Pearce 1988) arguing that subjective measures of performance are acceptable substitutes for objective data.

In closing, we would like to refer to Venkatraman and Ramanujam (1986 pp 804) who have argued that most strategy studies have adopted a restricted focus on financial and operational performance, while they seem to have ignored broader effectiveness criteria. Thus, a fruitful line of extension to this chapter would be to incorporate some elements of overall corporate effectiveness (e.g. quality of management, ability to attract and develop managerial talents, research and development). Research of this type is badly in need since despite its usefulness and broad applicability, research based on traditional performance measures suffers from major limitations (Chakravarthy, 1986) since it: (i) cannot approach excellence, (ii) focuses only on outcomes and not on transformation processes within the firm and (iii) does not take into account stakeholders other than stockholders.

Chapter 12

Integrative Chapter of Contextual Influence on Strategic Decision Making Processes (SDMPs)

12.1. INTRODUCTION

It should be reminded that the aim of this research effort has been to establish whether context influences SID making processes. Previous chapters by contemplating strictly bivariate associations between contextual dimensions and SID process characteristics, validated a number of interesting associations which aim to explain and predict strategy formulation and strategic decision making. For example, chapter ten centered on the strategic choice model and examined the role of 'upper echelons' in SID making. Chapter eight focused on the resource dependence or population ecology model which emphasizes the dominance of corporate environment on SID processes. Furthermore, chapter nine approached the inertial model of organizational decision making by studying the impact of organizational systems on SID processes. Finally, chapters 7 and 11 focused on two other important potential determinants of SID processes i.e. the perceived characteristics attributed to SIDs and corporate performance.

The results of these chapters appear to be both significant and extremely interesting. They confirm the contingency view on strategy formulation and show that each contextual dimension contributes in a unique manner to the way SIDs are made. But all these contextual variables are interrelated. For example, top management characteristics may have an influence on the perceptions of SID characteristics (e.g. Day and Lord, 1992), or the perceptions of corporate environment (Sturdivant et al. 1985). In the same vein, corporate environment may play a vital role in the creation of the internal structure and systems which again may influence SID processes. Thus, the purpose of this final empirical chapter is to integrate the results of previous chapters into an overall model which simultaneously considers the possible effects of various contextual factors in determining SID process characteristics.

12.2. METHODOLOGICAL CONSIDERATIONS

Before moving into further analysis we should clarify certain methodological issues pertaining to: (i) which multivariate data analysis methods are appropriate for

our type of data (ii) which additional methodological considerations we should take into account before proceeding with data analysis (iii) which additional control variables should we introduce in our analysis. The following three sections will deal with these issues.

12.2.1. ALTERNATIVE MULTIVARIATE DATA ANALYSIS METHODS

Since we aim at integrating all the above mentioned different schools of thought into an overall model, we should use some multivariate methods. Such methods include *multiple regression analysis*, *multivariate analysis of variance*, *discriminant analysis*, and *categorical data analysis*. Multiple **regression** analysis requires both dependent and independent variables to be interval, **MANOVA** is another statistical tool demanding interval dependent and nominal independent variables, **discriminant analysis** requires interval dependent variables and a mixture of nominal and continuous independent variables, and finally **categorical data analysis** requires nominal variables for both dependent and independent variables (Kleinbaum et al. 1988). Considering that all the variables in the thesis are interval in nature, the technique which seems more appropriate is multiple regression analysis.

Multiple regression analysis is a statistical technique that can be used to analyse the relationship between a single dependent (criterion) variable and several independent (predictor) variables. The objective of multiple regression analysis is to use the several independent variables whose values are known to predict the single dependent value. (Hair et al.1987)

An alternative to multiple regression could be some other multivariate technique which could at the same time incorporate multiple dependent and multiple independent variables. A number of such techniques are available to the researcher, including simultaneous equations models, and LISREL (e.g. Hayduk, 1986). Unfortunately, the number of variables considered is large relatively to the available sample size, something which discourages us to further proceed with such analysis before using less demanding and complex techniques as regression analysis.

12.2.2. CONSIDERATIONS IN BUILDING REGRESSION MODELS

Before building specific regression models several methodological and theoretical issues have to be clarified. It is clear that the study so far has been based on a rich data base encompassing a significant number of important contextual dimensions. While the advantages of this are obvious, it carries its own inherent drawbacks, that have to be tackled right from the outset.

A major methodological consideration has to do with whether one should test for some important control variables which may have a significant influence on SID processes (e.g. organizational size, ownership and control type). Section 12.2.2.i discusses the role and potential significance of control variables.

One of the most perplexing problems in using regression models is the multicollinearity (MCL) problem. Section 12.2.2.ii discusses the theoretical and practical aspects of the problem and sets specific rules that have to be followed in order to deal with it. Finally section 12.2.2.iii discusses the possibility of adopting a more parsimonious set of independent variables, adopts specific directives for running regression equations and sets specific rules to be followed.

i. Incorporating Control Variables

Two variables were included as controls because of their potential influence on SID making processes i.e. organizational size and ownership-control type (see table 12.1). According to Child (1972) organizational size has a long history within organizational theory. Several decades ago Weber (1947) found that bureaucratic characteristics of specialization, procedure orientation and structural differentiation were absent in smaller organizations. More recently size was linked with increased resistance to change (Wiersema and Bantel, 1992), or with increased adoption of innovations (Damanpour, 1987).

Concerning strategic decision making, several studies (e.g. Mintzberg, 1973; Lorange and Vancil, 1976; Fredrickson, 1984; Fredrickson and Iaquinto, 1989) have provided ample evidence of the important implications of size on strategic decision

making processes. More specifically, Fredrickson and Iaquinto (1989) reported that increased or decreased size was associated with changes in comprehensiveness in strategic decision making. Child (1972) also supported the dominant role of size in affecting the framework of organizational decision making. It is worth mentioning that the Bradford studies (e.g. Hickson et al. 1986) found no differences in strategic decision making processes which could be attributed to size, except that bigger organizations were using more committees in making strategic decisions.

Debates have also been raised as to the proper measurement of size. Several researchers have recently advocated the use of number of employees as a proxy of size (e.g. Fredrickson, 1984; Grinyer et al. 1988; Damanpour, 1987; Bantel and Jakcson, 1989). Others (e.g. Keats and Hitt, 1988) have argued in favour of such measures as sales volume or net assets as being more representative. With respect to operationalising size, one salient issue refers to the specifics of measurement. If one adopts a measure based on number of employees, is a log transformation more appropriate than a direct measure of size ?. Since the distribution of the sample is skewed, a log transformation may be more appropriate (Grinyer et al. 1988; Bantel and Jackson 1989). Therefore, in all regression analyses we will use the log of size as a predictor variable.

Another major control variable could be the **type of ownership** or else the **control type**. If we accept that Greek-owned enterprises to some extent are expected to portray the Greek style of management and the Greek 'culture' in decision making, while multinationals may represent an implanted decision making style, then it is considered extremely interesting to reveal possible differences in SDMP, attributed to type of ownership-control. The Bradford studies are among the few who have provided evidence of the existence of different decision making patterns between British and multinational companies operating in Britain (Mallory et al. 1983), or British and Swedish companies (Axelsson et al. 1991). We operationalize this variable as a dummy 0/1 variable which measures whether a specific company is a Greek national company or a subsidiary of a multinational operating in Greece.

ii. Multicollinearity Considerations

A potential problem associated with data used in a regression is the problem of multicollinearity. By this we mean that two or more independent variables used in a regression are significantly correlated (Schroeder et al. 1986). Perfect collinearity is present when one independent variable is perfectly linearly related to one or more independent variables, or when an independent variable when regressed on the other independent variables yields an R^2 very close to 1.00.

Unfortunately, due to the type of data used in the social sciences, multicollinearity arises often, since it is very possible that two or more variables will be interrelated. But it is the degree of association which matters, since only when this is high multicollinearity is a serious threat to the statistical validity of the regression results.

Unfortunately, except for the extreme case of perfect collinearity, in most regression models multicollinearity is difficult to detect, since there are almost no tests which could assess its detrimental impact (Berry and Feldman, 1985; Schroeder et al. 1986).

Symptoms of MCL

Several warning signals may alert the researcher of the presence of multicollinearity in the data. Let us shortly review the most significant of them:

(i). One rather sure symptom of high multicollinearity is a substantial R^2 (which means a good fit to the data) for the equation but statistically insignificant coefficients (Lewis-Beck, 1980; Berry and Feldman, 1985). In parallel the researcher should be suspicious when the t-tests for the individual beta parameters of the independent variables are nonsignificant, yet the F-statistic for the full model is significant (Berry and Feldman, 1985; Mendenhall and Sinchich, 1989). But probably, the most sure symptom of multicollinearity is the existence of large correlation coefficients between pairs of independent variables in the correlation matrix (Bailey, 1982; Neter et al. 1983; Mendenhall and Sinchich, 1989).

(ii). A second, weaker signal is regression coefficients which change greatly in value when independent variables are dropped or added to the equation (Lewis-Beck, 1980).

(iii). A third, set of symptoms involves suspicion about the magnitude of a specific coefficient. A coefficient may be regarded as unexpectedly large (small), either in itself, or relative to another coefficient in the equation. It may even be so large (or small) as to be rejected as nonsensical (Lewis-Beck, 1980).

(iv). A fourth alert might be the existence of estimated regression coefficients with algebraic signs opposite to the expected according to theoretical expectations (i.e. a coefficient with 'wrong' signs). Obviously, this last symptom is difficult to assess since in strategy research it is not easy to know in advance the 'right' sign of a relationship.

(v). A final test for detecting multicollinearity is to examine the stability of regression coefficient estimates when switching samples. When there exist serious multicollinearity problems, switching samples, or dropping and entering new variables in the equation may result in a dramatic change of many regression parameters (Neter et al. 1983; Berry and Feldman, 1985; Butler et al. 1992).

Diagnosis and Tests of MCL

All the aforementioned symptoms may provide strong indication of the existence of multicollinearity, but cannot establish the existence of the problem. One step towards this direction might be to inspect the correlation matrix of the independent variables. In case where bivariate correlations among some independent variables exceed 0.80, then we are sure of the existence of serious multicollinearity (Lewis-Beck, 1980; Berry and Feldman, 1985; Schroeder et al. 1986). For others, (e.g. Anderson and Zeithaml, 1984) correlation coefficients exceeding 0.60 may pose a problem. Otherwise, MCL does not seem to be a serious problem.

While suggestive, this approach may not prove foolproof, since there is always the possibility an independent variable to be a nearly perfect linear combination of the remaining independent variables. Moreover, in small-sample research efforts, a single bivariate correlation among independent variables (e.g. .70) could have serious consequences for estimation, while in larger samples a correlation of .85 may pose fewer problems (Berry and Feldman, 1985).

Thus, another more sure method may be preferable. This involves regression of each independent variable on all the other independent variables. In case where the resulting R^2 are close to 1.0, we are ascertained of the existence of a high degree of multicollinearity (Lewis-Beck, 1980; Berry and Feldman, 1985).

A final computational method to diagnose MCL has been developed by Belsley et al. (1980). This involves the computation of eigenvalues of the predictor variable correlation matrix. As the smaller eigenvalues of a set of factor-analysed variables approaches zero, the presence of a near collinearity among the original predictors is indicated. An eigenvalue of exactly 0 indicates perfect linear dependency among independent variables. Belsley and colleagues used the eigenvalues to compute three kinds of statistics: *condition indexes* (CI), *condition numbers* (CN), and *variance proportions.* A condition number of 30 or more reflects moderate to severe collinearity, worthy of further investigation, while a condition index exceeding 10 indicates mild to moderate collinearity. Condition indexes less than 10 mean that MCL is not a problem to worry about (Belsley et al. 1980; Mendenhall and Sinchich, 1989).

Remedies for MCL

Despite the aforementioned warning signals and diagnostic tests for MCL the important question remains: How can we remedy multicollinearity problems? Is there a methodology which may help the researcher to overcome MCL? Unfortunately, there is no single preferable technique for overcoming multicollinearity, since the problem is due to the form of the data. Some useful hints are:

(i). increase sample size: when the sample size is increased the standard error decreases, thereby offsetting the effect of multicollinearity (Berry and Feldman, 1985). Unfortunately, this is not feasible in this research effort.

(ii). If two variables are measuring the same thing, one of the variables is often dropped, since little information is lost by doing so (Lewis-Beck, 1980; Schroeder et al. 1986). A screening procedure such as stepwise regression is helpful in determining which variables to drop (Mendenhall and Sinchich, 1989).

(iii). An alternative to dropping highly correlated variables would be to combine them into a single indicator. If this approach makes conceptual sense, then it can work well (Lewis-Beck, 1980). For example, Meyer and Goes (1988) in their effort to deal with severe multicollinearity conducted factor analysis to examine the feasibility of combining highly intercorrelated variables into scales. They succeeded to build composite factors of environmental and organizational variables, but failed to do the same with leadership variables due to low Cronbach Alpha reliability coefficients.

If one decides, despite severe multicollinearity problems, to keep all the independent variables in the model he should: (i) avoid making inferences about the individual beta parameters (ii) restrict inferences about future values to values of the independent variables that fall within the experimental region (Mendenhall and Sinchich, 1989).

iii. Variable Selection and Adoption of Guidelines

Table 12.1 depicts the various contextual domains incorporated in the previous analysis together with the names of the variables used to dimensionalize each contextual domain. As is evident from table 12.1 the total number of contextual variables, together with the two control variables, amounts 33, a large number undoubtedly. This offers us the advantage of having a rich data base for subsequent analysis, but may at the same time pose specific problems and potential limitations which have to be clarified and solved right from the outset.

The question of whether this list of 33 variables presents an exhaustive list of dimensions influencing SID processes is prevalent. The answer is certainly not. There is an endless number of dimensions which may exert direct or indirect influence on SID processes which are not included in this effort (e.g. corporate climate, reward systems). One might also claim that for example a different set of environmental or managerial dimensions might be better predictors of SID processes. Despite this it is not an exaggeration to contend that this is a very reach data base which will hopefully allow us to produce some interesting results.

CONTEXTUAL DOMAINS	DIMENSIONS:	
1.SID CHARACTERISTICS	1. Magnitude of Impact 2. Frequency and Clarity of Stimuli 3. Uncertainty Surrounding the SID 4. Time Pressure and Pressure on the Organization	5. Frequency/Familiarity 6. Degree of Threat/Crisis Perception 7. SID as a Result of Formal Planning
2.ENVIRONMENTAL CHARACTERISTICS	1. Environmental Heterogeneity 2. Environmental Dynamism 3. Environmental Hostility 4. Perceived Environmental Uncertainty 5. Environmental Competitiveness	
3.FORMAL PLANNING SYSTEMS CHARACTERISTICS	1. Planning Horizon or Development of Formal Planning 2. Depth of Analysis in Planning 3. Formalization in Planning	
4.TOP MANAGEMENT CHARACTERISTICS	1. CEO's Need for Achievement 2. CEO's Risk Propensity 3. CEO's Internal Locus of Control 4. CEO's Intolerance of Ambiguity 5. CEO's Number of Years with the Company	6. CEO's Number of Years in the Same Position 7. CEO's Level of Education 8. Top Management's Aggressive Philosophy 9. Top Management Team's Level of Education
5.CORPORATE PERFORMANCE	1. Perceived Growth 2. Perceived Financial Performance 3. Perceived Market Share Performance	4. Return on Assets 5. Return on Sales 6. Growth in Profits 7. Growth in Sales
6.CONTROL VARIABLES	1. Size (Log Number of Full-Time Employees) 2. Control Type (Greek National vs Subsidiary of a Multinational)	

Table 12.1 : Independent Variables Used In Regression Analysis

However, the data beg an important question: should we adopt a more narrow set of variables by omitting some of the presented 33 variables. Considering the richness of the database it is not unsupported to drop some of them without losing significant explanatory power. It is certainly expected that due to the nature of the data some multicollinearity problems may exist. Thus, the issue of variable reduction together with MCL reduction is among the major methodological considerations.

Specific guidelines have to be set, in accordance with existing theory to help us solve the problem of variable reduction. Table 12.2 depicts the intercorrelations among all 33 independent variables, so as to inspect possible multicollinearity problems. A casual observation of table 12.2 reveals several issues which beg further attention.

In general, very few correlation coefficients exceed .50. This implies that serious multicollinearity is unlikely to be present. But in contrast to several researchers who consider the existence of correlation coefficients exceeding 0.60 or even .70 as a potential problem (e.g. Lewis-Beck, 1980; Anderson and Zeithaml, 1984; Berry and Feldman, 1985; Schroeder et al. 1986), we set stricter rules by considering correlation coefficients greater that 0.50 as warning signals and unacceptable. A few variables seem to create these high correlation coefficients. These variables are: (i) the three dimensions of formal planning systems used in chapter nine, (ii) the two variables measuring CEOs number of years in the company and CEO's number of years in the same position, (iii) the performance variables.

Thus, we have to decide which variables to drop. Regarding the planning variables the alternative was considered to create a composite variable by adding the three variables. This combination of highly correlated variables was not preferred in the course of this effort, since the planning formality variable is considered to be the most reliable and valid of the three variables. It is a scale widely used in the planning literature (Wood and Laforge, 1981) and has been tested in a variety of different contexts with satisfactory results (e.g. Pearce et al. 1987; Robinson and Pearce 1988). Thus we decided to drop from further analysis the variables measuring planning horizon and depth of analysis and to retain the statistically stronger 'planning formality' variable.

We also decided to keep only the variable measuring the CEO's number of years in the same company and drop the CEO's number of years in the position, since they experience a correlation coefficient of .59. Moreover, the former variable not only offers more predictive power, but seems to be conceptually stronger, in approaching CEO's 'domestication' in the company.

Moreover, the variables measuring subjective performance (e.g. perceived growth, perceived profits, and perceived market share performance) present serious multicollinearity problems among them as well as with several other variables (e.g. FPS dimensions). This may be due to the fact that these variables incorporate top management's perceptions of goals of the organization as well as top management attitudes. For example there is a strong relationship between perceived performance dimensions and top management's aggressive philosophy. Thus, we decided to omit perceived performance dimensions since objective measures are only considered as convenient substitutes for objective data whenever accurate objective data are unavailable (Dess and Robinson 1984; Robinson and Pearce 1988).

Finally, for reasons of parsimony and space conservation two other variables are dropped i.e. the degree of stimuli leading to the SID and the CEO's internal locus of control. These variables were dropped because both failed to enter in any of the initial and subsequent regression models we have run. Moreover, locus of control despite its theoretical prevalence in current research failed to prove its significance in this empirical research.

Thus, we excluded ten variables and retained 23 independent variables falling in six different contextual categories. Table 12.3 presents the intercorrelations in this parsimonious set of variables. As is cited, only 2 out of 288 possible correlation coefficients are slightly above 0.50 indicating that multicollinearity may not be a problem. Despite this, several tests for MCL will be performed for each regression model.

12.3. PRESENTATION OF RESULTS-DISCUSSION

In running regression models we created nine models, one for each dependent variable. Tables 12.4 to 12.12 present the results of these independent variables. As is evident from the tables the independent variables have been grouped into categories in order to facilitate discussion of results.

In each of the models presented it was within the aims of the research not only to present the best regression equation, i.e. the equation which provides the maximum number of significant variables, but also to give a flavor of the relative influence of each contextual domain alone on each independent variable.

In our attempt to provide the best regression model both backward elimination and stepwise regression methods were used for corroboration. In most cases the results were identical. In the very few cases where the two methods provided different equations, further tests.were attempted by entering and removing variables from the equation.

Another consideration in presenting the models was the question of whether we should present a full equation model along with the best equation model, for each of the dependent variables. Unfortunately, the rather medium-sized sample size (i.e. 70 SIDs) theoretically does not allow us to introduce more than 10 variables simultaneously. If we exceed this number we are left with less than adequate degrees of freedom and cannot be sure about the validity of the resulting regression models.

A third major consideration refers to the possible multicollinearity effects. We therefore followed procedures as outlined by Belsley et al. (1980) to test for the effects of multicollinearity in the regression analysis. Among our primary concerns was to calculate condition indexes and to assess the extent of multicollinearity effects. In each of the regression models of tables 12.4 to 12.12 the respective Condition Number for the best equation model is calculated. In our analyses, all the condition indexes are far from the suggested warning level of 10.0 for mild collinearity, and thus we do not expect serious problems (Belsley et al. 1980).

Several other warning signals were inspected, in order to detect possible multicollinearity problems. In none of the equations there was a substantial R^2 accompanied by statistically insignificant coefficients to make us suspicious about possible multicollinearity problems. Moreover, by adopting the more parsimonious set of data we have eliminated most of the possible 'seeds' of collinearity among explanatory variables. Furthermore, in order to test the stability of regression coefficients we conducted several runs by dropping or adding independent variables in the equation. In none of these trial runs did we witness any extraordinary change in regression coefficients.

All the regression coefficients appeared to produce algebraic signs according to theoretical expectations and no unexpected signs appeared. Moreover, the coefficients for each regression showed a reasonably high consistency with the simple correlations discussed in previous chapters. There appeared one or two differences, which are discussed in the following paragraphs. Finally we conducted several regression analyses by switching samples. In general, no dramatic changes of regression parameters were witnessed. Of course due to the change of samples a number of coefficients were modified but the changes were not interpreted as warning signals.

12.3.1 Rationality/Comprehensiveness

Table 12.4 presents the results of the first dependent variable, the rationality/ comprehensiveness construct. Six different regression models have been created. The first five examine the impact of each contextual domain individually (i.e. SID characteristics, environment, FPS, top management and corporate performance) on the process rationality. The sixth model incorporates all the contextual domains simultaneously and attempts to assess the relative significance of each one, since some are more influential, while others do not appear to play an important role in determining the rationality of SID processes.

Perhaps the most striking observation in model 6 of table 12.4 is that if we consider simultaneously all the adopted contextual domains we are able to explain almost half of the variability in rationality/comprehensiveness (R^2=.47 and Adj. R^2=.44). Considering the cross-sectional nature of the data this percentage is considered as remarkably high. Further analysing the results of the best model, it can be seen that SID's magnitude of impact, planning formality, TMT's level of education and organizational size are significant predictors of rationality.

Results are in line with Stein (1980) who suggested that a decision's magnitude of impact is among the strongest explanatory variables of decision making behavior. The first model, by assessing the aggregate impact of only SID characteristics on decision rationality revealed the significant contribution of two other variables (i.e. extent of threat/crisis and degree of emergence through formal planning systems) in explaining decision rationality. The theoretical and practical significance of both variables were acknowledged in chapter 7. Model one suggests that when considered with the remaining SID characteristics they account for a quarter of the total variance in rationality. But when considered simultaneously with the remaining contextual variables in model six they both fail to emerge as statistical significant contributors to rationality.

Contrary to the line of reasoning which understates the contribution of FPS to decision making (e.g. Hall, 1973; King 1983; Sinha, 1990), regression results appear to support that planning formality is the most important contributor to rationality in SID making. Indeed, results support the normative view on the essentiality of FPS as tools designed with the aim to contribute to more rational decision making (e.g. Kudla, 1976; Armstrong, 1982; Langley, 1988; Duncan, 1990). Moreover, results suggest that when SIDs are examined it seems that much of the actual decision making takes place inside formal planning systems, since managers seem to rate high the contribution of FPS to decisions.

A third significant result is the inclusion of TMT's level of education among the major explanators of decision rationality. The regression coefficient corroborates Hambrick and Mason (1984) as well as Bantel and Jackson (1989), and indicates that a team of well educated executives will be oriented toward rationalizing. It is worth noting that only characteristics of the TMT are included both in the best model and in model four which assesses the contribution of only TM characteristics to rationality. Indeed, regression results corroborate the correlation results of chapter 10 and lend credibility to the 'upper echelons' perspective in contrast to the 'CEO dominance'. Indeed, both TMT's level of education and TMT's aggressive philosophy, as opposed to characteristics of the CEO are better predictors of rationality in SID making.

Corporate size is the final important predictor of rationality, entering model six. The positive coefficient with which size enters the regression equation corroborates previous work (e.g. Mintzberg, 1973, and Fredrickson, 1984; Fredrickson and Iaquinto 1989) and indicates that increased or decreased size is associated with changes in rationality /comprehensiveness.

Several other issues worth discussing emerge from table 12.4. First, despite its positive association with comprehensiveness, the dummy variable measuring control type, fails to enter the final regression model. This implies that when we consider all the contextual domains simultaneously ownership-control does not seem to play a significant role in determining rationality/comprehensiveness. This is an important implication since the popular view in Greece posits that multinationals follow more rational comprehensive decision making processes when making decisions of a strategic nature. Results appear to support the view that size, perceived impact, FPS, and TMT's level of education are more important predictors of rationality than 'implanted decision making' found in MNC's.

A second striking result is the lack of significance of environmental variables in determining rationality comprehensiveness. In chapter eight, by examining bivariate associations we reported that heterogeneity, dynamism, and hostility are strongly associated with rationality. On the contrary, when we consider all the different contextual domains at the same time, it appears that corporate environment is noticeably absent as a predictor of rationality. Does this mean that the proponents of the environmental determinism school of thought should reconsider their argumentation? One could extend the argument to incorporate corporate performance levels, since no performance variable loads significantly in the 'best' model. We will not rush into quick conclusions before examining the results of the rest of dependent variables.

12.3.2 Financial Reporting

Table 12.5 presents the results regarding the influence of contextual factors on the degree of formal financial reporting. Again the explanatory power of the best model is significant, accounting for 40% of the total variance. From a quick inspection of table 12.5 it is clear that SID characteristics, environmental dimensions, and top management characteristics appear to be the major predictors of financial reporting behavior.

More specifically, results indicate that situations perceived as crises are actually associated with more financial reporting activities. This is in line with theory and argumentation advanced in chapter seven (Chaffee, 1985; Dutton, 1986). Furthermore, the emergence of a SID through some type of formal planning appears to be very important by associated with use of financial analysis. It is remarkable to note, that the degree of existing planning formality, although statistical significant, when analysed comparatively with other contextual variables does not remain significant. Current theory and practice has attacked FPS accusing them for being too ritualistic and for the fact that much of the actual decision making takes place outside them. The results of this model appear to validate this view since it seems that the

existence of FPS does not necessarily imply more financial reporting activities. It is only if FPS themselves have contributed to the emergence of a SID, that actually more reporting activities are witnessed. This is an interesting speculation which deserves further attention.

Another set of interesting relationships evolved from the inclusion of two environmental variables in the final integrative model. The expected positive association between dynamism and reporting has received enough attention in chapter eight. What was unexpected was the significant negative relationship between environmental competitiveness and degree of financial reporting. This can be possibly attributed to the fact that companies in competitive environments are already aware of the intensity of competition and may choose different paths to being comprehensive that resorting in financial reporting activities.

A final, although counterintuitive, significant association supports that a CEO's need for achievement is associated with less financial reporting. According to theory discussed in chapter ten, NACH is positively associated with entrepreneurial success (e.g. Mc Cleland 1961; Begley and Boyd, 1986). Miller and Toulouse (1986) argued that CEOs with high NACH are dominated by a desire to influence and control the context in which they operate, and are expected to require control over the organization (Miller and Droge, 1986). This again, may favour more financial reporting activities. Although the particular relationship is difficult to explain one may speculate that high achievers may resort more on other elements of rational decision making and not on extensive financial reporting. Again, this relationship warrants further investigation.

Several other relationships appearing in table 12.5 are worth commenting on. For example, as with the rationality equation, corporate performance does not seem to play a significant role. Despite the fact that ROA appears significant in the fifth model, it fails to enter the integrative regression. Finally, neither size nor control type appear to contribute significantly to financial reporting activities.

12.3.3 Rule formalization and Coordination Devices

Tables 12.6 and 12.7 present the results assessing the influence of contextual domains on the degree of rule formalization and the existence of formal coordination devices during SID making. As can be seen the explanatory power of the best models in both tables exceed 40% of the total variance, which is satisfactory. Upon first inspection, it appears that almost every contextual domain has its own unique contribution on process formalization.

More specifically in the best model of table 12.6 five variables load significantly. They measure decision uncertainty, environmental uncertainty, CEO's risk propensity, size and control type. Results support the hypothesis advanced in chapter seven that in situations where high uncertainty of actions to be taken and of information to be collected prevails, rigid rules and typical processes tend to be ignored or bypassed. Indeed, results concur with Thompson (1967) and show that lower formalization of the process as well as less rigidity concerning financial reporting activities obtain.

On the contrary, PEU provides the same strong positive association with the one obtained in chapter eight. A result of this type contradicts current theory (e.g. Burns and Stalker, 1961; Keats and Hitt, 1988), and is counterintuitive. One possible interpretation of this apparently unexpected correlation may come if we extend Sharfman and Dean's (1991) argument for environmental dynamism, and hypothesize that as firms in dynamic-volatile environments introduce formalization in order to structure their changing world, the same may take place in environments perceived as uncertain.

The third significant result of model six is the negative association between CEO's risk attitude and rule formalization. Although a statistical significant correlation is not provided in chapter ten, this dimension seems to offer unique explanatory power when taken together with other contextual forces. Again, such a result is intuitively expected, since risk takers are expected to brake the bounds of

organizational systems and formalities and influence the SID process towards more informal paths.

Also size and control type seem to bear significantly on the formalization of the SID process. Both results are according to expectations since increased size has been found to be positively associated with the bureaucratic characteristics of formalization (e.g. Weber, 1947). The control type is also expected to raise formalization, since multinationals usually demand greater rule orientation and uniform formalized procedures from their affiliates.

Comparable results are obtained in table 12.7 for formal coordination devices. As is seen, SID characteristics bear heavily on the formation of coordination devices. Similarly, frequent-familiar decisions as well as decisions emerging through FPSs, follow established channels, while perceived pressure as a SID characteristic forces companies to abandon any formality.

From the environmental dimensions, heterogeneity loads highly indicating a negative relationship between coordination devices and environmental heterogeneity. This concurs with much of the literature on this issue (e.g. Aldrich, 1979; Smart and Vertinsky, 1984; Sharfman and Dean 1991), which suggests that heterogeneous environments may not favour standardized ways of action.

Another finding can be gleaned from the results of table 12.7. It refers to the emerging significance of CEO characteristics on the use of formal coordination devices. Indeed, both need for achievement and intolerance of ambiguity seem to bear heavily on the process. The former characteristic exerts a positive influence, which is in line with current theory and research (Lawrence and Lorsch, 1967; Miller and Toulouse, 1986), while the later obtains a significant negative association which is rather counterintuitive. Unfortunately, as has been stressed in chapter ten, very little is known about the actual strategic behavior of top managers with high or low tolerance of ambiguity. Finally, control type together with return on assets positively influence the use of formal coordination devices.

Overall, however, it can be argued that there is a 'balanced contribution' of all the included contextual domains in explaining SID formalization. Of interest is the lack of significant association between FPS and decision formality, which raises some concern about the actual role of FPS in strategic decision making.

12.3.4 Hierarchical Decentralization and Lateral Communication

Tables 12.8 and 12.9 depict regression results exploring the influence of contextual domains on hierarchical decentralization and lateral communication respectively. Several conclusions can be drawn from the results. One, is that both models afford very good explanations of the extent to which context influences decentralization and communication, since the first model explains 43% of total variance, while the second exceeds 63%.

A second finding suggests that both hierarchical decentralization and lateral communication are highly dependent upon the attributes of the particular SID. In table 12.8 SID's magnitude of impact together with the pressure it exerts and the source of its emergence considerably influence subsequent behavior. Especially, the result for magnitude of impact corroborates Dutton et al. (1986) since it implies that issues with important impact attract the collective attention not only of various layers in the hierarchy (as revealed in table 12.8) but also of various departments (as revealed in table 12.9).

Moreover, SIDs perceived as exerting pressure appear to attract the full attention of higher levels without significant involvement from other that 'strategic elites'. In addition, emergence through FPS as is seen in table 12.8 implies greater participation of various layers. On the other side, broader lateral communication is fostered in frequent/familiar issues, while SIDs exerting pressure seem to remain a top management 'prerogative', as the negative regression coefficient in table 12.9 suggests.

It is somewhat surprising, however, to find that corporate environment does not seem to play a significant role in determining both hierarchical decentralization and lateral communication. Especially for the later, none of the environmental variables manages to enter the final integrative regression model. Concerning the former, only hostility appears to enter but as a rather weak predictor ($p<.10$) of behavior.

Planning formality despite being a statistical significant correlate of both hierarchical decentralization and lateral communication, enters significantly only in the regression model of table 12.9, where lateral communication is the dependent variable.

A fourth important category of variables i.e. top management characteristics produces interesting results. In table 12.8 the variable measuring CEO's number of years with the company is positively related to hierarchical decentralization patterns. This is in line with theory positing that CEO's tenure may influence communication patterns by developing greater levels of social integration, and possibly by including in the dominant coalition more managers from various layers (Zenger and Lawrence, 1989; Wiersema and Bantel, 1992). Similarly, in table 12.9 TMT's aggressive philosophy appears positively associated with lateral communication during SID making.

In both tables corporate performance levels as well as the two control variables incorporated do not seem to have significant influence on either hierarchical decentralization or lateral communication.

12.3.5 Politicization and Problem Solving Dissensus

Tables 12.10 and 12.11 depict the regression results for degree of politicization and problem solving dissensus during the making of SIDs. As can be seen politicization is stimulated by the decision's magnitude of impact, and its uncertain nature, as well as the TMT's level of education, and growth in profits, while it is discouraged by TMT's aggressive philosophy.

In the same vein, problem solving dissensus increases with decision's uncertainty, decision's pressure, environmental uncertainty, and growth in profits. On the other hand it decreases with environmental heterogeneity, dynamism and hostility as well as with multinational type of ownership.

Overall, it seems that both political activities and problem solving dissensus are highly influenced by various SID's characteristics. Indeed, politicization is influenced more by magnitude of impact and uncertainty while dissensus is influenced by uncertainty and pressure.

Environmental properties seem to be significant predictors of only problem solving dissensus, but rather poor predictors of political behavior. Indeed, results corroborate the profound significance of corporate environment, as discussed in chapter eight.

Contrary to expectations planning formality as well as the two control variables do not seem to bear any influence on either variable. Moreover, while management characteristics do not seem to actually influence problem solving dissensus, two notable associations emerge between politicization and TMT's education and aggressive behavior. The second association is in line with our hypothesis in chapter 10, but the TMT's level of education loads significantly on the regression equation, in spite of low correlations. This means that the contribution of this dimension is quite unique, bringing the results closely to previously reported research (e.g. Dess, 1987) and to our unsupported hypothesis in chapter 10. Indeed, as we have already argued in chapter 10, the existence of many well educated executives may foster multiple sources of power and expertise, thus increasing the levels of political behavior.

12.3.6 Duration - Timing

The results for duration-timing of the process are presented in table 12.12. As is evident from this table contextual elements prove to be weak predictors of process duration, since only 17% of the total variance is explained. By any account, this is not a bad result, since four important variables appear to load highly, while all variables

are in line with our theoretical analysis and the correlations obtained from empirical results. Indeed, as expected, SIDs magnitude of impact as well as company's size are found to be positive related to decision duration, while SID's frequency/familiarity as well as environmental competitiveness are found to be associated with more 'snapshot' decision processes.

12.4. DISCUSSION OF RESULTS

Table 12.13 summarizes the results of the chapter by incorporating the 'best' equations for all the dependent variables. By means of this we attempt to give a comprehensive view of the determinants of SID making processes, and to answer the question which contextual domain appears to be more influential in SID making processes: the environmental determinism school, the strategic choice school or the inertial school of thought?

Several patterns worth noting emerge from table 12.13. **First,** all nine models afford good to excellent predictions of the extent to which the process of SID making is determined by the context in which it takes place. With the exception of duration/timing (model 9) the explanatory power of the remaining models ranges from .35 to .66 and achieves an average explanatory power of almost 50%. Considering the cross-sectional nature of the research effort, this is considered as extremely satisfactory, since related research efforts in the past failed to explain more than 33% of the variance at best (e.g. Stein, 1980).

Second, the findings suggest that the SID process may be viewed as the interplay of various contextual factors, some of which are more influential than others. Indeed, despite some theoretical support and the initial empirical support obtained by simple correlation coefficients in chapter seven, it was rather a surprise to witness the dominant role of **project characteristics** in determining subsequent processes.

Regression results concur with the conclusion drawn in chapter seven that SID characteristics and process characteristics are inextricably linked. Results also corroborate an emerging significant body of research claiming that categorization of strategic issues into distinct categories directly influences the magnitude of actions taken and resources committed and shapes both the choice of strategic alternatives and predictable organizational responses (Pfeffer et al. 1976; Daft and Weick, 1984; Dutton and Jackson, 1987; Lyles and Thomas, 1988; Dutton et al. 1989).

This emerged importance of perceived SID characteristics in influencing SID processes, contradicts the assumptions of another body of research mostly based on laboratory testing (e.g. Fredrickson, 1985), which argues that experienced managers may be relatively unaffected by decision labels. It seems that the study of actual decision making may produce quite different results in comparison to laboratory research in artificial settings.

Similar results were obtained by Meyer and Goes (1988), in their study of innovation assimilation. In assessing the comparative influence of various environmental domains on innovation assimilation they found that environment, organization and leadership, taken together, were poor predictors of innovation, explaining only 11% of the total variance. On the contrary very good predictors proved to be the innate attributes of innovations. They concluded that "*apparently innovations possess innate attributes that significantly affect their adoptability even after the effects of environmental, organizational and leadership variables have been statistically eliminated*".

Particularly strong seem to be the influence of a decision's magnitude of impact on the process followed. Moreover, a SID's frequency/familiarity, its uncertainty and the way it emerges are found to significantly influence dimensions of the process.

Another important finding concerns the role and significance of various dimensions of **corporate environment** in influencing SID processes. In chapter 8, by contemplating strictly bivariate associations, we argued that the deterministic, external control or population ecology model received relatively strong support when

applied in SID making processes. On the contrary, environmental dimensions do not seem to retain their significance when examined in conjunction with other contextual domains. Regression results corroborate Provan (1989) who argues that the impact of external environment on strategy and strategic decision making is seldom direct and the cause-effect relationship between the two is not always clear. Of course environmental characteristics appear to be particular strong predictors of financial reporting activities, and problem solving dissensus, but fail to enter significantly the regression models for rationality, politicization and lateral communication. Results contradict with Jemison (1981), who argued that environmental factors, as opposed to internal organizational factors, are the primary sources of influence on SDs.

In the attempt to explain this lack of dominance of the external control model, several speculative assumptions may be advanced. Schneider and DeMeyer (1991), reported that Latin European managers in contrast to other Europeans, may be characterised by an attitude of having limited control over the external environment. Thus, they usually direct their efforts towards controlling the immediate, internal environment, rather than trying to anticipate and control external environment. Although speculative and untested, this assertion provides a fruitful avenue for research in comparative decision making practices.

Internal organizational processes as approached by **planning formality** appear to give rather poor results, in the sense that **FPSs** are found to have a profound influence on only two aspects of the decision making process (i.e rationality and lateral communication). These results appear to be in line with pertinent research questioning the role and significance of FPS in strategy formulation. On the other hand, the emerging importance of FPS in shaping rational decision processes is in line with theoretical speculations arguing that FPS are primarily designed with the aim to contribute to more rational/comprehensive decision making (Kudla, 1976; Armstrong, 1982; Langley, 1988; Duncan, 1990). Again, regression results corroborate the prevailing view that FPS act as mechanisms reinforcing lateral communication (Quinn, 1980; Tregoe and Tobia, 1991; Kudla, 1976; Langley,1988).

Concerning FPSs we should also stress the importance of another dimension which in the course of this research was considered more as a project characteristic than as a characteristic of the FPS, i.e. the emergence of a SID through FPS. This characteristic deserves special attention because it reveals another interesting speculation. The results suggest that although the existence of FPSs may not warrant significant influence on decision processes, of particular significance is the existence of deliberate strategic posture from which the decision originated.

Another contextual domain which deserves special attention is the domain of **top management characteristics**. Child (1972) argued that the values of the dominant coalition may have a more profound impact on SDMPs than other contextual variables do. Reviewing the conclusions of chapter ten we see that the characteristics of the TMT, as opposed to characteristics of the CEO, were found to be important predictors of decision behavior. The chapter ended by lending credence to the 'upper echelons view' of organizations, while putting into dispute the allegations of population ecologists (e.g. Hannan and Freeman, 1977) which consider TMT to be but a passive agent. The results of the regression models do not significantly depart from this conclusion. Indeed, top management team characteristics appear to influence decision rationality, lateral communication and political behavior. What is of particular interest is that CEO characteristics enter significantly into the regression models and influence financial reporting, formalization and hierarchical decentralization. This implies that the contribution of CEO characteristics have also their own effect when taken together with other contextual factors. This brings the results closer to research reporting that CEO personality characteristics are related to aspects of strategic decision making processes (e.g. Miller and Toulouse, 1986)

It is also worth noting that TM characteristics do not have any influence on such process characteristics as problem solving dissensus and decision duration. This may be explained by the fact that executives do not always have complete latitude of action (e.g. Lieberson and O'Connor, 1972; Hannan and Freeman, 1977). There exist conditions of restricted discretion where TM become less important and other factors

as environmental characteristics or innate attributes of SIDs become more significant in influencing SID making. Overall, regression results support the view that top management makes a difference, especially in medium-sized or smaller enterprises as those of the sample (Kets De Vries and Miller, 1986; Nahavandi and Malekzadeh, 1993).

Another set of interesting relationships revolves around the significance of **BEP** in determining decision processes. Return on assets, as well as profit growth entered the final regression models and provided significant positive associations with decentralization, politicization, dissensus and formal coordination devices.

Finally, control variables, size and control type, yielded some interesting results. **Size**, as a component of the inertial model of decision making (Romanelli and Tushman, 1986), provided results consistent with Mintzberg's (1973) observation that as companies grow they move towards a 'planning' mode of decision making. Indeed, results indicate that increased size is associated with more rational, formalized and time-consuming SID processes. This is in line with the view that increases in organizational size ad complexity, structural elaboration, and formalization of internal systems (e.g. Wiersema and Bantel, 1992).

Of note, also, is the positive association between multinational **ownership** and formalization and existence of coordination devices. In a study of decision-making practices between British and American-Owned firms in Britain Mallory et al. (1983) reported that in general american ownership had little or no influence on the way decisions were made. Among the few alleged differences the Bradford team found the reliance of pure British companies on the formalities of standing committees, on pre-existing customary procedures and on longer decision processes. The results of this study seem to reveal a surprisingly similar pattern of differences as far as pure Greek enterprises and MNC subsidiaries are concerned. Here, the results provide clear evidence that multinational management is associated with more rule formalization and more extensive use of internal coordination devices, but do not seem to vitally influence rationality, financial reporting, decentralization and political behavior.

Overall, the integrative models lend support to context as determinant of decision behavior and has proved as ill-grounded the speculations of a number of researchers who have hypothesized that: *the strategic decision processes of organizations that are dominated by highly experienced and successful executives may not be subject to the contextual factors articulated in the literature* (Fredrickson, 1985 pp 839).

The present thesis articulated the validity of a contingency approach in studying SDMPs and suggested the view that normative, across-the-board panaceas for strategic decision making and strategy formulation are likely to be ill-grounded. Indeed, it has been found that neither the external control model (environment), nor the strategic choice model (decision makers), nor the corporate inertial model (size), nor the resource availability (performance) alone, adequately explain actual strategic behavior. On the contrary leaders should be seen as partially constrained decision-makers who manage their organizations, always trying to take into account constraints posed by the external corporate environment, the organizational performance, the properties of the decisions themselves, as well as several other contingencies.

INTERCORRELATIONS AMONG ALL THE INDEPENDENT VARIABLES IN THE THESIS

VARIABLES	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
1.MAGNITUDE OF IMPACT	1																															
2.THREAD/CRISIS	09	1																														
3.STIMULI	28	28	1																													
4.UNCERTAINTY	-16	01	-27	1																												
5.FREQUENCY	03	13	-10	-26	1																											
6.PRESSURE	33	30	07	03	05	1																										
7.EMERGENCE THROUGH FPS	42	10	17	-30	20	13	1																									
8.HETEROGENEITY	13	-13	-10	-04	-19	19	35	1																								
9.DYNAMISM	23	-25	-19	-26	09	16	21	44	1																							
10.HOSTILITY	-19	05	-22	38	-09	-04	-19	-17	-32	1																						
11.UNCERTAINTY	13	-20	-15	11	-06	08	05	22	33	-07	1																					
12.COMPETITIVE-NESS	03	-13	-19	-10	16	-02	03	04	37	-19	12	1																				
13.PLANNING HORIZON	15	27	08	-17	15	11	42	31	18	-38	13	25	1																			
14.DEPTH OF FPS ANALYSIS	18	05	02	-13	13	14	49	41	41	-36	26	34	80	1																		
15.PLANNING FORMALITY	26	19	15	-04	17	17	47	31	21	-28	14	17	80	86	1																	
16.NEED FOR ACHIEVEMENT	-01	-26	-14	00	-18	-13	03	47	36	02	21	-04	02	14	-05	1																
17.RISK PROPENSITY	24	15	20	-16	-01	39	14	24	36	-09	04	16	31	20	21	-01	1															
18.LOCUS OF CONTROL	08	08	24	-12	-19	10	-11	11	-11	-12	-13	10	13	-06	-03	-12	38	1														
19.INTOLERANCE OF AMBIGUITY	-19	-23	-05	-08	16	-17	04	-09	-08	-17	-23	14	-06	02	-09	03	-27	-36	1													
20.No.OF YEARS WITH COMPANY	-01	-18	15	00	25	-17	-02	-13	-25	-12	-20	-14	-02	-02	17	-07	-26	-15	26	1												
21.No.OF YEARS AS CEO	10	-01	27	12	13	-22	15	08	-20	-10	-17	-05	17	11	32	14	02	07	06	59	1											
22.CEO's LEVEL OF EDUCATION	00	-01	-33	-01	10	02	01	-12	30	07	29	27	14	19	11	05	17	-03	-22	-39	-35	1										
23.TMT's LEVEL OF EDUCATION	08	25	06	-31	18	29	27	07	10	-46	-05	10	52	35	44	-43	19	00	-09	00	-14	17	1									
24.TMT's AGGRESSIVE PHILOSOPHY	37	-13	06	-13	13	26	34	42	55	-42	44	27	39	49	53	12	44	18	-10	01	11	16	21	1								
25.GROWTH	23	-08	11	-27	19	09	34	34	49	-44	32	24	45	55	52	21	32	11	04	-05	17	11	10	74	1							
26.FINANCIAL PERFORMANCE	06	-08	-03	-08	18	14	35	41	35	-27	42	24	33	49	41	09	01	-09	21	06	02	07	17	62	68	1						
27.MARKET SHARE	17	07	18	-37	41	26	32	09	25	-51	-10	20	45	38	43	-15	35	04	16	13	11	01	44	51	56	39	1					
28.RETURN ON ASSETS	03	-04	-02	11	18	13	10	13	16	01	04	-06	12	12	28	-14	08	-12	21	23	11	10	08	45	37	57	30	1				
29.RETURN ON SALES	02	-09	-02	13	11	08	01	17	12	00	-02	-19	07	00	19	-05	10	-09	16	29	13	06	05	36	26	46	19	95	1			
30.GROWTH IN PROFITS	03	03	25	-33	-07	22	17	14	17	-33	17	-14	24	17	16	10	10	08	04	-06	-02	01	28	21	36	32	26	12	09	1		
31.GROWTH IN SALES	12	-30	26	-35	05	08	-02	00	42	-43	12	31	05	07	-01	04	33	25	07	-12	-05	-02	04	45	43	29	50	11	09	27	1	
32.CONTROL TYPE/ OWNERSHIP	15	-06	-14	-17	13	22	38	35	39	-42	13	22	49	63	47	16	05	06	11	-03	-09	05	18	41	42	41	46	03	-05	11	21	1
33.LOG SIZE	-22	16	12	10	-06	-04	-07	-05	-19	00	-15	-04	08	08	00	11	-21	-06	-02	06	02	-04	05	-34	-11	-03	-21	-13	-08	17	-21	-23

Note: Decimals omitted for Correlation Coefficients.
For Coefficients greater than r > 0.20 p < 0.05.
For Coefficients greater than r > 0.275 p < 0.01.
For Coefficients greater than r > 0.35 p < 0.001.

Table 12.2 : Intercorrelations Among all the Dependent Variables in the Thesis

INTERCORRELATIONS FOR THE FINALLY SELECTED INDEPENDENT VARIABLES

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1. MAGNITUDE OF IMPACT	1																						
2. THREAD/CRISIS	09	1																					
3. UNCERTAINTY	-16	01	1																				
4. FREQUENCY	03	13	-26	1																			
5. PRESSURE	33	30	03	05	1																		
6. EMERGENCE THROUGH FPS	42	10	-30	20	13	1																	
7. HETEROGENEITY	13	-13	-04	-19	19	35	1																
8. DYNAMISM	23	-25	-26	09	16	21	44	1															
9. HOSTILITY	-19	05	38	-09	-04	-19	-17	-32	1														
10. UNCERTAINTY	13	-20	11	-06	08	05	22	33	-07	1													
11. COMPETITIVE-NESS	03	-13	-10	16	-02	03	04	37	-19	12	1												
12. PLANNING FORMALITY	26	19	-04	17	17	47	31	21	-28	14	17	1											
13. NEED FOR ACHIEVEMENT	-01	-26	00	-18	-13	03	47	36	02	21	-04	-05	1										
14. RISK PROPENSITY	24	15	-16	-01	39	14	24	36	-09	04	16	21	-01	1									
15. INTOLERANCE OF AMBIGUITY	-19	-23	-08	16	-17	04	-09	-08	-17	-23	14	-09	03	-27	1								
16. No.OF YEARS WITH COMPANY	-01	-18	00	25	-17	-02	-13	-25	-12	-20	-14	17	-07	-26	26	1							
17. CEO's LEVEL OF EDUCATION	00	-01	-01	10	02	01	-12	30	07	29	27	11	05	17	-22	-39	1						
18. TMT's LEVEL OF EDUCATION	08	25	-31	18	29	27	07	10	-46	-05	10	44	-43	19	-09	00	17	1					
19. TMT's AGGRESSIVE PHILOSOPHY	37	-13	-13	13	26	34	42	55	-42	44	27	53	12	44	-10	01	16	21	1				
20. RETURN ON ASSETS	03	-04	11	18	13	10	13	16	01	04	-06	28	-14	08	21	23	10	08	45	1			
21. GROWTH IN PROFITS	03	03	-33	-07	22	17	14	17	-33	17	-14	16	10	10	04	-06	01	28	21	12	1		
22. CONTROL TYPE OWNERSHIP	15	-06	-17	13	22	38	35	39	-42	13	22	47	16	05	11	-03	05	18	41	03	11	1	
23. LOG SIZE	-22	16	10	-06	-04	-07	-05	-19	00	-15	-04	00	11	-21	-02	06	-04	05	-34	-13	17	-23	1

Note: Decimals omitted for Correlation Coefficients.
For Coefficients greater than r > 0.20 p < 0.05.
For Coefficients greater than r > 0.275 p < 0.01.
For Coefficients greater than r > 0.35 p < 0.001.

Table 12.3 : Intercorrelations for the Finally Selected Independent Variables

Table 12.4. Regression Equations With Rationality/Comprehensiveness as Dependent Variable [a]

INDEPENDENT VARIABLES:	CORREL/ON COEFF/S	MODEL 1: SID CHAR/ICS	MODEL 2: ENVIRON/AL CHARACT/ICS	MODEL 3: FPS CHARACT/ICS	MODEL 4: TOP MGT CHARACT/ICS	MODEL 5: CORPORATE PERFORMANCE	MODEL 6: "BEST" MODEL
A. SID CHARACTERISTICS							
1.Magnitude of Impact	.42 ***	.28 *					.33 ***
2.Threat/Crisis	.23 *	.17 †					
3.Decision Uncertainty	-.14						
4.Frequency	.11						
5.Pressure	.28 **						
6.Emergence Through FPS	.43 ***	.30 *					
B. ENVIRONMENTAL CHARACTERISTICS							
1.Heterogeneity	.25 *		.20 †				
2.Dynamism	.20 *						
3.Hostility	-.28 **		-.25 *				
4.Perceived Environmental Uncertainty (PEU)	.11						
5.Competitiveness	-.01						
C. FPS CHARACTERISTICS							
1.Planning Formality	.59 ***			.59 ***			.42 ***
D. TOP MANAGEMENT CHARACTERISTICS							
1.CEO's Need for Achievement	-.02						
2.CEO's Risk Propensity	.14						
3.CEO's Intolerance of Ambiguity	-.15						
4.CEO's number of Years with the Company	.08						
5.CEO's Level of Education	.11						
6.TMT's Level of Education	.39 ***				.32 **		.17 †
7.TMT's Aggressive Philosophy	.39 ***				.32 **		
E. CORPORATE PERFORMANCE							
1.Return on Assets	.19 †						
2.Growth in Profits	.23 *					.23 †	
F. CONTROL VARIABLES							
1.Size (logarithm)	.09						.16 †
2.Control Type/ Ownership	.34 **						
R^2		.29	.12	.34	.25	.05	.47
Adjusted R^2		.25	.09	.33	.23	.04	.44
F		8.8 ***	4.6 *	35.5 ***	11.3 ***	3.8 †	14.3 ***

† $p < .10$ * $p < .05$ ** $p < .01$ *** $p < .001$

[a] Values Shown in the Regression Models are the Standardized Regression Coefficients. N=70

Table 12.5. Regression Equations with Financial Reporting as Dependent Variable [a]

INDEPENDENT VARIABLES:	CORREL/ON COEFF/S	MODEL 1: SID CHAR/ICS	MODEL 2: ENVIRON/AL CHARACT/ICS	MODEL 3: FPS CHARACT/ICS	MODEL 4: TOP MGT CHARACT/ICS	MODEL 5: CORPORATE PERFORMANCE	MODEL 6: "BEST" MODEL
A. SID CHARACTERISTICS							
1.Magnitude of Impact	.36 ***						
2.Threat/Crisis	.30 **	.26 *					.28 **
3.Decision Uncertainty	-.26 *						
4.Frequency	.20 *						
5.Pressure	.29 **						
6.Emergence Through FPS	.47 ***	.44 ***					.35 ***
B. ENVIRONMENTAL CHARACTERISTICS							
1.Heterogeneity	.13						
2.Dynamism	.30 **		.37 **				.47 ***
3.Hostility	-.19 †						
4.Perceived Environmental Uncertainty (PEU)	.04						
5.Competitiveness	-.07		-.20 †				-.22 *
C. FPS CHARACTERISTICS							
1.Planning Formality	.24 *			.24 *			
D. TOP MANAGEMENT CHARACTERISTICS							
1.CEO's Need for Achievement	-.15						-.26 *
2.CEO's Risk Propensity	.12						
3.CEO's Intolerance of Ambiguity	-.15						
4.CEO's number of Years with the Company	-.16 †						
5.CEO's Level of Education	.20 †						
6.TMT's Level of Education	.25 *				.20 †		
7.TMT's Aggressive Philosophy	.26 *				.22 †		
E. CORPORATE PERFORMANCE							
1.Return on Assets	.20 *					.20 †	
2.Growth in Profits	.19 †						
F. CONTROL VARIABLES							
1.Size (logarithm)	-.12						
2.Control Type/ Ownership	.28 **						
R^2		.28	.13	.06	.11	.04	.44
Adjusted R^2		.26	.10	.04	.08	.03	.40
F		13.3 ***	4.8 **	4.1 *	4.1 *	2.8 †	10.2 ***

† $p < .10$ * $p < .05$ ** $p < .01$ *** $p < .001$

[a] Values Shown in the Regression Models are the Standardized Regression Coefficients. N=70

Table 12.6. Regression Equations with Formalized Rules as Dependent Variable [a]

INDEPENDENT VARIABLES:	CORREL/ON COEFF/S	MODEL 1: SID CHAR/ICS	MODEL 2: ENVIRON/AL CHARACT/ICS	MODEL 3: FPS CHARACT/ICS	MODEL 4: TOP MGT CHARACT/ICS	MODEL 5: CORPORATE PERFORMANCE	MODEL 6: "BEST" MODEL
A. SID CHARACTERISTICS							
1.Magnitude of Impact	-.01	-.21 †					
2.Threat/Crisis	-.07						
3.Decision Uncertainty	-.26 *						-.23 *
4.Frequency	.20 *						
5.Pressure	.12						
6.Emergence Through FPS	.38 ***	.47 ***					
B. ENVIRONMENTAL CHARACTERISTICS							
1.Heterogeneity	.32 **		.28 *				
2.Dynamism	.30 **						
3.Hostility	-.28 **		-.23 *				
4.Perceived Environmental Uncertainty (PEU)	.22 *						.20 *
5.Competitiveness	.02						
C. FPS CHARACTERISTICS							
1.Planning Formality	.34 **			.34 **			
D. TOP MANAGEMENT CHARACTERISTICS							
1.CEO's Need for Achievement	.14						
2.CEO's Risk Propensity	-.16 †				-.33 **		-.19 *
3.CEO's Intolerance of Ambiguity	.06						
4.CEO's number of Years with the Company	.05						
5.CEO's Level of Education	-.04						
6.TMT's Level of Education	.19 †						
7.TMT's Aggressive Philosophy	.26 *				.40 **		
E. CORPORATE PERFORMANCE							
1.Return on Assets	.01						
2.Growth in Profits	.24 *					.24 *	
F. CONTROL VARIABLES							
1.Size (logarithm)	.04						.18 †
2.Control Type/ Ownership	.57 ***						.55 ***
R^2		.18	.16	.11	.16	.06	.46
Adjusted R^2		.16	.13	.10	.13	.05	.42
F		7.3 **	6.3 **	8.7 ***	6.24 **	4.3 *	10.8 ***

† $p < .10$ * $p < .05$ ** $p < .01$ *** $p < .001$

[a] Values Shown in the Regression Models are the Standardized Regression Coefficients. N=70

Table 12.7. Regression Equations with Formal Coordination Devices as Dependent Variable [a]

INDEPENDENT VARIABLES:	CORREL/ON COEFF/S	MODEL 1: SID CHAR/ICS	MODEL 2: ENVIRON/AL CHARACT/ICS	MODEL 3: FPS CHARACT/ICS	MODEL 4: TOP MGT CHARACT/ICS	MODEL 5: CORPORATE PERFORMANCE	MODEL 6: "BEST" MODEL
A. SID CHARACTERISTICS							
1.Magnitude of Impact	.19 †						
2.Threat/Crisis	.12						
3.Decision Uncertainty	.02						
4.Frequency	.27 *	.27 *					.22 †
5.Pressure	-.08						.17 †
6.Emergence Through FPS	.23 *						.29 **
B. ENVIRONMENTAL CHARACTERISTICS							
1.Heterogeneity	-.12		-.25 †				-.45 ***
2.Dynamism	.18 †		.28 *				
3.Hostility	.02						
4.Perceived Environmental Uncertainty (PEU)	.13						
5.Competitiveness	-.01						
C. FPS CHARACTERISTICS							
1.Planning Formality	.27 *			.27 *			
D. TOP MANAGEMENT CHARACTERISTICS							
1.CEO's Need for Achievement	.09						.32 **
2.CEO's Risk Propensity	.09						
3.CEO's Intolerance of Ambiguity	-.37 ***				-.38 **		-.56 ***
4.CEO's number of Years with the Company	.06				.27 *		
5.CEO's Level of Education	.24 *				.27 *		
6.TMT's Level of Education	.04						
7.TMT's Aggressive Philosophy	.18 †						
E. CORPORATE PERFORMANCE							
1.Return on Assets	.03						.20 †
2.Growth in Profits	-.02						
F. CONTROL VARIABLES							
1.Size (logarithm)	-.08						
2.Control Type/ Ownership	.13						.19 †
R^2		.07	.08	.07	.22	—	.46
Adjusted R^2		.06	.05	.06	.19	—	.39
F		5.3 *	2.98 †	5.5 *	6.3 ***	—	6.6 ***

† $p < .10$ * $p < .05$ ** $p < .01$ *** $p < .001$

[a] Values Shown in the Regression Models are the Standardized Regression Coefficients. N=70

Table 12.8. Regression Equations With Hierarchical Decentralization as Dependent Variable [a]

INDEPENDENT VARIABLES:	CORREL/ON COEFF/S	MODEL 1: SID CHAR/ICS	MODEL 2: ENVIRON/AL CHARACT/ICS	MODEL 3: FPS CHARACT/ICS	MODEL 4: TOP MGT CHARACT/ICS	MODEL 5: CORPORATE PERFORMANCE	MODEL 6: "BEST" MODEL
A. SID CHARACTERISTICS							
1.Magnitude of Impact	.38 ***	.37 **					.39 ***
2.Threat/Crisis	.06						
3.Decision Uncertainty	-.03						
4.Frequency	.18 †						
5.Pressure	-.08	-.23 *					-.22 *
6.Emergence Through FPS	.35 **	.22 †					.23 *
B. ENVIRONMENTAL CHARACTERISTICS							
1.Heterogeneity	.07						
2.Dynamism	.07						
3.Hostility	.05						.19 †
4.Perceived Environmental Uncertainty (PEU)	.07						
5.Competitiveness	-.15						
C. FPS CHARACTERISTICS							
1.Planning Formality	.25 *			.25 *			
D. TOP MANAGEMENT CHARACTERISTICS							
1.CEO's Need for Achievement	-.12						
2.CEO's Risk Propensity	.06						
3.CEO's Intolerance of Ambiguity	-.03						
4.CEO's number of Years with the Company	.37 ***				.37 **		.30 **
5.CEO's Level of Education	-.15						
6.TMT's Level of Education	.00						
7.TMT's Aggressive Philosophy	.20 *				.20 †		
E. CORPORATE PERFORMANCE							
1.Return on Assets	.37 ***					.37 **	.29 **
2.Growth in Profits	-.05						
F. CONTROL VARIABLES							
1.Size (logarithm)	-.10						
2.Control Type/ Ownership	-.01						
R^2		.24	——	.06	.18	.14	.48
Adjusted R^2		.20	——	.05	.16	.12	.43
F		6.9 ***	——	4.5 *	7.4 **	10.7 **	9.5 ***

† $p < .10$ * $p < .05$ ** $p < .01$ *** $p < .001$

[a] Values Shown in the Regression Models are the Standardized Regression Coefficients. N=70

Table 12.9. Regression Equations With Lateral Communication as Dependent Variable [a]

INDEPENDENT VARIABLES:	CORREL/ON COEFF/S	MODEL 1: SID CHAR/ICS	MODEL 2: ENVIRON/AL CHARACT/ICS	MODEL 3: FPS CHARACT/ICS	MODEL 4: TOP MGT CHARACT/ICS	MODEL 5: CORPORATE PERFORMANCE	MODEL 6: "BEST" MODEL
A. SID CHARACTERISTICS							
1.Magnitude of Impact	.62 ***	.52 ***					.48 ***
2.Threat/Crisis	.06						
3.Decision Uncertainty	-.14						
4.Frequency	.22 *	.16 †					.13 †
5.Pressure	.11						-.19 *
6.Emergence Through FPS	.47 ***	.22 *					
B. ENVIRONMENTAL CHARACTERISTICS							
1.Heterogeneity	.16 †						
2.Dynamism	.34 **						
3.Hostility	-.32 **		-.30 **				
4.Perceived Environmental Uncertainty (PEU)	.30 **		.28 *				
5.Competitiveness	.11						
C. FPS CHARACTERISTICS							
1.Planning Formality	.55 ***			.55 ***			.25 **
D. TOP MANAGEMENT CHARACTERISTICS							
1.CEO's Need for Achievement	-.00						
2.CEO's Risk Propensity	.23 *						
3.CEO's Intolerance of Ambiguity	-.17 †						
4.CEO's number of Years with the Company	.12						
5.CEO's Level of Education	.10						
6.TMT's Level of Education	.22 *						
7.TMT's Aggressive Philosophy	.62 ***				.62 ***		.34 ***
E. CORPORATE PERFORMANCE							
1.Return on Assets	.25 *					.25 *	
2.Growth in Profits	.10						
F. CONTROL VARIABLES							
1.Size (logarithm)	-.15						
2.Control Type/ Ownership	.31 **						
R^2		.46	.18	.30	.38	.06	.66
Adjusted R^2		.43	.16	.29	.37	.05	.63
F		18.6 ***	7.3 **	29.7 ***	42.0 ***	4.4 *	24.4 ***

† $p < .10$ * $p < .05$ ** $p < .01$ *** $p < .001$

[a] Values Shown in the Regression Models are the Standardized Regression Coefficients. N=70

Table 12.10. Regression Equations With Politicization as Dependent Variable [a]

INDEPENDENT VARIABLES:	CORREL/ON COEFF/S	MODEL 1: SID CHAR/ICS	MODEL 2: ENVIRON/AL CHARACT/ICS	MODEL 3: FPS CHARACT/ICS	MODEL 4: TOP MGT CHARACT/ICS	MODEL 5: CORPORATE PERFORMANCE	MODEL 6: "BEST" MODEL
A. SID CHARACTERISTICS							
1.Magnitude of Impact	.07						.20 †
2.Threat/Crisis	.22 *	.22 †					
3.Decision Uncertainty	.36 ***	.36 **					.56 ***
4.Frequency	-.17 †						
5.Pressure	.10						
6.Emergence Through FPS	-.03						
B. ENVIRONMENTAL CHARACTERISTICS							
1.Heterogeneity	.03						
2.Dynamism	-.06						
3.Hostility	-.09						
4.Perceived Environmental Uncertainty (PEU)	.06						
5.Competitiveness	-.14						
C. FPS CHARACTERISTICS							
1.Planning Formality	.21 *			.21 †			
D. TOP MANAGEMENT CHARACTERISTICS							
1.CEO's Need for Achievement	-.06						
2.CEO's Risk Propensity	-.12						
3.CEO's Intolerance of Ambiguity	-.10						
4.CEO's number of Years with the Company	-.01						
5.CEO's Level of Education	-.07						
6.TMT's Level of Education	.21 *				.21 †		.34 **
7.TMT's Aggressive Philosophy	-.09						-.23 *
E. CORPORATE PERFORMANCE							
1.Return on Assets	-.06						
2.Growth in Profits	.15						.28 *
F. CONTROL VARIABLES							
1.Size (logarithm)	.25 *						
2.Control Type/ Ownership	-.01						
R^2		.18	——	.05	.05	——	.35
Adjusted R^2		.15	——	.03	.03	——	.30
F		7.17 **	——	3.22 †	3.3 †	——	6.9 ***

† $p < .10$ * $p < .05$ ** $p < .01$ *** $p < .001$

[a] Values Shown in the Regression Models are the Standardized Regression Coefficients. N=70

Table 12.11. Regression Equations with Problem Solving Dissensus as Dependent Variable [a]

INDEPENDENT VARIABLES:	CORREL/ON COEFF/S	MODEL 1: SID CHAR/ICS	MODEL 2: ENVIRON/AL CHARACT/ICS	MODEL 3: FPS CHARACT/ICS	MODEL 4: TOP MGT CHARACT/ICS	MODEL 5: CORPORATE PERFORMANCE	MODEL 6: "BEST" MODEL
A. SID CHARACTERISTICS							
1.Magnitude of Impact	.09						
2.Threat/Crisis	.16 †						
3.Decision Uncertainty	.54 ***	.54 ***					.51 ***
4.Frequency	-.19 †						
5.Pressure	.21 *	.19 †					.20 **
6.Emergence Through FPS	-.28 **						
B. ENVIRONMENTAL CHARACTERISTICS							
1.Heterogeneity	-.21 *						.23 *
2.Dynamism	-.27 *		-.42 ***				-.22 *
3.Hostility	.11						
4.Perceived Environmental Uncertainty (PEU)	.30 **		.44 ***				.31 *
5.Competitiveness	-.20 †						
C. FPS CHARACTERISTICS							
1.Planning Formality	-.06						
D. TOP MANAGEMENT CHARACTERISTICS							
1.CEO's Need for Achievement	-.08						
2.CEO's Risk Propensity	-.02						
3.CEO's Intolerance of Ambiguity	-.18 †						
4.CEO's number of Years with the Company	.03						
5.CEO's Level of Education	.00						
6.TMT's Level of Education	-.14						
7.TMT's Aggressive Philosophy	-.07						
E. CORPORATE PERFORMANCE							
1.Return on Assets	.05						
2.Growth in Profits	.09						.23 *
F. CONTROL VARIABLES							
1.Size (logarithm)	.13						
2.Control Type/ Ownership	-.26 *						
R^2		.33	.25	——	——	——	.54
Adjusted R^2		.31	.22	——	——	——	.49
F		16.7 ***	10.9 ***	——	——	——	12.2 ***

† $p < .10$ * $p < .05$ ** $p < .01$ *** $p < .001$

[a] Values Shown in the Regression Models are the Standardized Regression Coefficients. N=70

Table 12.12. Regression Equations with Duration/Timing as Dependent Variable [a]

INDEPENDENT VARIABLES:	CORREL/ON COEFF/S	MODEL 1: SID CHAR/ICS	MODEL 2: ENVIRON/AL CHARACT/ICS	MODEL 3: FPS CHARACT/ICS	MODEL 4: TOP MGT CHARACT/ICS	MODEL 5: CORPORATE PERFORMANCE	MODEL 6: "BEST" MODEL
A. SID CHARACTERISTICS							
1.Magnitude of Impact	.16 †						.23 *
2.Threat/Crisis	.00						
3.Decision Uncertainty	.03						
4.Frequency	-.28 **	-.28 *					-.23 *
5.Pressure	.02						
6.Emergence Through FPS	-.03						
B. ENVIRONMENTAL CHARACTERISTICS							
1.Heterogeneity	.01						
2.Dynamism	-.15						
3.Hostility	-.02						
4.Perceived Environmental Uncertainty (PEU)	-.17 †						
5.Competitiveness	-.28 **		-.28 *				-.24 *
C. FPS CHARACTERISTICS							
1.Planning Formality	-.03						
D. TOP MANAGEMENT CHARACTERISTICS							
1.CEO's Need for Achievement	-.02						
2.CEO's Risk Propensity	.07						
3.CEO's Intolerance of Ambiguity	-.11						
4.CEO's number of Years with the Company	.12						
5.CEO's Level of Education	-.13						
6.TMT's Level of Education	-.08						
7.TMT's Aggressive Philosophy	-.18 †						
E. CORPORATE PERFORMANCE							
1.Return on Assets	-.01						
2.Growth in Profits	.13						
F. CONTROL VARIABLES							
1.Size (logarithm)	.21 *						.24 *
2.Control Type/ Ownership	-.09						
R^2		.08	.08	——	——	——	.22
Adjusted R^2		.06	.07	——	——	——	.17
F		5.65 **	5.9 **	——	——	——	4.6 **

† $p < .10$ * $p < .05$ ** $p < .01$ *** $p < .001$

[a] Values Shown in the Regression Models are the Standardized Regression Coefficients. N=70

Table 12.13. Summary Table of Best Models of Regression Analyses [a]

VARIABLES:	MODEL 1: RATIONALITY	MODEL 2: FINANCIAL REPORTING	MODEL 3: FORMALIZED RULES	MODEL 4: COORDINATION DEVICES	MODEL 5: HIERARCHICAL DECENTRALIZATION	MODEL 6: LATERAL COMMUNICATION	MODEL 7: POLITICIZATION	MODEL 8: PROBLEM SOLVING DISSENSUS	MODEL 9: DURATION/ TIMING
A.SID CHARACTERISTICS									
1.Magnitude of Impact	.33 ***				.39 ***	.48 ***	.20 †		.23 *
2.Threat/Crisis		.28 **							
3.Decision Uncertainty			-.23 *				.56 ***	.51 ***	
4.Frequency				.22 †		.13 †			-.23 *
5.Pressure				.17 †	-.22 *	-.19 *		.20 **	
6.Emergence Through FPS		.35 ***		.29 **	.23 *				
B.ENVIRONMENTAL CHARACTERISTICS									
1.Heterogeneity				-.45 ***				.23 *	
2.Dynamism		.47 ***						-.22 *	
3.Hostility					.19 †				
4.Perceived Environmental Uncertainty (PEU)			.20 *					.31 *	
5.Competitiveness		-.22 *							-.24 *
C.FPS CHARACTERISTICS									
1.Planning Formality	.42 ***					.25 **			
D.TOP MANAGEMENT CHARACTERISTICS									
1.CEO'sNeed for Achievement		.26 *		.32 **					
2.CEO's Risk Propensity			-.19 *						
3.CEO's Intolerance of Ambiguity				-.56 ***					
4.CEO's number of years with the Company					.30 **				
5.CEO's Level of Education									
6.TMT's Level of Education	.17 †						.34 **		
7.TMT's Aggressive Philosophy						.34 ***	-.23 *		
E.CORPORATE PERFORMANCE									
1.Return on Assets				.20 †	.29 **				
2.Growth in Profits							.28 *	.23 *	
F.CONTROL VARIABLES									
1.Size (Logarithm)	.16 †		.18 †						.24 *
2.Control Type/ Ownership			.55 ***	.19 †					
R^2	.47	.44	.46	.46	.48	.66	.35	.54	.22
Adjusted R^2	.44	.40	.42	.39	.43	.63	.30	.49	.17
F	14.3 ***	10.2 ***	10.8 ***	6.6 ***	9.5 ***	24.4 ***	6.9 ***	12.2 ***	4.6 **

† $p < .10$ * $p < .05$ ** $p < .01$ *** $p < .001$

[a] Values Shown in the Regression Models are the Standardized Regression Coefficients. N=70

Chapter 13

Conclusions - Implications

This chapter aims to review and consolidate the major outcomes of the research project, to pinpoint specific implications for theory and practice, to stress the strengths and weaknesses of the present research and finally to delineate promising research streams.

13.1. SUMMARY OF RESEARCH FINDINGS- IMPLICATIONS FOR THEORY

i SID Process Characteristics/Aspects

Among the major outcomes of the empirical analysis is the support of a multidimensional classification of SID process characteristics/aspects in **chapter six**. Results, suggest that the process of making decisions of a strategic nature may be described by nine internally consistent and reliable characteristics/aspects: *rationality*, existence of *formalized rules* guiding the process, *formal coordination devices* used (e.g. task forces, interdepartmental committees), *extent of financial reporting* conducted, *hierarchical decentralization*, *lateral communication*, *politicization*, *problem solving dissensus* and *duration-timing*. In this respect the thesis operationalises some of the suggestions of earlier theoretical efforts (e.g. Camillus, 1982) who in the past have supported the validity of such a framework for explaining strategic decision making processes.

ii Results of Hypotheses Testing

Next step was to contemplate bivariate associations between various contextual domains and the adopted SDMP characteristics/aspects. Five classes of antecedents were individually examined as predictors of SID making processes: (SID characteristics, environmental characteristics, FPSs characteristics, top management characteristics and business economic performance). Of particular interest was to test a number of hypotheses which either have received very sparse conceptual and empirical treatment in the literature, or have in the past produced strong debate due

to inconclusiveness and contradiction of reported results. Chapters seven to eleven have shed some light into these debates, somewhat broadened our knowledge on antecedents of decision making processes and produced a number of stimulating theoretical points for further exploration. More specifically:

Chapter seven validates the assumption that the perceived characteristics attributed to strategic decisions, to a significant extent may determine decision-maker's responses to issues and may trigger cognitive and motivational processes that direct the process into predictable paths.

The results of **chapter eight** lend credence to the environmental determinism school of thought and suggest that environmental characteristics can be significant predictors of SID processes. Furthermore, results aim to contribute to the endeavour for the formation of a coherent theory on the impact of environment on strategic decision making processes. The relationships found could lead to a much richer and integrated framework of the interaction between environment and decision processes.

Chapter nine, investigates planning systems as an interesting and rather unexplored internal dimension which may influence the way SIDs are made. In place of the vague assertion encountered in the literature, that much of important decision-making may occur outside planning systems, chapter nine shows that where the enterprise's planning system is relatively formal, the decision-making process in a SID is relatively systematic (mainly characterized by rationality, strong lateral communication, and systematic reporting).

Results of **chapter ten** indicate that CEO personality characteristics alone, have a weak association with the aspects of SID processes. On the contrary, the particularly strong association between TMT's characteristics and SID process characteristics lends itself to various explanations. *First*, it provides encouragement for those interested in pursuing the 'upper echelons' perspective introduced by Hambrick and Mason (1984). We found that certain characteristics of the TMT, as opposed to characteristics of individual managers are associated with specific dimensions of SID processes.

Second, the results of this investigation directly question a part of the empirical literature which contends that leadership variables account only for a relatively small fraction of the explanation of actual decision behavior, and that leadership does not constitute a very useful dimension to contribute in the explanation or prediction of the selection of a strategic decision approach. Chapter 10 confirms the top management team's significant influence on the direction of firms through their strategic decision making processes.

The results of **chapter eleven**, suggest that higher performance is strongly associated with (i) more rational decision making processes, characterized by extensive financial reporting activities, (ii) more rule formalization during the making of SIDs, and (iii) broader participation both in terms of departments and in terms of hierarchical levels. The remaining process characteristics (i.e. formal coordination devices, politicization, problem solving dissensus, and duration-timing) provide some interesting correlations with individual performance measures, but overall are not significantly associated with performance.

iii Integrative Effort

Chapter twelve, (the final empirical chapter) integrates the results of previous chapters into overall models which simultaneously considers the effects of various contextual domains in determining SID process characteristics. By building on previous chapters, this chapter (i) emphasizes the role of each contextual domain in influencing aspects of SID making processes and (ii) manages to take into account interrelationships among contextual domains and to explore the significance of each of them when considered simultaneously with all other domains.

Several patterns worth noting emerge. *One* is that all the models afford reasonably good to excellent predictions of the extent to which the process of a specific SID is determined by the context in which it takes place.

Second, the findings suggest that the SID process may be viewed as the interplay of various contextual factors, some of which are more influential than others. For

example, **project characteristics** appear to be very strong predictors of SID processes. Regression results concur with the conclusion drawn in chapter seven that SID characteristics and process characteristics are inextricably linked. Moreover, results corroborate an emerging significant body of research claiming that categorization of strategic issues into meaningful groups and their subsequent interpretation directly influences the magnitude of actions taken and resources committed and shapes predictable organizational responses.

Another important finding concerns the role and significance of various dimensions of **corporate environment** in influencing strategic decision making processes. In chapter eight, by contemplating strictly bivariate associations, we argued that the deterministic, external control or population ecology model achieved strong support when applied in SID making processes. On the contrary, correlation results do not seem to retain their significance when examined in conjunction with other contextual domains. Of course environmental characteristics appear to be particular strong predictors of financial reporting activities, and problem solving dissensus, but fail to enter significantly the regression models for rationality, politicization and lateral communication.

Internal structure as approached by planning formality appears to give rather poor results, in the sense that **planning systems** are found to be strongly associated with only two aspects of the decision making process (i.e rationality and lateral communication). These results appear to partially validate the stream of research which questions the role and significance of FPSs in actual strategy formulation and strategic decision making.

Another contextual domain which deserves special attention is the domain of **top management characteristics**. The results of the regression models also lend credence to the 'upper echelons' view of organizations. Indeed, TMT characteristics appear to influence decision rationality, lateral communication and political behavior. It is of particular interest the fact that CEO characteristics enter significantly into the regression models and influence a number of process characteristics. This implies that

the contribution of CEO characteristics is quite unique when taken together with other contextual factors, bringing the results closer to research reporting that CEO personality characteristics alone, are related to aspects of SDMPs.

Another set of interesting relationships revolves around the significance of BEP. Return on assets, as well as profit growth entered the final regression models and provided significant associations with decentralization, politicization, dissensus and formal coordination devices.

Finally the two control variables, size and ownership-control type, yield some interesting results. Size, as a component of the inertial model of decision making provided results consistent with the theory that as companies grow they move towards a 'planning' mode of decision making. Indeed, results indicate that increased size is associated with more rational, formalized and time-consuming SID processes. Of note, also, is the positive association between multinational ownership and formalization and existence of coordination devices.

In summary, the present thesis articulated the validity of a contingency approach in studying SDMPs and suggested the view that across-the-board panaceas for strategic decision making and strategy formulation are likely to be ill-grounded. Instead, a contingency approach to strategic decision making should be further developed to confirm and expand the findings of the present study concerning differences in decision characteristics, environmental influence, top management contribution, performance implications, internal organization effects etc. Results corroborate Daft and Weick (1984) who argued convincingly that organizations might be viewed as frameworks, control systems, or open social systems which process information from the environment, are based on the perceptions and mental characteristics of top level managers to interpret this information, and also utilise the internal structure and systems to manipulate and direct the whole process of strategic decision making. The empirical results of the present study added perceived project characteristics, past performance, organizational size and ownership-control type as additional domains of importance to strategic decision making.

13.2. IMPLICATIONS FOR PRACTICE

Several implications for practice have been drawn in the preceding chapters. Chief among them is the finding of chapter seven that the perceived characteristics attributed to SIDs may have a profound influence on decision processes followed. This is in line with the stream of research arguing for the importance categorisation and management of labels in strategic decision making. Again, the most important implication for strategists is that they can actively manipulate the perceptions of strategic issues and thus influence organizational responses. Again, chapter 8 has suggested that different perceived environmental characteristics may be associated with different processes during the making of SIDs.

The main implication of the results of chapter nine for planners (provided that we assume some type of causal linkage between FPSs and strategic decision making processes), is that they verify their important role in influencing the making of SIDs. We should stress for one more time that this significant influence does not necessarily mean that FPSs produce strategy, but results indicate that they may influence the way in which strategic decisions are taken, and thus to an extent, strategy itself. Indeed, by influencing SID-specific formal reporting activities, coordination devices and lateral communication, FPSs seem to act as input to strategic decision making.

Another implication for practitioners stems from the results of chapter 12. Despite that results indicate that all the contextual domains bear on the strategic decision making process, some of them appear to be of more importance. For example, contrary to allegations on the significance of planning systems or environmental contingencies, it seems that decision characteristics as well as CEO's and TMT's characteristics are of more importance. Especially the later stresses the salient role of managers in strategic decision making and directly questions the findings of a number of research works arguing for the secondary role of managers. The aspects of strategic leadership that are relevant to these results support the critical role of top managers; they suggest that individual managers, and even groups of managers, are important determinants of SID processes. The results indicate that

managers may function both as 'action generators' and as strategic agents, making rational choices. It seems that at least for the Greek context and in enterprises similar to those of our sample, individual managers as well as TMTs do matter. In different contexts, (e.g. large diversified corporations) the role and significance of top managers may not be as important. But this is an interesting issue to explore with research designs similar to the one adopted here.

Finally, it may be of significance is that despite the assumed differences in mentality of managers in various countries, results proved to be similar with those reported in the international research journals. This is in line with the 'culture free or contingency argument' that cultural differences may not affect relationships among several structural characteristics (e.g. Negandhi, 1971; 1975). Despite this, additional research which directly compares SDMPs in different cultures must be undertaken before this argument can be validated, because there is a strong body of research arguing for the 'culture specific' line of thought (e.g. Crozier, 1964; Jackofsky and Slocum, 1988)

13.3. STRENGTHS OF THE RESEARCH

The design of the research aimed to confront three major issues not adequately tackled by previous research in the area: (i) the frequent use of sample sizes too small to permit application of multivariate analytic techniques, (ii) the adoption of restrictive research frameworks, (iii) the lack or limited use of quantitative evidence. Indeed, effort was devoted with the aim to develop a semi-standardized format to report case studies on SIDs, so that larger-scale cross-comparisons are made possible as the number of cases increases, (iv) the scarcity of studies simultaneously examining the combined effects of various contextual factors on the SDMP (including managerial, environmental, organizational, and decision specific characteristics). These methodological points would be considered to be among the strong points of the present research effort.

Another potential strong point of this effort relates to the fact that it has been conducted outside U.K. or/and USA. As has been stressed in previous chapters, most of the research efforts in strategic decision making have taken place either in the U.K. or in the USA. Only a small number of efforts are made outside these countries, and only a small percentage of them have found their way in the international literature. Thus, it seemed interesting to provide quantitative evidence on SID making in a small EEC member country, and this may be considered among the strong points of the present research endeavour. It is remarkable that very recently a new wave of case studies examining specific SIDs in various countries seem to have emerged. The comparison of SID making in China and Britain (Lu et al. 1992; Child and Lu, 1992), together with the research of Yamamoto (1991; 1992 a,b) in Japan seem to urge for further research investigating strategic decision making processes in different contexts.

13.4. LIMITATIONS OF THE RESEARCH

Undoubtedly, the study has its own limitations. Chief among these is the fact that it attempts to explain strategic decision making processes as linear relationships. It has not been adjusted so as to test the possibly nonlinear, complex and recursive components of the process and the probability of interactions among independent variables (Mohr, 1982). Although care was exercised to transform data where appropriate, the assumptions of linearity largely remain. Despite such reservations, the very encouraging fit of the empirical data to the dependent variables, together with the exploratory nature of the study and the lack of significant comparative empirical work in the area seems to justify this approach.

Another limitation of the research is that as a cross-sectional attempt it may not capture dynamic change effects, and thus the confirmation of any of the final results may not stand over time. For such a task a longitudinal investigation would be needed, but this is time-consuming and practically difficult to achieve given the large number of SIDs studied and the long duration of SIDs. Finally, the results may be

representative of medium sized or larger industrial companies in Greece, in the three industrial sectors sampled. Future research may need to replicate this study by focusing on just one industrial sector or many sectors.

13.5. NEED FOR FURTHER RESEARCH

Certainly, the present research has touched but a few of the research questions in the field of strategic decision making. Several extensions, both methodological and substantive need to be made. Most of them have already been discussed in previous chapters or earlier in this chapter, and they will not be repeated here. Instead, a number of points concerning overall research recommendations in the area will be pinpointed.

First, strategic decision processes are mostly explored through cross-sectional studies. Indeed, as has been mentioned earlier, longitudinal research seems to acquire particular significance for future research in strategic decision making and change processes (Van De Ven and Huber, 1990; Pettigrew, 1990a; 1989; Chakravarthy and Doz, 1992).

Second, the present research has established the dominance of contextual influence over the making of SIDs. However, before accepting the importance of these dimensions in influencing SID processes the results should be subjected to critical examination. The study does not examine the relative importance of these contextual dimensions across different contexts (e.g. large vs small firms, private vs public, national vs multinational). In addition the combined results suggest that more work needs to be done: (i) to test the generalizability of current strategic decision process theory, and (ii) to develop theory that more accurately reflects how executives make SIDs. Progress in these areas could significantly improve both our understanding and eventually the quality of SID processes. A useful line of research would be to examine the same hypotheses in more narrowly defined samples, e.g. controlling for size, and ownership, so that consistent research findings be

accumulated and a more focused contingency theory on the impact of context on SID making processes be developed.

Third, despite the fact that the regression models tested here appear to have a very good predictive power over the adopted process dimensions, there still remains an unexplained percentage of variance. This induces us to urge for further research incorporating additional contextual elements not considered in the course of this research (e.g. reward systems, organizational structure), or even adopting different, possibly more appropriate, operationalisations of the constructs already used. Given the exploratory nature of this research, the results have exceeded our initial expectations; a refinement of the formulation will be necessary before a more substantial explanation or prediction capability can be achieved.

Fourth, the previous chapters have established the multiple and multidirectional relationships existing among the main variables of the study. This enhances the need for producing a more integrated image of decision making reality through the simultaneous study of a large number of qualities, and use of more sophisticated multivariate analysis of contextual influence on SDMPs (Miller and Friesen, 1984; Keats and Hitt, 1988; Priem, 1992). Techniques like LISREL, and/or simultaneous equations would be useful to further examine these complicated sets of relationships. The present research did not attempt to use such statistical techniques (i) because it is an exploratory research and as such it is a custom in international research not to start from very complicated techniques (ii) sample size posed a limitation in using such techniques as LISREL since they require at least 100 observations.

Finally, there have been very few cross-national comparisons of strategic decision making processes. If we accept the assumption that national culture vitally influences the making of strategic decisions, then large-scale research effort towards this direction is greatly in need.

Appendix 1

First Questionnaire

LONDON BUSINESS SCHOOL

RESEARCH:

STRATEGIC DECISION MAKING IN VERY IMPORTANT INVESTMENT DECISIONS

Instructions for Completing The Questionnaire

1. The purpose of this study is to gather comparative information regarding practices, policies and opinions as they relate to the making of very important investment decisions. The term very important investment decisions, as has been defined in this research might involve decisions ranging from the acquisition of a whole company to major modifications in the production systems, to major investments in marketing channels or new product introductions.

2. Questions are grouped in three parts. The first part explores the salient characteristics of the investment decision. The second part seeks to collect information about the overall process of decision making, starting from initial awareness and ending with the decision integration into an overall strategy. The third part deals with such behavioral factors as group behavior, communication patterns, and formality of decision making.

3. In your responses, please be careful to describe practices as they exist, not as you believe they should exist.

4. The nature of this research is STRICTLY SCIENTIFIC. All information provided will be held in strictest confidence and FULL ANONYMITY is quaranted.

SECTION A: MAJOR DECISION's CHARACTERISTICS

Q1.Please, describe in very few words the investment decision:

Q2.Please give the the major reasons who made you initiate this investment:

Q.3.Who were the major objectives sought by this specific decision?

Q.4..To what extent do you believe that the specific decision emerged through some type of formal planning (deliberate strategic posture) ?

NOT AT ALL	TO A SMALL EXTENT	TO A MODERATE EXTENT	TO A SIGNIFICANT EXTENT	TO A GREAT EXTENT
☐	☐	☐	☐	☐

Q.5.Duration-Gestation time
Even before starting to SERIOUSLY examine the possibility of making this investment, for how long was there the THOUGHT in your company that SOMEWHERE IN THE FUTURE, you would probably have to consider the investment in discussion?

_____ Nr of Months

Q.6.Duration Process Time
How long did it took to arrive at the approved choice or process outcome? (Nr of months from the first deliberate consideration of the topic to an authorized decision).

_____ Nr of Months

Q.7.Rarity: **How often** decisions of the same nature as the case under investigation arise in your organization?

VERY OFTEN	FREQUENTLY	SOMETIMES	SELDOM	VERY SELDOM
☐	☐	☐	☐	☐

Q.8.At the early stages of the decision, to what extent did your company feel **familiar with handling** decisions of this nature?

COMPLETELY FAMILIAR	VERY FAMILIAR	FAMILIAR	VERY UNFAMILIAR	COMPLETELY UNFAMILIAR
☐	☐	☐	☐	☐

Q.9.Radicality: By ticking the appropriate box, please indicate how far at the early stages did you anticipate the decision to change things in your company:

NOT AT ALL	TO A SMALL EXTENT	TO A MODERATE EXTENT	TO A SIGNIFICANT EXTENT	TO A GREAT EXTENT
☐	☐	☐	☐	☐

Q.10.How much money did the investment cost you?

_____ (In million Drs)

Q.11.Seriousness How **serious** the consequences would be for your company (e.g. loss of sales, or reputation et.c.) if something in the decision went wrong ?

NOT AT ALL SERIOUS	SLIGHTLY SERIOUS	QUITE SERIOUS	VERY SERIOUS	EXTREMELY SERIOUS
☐	☐	☐	☐	☐

Q.12.By circling the appropriate number in the scale, please indicate your perception of how widespread (for the whole company) did you initially expect the decision's effects to be on:

		NOT AT ALL WIDESPREAD	SOMEWHAT WIDESPREAD	MODERATELY WIDESPREAD	VERY WIDESPREAD	EXTREMELY WIDESPREAD
1.	Profit.....	1	2	3	4	5
2.	Quality of products/services	1	2	3	4	5
3.	Total Production.....	1	2	3	4	5
4.	Costs.....	1	2	3	4	5
5.	Sales.....	1	2	3	4	5
6.	Market Share.....	1	2	3	4	5
7.	Call for changes in existing programs (e.g. (sales, production).	1	2	3	4	5
8.	Organizational adjustment required to serve the decision.	1	2	3	4	5

Q.13.**How far ahead in the future** did you initially expect the decision to **significantly influence the whole company:**

1 YEAR	2	3	4	5	6	7	8	9	10 YEARS
☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Q.14.**To what extent** did you initially expect the the decision to **set parameters for subsequent decisions?**

NOT AT ALL	TO A SMALL EXTENT	TO A MODERATE EXTENT	TO A SIGNIFICANT EXTENT	TO A GREAT EXTENT
1	2	3	4	5
☐	☐	☐	☐	☐

Q.15.By ticking the appropriate box, please indicate to what extent the decision **influenced your corporate strategy:**

NOT AT ALL	TO A SMALL EXTENT	TO A MODERATE EXTENT	TO A SIGNIFICANT EXTENT	TO A GREAT EXTENT
1	2	3	4	5
☐	☐	☐	☐	☐

Q.16.To what extent the decision was part of another (investment or other) **more important decision taken in the past?**

NOT AT ALL	TO A SMALL EXTENT	TO A MODERATE EXTENT	TO A SIGNIFICANT EXTENT	TO A GREAT EXTENT
1	2	3	4	5
☐	☐	☐	☐	☐

Q.17.How was the decision initially seen?

1.As an **opportunity** that could be exploited..... ☐[1]
2.As a **problem** which ought to be solved..... ☐[2]
3.As a **crisis situation** that had to be dealt..... ☐[3]

Q.18.For each of the following statements, please select the one response which best describes the way you actually did things in your company.

	ABSOLUTELY FALSE 1	VERY FALSE 2	SOMEWHAT FALSE 3	NEITHER FALSE NOR TRUE 4	SOMEWHAT TRUE 5	VERY TRUE 6	ABSOLUTELY TRUE 7
1.When the STRUCTURING of the decision took place there was **no agreement** by those dealing with it about an **appropriate solution.**	☐	☐	☐	☐	☐	☐	☐
2.There was no initial agreement on a methodology for developing a solution to the problem.	☐	☐	☐	☐	☐	☐	☐
3.There was **no agreement** on the objective sought in the decision.	☐	☐	☐	☐	☐	☐	☐
4.**No** controllable or uncontrollable variables or constraints were initially **specified.**	☐	☐	☐	☐	☐	☐	☐
5.The **stimuli** which made us initiate the decision were **very frequent.**	☐	☐	☐	☐	☐	☐	☐
6.The **stimuli** which made us initiate the decision were **very clear.**	☐	☐	☐	☐	☐	☐	☐
7.Unless action was taken our company was threatened with **financial loss.**	☐	☐	☐	☐	☐	☐	☐
8.We were constantly obliged to redefine our criteria, goals and constraints of the decision because of its uncertain nature.	☐	☐	☐	☐	☐	☐	☐
9.The investment decision put new and **strict time-pressure** on us	☐	☐	☐	☐	☐	☐	☐
10.We were **very uncertain** with actions that should be taken	☐	☐	☐	☐	☐	☐	☐
11.In general there was **extreme time pressure** to take an immediate decision.	☐	☐	☐	☐	☐	☐	☐
12.**It was not at all clear** what kind **of information** we should select.	☐	☐	☐	☐	☐	☐	☐
13.It was not possible to estimate in advance the **consequences of the decision on our corporate strategy.**	☐	☐	☐	☐	☐	☐	☐
14.We faced extreme difficulty in finding the necessary information due to the **lack of such sources.**	☐	☐	☐	☐	☐	☐	☐

SECTION B: DESCRIPTION OF THE DECISION MAKING PROCESS

B1.GENERAL QUESTIONS

Q.1.Using the scale provided (from 1 to 5) please answer the following questions by writing the appropriate number in the box pertaining to each statement:

THE DIAGNOSIS OF THE SITUATION WAS MADE THROUGH:	THE IDENTIFICATION OF POSSIBLE ALTERNATIVES WAS MADE THROUGH:	THE ELIMINATION OF AN ALTERNATIVE WAS MADE THROUGH:	THE EVALUATION OF ALTERNATIVES WAS MADE THROUGH:	THE MAKING OF THE FINAL SOLUTION WAS MADE THROUGH:	THE INTEGRATION OF THE DECISION INTO AN OVERALL STRATEGY WAS MADE THROUGH:
☐	☐	☐	☐	☐	☐

SCALE

1.The ideas of a single individual(e.g.M.D.) ☐1
2.Informal discussions among managers..... ☐2
3.Scheduled meetings among managers..... ☐3
4.Scheduled meetings and some analysis..... ☐4
5.Scheduled meetings and extensive analysis..... ☐5

Q.2.Using the scale (from 1 to 5) provided, please answer to the following questions, by placing the appropriate number into the box pertaining to each statement:

PRIMARY RESPONSIBILITY FOR DIAGNOSING THE SITUATION WAS ASSIGNED TO:	PRIMARY RESPONSIBILITY FOR GENERATING ALTERNATIVES WAS ASSIGNED TO:	PRIMARY RESPONSIBILITY FOR EVALUATING ALTERNATIVES WAS ASSIGNED TO:	PRIMARY RESPONSIBILITY FOR THE FINAL SELECTION WAS ASSIGNED TO:	PRIMARY RESPONSIBILITY FOR INTEGRATING THE DECISION INTO ANY FORM OF WRITTEN OR UNWRITTEN STRATEGY WAS ASSIGNED TO:
☐	☐	☐	☐	☐

SCALE

1.No specific individual or group..... ☐1
2.One specific individual ..... ☐2
3.Two people jointly..... ☐3
4.An existing committee of three or more..... ☐4
5.A specially formed group of three or more..... ☐5

Q.3.Using the scale (from 1 to 5) provided, please answer the following questions, by placing the appropriate number into the box pertaining to each statement:

COLLECTING INFORMATION FOR THE SITUATION DIAGNOSIS:	COLLECTING OF INFORMATION FOR ALTERNATIVES IDENTIFICATION:	COLLECTING OF INFORMATION FOR THE EVALUATION OF ALTERNATIVES:
☐	☐	☐

SCALE

1.Information available from personal knowledge or opinions. ☐1
2.Information obtained readily from records ..... ☐2
3.Information obtained after a moderate research, inside and outside the company..... ☐3
4.Information synthesized after a significant attempt to integrate disparate information from diverse sources inside and outside the company. ☐4
5.Every possible information source (inside or outside the company) was found and all the available information was obtained..... ☐5

Q.4.By using the scale (from 1 to 5) provided, please indicate your perception of the degree to which your company retrieved information from **EXTERNAL SOURCES** (that is information beyond that already available from company sources), in the various stages of the decision making process listed below:

NOT AT ALL	TO A SMALL EXTENT	TO A MODERATE EXTENT	TO A GREAT EXTENT	TO A VERY GREAT EXTENT
1	2	3	4	5

DEGREE OF EXTERNAL INFORMATION SEEKING ACTIVITIES DURING SITUATION DIAGNOSIS:	DEGREE OF EXTERNAL INFORMATION SEEKING ACTIVITIES DURING ALTERNATIVE IDENTIFICATION:	DEGREE OF EXTERNAL INFORMATION SEEKING ACTIVITIES DURING ALTERNATIVE EVALUATION:	DEGREE OF EXTERNAL INFORMATION SEEKING ACTIVITIES IN YOUR ATTEMPT (IF ANY) TO EVALUATE THE IMPACT OF THE DECISION TO YOUR CORPORATE STRATEGY:
[ ]	[ ]	[ ]	[ ]

Q.5.Approximately how many employees were directly involved in each one of the phases of the decision making process?

NUMBER OF EMPLOYEES DIRECTLY INVOLVED IN DIAGNOSING THE SITUATION	NUMBER OF EMPLOYEES DIRECTLY INVOLVED IN ALTERNATIVE IDENTIFICATION	NUMBER OF EMPLOYEES DIRECTLY INVOLVED IN EVALUATING ALTERNATIVE SOLUTIONS	NUMBER OF EMPLOYEES DIRECTLY INVOLVED IN FINAL SELECTION:	NUMBER OF EMPLOYEES DIRECTLY INVOLVED IN INTEGRATING THE DECISION INTO AN OVERALL STRATEGY
[ ]	[ ]	[ ]	[ ]	[ ]

Q.6.Approximately how much in direct out-of-pocket expenses (e.g. travel costs, consulting fees) your firm actually spent,in each one of the following phases?

SITUATION DIAGNOSIS (Million Drs)	ALTERNATIVE IDENTIFICATION (Million Drs)	ALTERNATIVE EVALUATION (Million Drs)	DECISION INTEGRATION INTO AN OVERALL STRATEGY (Million Drs)	
[ ]	[ ]	[ ]	[ ]	(Million Drs)

Q.7.By using the scale provided (from 1 to 5), please indicate the degree to which outsiders were contracted to help you in each one of the following stages of the decision making process:

Please rate each column (that is a,b,c,d) separately

NOT AT ALL	TO A SMALL EXTENT	TO A MODERATE EXTENT	TO A GREAT EXTENT	TO A VERY GREAT EXTENT
1	2	3	4	5

	a)SITUATION DIAGNOSIS	b)IDENTIFICATION OF ALTERNATIVES	c)FINAL EVALUATION AND SELECTION	d)DECISION INTEGRATION INTO AN OVERALL STRATEGY
1.Consultants in our area of activities.	[ ]	[ ]	[ ]	[ ]

Q.8.Approximately how many years of historical data (e.g. productivity, cost were reviewed in each one of the following phases:

SITUATION DIAGNOSIS	ALTERNATIVE EVALUATION	
[ ]	[ ]	(Nr OF Years)

Q.9.In the following matrix the stages of the decision making process are presented. The purpose of this matrix is to define TO WHAT EXTENT EMPLOYEES AND/OR EXTERNAL CONSULTANTS WITH SIGNIFICANT EXPERTISE in each one of the functional areas of the firm, were used:

Please mark with a grade from one (1) to five (5) (using the scale provided below) each of the relevant functional areas listed below in terms of the DEGREE OF UTILIZATION in the various stages of the decision making process, employees and/or outsiders with significant expertise in:

Please mark for each column ie a,b,c,d, and e separately.

NOT AT ALL	TO A SMALL EXTENT	TO A MODERATE EXTENT	TO A GREAT EXTENT	TO A VERY GREAT EXTENT
1	2	3	4	5

EXPERTISE IN:	a)DECISION INITIATION	b)SITUATION DIAGNOSIS	c)CREATION OF ALTERNATIVES	d)ALTERNATIVE EVALUATION AND FINAL CHOICE	e)DECISION INTEGRATION INTO AN OVERALL STRATEGY
1.Marketing and Sales....	[ ]	[ ]	[ ]	[ ]	[ ]
2.Production Management..	[ ]	[ ]	[ ]	[ ]	[ ]
3.Design/Engineering.....	[ ]	[ ]	[ ]	[ ]	[ ]
4.Accounting/Finance.....	[ ]	[ ]	[ ]	[ ]	[ ]
5.Personnel Management...	[ ]	[ ]	[ ]	[ ]	[ ]

B2.INITIAL AWARENESS:

Q.1.Using the scale provided, please indicate where the source of initial stimulus for the investment decision was coming from:

1.Outside the organization (e.g. customers,suppliers)..... [ ]1
2.Employees near the customers (e.g. salesmen)..... [ ]2
3.Departmental level (e.g.Marketing or financial Director)..... [ ]3
4.The Managing Director, President or other top management members. [ ]4
5.The owner of the enterprise..... [ ]5
6.Parent company or controlling bodies..... [ ]6

Q.2.More specifically, please mention the source of the initial stimulus for the specific investment decision:

a. Specific source (inside or outside the company).....

b. Department where the source belonged (if relevant).....

c. Hierarchical Position.....

B3.SITUATION DIAGNOSIS

Q.1.In diagnosing the situation, please indicate by ticking the appropriate box, to what extent your company considered each of the following factors:

	NOT CONSIDERED AT ALL 1	2	CONSIDERED TO A MODERATE DEGREE 3	4	EXTENSIVELY CONSIDERED 5
1.Competitors short term and long term investment plans.	☐	☐	☐	☐	☐
2.Estimates of future activities in the industry.	☐	☐	☐	☐	☐
3.Summary trends of company's sales productivity and costs.	☐	☐	☐	☐	☐
4.Investment's compatibility with general corporate goals and strategy.	☐	☐	☐	☐	☐
5.Trends in market size/growth.	☐	☐	☐	☐	☐
6.Competitor's reaction to your market movements.	☐	☐	☐	☐	☐

B4.ALTERNATIVE GENERATION

Q.1.How many **different alternatives** were initially considered for evaluation? Please give a short description of each one of them:

Q.2.To what extent each of the following techniques was used to identify possible alternative actions.

	NOT USED AT ALL 1	2	USED TO A MODERATE DEGREE 3	4	EXTENSIVELY USED 5
1. Informal discussions of only possible alternatives	☐	☐	☐	☐	☐
2. Scheduled meetings to discuss only possible alternatives	☐	☐	☐	☐	☐
3. Individuals preparing separate lists of alternatives	☐	☐	☐	☐	☐
4. "Brain-Storming" meetings	☐	☐	☐	☐	☐
5. Modify/combine individual alternatives to form new ones	☐	☐	☐	☐	☐

Q.3.Using the following scale, please indicate, the degree of importance given to each one of the following factors in eliminating early alternatives:

	NOT CONSIDERED AT ALL 1	2	CONSIDERED TO A MODERATE DEGREE 3	4	EXTENSIVELY CONSIDERED 5	
1. Intuition of an important executive (e.g. M.D. or owner)	☐	☐	☐	☐	☐	R
2. Intuition of an important manager in a department (e.g. marketing)	☐	☐	☐	☐	☐	
3. Available financing.	☐	☐	☐	☐	☐	
4. Time required to implement the alternative.	☐	☐	☐	☐	☐	
5. Previous experience with that alternative.	☐	☐	☐	☐	☐	
6. Fit with company capabilities.	☐	☐	☐	☐	☐	
7. The attitude of several interest groups.	☐	☐	☐	☐	☐	
8. Compatibiliy with company image.	☐	☐	☐	☐	☐	
9. Compatibility with long term plans.	☐	☐	☐	☐	☐	
10. Technological Trends.	☐	☐	☐	☐	☐	

B5.ALTERNATIVE EVALUATION

Q.1.Please describe the criteria used for the selection of the final decision:

1.	4.
2.	5.
3.	6.

Q9.In deciding on the final choice, please indicate to what extent each of the following criteria was considered:

	NOT CONSIDERED AT ALL 1	2	CONSIDERED TO A MODERATE DEGREE 3	4	EXTENSIVELY CONSIDERED 5
1. Provides a minimum return on investment	☐	☐	☐	☐	☐
2. Satisfied the expectations and intuition of the top managers.	☐	☐	☐	☐	☐
3. Is based on bright future prospects.	☐	☐	☐	☐	☐
4. Is within the firms financing capabilities.	☐	☐	☐	☐	☐
5. Secures long term safety of the money invested.	☐	☐	☐	☐	☐
6. Is in accordance with our strategic (long term) plans.	☐	☐	☐	☐	☐

Q.2.Where there any WRITTEN SUMMARIES or REPORTS on the proposed choice and the evaluation of alternatives?

☐ YES ☐ NO

Q.3.If your answer is YES, then to what extent those written summaries or reports included the following?

	NOT AT ALL	TO A VERY SMALL EXTENT	TO A SMALL EXTENT	TO A FAIR EXTENT	TO A CONSIDERABLE EXTENT	TO A GREAT EXTENT	TO A VERY GREAT EXTENT
	1	2	3	4	5	6	7
1...Included **financial measures** (e.g. cash flows, payback, NPV, IRR).	☐	☐	☐	☐	☐	☐	☐
2...Stated the **assumptions** the evaluation was based on.	☐	☐	☐	☐	☐	☐	☐
3...Addressed the **feasibility** of **implementing** EACH alternative.	☐	☐	☐	☐	☐	☐	☐
4...Provided **contingency plans** for possible occurencies.	☐	☐	☐	☐	☐	☐	☐
5...Attempted to **identify all possible consequences** of each alternative.	☐	☐	☐	☐	☐	☐	☐
6...**Directly compared ALL the alternatives.**	☐	☐	☐	☐	☐	☐	☐
7...Included **detailed cost studies** of each one of the alternatives.	☐	☐	☐	☐	☐	☐	☐
8...Included **probabilistic assessment** of the range of possible results for one or more cash flows.	☐	☐	☐	☐	☐	☐	☐
9...Included proforma **financial statements.**	☐	☐	☐	☐	☐	☐	☐
10...recognized in the analysis an **explicit corporate attitude towards risk** e.g.by discounting the cashflows at some risk adjusted interest rate.	☐	☐	☐	☐	☐	☐	☐
11..Provided **details of the sensitivity analysis.**	☐	☐	☐	☐	☐	☐	☐
12..Included **labor requirements.**	☐	☐	☐	☐	☐	☐	☐
13... comprised an **assessment of success probabilities** for each **alternative.**	☐	☐	☐	☐	☐	☐	☐
14...included an **explicit ranking of alternatives.**	☐	☐	☐	☐	☐	☐	☐
15...firmly **stated the consequences** the decision may have on the company.	☐	☐	☐	☐	☐	☐	☐

Q.4.How high in the hierarchy was the final decision taken?

1.Below divisional level or equivalent... ☐1
2.Divisional level or equivalent..... ☐2
3.Chief executive..... ☐3
4.Chief executive and ratified by board..... ☐4
5.Board or equivalent top governing body (e.g.owner). ☐5
6.Board and ratified at higher external level..... ☐6
7.Outside and above the organization (e.g.parent companies, controlling bodies). ☐7

B6.DECISION INTEGRATION

Q.1.To what extent were the following techniques used to **integrate the decision** into an overall strategy for your firm:

	NOT AT ALL 1	TO A VERY SMALL EXTENT 2	TO A SMALL EXTENT 3	TO A FAIR EXTENT 4	TO A CONSIDERABLE EXTENT 5	TO A GREAT EXTENT 6	TO A VERY GREAT EXTENT 7
1. **Informal discussions** among key managers.	☐	☐	☐	☐	☐	☐	☐
2. **Scheduled meetings** among key managers.	☐	☐	☐	☐	☐	☐	☐
3. **Involve affected departments in making the original decision.**	☐	☐	☐	☐	☐	☐	☐
4. **Informal discussions with affected departments to decide how to implement the decision.**	☐	☐	☐	☐	☐	☐	☐
5. **Scheduled meetings with affected departments** to decide how to implement the decision.	☐	☐	☐	☐	☐	☐	☐
6. Incorporate the decision into **company-wide financial analysis.**	☐	☐	☐	☐	☐	☐	☐
7. Incorporate the decision into **company-wide written plans.**	☐	☐	☐	☐	☐	☐	☐

Q.2.To what extent did your company use the following coordination devices during the decision making process ?

	NOT AT ALL 1	TO A VERY SMALL EXTENT 2	TO A SMALL EXTENT 3	TO A FAIR EXTENT 4	TO A CONSIDERABLE EXTENT 5	TO A GREAT EXTENT 6	TO A VERY GREAT EXTENT 7
1. **Interdepartmental Committees** which are set up to allow departments to engage in joint decision making.	☐	☐	☐	☐	☐	☐	☐
2. **Task forces** which are temporary bodies set up to facilitate interdepartmental collaboration on the specific project.	☐	☐	☐	☐	☐	☐	☐
3. **Liaison personnel** whose specific job it is to coordinate the efforts of several departments for purposes of a specific project.	☐	☐	☐	☐	☐	☐	☐

Q.3.In the following matrix the stages of the decision making process are presented. The purpose of this matrix is to define WHO participated in WHAT STAGE of the decision making process, as well as HOW MUCH IMPORTANT his role was.

Please mark with a grade from one (1) to five (5) (using the scale provided below) each of the relevant functional areas and hierarchical ranks listed, in terms of their IMPORTANCE (OR CONTRIBUTION) at each one of the stages of the decision making process.

Please mark for each column ie a,b,c,d,e and f separately.

NOT AT ALL SIGNIFICANT (NO INVOLVEMENT AT THIS STAGE)	SOMEWHAT SIGNIFICANT	MODERATELY SIGNIFICANT	VERY SIGNIFICANT	EXTREMELY SIGNIFICANT (ACTIVE INVOLVEMENT AND INFLUENCE)
1	2	3	4	5

	a)IMPORTANCE IN SITUATION DIAGNOSIS	b)IMPORTANCE IN COLLECTING INFORMATION	c)IMPORTANCE IN ALTERNATIVE GENERATION	d)IMPORTANCE IN ALTERNATIVE EVALUATION	e)IMPORTANCE IN FINAL SELECTION	f)IMPORTANCE IN INTEGRATING THE DECISION TO OVERALL STRATEGY
VARIOUS DEPARTMENTS						
1.Finance-Accounting.....	___	___	___	___	___	___
2.Production and Equivalent 'workflow' depts..	___	___	___	___	___	___
3.Marketing-Sales dept...	___	___	___	___	___	___
4.Personnel Dept.....	___	___	___	___	___	___
5.Purchasing Dept.....	___	___	___	___	___	___
MANAGEMENT RANKS						
1.Owner-Main Shareholders	___	___	___	___	___	___
2.Chief Executive Officer and President.....	___	___	___	___	___	___
3.First Level Directors..	___	___	___	___	___	___
4.Middle Managers.....	___	___	___	___	___	___
5.Lower Level Managers...	___	___	___	___	___	___
EXTERNAL STAKEHOLDERS						
1.Ministries and other state agencies.....	___	___	___	___	___	___

Q.4.In general **how much emphasis** do you believe was given by your company to each one of the phases of the decision making process?

	NO EMPHASIS 1	2	MODERATE EMPHASIS 3	4	GREAT EMPHASIS 5
1.Initial identification of the need for an investment.	☐	☐	☐	☐	☐
2.Identification of possible alternatives.	☐	☐	☐	☐	☐
3.Evaluation of alternatives.	☐	☐	☐	☐	☐
4.Selection of the final course of action.	☐	☐	☐	☐	☐
5.Integration of the decision into an overall strategy.	☐	☐	☐	☐	☐

Q.5.Using the scale provided (from 1 to 7), please please select for each of the following statements, the one response which best describes the way you actually do things in your company. Then write the appropriate number in each one of the boxes:

ABSOLUTELY FALSE	VERY FALSE	SOMEWHAT FALSE	NEITHER FALSE NOR TRUE	SOMEWHAT TRUE	VERY TRUE	ABSOLUTELY TRUE
1	2	3	4	5	6	7

1. There is a formalized process which helps us decide whether a specific investment decision should be further investigated.

2. In reviewing the decision we had explicitly identified the criteria against which we evaluated it.

3. For each of the criteria used we have explicitly established minimum standards of performance.

4. We have a written procedure, which guides these types of decision processes and which we strictly follow in making the final decision.

5. No specific responsibilities have been assigned to anyone in the company regarding the decision in question. The idea materializes as a result of informal conversation among top managers.

6. There is a formalized procedure which helped us in our search for alternatives concerning the investment in question.

7. Some sort of standard form or document pertaining to this kind of decisions exists in our company to assist management to reach a final decision.

8. There is a certain hierarchy of approval (e.g. a specific list of top executives) through which a proposal must move?

9. The evaluation of new investment projects (financially) is conducted solely by our specialized department

10. The evaluation of new investment projects is taking place on the basis of pre-determined rules and techniques.

11. The evaluation of new investment projects is made by external bodies (e.g. consulting offices), specialized in these kind of activities.

12. The evaluation of new investments is left to the judgement and effectiveness of the top management team.

13. During the decision making process the major participants found themselves having different opinions about what should be done. As a result the decision making group was divided into groups with different opinions.

14. In several instances there were negotiations among the major participants with the aim to achieve a consent so as to continue the decision making process.

15. The participants tried to achieve NOT the IDEAL SOLUTION to the problem but the solution which was good enough to SATISFY A MINIMUM NUMBER OF REQUIREMENTS.

Q.6.How many different committees or working parties were created to deal with the decision.

Q.2.Following there is a number of statements. Please answer to all the statements, by ticking in each one the box in the scale, which best describes the way things actually happened in your company.

	ABSOLUTELY FALSE 1	VERY FALSE 2	SOMEWHAT FALSE 3	NEITHER FALSE NOR TRUE 4	SOMEWHAT TRUE 5	VERY TRUE 6	ABSOLUTELY TRUE 7	
1.There was an exceptionally fine collaboration among top managers. Managers really worked as a team.	☐	☐	☐	☐	☐	☐	☐	
2.Before moving to the next step a unanimous decision had to be reached	☐	☐	☐	☐	☐	☐	☐	
3.It was not judged necessary for middle managers to actively participate in whole process.	☐	☐	☐	☐	☐	☐	☐	R
4.The top management generally strongly supported the decision.	☐	☐	☐	☐	☐	☐	☐	
5.Cross functional communications were not very frequent (about once or twice per month).	☐	☐	☐	☐	☐	☐	☐	R
6.Access to collected information by the rest of the managers was not always easy.	☐	☐	☐	☐	☐	☐	☐	R

B8: DYNAMIC FACTORS

	NOT AT ALL 1	TO A VERY SMALL EXTENT 2	TO A SMALL EXTENT 3	TO A FAIR EXTENT 4	TO A CONSIDERABLE EXTENT 5	TO A GREAT EXTENT 6	TO A VERY GREAT EXTENT 7
Q.1.How far was the process interrupted by delays?	☐	☐	☐	☐	☐	☐	☐

Q.2.Impendance To what extent the decision making process experienced each one of the following impediments, which resulted in **considerable delay** ?

	NOT AT ALL 1	TO A VERY SMALL EXTENT 2	TO A SMALL EXTENT 3	TO A FAIR EXTENT 4	TO A CONSIDERABLE EXTENT 5	TO A GREAT EXTENT 6	TO A VERY GREAT EXTENT 7
1.Awaiting priority in the order of attention.	☐	☐	☐	☐	☐	☐	☐
2.**Poor coordination.**	☐	☐	☐	☐	☐	☐	☐
3.Awaiting the **opportune time** to start the process.	☐	☐	☐	☐	☐	☐	☐
4.**Searching:** Awaiting the obtaining or analysing of necessary information.	☐	☐	☐	☐	☐	☐	☐
5.**Problem solving:** awaiting, investigation of what is most understood.	☐	☐	☐	☐	☐	☐	☐
6.**Supplying:** awaiting the availability of resources.	☐	☐	☐	☐	☐	☐	☐
7.**Recycling:** Awaiting reconsideration of what has already been gone over.	☐	☐	☐	☐	☐	☐	☐
8.**Internal resistance:** awaiting the outcome of active internal opposition	☐	☐	☐	☐	☐	☐	☐
9.**External resistance:** awaiting the outcome of external opposition.	☐	☐	☐	☐	☐	☐	☐
10.Emergence **of unexpected new options,** proposals that stipulated new development or selection activity.	☐	☐	☐	☐	☐	☐	☐
11.**Failure recycle:**The decision was blokced for wait of an acceptable solution.	☐	☐	☐	☐	☐	☐	☐
12.Because of **turnover among upper level managers** the process had to be postponed or even stopped.	☐	☐	☐	☐	☐	☐	☐

Q.3.To what extent are you personally satisfied with certain elements of the decision making process and the decision outcome:

	NOT AT ALL 1	TO A VERY SMALL EXTENT 2	TO A SMALL EXTENT 3	TO A FAIR EXTENT 4	TO A CONSIDERABLE EXTENT 5	TO A GREAT EXTENT 6	TO A VERY GREAT EXTENT 7
SATISFACTION WITH THE OUTCOME							
1.All in all how satisfied are you with the contribution of the investment to the long term competitiveness and viability of the company?.	☐	☐	☐	☐	☐	☐	☐
2.All in all how satisfied are you with the direct impact of the decision on the turnover of your company?	☐	☐	☐	☐	☐	☐	☐
3.All in all how satisfied are you with the final decision reached?	☐	☐	☐	☐	☐	☐	☐
4.To what extent are you personally satisfied with the final implementation of the decision?	☐	☐	☐	☐	☐	☐	☐
SATISFACTION WITH THE PROCESS							
5.To what extent are you satisfied with the support which the decision received in your company?	☐	☐	☐	☐	☐	☐	☐
6.To what extent are you personally satisfied with the degree of communication and cooperation between the members of the top management team?	☐	☐	☐	☐	☐	☐	☐
7.All in all how satisfied are you with the work done during this decision?	☐	☐	☐	☐	☐	☐	☐
8.To what extent are you satisfied with the degree of utilization of the experience and capabilities of the existing managers?	☐	☐	☐	☐	☐	☐	☐

Q.4.How possible you consider that the following would occur for the key participants, if something went wrong with an important decision like the one we are talking about?

	RATHER IMPOSSIBLE 1	2	3	4	VERY POSSIBLE 5
1.The key decision makers would personally feel bad	☐	☐	☐	☐	☐
2.The would be a deterioration in the relationships between the top management team	☐	☐	☐	☐	☐
3.The personal popularity of the key decision makers would diminish	☐	☐	☐	☐	☐
4.The next evaluation of the key decision makers would be negative	☐	☐	☐	☐	☐
5.Their prospects of promotion would be minimized	☐	☐	☐	☐	☐
6.They would be excluded from any future bonus or pay increase	☐	☐	☐	☐	☐
7.They would loose their status against their peers	☐	☐	☐	☐	☐
8.They would loose their job	☐	☐	☐	☐	☐

Q.5.In case where the decision was extremely successful how possible do you consider that the following would occur for the key participants?

	RATHER IMPOSSIBLE 1	2	3	4	VERY POSSIBLE 5
1.Their personal popularity would boost.	☐	☐	☐	☐	☐
2.Their next evaluation would be very positive.	☐	☐	☐	☐	☐
3.Their promotion prospects would be maximized.	☐	☐	☐	☐	☐
4.They would receive bonuses and/or significant future pay-rises.	☐	☐	☐	☐	☐

Appendix 2

Second Questionnaire

LONDON BUSINESS SCHOOL

RESEARCH:

STRATEGIC DECISION MAKING

IN VERY IMPORTANT INVESTMENT DECISIONS

GENERAL QUESTIONNAIRE

Instructions for Completing the Questionnaire

1. The purpose of this study is to gather comparative information regarding practices, policies and opinions as they relate to the making of very important investment decisions.

2. The purpose of this study is to gather some general information for the enterprise. It is structured in such a way so as to be **SIMPLE** and **INTERESTING**. The questions can be classified into five groups. The **first** examines the company's basic characteristics. The **second** collects information about the characteristics of the corporate environment. The **third part** concerns itself with the organizational structure and the **fourth** with the top management characteristics. Finally, the **fifth** part collects some data relating to performance.

3. In your responses, please be careful to describe practices as they exist, not as you believe they should exist.

4. The nature of this research is STRICTLY SCIENTIFIC. All information provided will be held in strictest confidence and FULL ANONYMITY is quaranted.

SECTION A:COMPANY'S GENERAL CHARACTERISTICS

Q.1.When was your enterprise first established? _____ (Year)

Q.2.Approximately what percentage of your revenues is derived from the major industry where you operate?

_____ (% of revenues, approximately)

Q.3.Approximately what percentage of last year's turnover was derived from foreign sales?

_____ (% of total sales derived from foreign sales)

Q.4. Taking into consideration your company's main products, please specify your market share in each one of the two main product categories:

1st MAIN PRODUCT CATEGORY _____% market share

2nd MAIN PRODUCT CATEGORY _____% market share

Q.5.Taking into account your major products, what is the market share that the four major companies in your industry posses?

_____% market share owned by the four major companies

Q.6.Using the scale provided please rate the extent to which you follow each one of the following practices, concerning your company's major product/services:

NOT AT ALL	TO A VERY SMALL EXTENT	TO A SMALL EXTENT	TO A FAIR EXTENT	TO A CONSIDERABLE EXTENT	TO A GREAT EXTENT	TO A VERY GREAT EXTENT
1	2	3	4	5	6	7

1. ☐ We attempt to satisfy the needs of specific customers or segments of the market.
2. ☐ We attempt to differentiate our products/services from those of our major competitors.
3. ☐ We aim to satisfy the needs of an as bigger as possible market segment, without necessarily specializing our products or focusing attention on specific market segments.
4. ☐ We aim to achieve the lowest possible cost (cost leadership)

SECTION B: ENVIRONMENTAL CHARACTERISTICS

Q.7 Using the scale provided please evaluate the intensity of four different types of competition for the industry that accounts for the largest % of your sales (in other words for your principal industry).

In addition, using again the scale from 1-5 (1=NOT AT ALL SIGNIFICANT and 5=EXTREMELY SIGNIFICANT), please rate how important is each of the following types of competition to your most important products.

	VIRTUALLY NO COMPETITION 1	A LITTLE COMPETITION 2	MODERATE COMPETITION 3	CONSIDERABLE COMPETITION 4	INTENSE COMPETITION 5	DEGREE OF IMPORTANCE(1-5)
1. Price competition.	☐	☐	☐	☐	☐	____
2. Competition in product characteristics (e.g. quality).	☐	☐	☐	☐	☐	____
3. Competition in promotion and distribution.	☐	☐	☐	☐	☐	____
4. Competition in raw material procurement.	☐	☐	☐	☐	☐	____

Q.8.How would you characterize the external environment in which your company operates? Please tick the box which best describes the situation in your own company.

	1	2	3	4	5	
Very safe; little threat to survival and well-being of the firm.	☐	☐	☐	☐	☐	Very risky; a false step can mean the firm's undoing.
Rich in investment and marketing opportunities; not at all stressful.	☐	☐	☐	☐	☐	Very stressful, exacting, hostile; Very hard to keep afloat.
An environment that your firm can control and manipulate to its own advantage (e.g. a dominant firm in an industry has with little competition and few hindrances.	☐	☐	☐	☐	☐	A dominating environment, in which your firm's initiatives count for very little against the tremendous forces of your business or political environment.

Q.9.How often do changes occur in each one of the following factors?

	NO CHANGE 1	2	3	4	5	6	VERY FREQUENT CHANGES 7
1.Changes in mix of products/brands carried	☐	☐	☐	☐	☐	☐	☐
2.Changes in sales strategies	☐	☐	☐	☐	☐	☐	☐
3.Changes in sales promotion/ advertising strategies	☐	☐	☐	☐	☐	☐	☐
4.Changes in competitor's mix of products/brands	☐	☐	☐	☐	☐	☐	☐
5.Changes in competitor's sales practices	☐	☐	☐	☐	☐	☐	☐
6.Changes in competitor's sales promotions/advertising strategies	☐	☐	☐	☐	☐	☐	☐
7.Changes in customer preferences in product features	☐	☐	☐	☐	☐	☐	☐
8.Changes in customer preferences in product quality/price.	☐	☐	☐	☐	☐	☐	☐

Q.10.How would you characterise the external environment in which your company operates?

	1	2	3	4	5	
Very homogeneous; (e.g. a non-diversified market and consumers with similar preferences.	☐	☐	☐	☐	☐	Very heterogeneous (e.g. high market diversification and different consumer preferences).

Are there **significant differences** between the products/services you offer (e.g. from one product line to the other) in relation to:

	VIRTUALLY NO DIFFERENCES 1	A FEW DIFFERENCES 2	MODERATE DIFFERENCES 3	CONSIDERABLE DIFFERENCES 4	GREAT DIFFERENCES 5
1.Customers' buying habits.	☐	☐	☐	☐	☐
2.The nature of the competition	☐	☐	☐	☐	☐
3.Market Dynamism	☐	☐	☐	☐	☐
4. Market Uncertainty.	☐	☐	☐	☐	☐

Q.11.When strategic plans are being formulated, or critical decisions are being made, some of the following factors may have to be taken into account. Indicate HOW IMPORTANT a consideration each of the following factors is in influencing the outcome of the important decisions that are made by members of the top management group in your firm.

	NOT IMPORTANT AT ALL 1	ONLY A LITTLE IMPORTANT 2	SOMEWHAT IMPORTANT 3	CONSIDERABLY IMPORTANT 4	EXTREMELY IMPORTANT 5
1.The suppliers of raw materials and equipment.	☐	☐	☐	☐	☐
2.Distributors of your products.	☐	☐	☐	☐	☐
3.Demand and tastes of the users of your products.	☐	☐	☐	☐	☐
4.Actions of competitors for your customers.	☐	☐	☐	☐	☐
5.Government regulations controlling your industry.	☐	☐	☐	☐	☐
6.Keeping up with new technological requirements in the production of goods.	☐	☐	☐	☐	☐

Below are two questions. These are followed by the same list of factors in your firm's environment which sometimes have to be taken into account when strategic decisions are being made. To the right of the list are blank spaces in which to place the answers to the questions. After looking at the list, answer questions no. 12 and 13 by indicating the appropriate number from the scale given (ranging from 1 to 5), in the spaces provided:

NEVER 1 — SELDOM 2 — SOMETIMES 3 — OFTEN 4 — ALWAYS 5

Simply write the number indicating the appropriate level of frequency in the blanks for each question. Answer in spaces provided at the right of each factor listed below).

Q12 How often do you feel that you are unable to predict how each of the following factors are going to react to decisions made by your firm?

Q13.How often do you believe that the information your firm has about each of the following factors is adequate for decisions that must be made about those factors?

FACTORS	Answer to Question (see above) (12)	(13)
1.The suppliers of raw materials and equipment.	⌊_____⌋	⌊_____⌋
2.Distributors of your products.	⌊_____⌋	⌊_____⌋
3.Demand and tastes of the users of your products.	⌊_____⌋	⌊_____⌋
4.Actions of competitors for your customers.	⌊_____⌋	⌊_____⌋
5.Government regulations controlling your industry.	⌊_____⌋	⌊_____⌋
6.Keeping up with new technological requirements in the production of goods.	⌊_____⌋	⌊_____⌋

SECTION C: THE COMPANY'S INTERNAL ENVIRONMENT

Q.14."To what extent does the staff, other than top management participate or influence decisions concerning.."

	TO A VERY GREAT EXTENT 1	TO A GREAT EXTENT 2	TO A FAIR EXTENT 3	TO A SMALL EXTENT 4	TO A VERY SMALL EXTENT 5
1. ...selection and financing of ...major corporate investments	☐	☐	☐	☐	☐
2. ...sales policies	☐	☐	☐	☐	☐
3. ...new product/services development	☐	☐	☐	☐	☐
4. ...long range corporate planning	☐	☐	☐	☐	☐
5. ...hire of new executives	☐	☐	☐	☐	☐
6. ...promotion of any of the professional staff.	☐	☐	☐	☐	☐
7. ...marketing strategy for a new product or change in the existing marketing strategy.	☐	☐	☐	☐	☐
8. ...acquisition or control of other companies.	☐	☐	☐	☐	☐

Q.15.For each of the following statements, please tick the box which best describes the situation, in your own company:

	DEFINITELY FALSE	MORE FALSE THAN TRUE	MORE TRUE THAN FALSE	DEFINITELY TRUE
1."A person who wanted to make his own decisions would be quickly discouraged".	☐	☐	☐	☐
2."Even small matters have to be referred to someone higher up for a final solution	☐	☐	☐	☐
3."Any decision an employee makes has to have his superior's approval".	☐	☐	☐	☐
4."Most people here make their own rules on the job."	☐	☐	☐	☐
5."The employees here are constantly being checked for rule violations."	☐	☐	☐	☐
6."Whatever situation arises, there are procedures to follow in dealing with it	☐	☐	☐	☐
7."Every man has a specific job to do"	☐	☐	☐	☐
8."Going through proper channels is constantly stressed in our company"	☐	☐	☐	☐
9."This organization keeps written records of everyone's job performance"	☐	☐	☐	☐
10."Everyone has to follow strict operating procedures at all time"	☐	☐	☐	☐
11."Whenever there is a problem, one is supposed to go to the same person for an answer"	☐	☐	☐	☐

Q.16.Which of the following programs are regularly prepared in your company in WRITTEN form, and what length of time do they cover? Please tick the box which best describes the reality in your company:

	WE DON'T PREPARE SUCH A WRITTEN PROGRAMME 1	1-3 MONTHS 2	4-12 MONTHS 3	1 - 3 YEARS 4	MORE THAN 3 YEARS 5
1.Production plan.....	☐	☐	☐	☐	☐
2.Sales plan.....	☐	☐	☐	☐	☐
3.Procurement plan.....	☐	☐	☐	☐	☐
4.Budget.....	☐	☐	☐	☐	☐
5.Business Plan (Long Range Corporate Plan)..	☐	☐	☐	☐	☐

Q.17.In case where THERE EXISTS a long term business plan, please rate the depth to which the following analyses take place:

	NOT AT ALL 1	2	3	IN MODERATE DEPTH 4	5	6	IN A GREAT DEPTH 7
1.Analysis of parameters influencing demand.	☐	☐	☐	☐	☐	☐	☐
2.Examination of alternative growth scenaria.	☐	☐	☐	☐	☐	☐	☐
3.Examination of parameters influencing cost.	☐	☐	☐	☐	☐	☐	☐
4.Examination of strategic choices and alternative solutions.	☐	☐	☐	☐	☐	☐	☐
5.Analysis of Business risk.	☐	☐	☐	☐	☐	☐	☐
6.Analysis of threats and opportunities in the corporate environment.	☐	☐	☐	☐	☐	☐	☐
7.Analysis and evaluation of certain strengths and weaknesses of the company.	☐	☐	☐	☐	☐	☐	☐

Q.18.Please indicate,by ticking the appropriate box, the degree to which you agree or disagree, to each one of the following statements, referring to the planning systems of your company:

	STRONGLY DISAGREE 1	DISAGREE 2	UNDECIDED 3	AGREE 4	STRONGLY AGREE 5
1. Each functional area is expected to do its own planning with minimal company-wide direction or coordination.	☐	☐	☐	☐	☐
2. Departmental heads have to submit written long-range plans to top management for review.	☐	☐	☐	☐	☐
3. Top management has formulated quantified goals for the company	☐	☐	☐	☐	☐
4. Top management has developed a formal statement of what business the company is in or wants to be in.	☐	☐	☐	☐	☐
5. There is a person or group whose full-time responsibility is to coordinate a company-wide, long range strategic planning effort.	☐	☐	☐	☐	☐
6. The company's top management had developed a climate in the company which supports the planning effort	☐	☐	☐	☐	☐
7. Detailed action plans are developed to support each major strategy	☐	☐	☐	☐	☐

SECTION D: TOP MANAGEMENT CHARACTERISTICS

Q.19.What is the percentage of equity owned by the five most important shareholders?

_____ % (percentage of equity)

Q.20.What is the percentage of top managers, directly referring to Managing Director, who are shareholders or corporate partners?

_____ %

Q.21.Is the present CEO (or Managing Director) the founder of the company at the same time?

☐ ôäæ ☐ îÄ

Q.22.What is the percent of top managers who are relatives to the present CEO (or Managing Director) ?

_____ %

Q.23.What percent of top managers (down to the level of departmental Vice-presidents) are university graduates?

_____ (% of managers)

Q.24.How many years do you work in the same company? _____

Q.25.For how many years are you in your present position?_____

Q.26.Please check the box which best describes your level of education:

1.Secondary education..... ☐ 1
2.Higher National Education..... ☐ 2
3.University Education..... ☐ 3
4.Postgraduate studies resulting in a Master degree.... ☐ 4
5.Postgraduate studies resulting in a Ph.D. degree..... ☐ 5

Q.27.In which of the following functions of the company do you feel you command more specialisation and experience (please choose only one function):

1.Marketing and Sales..... ☐ 1
2.Production Management..... ☐ 2
3.Design/Engineering..... ☐ 3
4.Accounting/Finance..... ☐ 4
5.Personnel Management..... ☐ 5

Q.28.Below are listed several statements that describe various things people do or try to do on their jobs. We would like to know which of these statements you feel more accurately describe your own behavior when you are at work. Please check the box which best describes your own actions. Remember: **There are no right or wrong answers.** Please answer all questions frankly.

	ALWAYS 7	ALMOST ALWAYS 6	USUALLY 5	SOMETIMES 4	SELDOM 3	ALMOST NEVER 2	NEVER 1
1.I do my best work when my job assignments are fairly difficult	☐	☐	☐	☐	☐	☐	☐
2.I try very hard to improve on my past performance at work	☐	☐	☐	☐	☐	☐	☐
3.I take moderate risks and stick my neck out to get ahead at work	☐	☐	☐	☐	☐	☐	☐
4.I try to avoid any added responsibilities on my job	☐	☐	☐	☐	☐	☐	☐

	ALWAYS 7	ALMOST ALWAYS 6	USUALLY 5	SOMETIMES 4	SELDOM 3	ALMOST NEVER 2	NEVER 1
5.I try to perform better than my co-workers	☐	☐	☐	☐	☐	☐	☐
6.I cannot easily forget about my work when I'm on holiday	☐	☐	☐	☐	☐	☐	☐

Q.29.Below are listed several statements that describe various things people do or try to do on their jobs. We would like to know which of these statements you feel more accurately describe your own behavior when you are at work. Remember: **There are no right or wrong answers.** Please answer all questions frankly.

	DEFINITELY DISAGREE 1	INCLINED TO DISAGREE 2	NEITHER AGREE NOR DISAGREE 3	INCLINED TO AGREE 4	DEFINITELY AGREE 5
1.If I invested in stocks, it would probably be in safe stocks from well known companies	☐	☐	☐	☐	☐
2.If the possible reward was very high, I would not hesitate putting my money in a new business that could fail.	☐	☐	☐	☐	☐
3.I probably would not take the chance of borrowing money for a business deal even if it might be profitable	☐	☐	☐	☐	☐
4.I would prefer a job involving change, travel and variety even though risky and insecure	☐	☐	☐	☐	☐
5.I quite enjoy taking risks.	☐	☐	☐	☐	☐
6.When I am catching a train,I often arrive at the last minute.	☐	☐	☐	☐	☐
7.Life with no danger in it would be too dull for me	☐	☐	☐	☐	☐
8.I enjoy fast driving.	☐	☐	☐	☐	☐
9.I would make quite sure I had another job before giving up my old one.	☐	☐	☐	☐	☐
10.I am rather cautious in novel situations	☐	☐	☐	☐	☐
11.When buying things, I usually examine the guarantee.	☐	☐	☐	☐	☐
12.I do think people spend too much time safeguarding their future with savings and insurances.	☐	☐	☐	☐	☐
13.I believe that an element of risk adds spice to life.	☐	☐	☐	☐	☐
14.One should 'neither a borrower nor a lender be'	☐	☐	☐	☐	☐
15.When travelling in an aeroplane, bus or train, I choose my seat with safety in mind?	☐	☐	☐	☐	☐

Q.30. Below are listed ten pairs of two propositions each. For each pair, please mark into the box given the proposition (i.e. A or B) with which you agree more. Even if you don't agree with anyone of the two propositions (A or B), please mark that proposition with which you disagree less. Remember: **There are no right or wrong answers.**

1 a. Many of the unsuccessful events in a company's life are partly due to bad luck.
b. Corporate misfortunes result from the mistakes they make. ☐

2 a. Without the right breaks one cannot be an effective leader.
b. Capable people who fail to become leaders have not taken advantage of their opportunities. ☐

3 a. I have often found that what is going to happen will happen.
b. Trusting to fate has never turned out as well for me as making a decision to take a definite course of action. ☐

4 a. Becoming a success is a matter of hard work, luck has little or nothing to do with it.
b. Getting a good job depends mainly on being in the right place at the right time. ☐

5 a. The average citizen can have an influence in government decisions.
b. This world is run by the few people in power, and there is not much the little guy can do about it. ☐

6 a. When I make plans, I am almost certain that I can make them work
b. It is not always wise to plan too far ahead because many things turn out to be a matter of good or bad fortune anyhow. ☐

7 a. Who gets to be the boss often depends on who was lucky enough to be in the right place first.
b. Getting people to do the right thing depends upon ability, luck has little or nothing to do with it. ☐

8 a. One should always be willing to admit mistakes.
b. It is usually best to cover up one's mistakes. ☐

9 a. A good leader expects people to decide for themselves what they should do.
b. A good leader makes it clear to everybody what their jobs are. ☐

10 a. Many times I feel that I have little influence over the things that happen to me.
b. It is impossible for me to believe that chance or luck plays an important role in my life. ☐

Q.31. Please read carefully each one of the following statements and answer how much you agree or disagree with each one of them:

	STRONGLY DISAGREE 1	DISAGREE 2	UNDECIDED 3	AGREE 4	STRONGLY AGREE 5
1. An expert who doesn't come up with a definite answer probably doesn't know too much.	☐	☐	☐	☐	☐
2. There is really no such thing as a problem that can't be solved.	☐	☐	☐	☐	☐
3. A good job is one where what is to be done and how it is to be done are always clear.	☐	☐	☐	☐	☐

	STRONGLY DISAGREE 1	DISAGREE 2	UNDECIDED 3	AGREE 4	STRONGLY AGREE 5
4. In the long run it is possible to get more done by tackling small simple problems rather than large complicated ones.	☐	☐	☐	☐	☐
5. What we are used to is always preferable to what is unfamiliar.	☐	☐	☐	☐	☐
6. It is more fun to tackle a complicated problem than to solve a simple one.	☐	☐	☐	☐	☐
7. People who insist upon a yes or no answer just don't know how complicated things really are.	☐	☐	☐	☐	☐
8. Many of our most important decisions are based upon insufficient information	☐	☐	☐	☐	☐
9. Managers who hand out vague assignments give a chance for one to show initiative and originality.	☐	☐	☐	☐	☐
10. Adventurous and exploratory people go farther in this world than do systematic and orderly people.	☐	☐	☐	☐	☐

Q.32. For each of the following statements, please tick the box which best describes the the philosophy of the top management team of your firm (i.e. the management philosophy that actually gets used in strategic decision making).

	1	2	3	4	5	6	7	
Strong emphasis on the marketing of true and tried products or services and the avoidance of heavy R&D costs.	☐	☐	☐	☐	☐	☐	☐	Strong emphasis on R&D, technological leadership, and innovations.
There is a strong tendency to follow market leaders in introducing new products or ideas.	☐	☐	☐	☐	☐	☐	☐	We always try to be ahead of the competitors in new product introduction and innovativeness.
We favour true and tried practices and avoid heavy R & D costs.	☐	☐	☐	☐	☐	☐	☐	Strong emphasis on R&D, technological leadership and innovations.
A philosophy of cooperative coexistence with rival firms within the limits of the law	☐	☐	☐	☐	☐	☐	☐	Very competitive, "undo-the-competitors" philosophy.
There is a strong proclivity to low risk projects (with normal and certain rates of return).	☐	☐	☐	☐	☐	☐	☐	The firm has a strong proclivity for high risk projects (with chances of very high return).
Due to the nature of the environment it is best to explore it gradually via timid, incremental behavior.	☐	☐	☐	☐	☐	☐	☐	Bold, wide-ranging acts are viewed as useful and common practice.

SECTION E: PERFORMANCE MEASURES

Q.33.Using the scale provided, please rate the performance of your business over the past 5 years, in comparison to your major competitors on each of the following performance criteria?
Subsequently, using the scale from 1 to 5 (1=of no importance, 5=extremely important), please rate the degree of importance you attribute to each one of the factors, for the success of your company.

PERFORMANCE EVALUATION

	NOT AT ALL SATISFACTORY 1	2	MODERATE 3	4	OUTSTANDING 5	DEGREE OF IMPORTANCE (1 to 5)
1.Operating profits.	☐	☐	☐	☐	☐	_____
2.Return on total Assets.	☐	☐	☐	☐	☐	_____
3.Growth in revenues.	☐	☐	☐	☐	☐	_____
4.Growth in profits.	☐	☐	☐	☐	☐	_____
5.Market share.	☐	☐	☐	☐	☐	_____
6.Market share gain.	☐	☐	☐	☐	☐	_____
7.New product development.	☐	☐	☐	☐	☐	_____
8.Product quality.	☐	☐	☐	☐	☐	_____
9.Cost reduction programs	☐	☐	☐	☐	☐	_____
10.R&D activities.	☐	☐	☐	☐	☐	_____
11.Innovativeness.	☐	☐	☐	☐	☐	_____
12.Personnel development	☐	☐	☐	☐	☐	_____
13.Ability to attract, develop and keep talents	☐	☐	☐	☐	☐	_____
14.Quality of Management.	☐	☐	☐	☐	☐	_____

FINANCIAL MEASURES (IN MILLION DRACHMAS)

	1989	1988	1987	1986	1985
1.Turnover.....	_____	_____	_____	_____	_____
2.Gross Profit.....	_____	_____	_____	_____	_____
3.Profit before interest and taxes..	_____	_____	_____	_____	_____
4.Profit before taxes.	_____	_____	_____	_____	_____
5.Total assets	_____	_____	_____	_____	_____
6.Net Fixed Assets....	_____	_____	_____	_____	_____
7.Long and short term loans	_____	_____	_____	_____	_____
8.Equity.....	_____	_____	_____	_____	_____

Appendix 3

List of Participating Companies and Types of SIDs Studied

INDUSTRIAL SECTOR OF ACTIVITY AND NAME OF COMPANY	STATUS	MANAGERS INTERVIEWED	SIZE	TYPES OF SIDs STUDIED
A.FOODS AND DRINKS				
1.ATHENIAN BREWERY SA	SU,PRI	4	L	-COMPANY BUYOUT -EXPANSION OF PRODUCTION EQUIPMENT
2.HELLENIC BOTTLING COMPANY SA	IN,PRI	4	L	-COMPANY BUYOUT -NEW COMPANY ESTABLISHMENT
3.IVI PANAGOPOULOS SA	SU,PRI	4	M	-BUILDING OF A NEW FACTORY -COMPUTERIZED STORING FACILITIES
4.BOUTARI JOHN and SON, WINES and SPIRITS INC	IN,PRI	3	M	-BUILDING OF A NEW FACTORY -JOINT VENTURE
5.ADAMS CHILCOTT	SU,PRI	4	M	-NEW PRODUCT INTRODUCTION -BUILDING OF A NEW FACTORY
6.ASTY MILK PASTEURIZING FACTORY	SU,PU	3	M	-NEW PRODUCT INTRODUCTION
7.VOKTAS INC	IN,PRI	3	M	-EXPANSION OF PRODUCTION EQUIPMENT -BUILDING OF A NEW FACTORY
8.DELTA DAIRY SA	IN,PRI	4	L	-MARKETING CHANNELS -COMPANY BUYOUT
9.EVGA HELLENIC MILK INDUSTRY SA	IN,PRI	3	M	-NEW PRODUCT INTRODUCTION -INFORMATION SYSTEMS
10.ELAIS OLEAGINOUS PRODUCTS SA	SU,PRI	4	M	-NEW PRODUCT INTRODUCTION -EXPANSION OF PRODUCTION EQUIPMENT
11.HELLENIC BISCUITS Co. SA	IN,PRI	2	M	-MERGER
12.THRAKI SA	IN,PU	3	M	-EXPANSION OF PRODUCTION EQUIPMENT -MERGER
13.ION COCOA and CHOCOLATE MANUFACTURERS SA	IN,PRI	4	M	-EXPANSION OF PRODUCTION EQUIPMENT -NEW PRODUCT INTRODUCTION
14.NESTLE HELLAS SAI	SU,PRI	3	M	-COMPANY BUYOUT -EXPANSION OF PRODUCTION EQUIPMENT
15.OLYMPIC CATERING SA	SU,PU	4	L	-INFORMATION SYSTEMS -COMPANY BUYOUT
16.FAGE SA	IN,PRI	4	M	-COMPUTERIZED STORING FACILITIES -INTERNAL REORGANIZATION
B.CHEMICAL INDUSTRIES				
1.AEVAL NITROGENOUS FERTILIZERS INDUSTRY SA	SU,PU	4	L	-EXPANSION OF PRODUCTION EQUIPMENT -BUILDING OF A NEW FACTORY
2.BDF HELLAS	SU,PRI	4	M	-EXPANSION OF PRODUCTION EQUIPMENT -COMPUTERIZED STORING FACILITIES
3.EKO CHEMICALS Co. SA	SU,PU	3	M	-MODERNIZATION OF PRODUCTION EQUIPMENT -BUILDING OF A NEW FACTORY
4.HELLENIC CHEMICAL PRODUCTS and FERTILIZERS Co. SA	SU,PU	4	L	-MODERNIZATION OF PRODUCTION EQUIPMENT -BUILDING OF A NEW FACTORY
5.COLGATE PALMOLIVE SA	SU,PRI	4	M	-BUILDING OF A NEW FACTORY -COMPANY BUYOUT
6.LEVER HELLAS SAIC	SU,PRI	5	M	-BUILDING OF A NEW FACTORY -NEW PRODUCT INTRODUCTION
7.MINERVA PHARMACEUTICAL SA	IN,PRI	4	M	-INFORMATION SYSTEMS -EXPANSION OF PRODUCTION EQUIPMENT
8.FAMAR SA	IN,PRI	3	M	-COMPANY BUYOUT
9.CHEMICAL INDUSTRIES OF NORTHERN GREECE SA	IN,PRI	3	M	-NEW PRODUCT INTRODUCTION -BUILDING OF A NEW FACTORY
10.HOECHST HELLAS AG	SU,PRI	3	M	-NEW PRODUCT INTRODUCTION
11.JOHNSON AND JOHNSON HELLAS SA	SU,PRI	4	M	-INFORMATION SYSTEMS -NEW PRODUCT INTRODUCTION

INDUSTRIAL SECTOR OF ACTIVITY AND NAME OF COMPANY	STATUS [1]	MANAGERS [2] INTERVIEWED	SIZE [3]	TYPES OF SIDs STUDIED [4]
C.TEXTILE INDUSTRY				
1.DAMOS I. SA	IN,PRI	3	M	-MODERNIZATION OF PRODUCTION EQUIPMENT -BUILDING OF A NEW FACTORY
2.HELLENIC FABRICS SA	IN,PRI	3	M	-MODERNIZATION OF PRODUCTION EQUIPMENT -MODERNIZATION OF PRODUCTION EQUIPMENT
3.ETMA ARTIFICIAL SILK SA	IN,PRI	4	L	-EXPANSION OF PRODUCTION EQUIPMENT -EXPANSION OF PRODUCTION EQUIPMENT
4.ATTICA SPINNING MILLS SA	IN,PRI	3	M	-EXPANSION OF PRODUCTION EQUIPMENT -BUILDING OF A NEW FACTORY
5.NAOUSSA SPINNING MILLS SA	IN,PRI	3	M	-BUILDING OF A NEW FACTORY
6.LEKKAS A. AND BROS SA	IN,PRI	3	M	-BUILDING OF A NEW FACTORY -COMPANY BUYOUT
7.MACEDONIAN SPINNING MILLS SA	IN,PRI	3	M	-NEW PRODUCT INTRODUCTION -NEW COMPANY ESTABLISHMENT
8.MINERVA J&B LADENIS BROS SA	IN,PRI	4	M	-MODERNIZATION OF PRODUCTION EQUIPMENT -NEW PRODUCT INTRODUCTION
9.SCHIESSER-PALLAS LTD	SU,PRI	3	M	-EXPANSION OF PRODUCTION EQUIPMENT
10.ILIOS TEN CATE TEXTILE MILLS SA	IN,PRI	3	M	-MODERNIZATION OF PRODUCTION EQUIPMENT -COMPANY BUYOUT
11.VOLOS COTTON MFC CO SA	IN,PRI	4	M	-NEW PRODUCT INTRODUCTION -EXPANSION OF PRODUCTION EQUIPMENT
TOTAL NUMBER OF MANAGERS INTERVIEWED		133		

Table A3.1 List of Participating Companies and SIDs Studied *

1 STATUS: IN = Independent, SU = Subsidiary, PU = Public-Owned, PRI = Private

2 Managers interviewed = Number of informants interviewed.

3 SIZE: measured by number of employees (M = between 300 and 10000 employees and L = more than 1000 employees)

4 Six out of the 38 companies conducted, reported only one significant investment decision during the last five years. I by no means attempted to study a second decision not considered as strategic by the CEO.

Only one company refused to participate. The CEO expressed the view that "we cannot reveal our best kept secrets "!.

Two others (Lortex, Piraiki-Patraiki) were rejected because being in the verge of bankruptcy they could show no important decision in the recent 5 years.

Two companies were rejected despite the fact that they were willing to participate (Henniger Hellas, Lowenbrau). The reason was that they have been recently taken over and the entire management team had been replaced. None of the newcomers could provide me with a reliable picture of the decision making process.

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