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Implementing business strategy: Patterns in resource allocations and the impact on firm performance

Camp, Stephen Michael, Ph.D.
The Ohio State University, 1993

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Finally, for calling me to this effort and giving me the strength to see it accomplished, I thank my Lord, Jesus Christ, to whom not only this work but my entire life is dedicated.

ii
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CHAPTER I
INTRODUCTION

This study is designed to empirically examine the impact of resource allocations across separate functional areas (i.e., manufacturing, marketing, research and development) in the strategic management of businesses. The primary objective is to determine what impact business-level strategy has on the allocation of financial capital between 1) market development, 2) product and process development, and 3) manufacturing, and the resulting performance of the firm.

Though researchers often identify strategy implementation as the "action" of the strategic planning process (Ansoff, 1984; Byars, 1984; Hax and Majluf, 1991; Nutt, 1989), few studies empirically link what the firm does, as evidenced by its resource allotments, with strategy and performance. The conceptual framework presented in Chapters II and III provide the foundation from which the need for this study has developed. The foundation is derived from specific theoretical issues, such as: 1) the entrepreneurial process as opportunity recognition and exploitation (Kirzner, 1973; Sexton and Bowman-Upton, 1991; Stevenson and
Sahlman, 1986; Timmons, Muzyka, Stevenson and Bygrave, 1988); 2) resource allocations in the implementation of strategy (Ansoff, 1980; Mintzberg, 1978; Mintzberg and Waters, 1982; Quinn, 1980); 3) differences in allocations for different strategy types (Mintzberg and Waters, 1985; Pascale, 1984); 4) the multi-dimensionality of the performance construct (Venkatraman and Ramanujam, 1986; Woo and Willard, 1983); and 5) the appropriateness of corporate ventures as a sampling base (MacMillan, 1986; Schollhammer, 1982; Stevenson and Jarillo, 1990).

Business ventures, independent or subsidiary, often face funding considerations which prevent optimum allocations to marketing, research and development, and manufacturing processes (Buzzell and Chussill, 1985; Fast, 1981; Miller and Camp, 1985). Hence, sub-optimizations are necessary, requiring strategic decisions in light of how the tradeoffs ultimately impact the performance of the firm (Galbraith and Schendel, 1983; Hobson and Morrison, 1983; Miller, Wilson and Adams, 1988). Few studies have examined strategy as a pattern in decision-making though the concept is well supported conceptually (Mintzberg and Waters, 1982). This is perhaps the first study to empirically link specific business level strategies with management's decisions concerning product and market development expenditures over time.
Overview of the Research Issue

Implementation involves "the carrying out" or "accomplishment" of specific organizational strategies (Nutt, 1989). Whereas the evidence of strategy as formulated exists within a documented plan of action, the evidence of strategy as implemented exists within the outcomes or real world results of the implementation effort. The hierarchical theory of organizational design suggests that specific behaviors or processes of formulating and implementing strategies can be distinguished at each level of the organization (Ansoff, 1965; Schendel and Hofer, 1979; Vancil and Lorange, 1975). It is said that the behaviors which make up implementation are unique at any one level because the strategy being pursued at that level is unique (Andrews, 1980; Beard and Dess, 1981). Thus, when discrepancies exist between a strategy formulated (i.e., planned or intended) and a strategy actually implemented (i.e., emergent or realized) at any one level in the organization, the discrepancy should be most evident in a comparison of the content of the strategy formulated and the content of the strategic actions in which the firm is engaged.

The content of strategy as implemented or realized is said to consist of the sequential pattern in decision making over time regarding the allocation of organizational resources (Mintzberg, 1978). In order to observe strategy as realized, one must observe the consequences or "real world"
evidence of the implementation efforts (Quinn, 1980). Because implementation is said to comprise the "accomplishment" of strategy and can be observed in the evidence of resource allocations, it is concluded that the content of a realized strategy at any one level in the organization should be directly linked to the observed patterns in the allocation of resources at that level. Thus, conceptually, there should be a direct relationship between the strategy a business unit pursues and the manner in which it allocates its scarce and costly resources over time to implement that strategy.

Given the nature of the research question, examining the relationship between formulated and realized strategy requires a single level of analysis where 1) the planned strategy has a definitive genesis, and 2) the same strategy is both formulated and implemented (Mintzberg, 1990). Because of the need to identify strategy at the point of conception, the level of analysis in this study is the single business unit. More specifically, the business units are comprised of new corporate ventures. The study of new corporate ventures is appropriate for the proposed research issues in that 1) corporate ventures comprise a single level of analysis and 2) their strategy is most often formulated prior to market entry (Cooper, 1981; McDougal and Robinson, 1990).
In addition, like independent ventures, corporate ventures are often initiated under conditions of resource scarcity and environmental uncertainty (Barney, 1986; Burgelman, 1983; Pfeffer and Salancik, 1978). Under such conditions, firms often minimize the number of strategy alternatives as well as the variation among the individual decision components of any one particular strategy to be pursued (Kanter, 1985). Patterns in resource allocations necessary to implement the chosen strategy should, therefore, be consistent within and different between unique types of strategies for single business units.

In the total array of resources available and necessary for initiating new ventures, adequate capital financing is considered most critical to success (Block, 1982; Buzzell and Gale, 1975; Fast, 1981; Fast and Pratt, 1981). Thus, the relationship between strategy formulated and strategy implemented at the business-unit level of analysis should be discernable from an analysis of the patterns in the allocation of financial resources across functional areas over time (i.e., realized strategy).

Both strategy and financial resource allocation patterns have been shown to affect firm performance. However, conclusions regarding the effectiveness of a particular allocation pattern and strategy have also been shown to be sensitive to the performance measure examined (Hitt and Ireland, 1985; Michel and Shaked, 1984). Thus, for this
study, it is assumed that different measures of performance will lead to different conclusions concerning the effectiveness of a particular resource allocation pattern and business strategy. Therefore, multiple measures of performance will be used to analyze the overall effectiveness of specific combinations of strategy and resource allocations.

Though a list of specific hypotheses is presented in Chapter IV, some general research questions addressed in this study are listed below:

1) Is there a direct and significant relationship between business strategy and resource allocations between product and market development over time?

2) Do specific strategies lead to unique patterns in the resource allocations across functional areas over time?

3) Does the relationship between business strategy and resource allocations lead to a greater understanding of how the actions of the organization contribute to performance?

4) What impact do strategy and resource allocation patterns have on distinct measures of firm performance?

Research Methodology

This study utilizes the Profit Impact of Marketing Strategies (PIMS) Start-Up Data Base maintained by the
Strategic Planning Institute (SPI) in Cambridge, Massachusetts. It is comprised of approximately 1000 variables for 129 new corporate ventures. The variables represent numerous dimensions of the primary constructs in this study. The data base is also unique in that the variables for each construct are recorded over time. Measures of resource allocations stem from five years prior to market entry and as many as eight years following market entry. The incorporation of longitudinal data in strategy research was recommended by Galbraith and Schendel (1983).

The intent of this study is to capture the relationship between business level strategy and resource allocations and the resulting impact on performance. Strategy has been defined as a pattern in managerial decision making over time. Thus, for this study, multiple variables, each controlled by management, are used to operationalize the strategy construct. Some of the variables include: 1) relative price; 2) relative product quality; 3) relative breadth of product line; and 4) degree of vertical integration. A complete list of the strategy variables is provided in Chapter IV.

Resource allocations are measured as the proportion of total capital expenditures for three separate functional areas: market development, product and process development, and manufacturing. Because of its multi-dimensionality, performance is measured using three of the more critical
measures of business success, namely return on investment, cash flow, and relative market share.

The research methodology consists of two parts. The first involves the steps necessary to prepare the data for analysis. The second is comprised of the procedures necessary for testing the proposed relationships. Preparing the data for analysis mostly involves operationalizing the constructs and controlling for specific data limitations. Operationalizing business strategy involves: 1) selecting the conduct variables which make up the construct; 2) cluster analyzing the firms in the data base; 3) conducting discriminate analysis of each of the resulting clusters; and 4) developing the strategy profiles.

The procedures for testing the relationship between strategy and resource allocations consist of: 1) profiling allocation patterns for each strategy type; and 2) testing for mean differences in the allocation profiles. The procedures for testing the main and interaction effects of strategy and resource allocations consists of testing for mean differences in each of the performance measures for each strategy type and allocation profile, as well as for each unique combination of strategy and allocation profile.

Limitations

Given its exploratory nature, one of the more significant limitations to this study is the fact that it is
designed solely to determine if relationships exist between business strategy, resource allocation patterns, and performance. The particular characteristics of the individual relationships will remain for future studies to explore. A second significant limitation which also stems from the exploratory nature of the study concerns the lack of direct empirical support for strategy as a pattern in decision making over time. Consistent with the "strategy as a pattern" concept, this study proposes that allocating capital resources across functional areas as strategy implementation will be significantly related to business level strategy as formulated.

A third limitation stemming from the exploratory design is that, although allocations are examined over time, what role time actually plays is, for the most part, unknown. Future studies will need to explore how time influences the allocations via the learning effects that Mintzberg (1978) relies on to derive the concept of emergent and realized strategy.

In addition, the resources under study are restricted to financial resources. Though financing is regarded as most critical, scholars have definitively established the need for other resources in business success including managerial and technological capital. For simplicity, the study of allocations of financial capital are also restricted to the functional areas of market development,
product and process development, and manufacturing. Though allocations occur outside of these areas, these three account for the majority of spending in the early development of a new enterprise.

This study also utilizes multiple measures of performance. However, the chosen measures only account for a small number of the known performance dimensions. Thus, conclusions concerning the effectiveness of a given strategy and resource allocation pattern may be somewhat misleading in that they do not explore performance tradeoffs in other areas. For example, if a strategy is determined to be effective at generating high levels of return on investment, this finding is insufficient to conclude how the same strategy impacts market position. The intent is not to identify the one measure of performance that best reflects the total realm of organizational effectiveness, as Hofer (1983) suggests. Rather, the idea is to test multiple measures and discern the tradeoffs between them given the influence of a particular strategy and resource allocation pattern.

There are several specific limitations associated with using the PIMS data base and the research methodology as well. These are specified in detail in Chapter V, "Research Design and Methodology." However, they are briefly stated as: 1) potential errors in conclusions derived from cross-sectional data; 2) some variables in the PIMS data base may
be significant simply because of their construction rather than a true causal impact; 3) conclusions may be misleading due to the omission of certain contingency variables; and 4) the causal aspects of the relationships remain uncertain.

A final limitation worth noting is the exclusion of certain contextual factors known to influence the strategy and performance relationship in new ventures. It is assumed that the relationships proposed in this study will hold regardless of contextual influences. Thus, studying the unique nature of the relationships and how they change under different competitive settings will remain for future studies to explore.

Potential Contribution

The contribution of this study is framed by three important concepts surrounding the establishment and development of new business ventures. The first concerns the 1) limits and 2) necessity of start-up financing. As previously noted, start-up capital is not only critical to the success of new business ventures, it is often the most difficult resource to acquire. Lack of adequate financing is often cited as the leading cause of failure in new ventures, both independent and corporate.

The second concept influencing the contribution of this study involves the uncertainty associated with establishing new business ventures. Researchers have long noted the need
for entrepreneurs to manage between periods of change (Maidique and Hayes, 1984). Change for many new businesses is paramount during the early years of development (Burgelman, 1983; Timmons et al., 1988). This is the point at which management is most uncertain about how to respond to particular events in the competitive arena. As new ventures mature, management grows increasingly adept at interpreting competitive and environmental movements and devising appropriate responses (Kanter, 1985).

Combining the limited availability and necessity of start-up capital with the higher levels of uncertainty in new venture initiation points to the primary contribution this study makes to the practice of corporate venturing. The findings should link specific patterns of capital allocations with specific business strategies. In addition, the findings should suggest which patterns lead to improved performance in the areas of relative market share, profitability, and cash flow. Insight should be gained into how managers can effectively allocate their limited capital across different functional areas to insure the greatest level of performance in the pursuit of a particular business strategy.

The third and final concept framing the contribution of this study involves strategy as a pattern in decision-making over time. Though conceptually sound, this concept has had little in the way of empirical verification. If strategies
are devised to insure strong competitive positions in the marketplace and to enhance firm performance, researchers must link specific strategies with the managerial decisions involved in carrying out (i.e., implementing) those strategies. If a significant part of the implementation effort involves allocating resources to specific functional areas, then this study makes its most significant theoretical contribution by tracking business level strategy in the patterns of resource allocations between functional areas over time. This study stands as one of only a few empirical, multi-variate, cross sectional/time-series assessments of realized strategy as a sequential pattern in managerial decisions over time.

Structure of the Research Report

The research report is designed to effectively communicate the research questions, design and methodology, analytical results, and the researcher's conclusions in a clear and structured manner. Each of the chapters which comprise the research report is briefly described below in the order in which it is presented.

Chapter II: Entrepreneurship, Strategy and Resource Allocations. This chapter presents an in-depth review of the literature in entrepreneurship, business strategy, and resource allocations and explores the relationship between the constructs. The basic argument is that if distinctions
can be made between different types of strategies, then perhaps patterns in resource allocations should emerge consistent with such distinctions. Thus, as representative of strategy implementation, resource allocation patterns should help to explain the relationship between strategy and performance.

Chapter III: Strategy and Resource Allocations in Corporate Ventures. This chapter examines the literature with respect to corporate entrepreneurship, new venture strategy, performance, and resource allocations. The focus is on the conceptual linkage between strategy implementation and resource allocations at the business-unit level of analysis. The basic proposition is that if strategies are distinct for new ventures at the business level, allocation patterns designed to carry out those strategies should be distinct as well.

Chapter IV: Research Questions and Hypotheses. Chapter IV summarizes the basic research logic developed in Chapters II and III, and identifies the specific hypotheses to be tested. Given the exploratory nature of this study, the hypotheses focus on the existence of direct relationships between the proposed constructs and are less concerned with the characteristics of those relationships.

Chapter V: Research Design and Methodology. This chapter explores the research design and methodology proposed for testing the hypotheses. The primary purpose of
this chapter is to describe the database, sample selection, variable operationalization, and the unique statistical routines to be used in testing the proposed relationships between strategy, patterns in capital allocations, and performance. The chapter is divided into four major sections. The first describes the strengths and weaknesses of the Profit Impact of Marketing Strategies (PIMS) Program used in this study. The second provides a detailed description of the sample and the variables selected for each of the respective constructs. The third section explores the methods necessary for constructing strategy typologies and patterns in resource allocations. The final section examines the procedures used in testing the specific hypotheses.

Chapter VI: Results. This chapter presents the results of the data preparation and hypothesis testing. The results include descriptions of the strategy typologies and their respective profiles and descriptions of the allocation patterns as depicted across the primary functions over time. Also presented are the research findings regarding the relationships between the strategy and resource allocation constructs, strategy and performance, and the interactive effects of strategy and allocations on performance.

Chapter VII: Discussion and Conclusions. As the name implies, this chapter presents a detailed discussion of the findings as framed by the theoretical and conceptual
discussion. This chapter provides a framework from which to identify specific managerial implications, make conclusions, and propose a research agenda. A detailed research agenda is proposed which extends the current theory and respective methodology beyond the cross-sectional time series design proposed in this phase of the research. The basis of this chapter is to propose challenging research questions concerning strategy as a pattern in organizational behavior over time, which require unique longitudinal, process-oriented methodologies.

New ventures are often restricted with limited access to critical resources. Also, sub-optimal allocations result because of the inherent uncertainty associated with new venture initiation. It is critical that scholars and practitioners alike empirically explore the linkages between the formulation and implementation of new venture strategies which lead to enhanced performance. This study is the first in a long series designed to determine effective resource allocation patterns for specific types of business level strategies.
CHAPTER II
ENTREPRENEURSHIP, STRATEGY, AND RESOURCE ALLOCATIONS

This chapter begins with a look at the historical development of the entrepreneurial concept. Of particular interest is the fact that, as an economic phenomenon, the control and allocation of firm resources comprises one of the primary roles of entrepreneurship in today's society. Resource allocations are also critical to understanding business strategy. The theory of organizational hierarchy supports the notion that as strategies are formulated at one level of the organization, resources will be allocated to lower levels as part of the implementation effort. The hierarchical perspective is well developed both conceptually and empirically.

Conceptually, entrepreneurship is perhaps most closely linked to business strategy at the point when the strategic initiatives of an established firm include the development of a new and separate business enterprise as an addition to its existing product market portfolio. Often referred to as corporate entrepreneurship, the process involves a distribution of resources from the parent firm to the subsidiary venture. Hierarchical theory suggests that the manner in
which resources are allocated is unique for each level of
the firm where strategies are formulated and implemented.
Linking the resource allocations of entrepreneurship and the
hierarchical perspective of strategy focuses attention on
the manner in which new ventures allocate resources across
functional areas as the implementation of strategies
formulated.

OPPORTUNITY RECOGNITION

Perhaps the only thing scholars are sure of with regard
to the study of entrepreneurship is that entrepreneurship
implies economic activity, and that economic activity in­
volves human action. Thus, in its simplest form, entrepre­
neurship is comprised of various forms of human behavior.
Determining what behaviors, however, has served as one of
the central components of entrepreneurship literature for
centuries (Herbert and Link, 1982). Despite the significant
attention given the subject among private, government, and
academic institutions, there is little consensus within the
literature today as to what constitutes entrepreneurship
(Herbert and Link, 1982).

Entrepreneurship has been viewed as an interdisci­
plinary or general construct, incorporating the theories of
finance, organizational behavior, decision making, and
marketing. By the early 1980s, however, despite decades of scholarly debate, failure to identify the critical functions of entrepreneurship and the role of the individual entrepreneur had considerably thwarted theoretical development (Herbert and Link, 1982; Livesay, 1982; Wilken, 1979). Advancements in the conceptual understanding since the early 1980s, however, have been considerable, including the role of opportunity recognition, resource allocation, and the individual's propensity toward growth and change. The historical development of the theory of entrepreneurship is listed in Table 1.

From a cursory review, the behavioral aspects are most evident. Four factors have emerged as the core of the current understanding: 1) opportunity recognition; 2) managerial experience and competence; 3) resource allocations; and 4) management under uncertainty (Bygrave, 1989; Carland, Hoy, Boulton and Carland, 1984; Carland, Hoy and Carland, 1988; Sexton and Bowman-Upton, 1991; Stevenson and Sahlman, 1986). In addition, Stevenson and Sahlman (1986: 17) note:

"Considerable effort has gone into the development of an understanding of the psychological and sociological wellsprings of entrepreneurship . . . These studies have noted some common modalities among entrepreneurs with respect to need for achievement, perceived locus of control, orientation toward intuitive rather than sensate thinking, and risk taking propensity. In addition, many have commented on the common, but not universal, thread of childhood deprivation, minority group membership, and early adolescent economic experiences as typifying the entrepreneur."
TABLE 1

Historical Development of the Concept of Entrepreneurship *

<table>
<thead>
<tr>
<th>Year</th>
<th>Author</th>
<th>Description</th>
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<tbody>
<tr>
<td>1725</td>
<td>Cantillon</td>
<td>Bearing the risk of buying at certain prices and selling at future uncertain prices.</td>
</tr>
<tr>
<td>1797</td>
<td>Beaudeau</td>
<td>Bearing risks, planning, organizing, and supervising.</td>
</tr>
<tr>
<td>1803</td>
<td>Say</td>
<td>Profiting by managerial action versus capital investment; bringing together the factors of production.</td>
</tr>
<tr>
<td>1934</td>
<td>Schumpeter</td>
<td>Innovation, developing new resource combinations; implementing technologies; creating and responding to economic discontinuities.</td>
</tr>
<tr>
<td>1961</td>
<td>McClelland</td>
<td>Taking risks.</td>
</tr>
<tr>
<td>1964</td>
<td>Drucker</td>
<td>Maximizing opportunities.</td>
</tr>
<tr>
<td>1973</td>
<td>Kirzner</td>
<td>Recognizing profitable opportunities in the market; exploiting economic waste.</td>
</tr>
<tr>
<td>1975</td>
<td>Shapiro</td>
<td>Taking initiative; organizing social economic mechanisms; and bearing the risk of failure.</td>
</tr>
<tr>
<td>1984</td>
<td>Stevenson</td>
<td>Commitment to opportunity; allocating resources for long-term gain.</td>
</tr>
<tr>
<td>1985</td>
<td>Hisrich</td>
<td>Creating value; assuming risk.</td>
</tr>
<tr>
<td>1991</td>
<td>Sexton</td>
<td>Recognizing opportunities; allocating resources to exploit opportunities for long-term gain; having a propensity for and an ability to manage growth.</td>
</tr>
</tbody>
</table>

Critics of this supply-side perspective, however, have questioned whether the psychological and social traits are either necessary or sufficient for theory development in entrepreneurship (Sexton and Bowman-Upton, 1991). Those who ascribe to the behavioral perspective challenge the notion that entrepreneurship is characteristic of the personality of individuals. Their primary concern is with determining what constitutes entrepreneurship in terms of economic behavior.

Functions of Entrepreneurship

The study of entrepreneurship as economic behavior received much of its impetus from the inability of microeconomic theory to explain practical business issues (Herbert and Link, 1982). A leading assumption of the microeconomic paradigm is that pure competition produces efficiency in the allocation of scarce and costly resources. The theory also presupposes conditions of utility maximization, rationality, and perfect information. In entrepreneurship literature, the microeconomic perspective is perhaps most evident in Schumpeter's (1934) view of the role of entrepreneurship in economic behavior. Schumpeter argued that entrepreneurship involved producing new resource combinations that would ultimately destroy the existing equilibrium in the respective marketplace. Thus, the disequilibrating function would lead to improved levels of
efficiency in the allocation of available resources in a given product market.

From Schumpeter's view of the entrepreneur, it became increasingly evident that the existing economic theory could not adequately explain the activities associated with this phenomenon. Theoretical development outside of economics, however, was slow in coming (Herbert and Link, 1982). Much of the delay was attributed to the inadequacies of the microeconomic paradigm. Arndt (1983) argued that the microeconomic paradigm was the dominant world view in social science:

"The mission of the microeconomic perspective is to explain relative prices, market equilibrium, and income distribution. A central tenet is the belief that competition brings about allocative efficiency. The paradigm also implies that supply and demand curves can be derived by marginal analysis and assumptions about utility maximization, utility and cost functions, rationality, and perfect information."

Arndt's (1983) primary argument was that the reluctance on the part of researchers to explore perspectives other than the microeconomic view had limited the development of theory in fields such as entrepreneurship (Herbert and Link, 1982). Within the microeconomic framework, assumptions of perfect information, equilibrium, profit maximization, and rationality left no possibility for the function of entrepreneurship when viewed as dynamic or irrational behavior, exploiting disequilibrium, creating competitive advantages, and benefiting from imperfect information (Kirzner, 1973).
Discrepancies with the assumptions underlying the traditional microeconomic paradigm served as the impetus to many of the on-going debates in entrepreneurship. These discrepancies are no more pronounced than in the on-going debate over the economic function of the entrepreneur (Cheah, 1990). Schumpeter (1950) noted:

"... the function of entrepreneurs is to reform or revolutionize the pattern of production by exploiting an invention or, more generally, an untried technological possibility for producing a new commodity or producing an old one in a new way by opening up a new source of supply of materials or a new outlet for products, or by reorganizing an industry ... This kind of activity is primarily responsible for the recurrent "prosperities" that revolutionize the economics organism and the recurrent "recessions" that are due to the disequilibrating impact of the new products or methods. To undertake such new things is difficult and constitutes a distinct economic function"

In contrast, Kirzner (1973) argues that the assumptions of perfect information, rationality, equilibrium, and profit maximization offer little explanation for the complex role of entrepreneurship in economic and social behavior. A noted Austrian economist, Kirzner distinguishes entrepreneurship as the ability to identify profitable market opportunities. Whereas the Schumpeterian entrepreneur uses innovation to introduce disequilibrium in an otherwise static market, the Austrian entrepreneur promotes equilibrium in an otherwise dynamic market process. Under the previous microeconomic assumptions, maximum efficiency was maintained in all resource allocations. The Austrian perspective, however, implies that market information is
never perfect and that resources are often misallocated (i.e., wasted), resulting in profit opportunities for the entrepreneur. Kirzner (1982: 272-273) noted:

"Economics explains that where there are unexploited profit opportunities, resources have been misallocated and resulted in some kind of social "waste." If a resource unit can be used to produce $15 worth of output and is currently being used to produce $10 worth of output, the current use of the resource is a wasteful one and offers an opportunity for pure profit, i.e., for entrepreneurship. A profit opportunity implies a preexisting waste. Entrepreneurship corrects waste."

Stevenson and Sahlman (1986) also identified the importance of opportunity recognition in entrepreneurship. Likewise, Timmons et al. (1988) defined opportunity recognition as the "core" of entrepreneurship. They linked opportunity screening and evaluation processes with successful venturing. Successful opportunity recognition consisted of several functions grouped into five major areas: 1) product market structure, 2) competitive dynamics, 3) business economics, 4) business performance, and 5) management (Timmons et al., 1988). The five areas of interest and the respective functions provide perhaps the most complete listing of the functions of entrepreneurship in the research literature (Table 2). These functions of entrepreneurship, as opportunity recognition and exploitation, are captured in the following definition of successful venturing from Timmons et al. (1988: 115):

"... successful ventures appear to have [1] identified lucrative markets within an industry, [2] found gateways to entry (Yip, 1982) through the barriers
TABLE 2

Contributions to Successful Opportunity Exploitation *

I. Product Market Structure:

Knowledge of the actual customers
Rationale for purchasing the product or service
Benefits realized by the customer
Size of the market, number of actual customers
Market growth rate

II. Competitive Dynamics:

Reaction of existing firms to new competitors
Basis of competition
Likelihood of achieving a dominant position
Barriers to entry, i.e., competitive advantage
Product line growth path

III. Business Economics:

Determination of the value-added stream
Investment stream required to create the business
Capturing the value created by the business

IV. Business Performance:

Time-related standards
Cash flow and profit-related standards
Return measures

V. Management:

Start-up experience of the management team
Industry experience of the management team
General experience of the management team
Integration and orientation of the management team

protecting the markets, [3] taken dominant share positions in the specific market while ensuring that their costs are the lowest of any competitor serving the specific market, and [4] have attempted to grow and maintain barriers to protect the chosen markets."

It can be concluded, therefore, that Schumpeterian entrepreneurship involves developing new resource combinations as innovations which, when introduced into the market, drastically alter the economic status quo of supply and demand. Austrian entrepreneurship, on the other hand, involves the reconfiguration of existing resources to exploit opportunities in the marketplace resulting from misallocation of industry resources, i.e., consequences of imperfect resource mobility and imperfect information.

Despite their differences, researchers have been reluctant to accept or refute either perspective. Cheah (1990) recently characterized the two perspectives as complimentary to one another rather than contradictory as traditionally perceived. He argued that the condition of perfect information provides the greatest scope for the disequilibrating activities of the Schumpeterian entrepreneur. Engaging in Schumpeterian activities, however, leads to increased levels of uncertainty, which enhances the scope for the equilibrating efforts of the Austrian entrepreneur (Cheah, 1990). Cheah (1990: 345) noted:

"Such activities as arbitrage, speculation, nonradical or adaptive innovation, and imitation, as well as planning and management efforts in response to market signals and other indicators of market opportunity, led to a progressive increase in knowledge and
understanding of the situation and, consequently, a higher level of certainty. . . The result is a reduction of disequilibrium and a tendency towards increasing equilibrium. As the level of certainty rises, as a consequence of Austrian activities and processes, the scope for Schumpeterian entrepreneurs grows . . . Specifically, the activities and processes generated by Schumpeterian entrepreneurs increases the scope of Austrian entrepreneurs over time, and vice versa."

Conceptually, it appears that entrepreneurship performs both equilibrating and disequilibrating functions; driving markets toward equilibrium where the misallocation of resources produces profit opportunities, and driving them toward disequilibrium where new resource combinations create new market demands. This is consistent with Ansoff's (1988) dual distinction of 1) entrepreneurial behavior associated with creating opportunities and 2) competitive behavior associated with exploiting opportunities. Thus, the core function of entrepreneurship can be defined as:

"to identify profitable opportunities in the marketplace and allocate resources necessary to exploit those opportunities for long-term gain" (Sexton and Bowman-Upton, 1991).

Entrepreneurs face not only the difficult task of identifying lucrative market opportunities, but also the assembling of the appropriate mix of resources necessary for successful exploitation (Cohen and Cyert, 1965; Rumelt, 1984).
THEOLOGISTS HAVE LONG DEFENDED THE IMPORTANCE OF RESOURCE ALLOCATIONS WITHIN ECONOMIC THEORY IN GENERAL AND WITHIN ENTREPRENEURSHIP THEORY SPECIFICALLY. STEVENSON AND SAHLMAN (1986) SUGGESTED THAT THERE ARE SIX CRITICAL DIMENSIONS TO THE RANGE OF ECONOMIC BEHAVIORS THAT DISTINGUISH ENTREPRENEURS FROM GENERAL ADMINISTRATORS: 1) STRATEGIC ORIENTATION; 2) COMMITMENT TO OPPORTUNITY; 3) THE RESOURCE COMMITMENT PROCESS; 4) THE CONCEPT OF CONTROL OVER RESOURCES; 5) THE CONCEPT OF MANAGEMENT; 6) COMPENSATION POLICY. ONE OF THE KEY PRINCIPLES UNDERLYING THIS RANGE OF BEHAVIORS IS THE ATTITUDE TOWARD AND ABILITY TO MANAGE RESOURCES. A DESCRIPTION OF THE BEHAVIORS IS INCLUDED IN TABLE 3.


"IN THE LANGUAGE OF ECONOMICS, THE CHIEF CONCERN OF BUSINESS POLICY RESEARCHERS HAS NOT BEEN STATIC PROFIT MAXIMIZATION BUT PROFIT SEEKING THROUGH CORPORATE ENTREPRENEURSHIP AND WITH THE EMPIRICAL OBSERVATION THAT CORPORATE ENTREPRENEURSHIP IS INTIMATELY CONNECTED WITH THE APPEARANCE AND ADJUSTMENT OF UNIQUE AND IDIOSYNCRATIC RESOURCES."

"GIVEN UNCERTAINTY, THE EX POST RESULTS OF ENTREPRENEURIAL ACTIVITY WILL NECESSARILY BE RESOURCE HETEROGENEITY. AT THE MOST PRIMITIVE LEVEL, FIRMS MAY SIMPLY DIFFER IN THE RELATIVE EFFICIENCY WITH WHICH
TABLE 3
Behaviors Distinguishing Entrepreneurs *

**Strategic orientation:**
Entrepreneurs are oriented toward exploiting the opportunity, not controlling the resources.

**Commitment to opportunity:**
Entrepreneurs are committed to action but often doubt the durability of those actions.

**Commitment of resources:**
Entrepreneurs attempt to do more with less, while administrators simply control existing resources.

**Control of resources:**
Entrepreneurs do not like overhead, while administrators look to accumulate assets.

**Concept of management:**
With entrepreneurs, responsibility and authority are less well defined, while with administrators authority is well defined and formal.

**Compensation:**
Based on value creation for entrepreneurs and on responsibility for administrators.

they extract or process homogeneous goods. However, in the absence of perfect intermediate markets for these goods, firms will have incentives to integrate. Thus is born the 'strategic' firm, characterized by a bundle of linked and idiosyncratic resources and resource conversion activities."

For this study in particular, and for the theory of the firm in general, it is necessary to link resource allocations in entrepreneurship with business strategy. Combining the Schumpeterian and Austrian perspectives in the formation of new ventures, Day (1992: 117) defined entrepreneurship as "the creation of new businesses and the related development of innovations from new or reconfigured resources." Day's definition is interesting in that it is consistent with Rumelt's (1984) perspective on business strategy, and it addresses both of the widely held functions of entrepreneurship, i.e., opportunity recognition and resource allocations (Carland et al., 1984; Sexton and Bowman-Upton, 1991; Stevenson, Roberts and Grousbeck, 1989).

In citing implications of the strategic theory of the firm, Rumelt (1984: 569) acknowledges that "the routine component of strategy formulation is the constant search for ways in which the firm's unique resources can be redeployed in changing circumstances." This perspective of strategy is conceptually similar to the existing understanding of entrepreneurship as the search and exploitation of new opportunities. Rumelt (1984) emphasizes the conceptual linkages between entrepreneurship and business level strategy in his
argument that a firm's stability and profitability fundamentally depend upon entrepreneurial activity.

Although resources have been studied as moderators in corporate strategy, only recently have efforts been made to determine their direct impact on strategic decision-making within organizations (Barney, 1986; Wernerfelt, 1984). Wernerfelt (1984) has argued for more research to examine business strategy from the perspective of acquiring and exploiting resources in order to maintain a competitive advantage. Like Rumelt, Barney (1986) suggests that it is the heterogeneity and imperfect mobility of firm resources that allows for the creation of sustained competitive advantages.

A prominent area of normative research in strategic management has been the search for what establishes and sustains competitive advantage. In light of the resource-based approach, Barney (1986) suggests that a sustained competitive advantage exists when resources are rare, imperfectly imitable, and non-substitutionary. He defines a sustained competitive advantage as that which cannot be duplicated or imitated by a competing firm without regard for duration. In the entrepreneurship literature, competitive advantage is encompassed in constructs such as entry barriers (Porter, 1980; Yip, 1982), first-mover advantages, and new economic wealth (Rumelt, 1984).

Because it is conceivable that markets never reach a state of perfect equilibrium, however, the forces of
innovation and entrepreneurship serve to eliminate competitive advantages that result from specific resources (Kirzner, 1973). Under the constant pressure of disequilibrating forces, sustaining a competitive advantage involves constantly changing the resource combinations which produce them. Thus, business strategy involves maintaining a "balance between the exploitation of existing resources and the development of new ones" (Wernerfelt, 1984: 180).

Competitive advantages, though not perfectly sustainable as Barney defines them, can exist in markets where the resources are not rare or imitable. It is also possible, as Kirzner (1973) notes, that no competitive advantage would exist in markets where firm resources are unique. These conditions suggest that it is the combination and implementation of resources (perfect or imperfect) which leads to competitive advantages, entry barriers, and new economic wealth. In business strategy, the conception and implementation of strategy requires specific firm resources (Barney, 1986; Wernerfelt, 1984). Although many businesses compete successfully in markets where no sustained competitive advantage exists, managers often fail to recognize that resources, rather than products, lie at the core of a firm's competitive position (Dierickx and Cool, 1989).

In summary, allocating resources is perhaps the most fundamental concept in economic behavior. Entrepreneurship involves the allocation of resources for the exploitation of
profit opportunities. Business strategy involves maintaining a balance of exploiting existing resources and developing new resources to be exploited. Thus, in those instances in which the strategy of an existing firm is to pursue profitable opportunities in the marketplace, theory would suggest the firm is behaving in an entrepreneurial manner.

Yet, we can extend the conceptualization further. Strategy is considered at multiple levels within the organization. Strategy, from the hierarchical perspective, includes corporate strategy, business strategy, and functional strategy. The formulation and implementation of corporate level strategy involves resource allocations across strategic business units. The formulation and implementation of business level strategy involves resource allocations across functional divisions. Functional level strategy formulation and implementation consist of resource allocations between projects within specific divisions. The question is whether resource allocations at any one level in the organization are directly linked to the strategy pursued at that level.

HIERARCHY AND STRATEGY

Both conceptually and empirically, one of the most well framed concepts in strategic management is the hierarchical nature of structure and strategy (Ansoff, 1965; Camillus,
1981, Hax and Majluf, 1991; Schendel and Hofer, 1979; Snow and Hrebiniak, 1980; Vancil and Lorange, 1975). Jaques (1990) noted that "managerial hierarchy is the only effective organizational form for deploying people and tasks at complementary levels, where people can do the tasks assigned to them, where the people in any given layer can add value to the work of those in the layer below them, and where this stratification of management strikes everyone as necessary and welcome." Research in hierarchical theory has shown that strategy development transcends the three primary levels (i.e., corporate, business unit, and functional) within the multibusiness firm. Due to its hierarchical nature, strategy development at each level is uniquely dependent upon the preceding higher level for establishing planning structures, allocating resources, and framing expectations for goals and strategy (Beard and Dess; 1981; Schendel and Hofer, 1979; Vancil and Lorange, 1975).

At the corporate level strategy involves the selection of product-markets and the allocation of resources among them. Strategy at the individual business unit level is comprised of the competitive actions taken to establish distinctive competencies and competitive advantages. Functional level strategies emphasize tactical, day-to-day operations and consist of the unique resource combinations within each functional area. Thus, the strategic management process can be studied as a pattern in the stream of
decisions concerning resource allocations initiated by corporate management and ultimately implemented through the operational plans of each business unit (Chandler, 1962; Hrebiniak and Joyce, 1984; Mintzberg and Waters, 1985).

Ansoff (1965) was one of the first to conceptually distinguish between strategy at multiple organizational levels. His hierarchy consisted of 1) the selection of product markets (i.e., strategic decisions), 2) the deployment of firm resources to maximize potential (i.e., administrative decisions), and 3) the maximization of efficiency in resource conversion (i.e., operating decisions). Vancil and Lorange (1975) also depicted the planning process as moving through three distinct but interrelated cycles: 1) setting corporate objectives; 2) setting objectives within individual business units; and 3) generating actions plans. In one of several empirically-based studies, Beard and Dess (1981) found both corporate and business-level strategies to be important in explaining variation in firm performance.

To escape much of the confusion surrounding the definition of strategy at that time, Hamermesh (1986) also suggested a multi-level perspective of strategy. He identified four distinct levels of strategy: institutional, corporate, business, and functional. Andrews (1980: 18) argued that corporate level strategy is:

"... the pattern of decisions in a company that determines and reveals its objectives, purposes, or goals, produces the principle policies and plans for
achieving those goals and defines the range of business the company is to pursue."

Andrews (1980) delineated business level strategy as less comprehensive than corporate strategy, focusing primarily on the choice of product/service markets. He defined business level strategy as the determination of how a company will compete in a given product market and position itself among competitors.

Many researchers consider the linkages between the organizational levels as the primary determinant of organizational effectiveness (Ansoff, 1979a; Ansoff, 1979b; Camillus, 1981; Hax and Majluf, 1984; Hobbs and Heany, 1977; Hofer and Schendel, 1978). Camillus (1981) argues that, although distinctions at each level are worthwhile, much of strategy ignores how corporate intentions get translated into long-range action plans. This problem may stem from the underlying configurational view of strategy, which supports hierarchical theory (Dow, 1988). The configurational perspective emphasizes the "integration of multi-level work tasks under a common managerial authority in the pursuit of a single purpose" (Dow, 1988). From this perspective, a dominant coalition, usually corporate management, has the power to impose its preferences in strategy, structure, and intentions, on the other organizational participants.

Though researchers recognize hierarchical effects, they often consider the functional-level to be "outside the
mainstream" of strategy research (Ginsberg and Venkatraman, 1985). Slevin and Pinto (1987), however, suggest that there should be continuous interaction among the multiple levels (i.e., coactivational perspective). Like Hamel and Prahalad (1989), they note that throughout the duration of a project the company's initial intentions frame subsequent actions at lower levels. While business strategies and functional plans are both essential to the success of a given project, tactical plans become increasingly important as the project moves through its life cycle (Slevin and Pinto, 1987).

The concept of structural hierarchy is also central to the discussion concerning the relationship between strategy formulation and implementation (Ginsberg and Venkatraman, 1985; Quinn, 1980; Reed and Buckley, 1988; Uyterhoeven, Ackerman and Rosenblum, 1977). Research has shown that establishing resource allocation policies is key to the successful implementation of business level strategies. Of primary concern is whether patterns in allocations over time can distinguish between strategy as formulated and strategy as realized through implementation.

STRATEGY AS PATTERNS

Two perspective of organizational strategy dominate the research literature. One consists of the establishment of a
fit among environmental, contextual, and structural elements affecting an organization at any one time (Galbraith and Nathanson, 1979; Jauch and Osborn, 1981; Montanari, 1979; Schendel and Hofer, 1979). The other takes a more prescriptive approach comprised of patterns in behavior over time (Ansoff, 1979b; Mintzberg, 1978; Mintzberg and Waters, 1982, 1985; Quinn, 1980). The preference for either perspective seems to reside with whether one prescribes to the static match of contextual, environmental, and structural factors or the progressive process of matching over time. The longitudinal aspect of strategy as a sequence in firm actions makes it the more difficult to conceptualize for scientific inquiry. Thus, strategy as patterns in decision-making has received little empirical attention.

Using patterns in human behavior to depict various organizational functions is not a new concept to the field of business strategy. Shrivastava and Nachman (1989) used the patterned behavior perspective to identify patterns in strategic leadership. Using facet analysis on data from 27 published business case studies, four strategic leadership patterns were identified: 1) entrepreneurial; 2) bureaucratic; 3) political; and 4) professional. Mullen and Stumpf (1987) examined strategic decision-making processes among 531 executives and 410 business students. The study was designed to identify patterns in the means by which decision makers identify and address strategic issues. An analysis
of the respondents languaging revealed six separate and distinct patterns: identifiers, sorters, selectors, unilateral discriminators, evolvers, and searchers.

Files (1988) defined strategy formulation as the process of determining an activity pattern that guides an organization's deliberate and strategic maneuvers. He noted that corporate resources play a critical role during the formulation process and the implementation of the resulting activity patterns. Central to the strategy making process are: 1) how to respond to changing conditions; 2) how to allocate resources; 3) how to compete; and 4) how to manage the major functional areas and operating departments. Hutt, Reingen and Ronchette (1988) traced the emergent process in the formulation of marketing strategies for newly developed technical products. Results depicted a unique pattern of events involving the exchange of information in the product development process. The authors concluded that autonomous strategic initiatives, such as the development of a new product or the growth of a new venture, can be aided by information exchange among the organization's functional areas and business units.

Historically, strategy has been defined as: 1) a deliberate set of guidelines that frames future decisions (Mintzberg, 1978); 2) a set of rules that governs the actions of individual players; 3) the long-range planning and development of forces and resources to ensure security;
and 4) the determination of the basic long-term goals and objectives of an enterprise and the adoption of courses of action and the allocation of resources necessary for accomplishing these goals (Chandler, 1962). Mintzberg (1978) argues that those perspectives characterize business strategy as 1) explicit, 2) consciously and purposefully developed, and 3) made in advance of the decisions to which it applies.

Mintzberg (1978) proposes that because of the limitations associated with studying strategy as an intended and explicit phenomenon, researchers tend to view the strategy formulation process as only a "perceptual phenomenon" and forward focused. In an effort to avoid such limitations, Mintzberg (1978) proposed the concept of "realized" strategy, i.e., a pattern in a stream of decisions over time. Mintzberg (1978, 935) suggested that "when a sequence of decisions in some area exhibits a consistency over time, a strategy will be considered to have formed."

Consistent with Mintzberg's early empirical research, "decisions" are defined as a commitment to action, namely an allocation of some form of resources (Mintzberg, Raisinghani and Theoret, 1976). Though not explicitly stated, Mintzberg et al. indirectly assert a necessary and observable relationship between an organization's strategy and the pattern in which its resources are allocated over time. Quinn (1980) defined strategy as "the pattern or plan that
integrates a company's goals, policies, and actions into a cohesive whole." Andrews (1980) also suggested that strategy was a pattern in decisions concerning the allocation of resources. Pascale (1984) found empirical support for the concept of realized or emergent strategy in a case study of the recent success of Honda Motorcycles in the U.S. market.

Because of its cognitive nature, observing strategy as a pattern in a stream of decisions requires observing the evidence, results, or outcomes of those decisions. Thus, strategy is said to be observed in the measurable results of strategic decision-making processes, including results such as budget allocations across functional areas. Gluck (1981) identified three dilemmas facing management regarding resource allocations: 1) defining the criteria for making resource allocation choices; 2) balancing the available resources with those needs in multiple areas; and 3) timing choices. The portfolio approach (i.e., BCG Matrix, GE Matrix, Life Cycle Analysis, etc.), in particular, was developed to overcome these limits in support of corporate resource allocation decisions. The portfolio approach calls for the evaluation of the attractiveness of the company's product markets and the strength of its competitive position in each. Limited corporate resources are then allocated according to management's objectives within each product market. Thus, allocations are unique to strategy pursued.
Bart (1987) conducted an in-depth study of products managed by product managers in five large consumer packaged goods companies, each of which was a wholly-owned subsidiary of a US-based Fortune 500 company. The study showed that products with different strategic postures were managed differently. Products managed under a growth strategy were thought to have more advertising related activities, while those managed under a harvest approach were said to have more trade-related activities. Bart (1987) concluded that the more informal management processes may be the key to implementing strategy at lower levels within large diversified corporations. If Bart is correct then identifying the unique pattern of resource allocations and matching them to the business level strategy should result in significant relationships which impact performance. Mintzberg and Waters (1985: 272) note:

"pattern recognition is likely to prove a crucial ability of effective managers and crucial to effective organizations may be the facilitation of self-awareness on the part of all its members of the patterns of its own actions and their consequences over time."

Allocations in Business Strategy

Mintzberg (1990) argued that there are only two conditions in which strategy can be directly observed in managerial decisions: 1) in "a new organization (during) the period of initial conception of strategy" (1990: 191), or 2) 
"(when) an organization (is) coming out of a period of
changing circumstances and into one of operating stability" (1990: 191). New ventures, by definition, imply a beginning or point of conceptualization. Entrepreneurial venture development also reflects movement from periods of infancy to periods of maturity where operations are deemed more stable. Though different firms require different time periods to stabilization, it is possible to observe in new venture performance a period in which the operating processes stabilize despite continued growth and market uncertainty. Thus, new ventures provide a unique and fitting context within which to study the relationship between strategy and resource allocation patterns (Mintzberg, 1990).

This is similar to the gestalt strategy Mintzberg (1978) proposes. Gestalt strategies are developed at one point in time, namely when the organization is founded. Second, gestalt strategies seem to be associated with single powerful coalitions/leaders. These overarching strategies are devised most often when bureaucratic momentum is weakest, leadership is typically strong, and environments are rather tolerant (Mintzberg, 1978: 944). These characteristics closely describe the context in which new corporate ventures are established.

Pattern analysis is particularly effective for the study of strategy for entrepreneurial ventures. Burgelman (1991) notes that autonomous initiatives, such as
establishing new corporate ventures, can originate at all levels of management. They are more likely, however, to emerge at a level where managers are directly in contact with new technological developments and have some budgetary control. For corporate ventures in particular, it is critical to view the patterns in resource allocation decisions at the business unit level of analysis. Burgelman (1991) suggests that autonomous strategic initiatives in established firms often result in the creation of new firms, rather than in new business for the firms where the development originated.

Willard and Savara (1988) studied patterns of entry of non-domestic manufacturers into the domestic markets once secured by U.S. manufacturers. They argued that the loss in competitive vitality among U.S. manufacturers followed a particular pattern, as an emergent realized strategy, not intended or deliberate. Murray (1984) looked to distinguish entrepreneurial strategy from entrepreneurial behavior of a firm. He noted that entrepreneurial behavior in a firm is characterized by a long-term pattern of risk-taking and innovativeness. Rather, with entrepreneurial strategy the firm enacts simultaneous changes in its pattern of decision making in response to a perceived mismatch between the firm and its operating environment. Thus, patterns are altered in response to a perceived need to alter the strategy.
To demonstrate strategy as patterns, Mintzberg and Waters (1982) tracked the strategy of a single firm over a sixty year period. A theme that emerged from the detailed case study was that waves or cycles are present in the organizational development process. They contrast the perspective of planned strategy with that of emergent strategy as the pattern in decision-making over time. The emergent strategy was observed in the plans and actions of the firm during the 60-year period.

Assuming the hierarchical nature of the strategic management process, resource allocations at the business unit level of analysis show up across functional areas (i.e., manufacturing, R&D, marketing, administration, etc.) The central question underlying this study, therefore, is whether the strategy a new venture pursues is linked to the patterns in resource allocations and whether patterns are reflective of the commitment to action or strategy implementation.

STRATEGY IMPLEMENTATION

The research literature suggests that implementation is 1) the process of carrying out the strategic plan (i.e., set of actions) by changing current operations to improve performance (Ansoff, 1984; Hax and Majluf, 1991; Nutt, 1989),
Like formulation, strategy implementation is often broken down into aspects of content and process (Andrews, 1991; Eigerman, 1988). The actions comprising implementation processes often involve physical movement of people and other organizational resources. Formulation actions, on the other hand, refer to cognitive processes more than "in-the-world" phenomenon.

Although strategy formulation also consists of distinct actions, implementation is often regarded as the "action" of strategic management. Nutt (1989) refers to implementation activities as what managers "do" to insure business success. Others contend that the formulation of an effective strategy can only lead to the realization of a successful corporate strategy if implementation is successful (Hamermesh, 1986). Day (1992) studied the development of strategy implementation as it relates to entrepreneurship and found that it is similar to: 1) organizational design; and 2) the innovation process.

Despite the progress in the study of business strategy, questions remain concerning its effectiveness in improving organizational performance. Part of the concern has been contributed to the lack of understanding surrounding the implementation process and management's ability to implement
implement strategies as formulated (Ginsberg and Venkatraman, 1985; Mintzberg and Waters, 1985; Walker and Ruekert, 1987). Assessing the merits of such assertions requires an understanding of strategy implementation as it is presented in the research literature.

Lorange (1982) traced the development of the implementation concept. Stage one of extrapolative planning emerged from the economic environment in the 1960s and focused on constraints that prevented growth. During this period implementation mostly involved identifying the constraints and budgeting to overcome them. In the late 1960s and early 1970s, strategic planning shifted to business planning where the firm was concerned with its competitive strengths and market position. Implementation at this stage involved assessing the firm's strengths and weaknesses and external threats and opportunities. The third stage occurred in the late 1970s and early 1980s and was termed strategic planning. Implementation involved managing risk via effectively allocating resources within the corporate portfolio across divisions.

Much of the research defines implementation in terms of the tasks, people, systems, policies, and structures to carrying out business strategy (Nutt, 1986). Thompson and Strickland (1990) argue that strategy implementation is "seeing what it will take to make the strategy work" and then getting it done on schedule, i.e., achieving results.
They identify the "action-driven, administrative" tasks of implementation as: 1) building the organization; 2) developing budgets; 3) motivating people; 4) creating reward structures; 5) creating a work environment; and 5) exerting leadership. Thus, it is said that implementation is successful if it produces management's intended results. The goal of implementation then is to "unite the total organization behind strategy accomplishment and to fit the organization's conduct of its operations to the requirements for successful strategy execution" (Thompson and Strickland, 1990).

In a similar manner, Pearce and Robinson (1982) argue that implementation involves the "management activity of acquiring and allocating resources in conjunction with the development of structures and procedures necessary to operationalize a strategy." Such activities include: 1) acquiring resources; 2) allocating resources; 3) developing structures; and 4) developing policies and procedures for future allocations. In this case, implementation involves putting strategies into action. They identify five factors critical to successful strategy implementation: tasks; people; structures; technologies; and rewards. Mintzberg and Quinn (1991) defined strategy implementation as "a series of activities which are primarily administrative" and involve the proper allocation of limited firm resources. They note that if the firm's mission is clearly specified,
resources can be mobilized to accomplish it. According to Mintzberg and Quinn (1991), strategy implementation is composed of: 1) organizational structure; 2) organizational processes and behavior; and 3) top leadership.

Stonich (1982) defended the link between implementation and the development of organizational structure and resource allocations. He identified the four primary components as 1) organizational structure (i.e., hierarchy of roles, responsibilities, and reporting); 2) firm resources (i.e., people, skills, experience); 3) culture (i.e., rules of the game); and 4) management processes (i.e., planning, programming, budgeting, rewarding). In their model of implementation, Galbraith and Nathanson (1979) also identify five critical components: 1) tasks (i.e., uncertainty, diversity, interdependence); 2) structure (i.e., division of labor, departmentalize, shape, power); 3) information and decision processes (i.e., planning, budgeting, mechanisms; performance measures); 4) reward system (i.e., compensation, promotion, leader style, job design); and 5) people (i.e., recruit, select, transfer, train, develop).

Nutt (1986) reported in his findings on implementation tactics that managers use implementation to make planned changes in their organizations by "creating environments in which changes can survive and take root." In a similar proactive perspective, Ansoff (1984) characterized implementation as "causing the firm to behave in accordance with
the purposes, guidelines, and strategies developed in the planning stage." Galbraith and Kazanjian (1986) identified several mechanisms for interdepartmental coordination of organizational strategy, including: 1) hierarchy; 2) rules; 3) goal setting; 4) direct contact; 5) interdepartmental liaison roles; 6) temporary task force; 7) permanent teams; 8) integrating roles; and 9) integrating departments. Such integration is necessary if one adopts the notion of simultaneous formulation and implementation (Mintzberg, 1991; Quinn, 1980; Wernham, 1985).

Quinn (1980) argued that rather than separate the functions, formulation and implementation should be considered as incremental activities of the same process. The distinction is blurred in most organizations because they are usually engaged in aspects of both simultaneously with multiple strategies (Quinn, 1980). Likewise, Wernham (1985) and Mintzberg (1991) argued that implementation and formulation do not follow a rational/sequential process, but rather are more interactive. Tregoe and Tòbia (1990) suggested a similar concept in their proposition that managers link visions for the organization with operational plans on a single continuum.

Cohen and Cyert (1973) and Bourgeois and Brodwin (1984) were among the first to outline the activities associated with the process of strategy implementation. The first step was to break the strategy down into time sequenced plans
including new product development, new market introductions, acquisitions, personnel needs, capital investments, etc. These plans were then to be broken down into yearly increments and used to formulate the annual budget. Collier (1984) summarized the understanding of the process of implementation: 1) CEO must be determined to see decisions are made and executed; 2) firm must be properly organized; 3) strategic plans must be credible; 4) functional plans must support the strategy; 5) resource allocations must be realistic; 6) culture must be consistent with strategy; 7) a monitoring and early-warning system must be in place; and 8) rewards must be provided for successful implementation.

Realized strategy is said to consist of patterns in firm behavior which emerge over time. However, it is critical to recognize that such patterns are observed in the results of implementation, and not in the decisions themselves (Mintzberg, 1978). This suggests that the strategic decisions being made in formulating a competitive strategy should be most evident in the observable, measurable outputs that result from the strategy formulation and implementation processes. For example, much has been written about the need to formally document strategic plans. Written plans serve as the primary documentation of the strategic decisions being made. Several written plans, however, might serve as documentation of the pattern in formal strategic plans over time. Likewise, annual budgets serve as
documentation of the strategic actions deemed necessary to implement an intended strategy. Tracking several consecutive (i.e., actual) budgets, however, might serve as documentation of the pattern of strategic actions, giving insight to the actual strategy the firm was pursuing over time. Asch (1987) defended the notion that strategy implementation involved budgeting the appropriate resource allocations over time.

Researching resource allocation patterns requires the specification of the resource or resources under study. In accordance with Caves (1980), Wernerfelt (1984: 172) identified firm resources as "anything which could be thought of as a strength or weakness of a given firm... those assets (tangible and intangible) which are tied semi-permanently to the firm. Examples of intangibles include technical knowledge, managerial skills, brand name, and image. Tangibles consist of assets such as technology, equipment, and financial capital. As noted, business level strategy is concerned with how such resources are allocated across functional areas to secure and maintain the firm's competitive position in the marketplace.

Given the exploratory nature of this study it is imperative that the selection adhere to the following guidelines: 1) the resource(s) should be tangible and its value easily determined; 2) the value measurement should be objective and not dependent upon the researcher's
interpretation; 3) the change in the value over time should be objective and easily measured; and 4) the resource(s) should be of critical importance to management in the success of the new venture. In new venture creation and strategic development perhaps no other resource meets each of these criteria and is more critical than financial capital (Alexander, 1985; Buzzell and Gale, 1987; Fast, 1981).

Alexander (1985) identified many of the problems firms experience in implementing strategic plans. Of the recommendations, one of the critical components was the provision of sufficient resources (Alexander, 1985). The CEOs which responded to Alexander's survey noted that the primary resource was financing. Alexander (1985) summarized that failure to provide adequate funding may contribute to limited success or failure of the strategic endeavor. For this study, it is proposed that the distinct strategies new ventures pursue will result in distinct patterns in the manner in which financial resources are allocated across functional areas.

CAPITAL BUDGETING

Corporate planning is a complex process operating at corporate, business, and functional levels (Hax and Majluf,
The corporate level is concerned with 1) an expression of the mission of the firm, 2) the identification of strategic business units, and 3) the definition of corporate philosophy. Business level planning is comprised of defining the mission of the business then formulating the overall strategy based on the mission. Functional strategy is then formulated based on the business level strategy. Specific action programs at the business level are defined and evaluated, resources are allocated according to annual budgets, and performance measurements defined (Hax and Majluf, 1984).

The research of Stonich (1980) and others (Burton, Damon and Obel, 1979; Dobbins and Pike, 1980; Myers, 1984; Petit and Wingler, 1981; Wu, 1981) supported the idea that the primary issue for business strategy in the 1980s was a shift in emphasis away from the formulation of the one best strategy to how to translate that strategy into organizational action. Schlissel (1979) was one of the first to defend the notion that budgeting was linked to corporate strategy. Schlissel (1979) argued that only through the performance of objective-oriented tasks, coordinated through a program concept, can an organization achieve its goals. He argued that in order to determine the wisdom of various budget decisions, information must be available that indicates task-related progress toward objectives. The budget should relate to the planned performance
of work policy objectives of the organization, the costs in reaching those objectives, and management's time schedule.

The budget should also link past, present, and future plans in a continuum (Schlissel, 1979). Schlissel notes that coupling the strategic direction from top management with the tactical advice of operational management within the separate and distinct business units, permits the cooperation of all subordinates in the planning process. As noted, in strategy implementation, it is often the actions of the lower levels of the firm which determine the success of the implementation effort.

Lin (1979) also developed an integrated approach to combining corporate planning with budgeting. He noted that budgets serve as the financial expression of short-term plans. He further argued that the growing complexity of business operations and the rapid rate of technological change requires careful planning and budgeting by corporations. He identifies five parameters which must be in place for the integration of planning and budgeting to be effective: 1) all management levels must be involved with special level of commitment and support at the highest level; 2) a precise delineation of goals and planning requirements; 3) a practical budget limit based on applicable data; 4) responsibility accounting with a focus on control; and 5) continual and successful flow of information within the system.
Allen (1978), in a detailed review of the literature addressing the linkages between divisions and the corporate parent of a multi-divisionalized firm, noted that most studies look at factors such as self-containment, complexity of coordinative devices, the average size and number of divisions, and the product scope. Studies on the evolution of divisionalized companies show that most change to more complex organizational structures. This property requires more complex coordinating devices which generally include planning and budgeting (Allen, 1978). Thus, budgets serve as the link between the parent and the subsidiary, or between the business unit and the functional departments.

Piercy and Thomas (1984) use case studies via unstructured interviews with managers to demonstrate the level of corporate plan-budget integration and its form. They argue that it is possible to assess how seriously corporate planning is taken in a firm by the extent to which there is integration between plans and budgets. The plan/budget integration may also influence the way in which corporate objectives are perceived and translated to lower levels within the organization (Piercy and Thomas, 1984).

Trigeorgis and Kasanen (1991) have more recently defended the notion that capital budgeting should be directly linked to corporate and business level strategy. They argue that capital budgeting should not be treated as a static, mechanistic accept-reject lower level staff function, but should
instead be integrated with the strategic planning and control systems throughout the organization.

Gallinger (1980) noted that strategic planning in large organizations has been the topic of a great deal of research but little attention has been given to the implementation of strategy through capital expenditure systems. He noted that management must pay attention to the following steps necessary for the effective administration of such systems: 1) a thorough search for possible investment opportunities; 2) assessment of the profit and cash flow potential of the different capital expenditure proposals; 3) investment decisions founded on the forgoing evaluation of the economic worth of the different proposals; 4) implementation of each decision according to its plan; 5) adequate control over the investment expenditures by comparing amounts spent to budgeted appropriations; and 6) post-audit of capital expenditures to improve forecasting, measurement, and decision-making procedures for the future.

Blanning (1983) looked at the decision making and resource allocation decisions associated with variable based budgeting. There are those resources allocated to decision-making; and those resources allocated to implementation of the decisions. The purpose of the budgeting effort is to maximize return. The expected return is dependent upon that part of the organization's resources allocated to implementation, net of risk, which is reduced by resource allocated
to decision-making. It has been shown that zero-based budgeting in which massive resources are deployed for decision making and not implementation, is only effective if resources are costless and limitless. However, with start-up ventures as subsidiary firms of corporations, resources are not limitless and are expensive when competing with other investment proposals available to the corporate parent.

Rizzi (1984) argued that the discounted cash flow method for evaluating capital budget decisions was limited in that it allows for only evaluation of the financial contributions of the project. In other words, it neglects strategic objectives outside of the financial. Discounted cash flow involves forecasting the after-tax cash flow to be generated by a given project and discounting them according to a firm's cost of capital and comparing them to the discounted cash outflows required by project investment. Rizzi further argued that strategic capital budgeting could be linked to financial and strategic objectives. He argued for a portfolio approach to evaluate business investments according to 1) market risks and competitor reactions, and 2) effects on cash flow. Investment proposals are viewed as a portfolio of options, and only those that are consistent with the firm's overall strategy should be selected for budgeting (Rizzi, 1984).

competitive advantage based on monopoly power is the source of positive net present value. Alberts and McTaggert (1984) further explored the concept of present value in strategic planning. They noted that the diversified company faces a variety of decisions concerning what businesses to acquire, which ones to sell, and how much capital to allocate to each business in its portfolio. The researchers explored various approaches to capital allocation including the product portfolio approach (Alberts and McTaggert, 1984) and the value-based approach (Porter, 1980), which is guided by the potential for profitable growth.

Bettis and Hall (1981) supported the link between portfolio management and long-range planning. The portfolio concept relies on matrix measures of competitive position and market attractiveness. The position within the matrix determines the strategic mission and characteristics of the strategy for the business unit. Alberts and McTaggert (1984) propose that rather than centralize the process for allocating capital to diversified businesses, that each business unit should be responsible for evaluating the major competitive forces driving its industry and should guide choices by profitability criteria rather than growth.

Other planning techniques used to link business strategy with capital allocations include strategic funds programming (SFP), zero-based budgeting (ZBB), and planning-programming-budgeting (PPB). Strategic funds programming,
Stonich (1980) suggests, serves as the "missing link" between strategy formulation and the resource allocation process. In SFP management determines how much it will cost to implement a particular strategic objective and if it should be implemented given the projected costs. Both ZBB and PPB involve investment decisions in which costs and benefits are evaluated, and both emphasize planning. Furthermore, they both require the justification of goals, output analysis, and measurement of objectives.

Rondberg, Taylor and Schmidt (1981) note that the benefits of budgeting systems are a broadened management involvement, clearer strategy and priorities, improved resource allocation, and better communications. Long-range planning, milestone tracking, and productivity improvement may prove more beneficial in the long-run (Rondberg et al., 1981). Dmuchowski and Regan (1981) also defend systematic approaches to capital budgeting in that the various procedures, though unique in process, serve to assist management in its identification and selection of desirable investments alternatives.

Martin (1982) argued that the ultimate success of a budget depends upon the performance of those who are required to implement the appropriate managerial strategies. Different levels of management view the budgetary process in ways governed by their individual roles. This is why it is critical to examine strategy formulation and resource
allocations at one level within the firm for the initial test of the relationship. Martin (1982) examined the perspective on budgeting from top and lower levels of management on nine budgetary dimensions. The results of the study revealed that top managers and lower level managers often view the same situations in different ways.

Rizzi (1982) noted that strategic capital budgeting focuses on industry and competitor factors in order to resolve strategic investment decisions. Strategy formulation involves the assessment of competitive markets and the development of responses to exploit market imperfections to yield positive net present values. This is the concept of value creation in entrepreneurship. The opportunity recognized by the entrepreneur in the marketplace is only valid if it is economically feasible, i.e., dollars allocated today and the future expected cash flows result in a positive net present value. Value creation involves capital budgeting from the top down with management selecting the markets in which it wants to compete, and venture management selecting how it should compete in those markets.

Business strategy, when studied as the pattern in financial allocations over time, has been conceptually founded but lacks empirical validation. This study explores the relationship between strategies and patterns in financial resource allocations across functional areas in the establishment and development of new corporate ventures.
CHAPTER III
STRATEGY AND RESOURCE ALLOCATIONS IN CORPORATE VENTURES

New corporate ventures provide an important arena for testing the relationship between strategy and resource allocations both practically and theoretically. Linking allocation patterns for scarce and costly resources with new venture strategy and success could benefit practitioners in their pursuit for generating maximum return on limited resources. Theoretically, corporate ventures represent new organizations for which the point of conception can be distinguished. With a definitive point of initiation, researchers can be assured that the competitive strategy at the time of market entry is the direct product of management's intentions. In other words the strategy at the point of market entry is planned, for there was no previous exchange in the market for which a separate strategy could emerge. Therefore, the strategic position that the firm maintains at the point of entry would logically represent the intended or planned entry strategy of management. If allocation patterns are linked to specific entry strategies, this might serve to adequately test the emergent or realized concept of business strategy. Such a relationship would
also shed new insight on the role of the emergent strategy and the influence of implementation activities on the success of the firm.

CORPORATE ENTREPRENEURSHIP

In Chapter II entrepreneurship was conceptually distinguished as the process of identifying market opportunities and the acquisition and allocation of resources necessary to exploit those opportunities for long-term gain. However, such a conceptualization is not exclusive to the initiation and growth of independent business ventures as is traditionally assumed. Rather, a significant pool of research has extended the theory of entrepreneurship, as an approach toward general management, to include an array of managerial and administrative activities which appear opportunistic or innovative. This is partly due to the shift in the research focus away from studies of the personality characteristics of entrepreneurs toward the economic function of entrepreneurship. This is particularly true in the case of corporate entrepreneurship.

A number of research studies have been conducted to define corporate entrepreneurship (Guth and Ginsberg, 1990; Hobson and Morrison, 1983; Jennings and Lumpkin, 1990; MacMillan, 1986; Miller and Friesen, 1982; Pinchot, 1984;
Schollhammer, 1982; Stevenson and Jarillo, 1990; Vesper, 1984). Stevenson and Jarillo (1990) proposed a paradigm for corporate entrepreneurship labeled, "entrepreneurial management." This was an attempt to link the fields of corporate management with the field of entrepreneurship. They proposed that entrepreneurship is the process by which individuals, either independently or within existing organizations, pursue opportunities without regard to the resources they control. Guth and Ginsberg (1990) suggest that the definition should encompass both the creation of new businesses within an existing firm and the reconfiguration of existing firms through new resource combinations (Burgelman, 1983; Schumpeter, 1934).

Hobson and Morrison (1983) suggest two criterion in order for managerial activities to qualify as corporate entrepreneurship: 1) the firm must market something it has never marketed before; and 2) the organization must acquire new knowledge, equipment, or people in order to produce that something. Schollhammer (1982) argues that corporate entrepreneurship is comprised of all the formalized entrepreneurial activities within existing business organizations. Schollhammer (1982: 211) defined formalized entrepreneurial activities as "those which receive explicit organizational sanction and resource commitments for the purpose of innovative corporate endeavors." Miller (1983) defended corporate entrepreneurship as a multidimensional concept that
incorporates a firm's activities directed at product and technological innovation, risk taking, and proactiveness. For Ansoff (1979b), corporate entrepreneurship consists of the replacement of obsolete product market combinations with new ones that have greater profit potential. Like Ansoff, Jennings and Lumpkin (1989) argued that corporate entrepreneurship involves the establishment and development of new product markets.

Burgelman (1984) proposed that corporate entrepreneurship constituted extending the parent firm's domain of competence and corresponding opportunity set through new resource combinations generated internally. This was consistent with Schumpeter's (1934) proposition that the function of entrepreneurship was to develop new resource combinations. Burgelman presented a model of entrepreneurial behavior within the large established firm that combined the traditional view of strategic behavior with the concept of autonomous strategic behavior. The model suggests that corporate entrepreneurship consists of the interlocking strategic activities of managers at multiple corporate levels. Burgelman (1984) further argued that once a strategic proposal is adopted for implementation, combinations of administrative and operational linkages are determined, leading to an organizational design for structuring the relationship between the new business and the existing corporation.
Corporate Venturing

The concept of corporate entrepreneurship is more general than that of corporate venturing. Behaviorally, corporate entrepreneurship consists of a concerted effort on the part of individuals within an existing organization to recognize opportunities in the marketplace and allocate the resources necessary to exploit them (Day, 1992). Corporate venturing, on the other hand, involves the initiation and development of new business ventures, separate and distinct in their governance structure from the parent firm (Burgelman, 1984; Day, 1992). Thus, while not all corporate entrepreneurial activities necessarily require the establishment of a separate business venture, it is universally accepted that corporate venturing does constitute entrepreneurial behavior on the part of the firm.

Yet, exactly what constitutes corporate venturing is still openly debated. Vesper (1984) defined corporate venturing along three dimensions: 1) the extent to which the activity is a strategic departure from the firm's current activity; 2) the extent to which the activity is the result of bottom-up versus top-down initiatives; and 3) the extent to which the activity is assigned to an autonomous unit. Vesper (1984) also identified five modes of corporate venturing: 1) new product development; 2) acquisition; 3) joint venturing; 4) new venture development; and 5) independent start-ups. Morris and Trotter (1990) focused on corporate
venturing as the implementation of an entrepreneurial strategy of corporations. Likewise, Miller and Friesen (1982) noted that organizations pursuing an entrepreneurial strategy engage in innovative activities, including venturing, to develop distinctive competencies. Non-entrepreneurial organizations, on the other hand, view innovation as something that must be conducted in response to competitive challenges, but only when necessary.

Consistent with Day's (1992) definition of entrepreneurial management, Venkataraman, MacMillan and McGrath (1992: 488) define corporate venturing as "the process by which members of an existing firm bring into existence products and markets which do not currently exist within the repertoire of the firm." This process is said to develop within the context of uncertainty, uncertainty about the technology, market, political ramifications, suppliers, affect of strategy, and the soundness of the strategic plan. Yet, the underlying profit potential causes managers to act despite the uncertainty. The closer the match between the skills of the organization and the needs of the market, however, 1) the lower the volatility of the environment (i.e., less uncertainty); 2) the greater the rapidity with which learning occurs; and 3) the greater seems to be the success of the idea.

Burgelman (1984) defined the objective of corporate venturing as providing the means for extending the
"frontiers" of corporate capabilities and for the discovery of additional synergies in the unique resource combinations. MacMillan and George (1985) identified six levels of corporate venturing in order of increasing difficulty:

1) developing new enhancements to current products and services;
2) developing new products or services to be sold within the existing markets;
3) developing new markets for selling existing products and services;
4) developing new products or services that can be sold in existing markets or developing new markets for existing products and services;
5) developing products or services that are new to the company but are already being produced by competitor firms in the market; and
6) developing new products or services that do not exist today but may be used in the future to replace existing products or services in known markets, or developing entirely new markets for the new products or services.

The unique circumstances surrounding the development of new ventures within the corporate setting have resulted in relatively high rates of failure (Block, 1982; Quinn, 1979; Venkataraman et al., 1992). This inflated rate of failure
has been attributed to 1) a lack of effective entrepreneurial leadership (Fast and Pratt, 1981), 2) a bureaucratic culture and management style (Kanter, 1985; Maidique and Hayes, 1984), 3) various market/external factors (MacMillan, 1986; Venkataraman et al., 1992), and 4) a lack of long-term resource commitment (Buzzell and Gale, 1975; Fast, 1981; Fast and Pratt, 1981). Fast and Pratt (1981) argued that the lack of commitment among top management and the inexperience of many top management teams in charge of the new venture contributed to an exceptionally high rate of failure among corporate ventures. Buzzell, Gale and Sultan (1975) noted that the lack of long-term financial commitment on the part of the corporate parent leads to lower overall performance for new corporate ventures.

MacMillan, Block and Narasimha (1984) identified several leading obstacles to the various modes of corporate venturing. Obstacles cited for start-ups in particular included: 1) inaccurate market and competitive forecasting; 2) a focus on short-term results; and 3) the refusal or inability of the parent firm to account for the risk in market entry and the weaknesses in the new venture. Likewise, Venkataraman et al. (1992) identified three challenges to the process of corporate venturing: 1) business founding; 2) managing the hierarchical process; and 3) managing the institutional context. Kanter (1985) noted that the difficulties firms have in establishing new
ventures is mostly due to their inability to differentiate between the requirements of administrative and entrepreneurial management. Entrepreneurial management addresses characteristics such as: 1) uncertainty, 2) knowledge intensity, 3) competition with alternative courses, and 4) boundary spanning. Kanter (1985) explored the need for a mutual adjustment system in order to balance between periods of entrepreneurial and administrative management. In describing the system, she emphasizes the need for maintaining access to critical resources.

Just as in the somewhat more general concept of entrepreneurship, access to and the allocation of financial resources play a critical role in the corporate venturing process. Financial resources are closely linked to the ultimate success of corporate ventures. However, before one can consider the possible association that the allocation of financial capital might have in the new venture's pursuit of specific strategies, it would be appropriate to discuss new venture strategies as they are presented in the research literature.

NEW VENTURE STRATEGY

In Chapter II business strategy was defined from two perspectives. The first consisted of the establishment of a
fit or alignment among environmental, contextual, and structural elements affecting an organization at any one time. The other consisted of patterns in organizational behavior over time. Strategy as a sequence in organizational behavior, however, has not been studied for new corporate ventures.

New venture strategies, by virtue of their place in the organizational hierarchy and their entrepreneurial basis, consist of business unit level approaches/maneuvers for market entry. Schollhammer (1982) defined new venture strategies as "goal-oriented courses of action" which require the deployment of firm resources. The major purpose of strategy is:

"to identify the major opportunities and threats a business or strategic business unit (SBU) will face and to identify the key resources and skills around which it can develop a strategy that will exploit these opportunities and meet these threats in a way that will satisfy its goal structure" (Hofer and Schendel, 1978: 101-102).

Hofer and Schendel (1978: 102) recommend four steps to the analysis and development of a new business strategy:

1) assess the current strategic position of the business;

2) identify the major strategic opportunities and threats that the business faces, given its proposed strategic position;
3) identify the principal resources and skills on which the business can build a competitive strategy; and

4) identify the major strategic issues and performance gaps that derive from the business's current strategic position.

Tsai, MacMillan and Low (1991) noted that engaging in each of these activities for aggressive entry benefits both short and long-term performance.

**Market Entry Strategies**

An entry strategy comprises those decisions concerning the competitive position that the firm adopts when entering a particular market. According to Cooper (1981), the strategic decision to initiate a firm and to position it within a particular competitive entry strategy impacts both the current and future development of the firm. Vesper (1990) noted that markets do not generally welcome new competitors for the customers and resources needed to create profits. Consequently, those who start new ventures need some sort of "entry wedge;" i.e., a competitive advantage for breaking into an established pattern of commercial activity. Vesper (1990) suggests three main entry wedges: 1) a new product or service, which is the least used but often the most powerful; 2) parallel competition, where the
company's advantage is derived from rather minor variations in products or services which already exist in the market; and 3) franchise entry, which employs a proven product or service without variations but in new geographical markets.

Biggadike (1976) argued that entry strategy consists of two components: posture and marketing mix. He defined posture variables to consist of: the degree of innovation offered by entrants relative to incumbents; the degree of forward and backward integration relative to incumbents; and the size of the production entry scale. The marketing mix arrangements Biggadike (1976) proposed consisted of several variables, all measured relative to incumbents: price, quality, length of product line, breadth of segment served, distribution, services and expenditures on the sales force, advertising, and promotion. These factors are consistent with the components popularized for operationalizing business level strategy (Venkatraman and Prescott, 1990).

McDougal and Robinson (1990) identified eight different "archetypes" of entry strategies for new ventures, including: 1) aggressive growth via commodity type products to numerous markets with small customer orders; 2) aggressive growth via price-competitive new products to large customers; 3) aggressive growth with narrow, special products priced competitively to a few large buyers; 4) controlled growth with a broad product range to many markets and extensive backward integration; 5) controlled growth via
premium-priced products sold directly to consumers; 6) limited growth in small niches offering a superior product and high customer service; 7) average growth via steady development of new channels, brand/name identification, and heavy promotion; and 8) limited growth selling infrequently purchased products to numerous markets with some forward integration. Only the strategy of controlled growth via premium-priced products sold directly to consumers was significantly related to increased return on investment.

Porter (1980) identified six approaches for overcoming entry barriers for new ventures entering established markets. The approaches included: 1) reduce product costs, 2) lower price to capture market share; 3) produce superior product quality; 4) enter a new niche; 5) use marketing innovation to overcome product differentiation; and 6) use piggyback distribution (Porter, 1980). Abell (1980) used the product life cycle model to prescribe specific market entry level strategies. He recommended new ventures use a differentiation strategy when entering growth markets and a focus strategy when entering mature markets. Covin and Slevin (1990), like McDougal and Robinson (1990) found that multiple strategies were effective for new ventures competing in markets of varying stages of development.
New Venture Strategy and Performance

Cooper (1989) explored the various strategies associated with different levels in the corporation, i.e., corporate, business, and administrative. The most successful business level strategy, Cooper (1989) noted, is to maintain a market-related perspective that uses research and development to develop new products with a competitive advantage, rather than new processes. Miller and Camp (1985) noted that adolescent businesses had higher profits using a strategy based on high differentiation rather than on low cost, while the opposite is true of mature businesses. Both corporate-level and business-level managers influence the financial success of corporate ventures. MacMillan (1986) noted in his review of the corporate venturing literature that successful ventures differed from unsuccessful in the following ways:

1) product superiority;
2) superior marketing research;
3) superior experience and skill at marketing to the customer;
4) superior experience and skill in technology and production;
5) greater experience with the customer base;
6) strong marketing communication skills; and
7) more effort at user education.
Biggadike (1979) explored how firms entered their chosen markets. He noted that an aggressive scale of entry was highly correlated with superior returns on investment. Aggressive entry was determined from the value of production and market scales. Production scale consisted of the initial production capacity of the new venture as a percent of market size. Market scale was defined as the number of customers served and the breadth of the product line offered relative to the competitors. Biggadike (1979) argued that production and market scale combined represented the maximum potential share a business could obtain. Hobson and Morrison (1983) confirmed Biggadike's findings that aggressive marketing maneuvers were correlated with success in market share gain. They suggested that as a result of aggressive share objectives, companies select investment strategies that allow them to capture economies of scope and scale that led to greater profitability.

Like Biggadike (1979) and Hobson and Morrison (1983), MacMillan and Day (1987) explored aggressive entry in terms of management's intentions and investments in marketing strategy. MacMillan and Day (1987) conducted a study to investigate the dynamics of the relationship between entry strategy and performance of corporate start-ups. They found significant correlation between the competitive attractiveness of the target industry and the initial share objective set by the new venture. Also, the downstream share
objective set at the point of market entry was significantly related to several strategy options. It was concluded that levels of most of the key strategy options selected at the point of market entry are significantly correlated with return on investment in the fourth year of operations.

Miller, Gartner and Wilson (1989) used the PIMS database to study the extent to which entry order determines market share and other competitive factors. The results suggested that the choice to pioneer a new market led to higher market shares and other important competitive advantages, such as higher quality, more differentiated products, and better service. Lambkin (1988) also studied the order of entry and its influence on new venture performance. She found, like Miller et al. (1989), that market pioneers enjoy a long-term profit advantage over their rivals. Williams, Tsai and Day (1991) looked at the influence on intangible assets, such as corporate image, on the strategy and subsequent performance of new ventures in industrial markets. The results showed that the interaction of strategy and certain intangible assets was significant in explaining the variation in new venture performance.

Strategy as "Fit:" Strategy as "Patterns"

Building from Biggadike's (1979) concept of aggressive entry strategy, researchers have proposed multi-variate operationalizations of business level strategy relative to
leading competitors (Venkatraman and Prescott, 1990).

Venkatraman and Prescott (1990) and Miller et al. (1989) looked at business level strategy options which were operationalized using multiple distinct variables. In support of the conceptual argument that resource allocations are directly linked with business level strategy, some of the variables selected included financial allocations to research and development, market development, and manufacturing.

However, both studies differed from this study in that they only used the allocation factors as variables in strategy content, or as the "fit" between internal and external situations. This results in two distinct differences with the current study. First, their studies failed to acknowledge that, at the business unit level, resources are allocated across competing functional areas. Thus, the proportional allocation to any one area is likely to be dependent upon the particular strategy being pursued. Second, as content factors, they failed to illustrate the pattern in allocations over time as indicative of "realized" or "emergent" strategy.

Though the construct definition proposed by Venkatraman and Prescott (1990) and Miller et al. (1989) supports the conceptual linkage between strategy and resource allocations, one cannot conclude from their studies whether the allocations over time made any difference in implementation or subsequent performance. If we adopt the concept of
business level strategy as a pattern in consecutive decisions concerning the allocation of firm resources, we must examine the patterns over time in order to discern if strategies are realized as intended.

NEW VENTURE STRATEGY AND RESOURCE ALLOCATIONS

There are four major components to business level strategy: scope, resource deployments, competitive advantages, and synergy (Ansoff, 1965; Hofer and Schendel, 1978). Scope refers to the range of interactions between the firm and its competitive environment. Resource deployments, the primary focus of this study, consists of the pattern of resource allocations across functional areas. Competitive advantages are comprised of the unique positioning of the firm in the marketplace relative to the existing competitors. Finally, synergy refers to the combined effects of scope, resource deployments, and competitive advantage. Rumelt (1974) and Hofer (1973) argued that the success of business level strategy is dependent upon critical resource deployments along with specific competitive advantages.

Buzzell and Chussil (1985) reported that one of the primary reasons why many corporate ventures fail to reach their potential is the lack of financial resources to fund aggressive market entry strategies. Burgelman (1983) highlighted the difference between internal and external
entrepreneurship with respect to resource allocations. External or independent entrepreneurs not affiliated with an existing organization, create resource combinations that are unique and independent of all other combinations. The internal or corporate entrepreneur, on the other hand, develops resource combinations that remain part of the larger pool of resources controlled by the parent firm and are thereby dependent upon that pool (Burgelman, 1983).

Kuratko, Montagno and Hornsby (1990) noted that implementing corporate entrepreneurship was becoming an important activity for growth-oriented businesses. Yet, little study had been made of the effectiveness of and the environment for the implementation process. The results of the Kuratko et al. study revealed three factors that were most critical to entrepreneurial implementation within corporations: 1) management support, culturally; 2) organizational structure (decision-making autonomy); and 3) resource availability (Kuratko et al., 1990). Knight (1987) found similar conditions. In a detailed study of new product innovation, he found that the more successful firms devoted time and resources to an idea regardless of its initial lack of merit, and did not require an innovation to fit into current product lines.

Often, within multilevel organizations, the strategic initiatives of the more senior levels are communicated in the resource allocations to lower levels (i.e., capital
budgeting, functional budgeting, forecasting) (Alballa, 1977; Andrews, 1991; Ansoff, 1988). Camillus (1981) looked at the literature which examined the processes and mechanisms for translating corporate strategy into reality through managerial decisions and actions. A review of the literature identified: 1) discrete stages in the process of converting strategies into actions; and 2) distinct ways in which these stages can be linked.

Camillus (1981) and Camillus and Grant (1980) note that the traditional approach to corporate planning consists of 1) strategic planning; 2) long-range planning; and 3) budgeting. Camillus and Grant argue, however, that separating the long-range planning and budgeting processes is dysfunctional in the long run. They note that budgeting has evolved into a planning device more so than an accounting-control device, and as such budgeting and planning programming are extensions of the same process. They develop a planning approach which incorporates the two dimensions simultaneously. Merging the planning and budgeting processes can improve both functions and have its own unique advantages primarily relating to the quality and ease of profit planning (Camillus and Grant, 1980).

Gale and Branch (1987) and Wheelwright and Banks (1979) seem to support Camillus and Grant's proposition. Gale and Branch (1987) note that "allocation" refers to assigning resources to a particular event or activity. The annual
budget reflects resource deployments across functional areas in the conduct of carrying out the business strategy. Wheelwright and Banks (1979) suggest that operating decisions which negatively impact long-range goal achievement seem to be relatively common under well-developed planning and review processes. An inability to link operating decisions with long-term goals could lead to failure (Wheelwright and Banks, 1979).

Reed and Buckley (1988) argued that the reward from a chosen strategy is derived from the maximization of its benefits and a minimization of its risks. Implementation of a strategy is a period of high risk. They note that a major requisite of problem avoidance in strategy implementation is the communication of strategic intent beyond the levels where strategy is formulated. Thus, if strategy is formulated by the senior managers of a new venture, as the configurational perspective prescribes, then the behaviors of functional level management is dependent on the effective communication of those decisions.

Building on the hierarchical theory of the firm and on Mintzberg's concept of strategy as an emergent pattern in firm behavior, Calingo (1989) argued that the strategic planning process must be comprehensive, not necessarily formal, and the managers who will implement the strategic plan should be actively involved in its development. Calingo (1989) further noted that the managers responsible
for strategic planning should interact directly with those responsible for budgeting.

The overall strategic plan should be closely linked to the firm's action plans or programs for different functional areas (Calingo, 1989). Schlissel and Giacalone (1982) linked budgeting with the strategic marketing plan. They developed a budget allocation method that is compatible with strategic planning. The budget shows the tasks to be done, the effort level required, and the cost boundaries to be observed. At each level of the firm hierarchy, the quantitative level of task performance needed from the resource units to meet a specific objective is identified. The finances to meet these objectives is allocated in proportion to the importance of achieving these goals. Objectives and tasks are planned at each level and implemented at the next lower level.

All strategic behavior, whether independent or within an existing organizational context, involves the acquisition and allocation of resources (Barney, 1986). The appropriation of financial resources is particularly critical to the success of corporate ventures (Buzzell and Chussil, 1985; Fast and Pratt, 1981; Sexton and Camp, 1992). However, linking funding allocations to business level strategy is not an entirely new concept. Parry, Parry and Farris (1991) studied the budgeting techniques for various marketing strategies in nonprofit hospitals. The study was designed
to determine the prevalence among nonprofit hospitals of marketing budgeting techniques that are widely used in consumer and industrial goods industries; 2) to examine the relationship between budgeting methods and organizational structure (i.e., implementation); and 3) to explore the relationship between budgeting methods and strategy and performance. They empirically showed that business strategy is directly linked to budgeting by linking various marketing strategies with budgeting techniques. They noted that the objective-and-task method resulted in higher performance than nonusers of this method and among those who placed more emphasis on differentiation than on cost leadership as a strategy.

The research of de Kluyver and Pessemier (1986) also supported the link between marketing strategy and the marketing budget. They noted that the principal purpose of the marketing budget is to facilitate the implementation of marketing strategy through planning and control. Two important findings surfaced from these studies. First, the marketing budget is part of the overall operating budget of the firm. Second, the marketing budget is directly associated with the marketing strategy as it is to be implemented. Thus, one can conclude that business level strategy should be associated with the overall operating budget, including allocations across functional areas. However, neither de Kluyver and Pessemier (1986) or Parry et al.
(1991) attempted to determine if the manner in which resources were actually budgeted dictated an emergent strategy or was associated with the intended strategy.

Hobbs and Heany (1977) agree that strategic decisions affect all functional areas of the business and all functional areas should, therefore, be linked to the strategic plan. The lack of coupling or linking at different levels, particularly the failure to couple the functional plans to the overall business level strategy, could be costly in terms of wasted resources (Hobbs and Heany, 1977). Likewise, Grossman and Lindhe (1984) argued that decisions on capital investments and budgets at all levels in the organization should be made within the context of the objectives of the organization as a whole and not specific to any one level.

Lapides and Ottensmeyer (1990) conducted one of the few studies to link business level strategy with resource allocations in new ventures. Examining the spending patterns of several of the leading firms in a particular high technology market, they found that inflated levels of research and development expenditures represented a technology-based strategy. Relatively high levels of advertising expenditures represented a marketing-based strategy, while increases in property, plant and equipment expenses represented a manufacturing-based strategy. They proposed and empirically determined that through the analysis of spending patterns in
these functional areas, a firm's overall competitive strategy could theoretically be deduced.

Powers, Sterling and Wolter (1988) identified the conflict between marketing and manufacturing functions as a common problem in many firms. The conflict stems from a problem of allocating resources as profitably as possible. They identify a four step approach to solving the problem: 1) developing an explicit statement of corporate objectives and strategies; 2) translating objectives and strategy statements into what they mean to marketing and manufacturing specifically; 3) making a careful study of each statement for the production system and determining how it must be changed to implement the main manufacturing task; and 4) reorganizing the elements of structure to produce a congruent focus.

Croft and Finley (1987) suggest that one of the basic facets of management accounting is the need to adapt appropriate planning and control procedures to a particular situation. Thus, it seems reasonable that one of the basic facets of strategic planning is the need to adapt resource allocations to a particular strategy. In different situations, the selection of formal planning and control techniques will vary (Croft and Finley, 1987). Thus, under different strategies, the emphasis on implementation activities as revealed in the resource allocations across functional areas should vary. That business level strategies
are linked to decisions concerning how to allocate financial capital across functional areas appears to be grounded, at least conceptually, in the strategy literature.

STRATEGY AND VENTURE PERFORMANCE

The proper assessment of the effectiveness of a strategy at any one level within the organization is dependent upon the selection of the performance measure which most reflects the strategic objectives. However, a great deal of the research concerning the relationship between strategy and performance has utilized financial measures (e.g., sales, profitability, return on investment, return on sales, return on equity, and cash flow), with little regard for how such measures relate to the strategy being pursued. Likewise, in those instances where other measures have been employed (i.e., positional/operational measures such as market share, new product development, innovation, quality, and delivery), little theoretical or practical explanation has been given as to why such measures are appropriate.

It is the intent of this study to show that what performance measures are used in strategy research impacts the conclusions made concerning the effectiveness of a given strategy. Measures which are selected for their statistical convenience, without regard for theoretical and practical
implications, can result in inaccurate and misleading assessments. The process of strategic control is designed to answer whether 1) a strategy is being implemented as intended, and 2) the results are occurring as planned (Schendel and Hofer, 1979). A strategic control system is that set of procedures which act together to ensure that actual performance is comparable to the desired specifications. From a management perspective, it consists of "assessing the relevance of the organization's strategy to its progress in the accomplishment of its goals" (Lorange, Morton and Ghoshal, 1986). Though the concept is well defined, few studies directly link firm performance to the objectives for which the strategy was intended (Hofer, 1983).

Sandberg (1986) and Sandberg and Hofer (1986) studied the effectiveness of strategy on new venture performance. Contrasting Porter's (1980) generic strategies, they found that a differentiation strategy was superior to both a cost leadership and focus strategy. Miller and Camp (1985) found similar results. Van de Ven, Hudson and Schroeder (1984), however, associated new venture success with a niche or focus start-up and incremental expansion.

Weiss (1981) compared Biggadike's (1979) sample with independent ventures and found the performance of the independent ventures to be significantly superior to that of the corporate ventures in Biggadike's study. Likewise, Fast
(1981) found that venture-backed start-ups attained profitability sooner, and at higher levels, than did the ventures in Biggadieke's (1979) sample. Sykes (1986) also examined success factors for corporate ventures. He found that the amount of lead time needed to get the product to market, the extent to which the market was familiar with the type of product, and the level of product development at the time of the investment decision were all critical factors to the success of the new venture.

Hofer and Sandberg (1987) identified three factors most crucial to the successful performance of new ventures: 1) industry structure, 2) venture strategy, and 3) the behavioral characteristics of the founding entrepreneur. Citing the high rate of failure among new ventures, Stancill (1981) proposed several steps to reduce the likelihood of failure. Much of the assessment was designed to be before-the-fact of establishing the new venture and consisted of various analysis procedures. Criteria included: long-run returns, size and growth of the potential market, capital requirements, role of profitability and cash flow, and alternatives strategies.

Lambkin (1988) studied the idea that order of entry into a market influenced long-term performance in new markets. She identified three entry categories using the PIMS database: pioneers, early entrants, and late entrants. The results support the hypothesis that pioneers enjoy a
long-term profit advantage over their rivals. Evidence suggests, however, that the high return is necessary to compensate for the high investment pioneers must make to develop new markets. Although early entrants and late entrants do not differ much initially, during the adolescent stage, the early followers show significant advantages over late entrants in both market share and profitability.

Several researchers have identified relative perceived quality as a key competitive strategy option for new ventures (Gale and Branch, 1987; Gale and Klavans, 1985; Thompson, DeSouza and Gale, 1985). Gale and Branch (1987) noted that ventures that are strong in both relative market share and perceived quality earn returns that are significantly higher than businesses with smaller share and inferior quality. Gale and Branch (1987) further defined the strategy options of investment intensity and employee productivity. A high investment level to output depresses profitability in several ways: 1) it leads to more aggressive competition, thus prices and margins are reduced; 2) heavy investment in fixed assets serves as a barrier to exit; and 3) higher investment intensity may point to inefficiencies in operations. If investment intensity is high, employee productivity must increase to offset negative effects on profitability.

Hobson and Morrison (1983) studied start-up ventures in the Profit Impact of Market Strategy (PIMS) program. They
divided the sample of 117 firms into "winners" and "losers" based on the level of market share achieved by the venture by the end of the fourth year after market entry. Ventures with high market share objectives were more likely to succeed. Those that succeeded also maintained plant capacity to meet twice the total market demand. Market structure was also a critical factor to new venture performance. Winning start-up ventures entered markets with strong competition. Although all start-ups entered markets with high growth rates, the start-ups entering very rapidly growing markets gained higher levels of market share. The winners provided a relatively high level of quality in their products and services and charged a premium price.

In addition, Hobson and Morrison (1983) studied the differences in resource allocations. They noted that winners spent early and heavily on research and development and marketing, two primary functional areas in this study. Though it portrays resource allocations as critical to new venture success, the authors failed to link allocations with strategy. The interaction effects of these two may provide significant insight into how to determine the effect each has on new venture performance.

Like Hobson and Morrison (1983), Miller and Camp (1985) analyzed corporate start-up ventures from the PIMS database. They studied determinants of success along environmental and strategic positioning variables. They found that corporate
ventures with the highest growth in market and sales had an average return on investment three time as large as that of the slowest-growing third of the sample. The authors found that market share improves profitability and that profits increase with growth. Perhaps, most noted, the data supported early entry in order for ventures to be successful.

The third study focused on the point of entry as determinant of new venture success. Miller, Wilson and Gartner (1987) analyzed the PIMS corporate ventures to determine if early entry provided significant competitive advantages as had been inferred in the previous literature. They divided the PIMS sample into three categories based on market growth, stage of the industry life cycle at entry, and date of entry. The three categories consisted of 1) "pioneers" (i.e., early entrants into emerging industries), 2) "ranchers" (i.e., later entrants into growing industries), and 3) "settlers" (late entrants into mature or declining industries). Results suggested that early entrants in emerging industries did gain several significant competitive advantages, including: 1) increased market share; 2) superior products and broader product offering; and 3) better customer service. It is interesting to note, however, that early entrants (i.e., pioneers) did not achieve better short-run financial performance.
There have been a number of both conceptual and empirical studies of the normative relationship between strategy and firm performance. Many studies have utilized a variety of contextual settings and competitive strategies among different types of organizations (Hofer, 1983; Venkatraman and Ramanujam, 1986). Hofer (1983) acknowledges that research in the areas of accounting, finance, economics, marketing, production, and strategic management use a variety of related but often distinct performance measures. He concludes that such distinctions are appropriate because 1) each area approaches the normative perspective with different research questions, and 2) organizations do pursue multiple objectives with their strategic actions. His concern, however, is that little attention has been given to which performance measure "makes the most sense" (Hofer, 1983).

Based on a detailed review of the strategy/performance literature, Hofer (1983) identified three unresolved issues regarding the measurement of organizational performance. First, few studies have used management objectives (i.e., strategic goals) as the critical measure of performance despite previous arguments for such measures. Second, few studies explicitly address the issue of tradeoffs among various organizational objectives. Third, and most
importantly, none of the research considered the theoretical or managerial reasons for using a particular measure.

Venkatraman and Ramanujam (1986) presented a multi-level perspective on firm performance in which the financial and operational aspects were viewed as separate domains within the more general concept of organizational effectiveness. In empirically-based research, financial measures have clearly been the dominant representation of firm performance. Such measures include profitability (e.g., return on investment, return on sales, and return on equity), sales growth, cash flow, and earnings per share. Operational or positional measures, on the other hand, can include market share, new product development, product quality, marketing effectiveness, and technological efficiency. Such measures are nonfinancial, yet they represent justifiable alternatives to measuring the effectiveness of a given strategy.

Woo and Willard (1983) utilized a factor-analytic framework to analyze the performance of corporations in the PIMS data base. An analysis of 14 indicators, including both financial and operational, resulted in four primary dimensions: 1) profitability and cash flow; 2) relative market position; 3) change in profitability and cash flow; and 4) revenue growth. Venkatraman and Ramanujam (1988) further suggested that specific measures within each of these domains should not be considered synonymous in that they appear to represent distinct dimensions.
Hitt and Ireland (1985) found that different measures resulted in different conclusions regarding the impact of strategies on firm performance. They suggested that "practitioners should determine the performance measures that are most important" to their competitive arenas (Hitt and Ireland, 1985). In addition, Prescott (1986) found that, in certain contexts, traditional indicators such as profitability or market share are not appropriate measures of firm performance. He recommended that practitioners find those outcome variables significantly related to performance and adjust their strategies accordingly.

One of the more recognized studies illustrating the multi-dimensionality of firm performance was that of Michel and Shaked (1984). Michel and Shaked used market-based measures of performance to test the effectiveness of firm diversification efforts. Their results were in sharp contrast to those of earlier studies which had used accounting-based measures of performance (Rumelt, 1982). In an attempt to explain the differences, Dubofsky and Varadarajan (1987) replicated the Michel and Shaked study only to discover that the market-based performance measures were negatively correlated with the accounting-based measures in the replicated study. They concluded that "accounting and market-based measures of performance may give conflicting results, even though they both purport to measure a firm's performance."
Selecting Measures of New Venture Performance

A review of the strategy literature for new corporate ventures indicates that researchers have generally not considered the multi-dimensionality of the performance construct in their selection of performance measures (Hofer, 1983). Also, most show little concern for whether the chosen performance measure reflects the strategic intentions of the decision makers implementing the strategy under question. Researchers have suggested that determining what measure is most adequate for corporate ventures is open to debate because of the limitations of many of the traditional measures (Chakravarthy, 1986; Cooper, 1979a; Miller et al., 1988). Some of these concerns are noted below:

Return On Investment. ROI is the most common measure of financial performance. Its popularity arises from its simplicity, ease of measurement, and generalizability (Miller et al., 1988). The primary disadvantages to using ROI include 1) sensitivity to accounting practices and 2) excessive variability for new ventures. It is estimated that new ventures require as many as eight years to show substantial progress in ROI (Biggadike, 1979; Miller et al., 1988). Biggadike (1979) reported an average of 10 to 12 years after entry before the return on investment of new ventures is comparable to that of established firms. This delay in new venture performance is of considerable obstacle to many corporations wishing to develop new product markets (Fast, 1981; MacMillan et al., 1984).

Cash Flow. Many argue that cash flow is an appropriate measure of new venture performance, because cash serves as the primary source of funds for a young and growing venture. Miller et al. (1988) argue, however, that for corporate ventures, such a measure is dependent upon a the parent company's efforts to balance cash across a portfolio of diverse business units. Cash from business units which are cash rich may be used to support those units which are cash poor. Yet, the cash poor business unit may be the promising "star" of tomorrow.
Therefore, it is difficult to use cash flow as an adequate performance measure unless the researcher can ascertain the role of the venture in the portfolio and corporate's intentions regarding cash flow.

Market Share. The acquisition of market share for many small ventures is expensive and time consuming. For many small ventures, incremental changes in market share are difficult to accurately measure because it is minimal compared to the total size of the market. In new venture pioneering, market share is initially 100 percent. These firms must engage in strategic initiatives to reduce share loss as opposed to gaining.

Return to Stockholders. It often requires seven to ten years before stocks are issued for new ventures. Also, analyzing the impact of a new venture on the stock performance of the parent company is difficult because the new venture typically accounts for only a small portion of the firm's total operations.

"V". Miller et al. (1988) suggest a performance measure which reflects movement toward a desired end to overcome limitations in using specific ends. "V" is a measure of the velocity of improvement in financial performance across time adjusted for the level of variability in the performance trend. It incorporates the beta coefficient of a regression analysis of return on investment against time, used as a measure of the overall rate of change in financial performance, and 2) the coefficient of determination used as a measure of the predictability of change. Miller et al. (1988) note that the most significant contribution of "V" is that it entails "the shift to evaluating a new venture on the basis of its progress toward a desirable end rather that on the end itself."

TRADEOFFS IN VENTURE PERFORMANCE

Market share and profitability are two of the more widely used performance factors in strategy research. However, the multi-dimensionality of firm performance construct and the tradeoffs new ventures face among competing
objectives in conditions of uncertainty and resource scarcity pose significant implications for the relationship between market share and profitability in corporate venturing. For corporate ventures, strategy tradeoffs often involve the decision to "build" or to "maintain" the new business (Gupta, 1987). A maintain strategy refers to the efforts to stabilize operations to secure a steady positive flow of net revenues. A build strategy, on the other hand, involves strengthening the competitive position of the developing firm through the pursuit of market share and growth.

The relationship between market share and profitability for mature firms has been that an increase in market share is accompanied by an increase in return on investment (Buzzell and Gale, 1987; Buzzell et al., 1975; Lillis, Cook, Best and Hawkins, 1985; Thietart and Vivas, 1984). However, though the correlations are plausible, others have challenged the claim that market share "causes" profitability (Lippman and Rumelt, 1982). Hall (1987) identified several reasons why market share would be related to return on investment, including: 1) economies of scope and scale; 2) market power; 3) experience; and 4) quality of management. He suggests that the links between market share and profitability are numerous and often complex. Though there is a statistical correlation between the two, the order of the relationship, and thereby, causality, remains to be determined.
Jacobson and Aaker (1985) argued that other factors such as managerial quality and prices influenced return on investment more so than market share. In a study of 112 high and low performing units which each maintained the leadership position in terms of market share, Woo (1984) found that factors such as types of goods produced, perceived product quality, and poor strategic fit resulted in poor unit performance regardless of the unit's market share position. Likewise, Woo and Cooper (1985) showed that high performance is possible without market share leadership.

In Miller et al.'s (1987) study of corporate ventures, the authors noted that "efforts to increase market share in the beginning of the business's life cycle may be the reason why pioneers do not have better financial performance than later entrants." In other words, later entrants out performed early entrants and pioneers if the criteria was profitability. However, the pioneers out performed all other entrants in terms of market share gains. The authors conclude that pioneers do not have large gains in profitability because of the substantial investment needed to establish a strong competitive position. This conclusion helps illustrate the tradeoff in strategies for new ventures between the pursuit of profitability and cash flow (i.e., harvest) and the pursuit of market share (i.e., build).
CHAPTER IV
RESEARCH LOGIC AND HYPOTHESES

The theoretical discourse presented in Chapters II and III draws on a wide array of literature to appropriately conceptualize entrepreneurship, business strategy, strategy implementation, resource allocations, and corporate venturing. Both entrepreneurship as economic behavior and business strategy as a pattern in decision-making reflect the importance of effective resource allocations to exploit market opportunities. However, patterns in resource allocations are rarely studied as business level strategy.

Because of their definitive genesis at the point of market entry, new ventures provide a unique setting in which to study business level strategy as a sequence in firm behavior. It was determined that efforts to implement a particular strategy can be ascertained from the capital budget which reflects resource allocations, particularly financial, across functional areas. This study explored the means by which new ventures allocate vital resources in order to implement planned or intended strategies and the effect on new venture performance. While a great deal is written about each of the proposed concepts separately, few
empirical tests have been completed of strategy as a sequence of firm behavior.

THEORETICAL PREMISE AND RESEARCH LOGIC

Theories in social science are said to be comprised of a sequentially ordered series of propositions, building from one another to form a coherent whole. This study relies on several such propositions, many of which have received both conceptual and empirical support in the research literature and several yet to be confirmed. Of those which remain to be verified, the primary focus is 1) whether strategy represents a pattern in decision-making over time, 2) whether implementing unique strategies requires unique patterns in the allocation of firm resources, 3) whether both resource allocation patterns and the relationship between entry strategy and allocation patterns influence new venture performance, and 4) whether discrepancies between new venture strategy and resource allocation patterns promote further understanding of the conceptual differences between planned and realized strategy.

The following series of statements depicts the theoretical basis on which this research was designed. The outline, in part, serves as a summary of the conceptual development presented in Chapters II and III. However, it
also serves as guide for framing the research hypotheses which follow.

Research Logic

1. The hierarchical theory of organizational design suggests that, although interdependencies exist among most processes at different levels in the organization, specific behaviors or processes for formulating and implementing strategies can be distinguished at each level (i.e., corporate, business unit, and functional).

2. Because the behaviors which comprise the processes of strategy formulation and implementation are unique at each level within the organization, it is concluded that the strategies which result from those processes are unique as well.

3. If the strategy implemented at any one level within the organization is unique to that level and the behaviors which make up the implementation process are unique, it is concluded that the unique aspects of the implementation process are directly related to unique aspects of the strategy formulated at that level in the organization.

4. Furthermore, the strategy formulated at any one level within the organization must be consistent with the strategy implemented at that same level.
5. If discrepancies exist between the strategy formulated (i.e., planned or intended strategy) and the strategy actually implemented (i.e., emergent or realized strategy) at any one level, this discrepancy should be evident in a comparison of the content of the strategy formulated and the content of the strategy implemented. As process phenomenon, the content would consist of specific firm behaviors.

6. The content of strategy as implemented or realized is said to consist of the sequential pattern in decision making over time regarding the allocation of organizational resources.

7. Thus, in order to observe strategy as implemented one must observe the consequences, results, or "real world" evidence of decision making pertaining to the implementation of the chosen strategy.

8. Because implementation is said to comprise the "accomplishment" of strategy and can be observed in the evidence of resource allocations, it is concluded that the content of a realized strategy at any one level within the organization should be directly linked to the observed patterns in the allocation of resources at that level.
9. Thus, any discrepancy between the intended and the realized strategy should be identifiable from a comparison of the pattern in the allocation of firm resources to carry out a particular strategy and the content of the strategy formulated.

10. Given the nature of this proposition, discrepancies between planned and realized strategy should be examined at a single level of analysis within the organization where the same strategy is both formulated and implemented.

11. If discrepancies do occur, they should be most evident in those situations where management has either 1) specifically formulated and implemented a "new" strategy (i.e., strategic change), or 2) initiated a strategy for the very first time (e.g., new ventures at market entry).

12. The study of new corporate ventures qualifies under both criteria in [10] and [11], namely: 1) corporate ventures comprise a single level of analysis (i.e., the business unit), and 2) their unique competitive strategy is often initially formulated at the point of market entry.

13. Like independent ventures, corporate ventures are initiated under conditions of resource scarcity and environmental uncertainty.
14. Under such conditions, firms minimize the number of different strategy alternatives as well as the variation among the individual decision components of any one particular strategy to be pursued.

15. Thus, new venture strategies should be distinguished in the relative pattern in the allocation of scarce resources over time under uncertainty.

16. Also, patterns in resource allocations necessary to implement the chosen strategy should be consistent within and different between unique types of strategies (i.e., strategy/allocation pattern distinction).

17. Just as the implementation of corporate strategy is said to consist of the allocation of corporate resource across separate business units, so the implementation of business level strategy is said to be comprised of the allocation of firm resources across functional areas.

18. In the total array of resources available for initiating new ventures, capital financing is considered most critical to success.

19. Thus, any discrepancy between intended and realized strategies for new ventures should be determined from a comparison of the pattern in the allocation of financial resources to carry out a particular strategy (i.e., realized or emergent
strategy) and the content of the strategy formulated (i.e., intended or planned strategy).

20. Like resource allocations, new venture strategy is also directly linked to new venture performance.

21. Thus, the relationship between new venture strategy and financial resource allocation patterns should also be directly related to new venture performance.

22. However, performance is said to be a multi-dimensional construct.

23. Thus, conclusions regarding the effectiveness of linking a particular pattern in the allocation of financial resources across functional areas with specific types of entry strategies will be significantly different for unique measures of new venture performance.

In summary, the theoretical premise contends that 1) business level strategies are distinct as formulated, 2) resource allocation patterns are distinct in strategy implementation, 3) thus, resource allocation patterns for each type of business strategy are distinct, 4) these strategy/allocation distinctions are directly linked to firm performance, and 5) the effectiveness of the strategy/allocation distinction is dependent upon the performance measure.
CONSTRUCT DEFINITION AND RESEARCH HYPOTHESES

There were three primary constructs under study: business level strategy, resource allocations, and performance. Each of these constructs is defined in the following summary. In addition, a brief description is provided concerning how each of the constructs was operationalized in the research study. This section concludes with a detailed list of the hypotheses.

New Venture Strategy

From the theory of organizational hierarchy, strategy has been shown to be critical within at least three levels of the organization: 1) corporate; 2) business unit; and 3) functional (i.e., marketing, manufacturing, finance, R&D, etc.). Regardless of the level of analysis, two perspectives of strategy currently dominate the research literature:

1) the establishment of a "fit" among environmental, contextual, and structural elements affecting an organization at any one time (Galbraith and Nathanson, 1979; Jauch and Osborn, 1981; Montanari, 1979; Schendel and Hofer, 1979); and

The preference for either perspective seems to reside with whether researchers prescribe to the static match of contextual, environmental, and structural factors or to the progressive process of learning over time. The longitudinal aspect of strategy as a sequence in firm actions makes it more difficult to conceptualize for scientific inquiry. Therefore, strategy as patterns in decision-making has received little empirical attention (Galbraith and Schendel, 1983; Prescott, 1983; Venkatraman and Prescott, 1990).

Hierarchy holds that strategy formulated at one level of the organization will lead to specific actions at that level when the strategy is carried out. These behaviors, when combined as a single process, are referred to as strategy implementation. Thus, the base proposition of this study is that there should be a direct link between the content of a strategy formulated and the efforts on the part of management to have the strategy implemented over time.

However, in order to adequately test whether such a proposition is true, at least two conditions must be met. The first condition is that the examination of the strategy formulated and implemented must be at a single level within the organization. The efforts to carry out a particular strategy must be identified at the same level in which the strategy was devised. Second, the content of the strategy formulated must be distinct from the consequences of strategy implementation. The strategy must have a
definitive beginning where its dimensions can be clearly identified.

One of the few situations in which both of these conditions can be met is in the study of new business ventures. New ventures comprise a single level of analysis (i.e., business unit). Also, the strategies new ventures pursue are placed in effect at the point of market entry (i.e., date of first sale). This complies with the linear assumption that strategy implementation follows strategy formulation, and provides the necessary conditions to test whether strategy leads to specific decisions/actions in implementation. This study relies on the previous work of Prescott (1983), Galbraith and Schendel (1983), and Venkatraman and Prescott (1990) for the operationalization of the strategy construct. Thirteen variables were used to identify specific types of market entry strategies. They included:

**New Venture Strategy Variables**

1. Degree of Vertical Integration
2. Degree of Compatibility
3. Distribution Approach
4. Type of Customer Market
5. Relative Number of Customers
6. Relative Size of Customers
7. Relative Breadth of Product Line
8. Relative Product Quality
9. Relative Service Quality
10. Relative Price
11. Relative Direct Costs per Unit
12. Relative Image
13. Relative Advantage

A strategy was said to consist of the pattern among the component variables at the point of market entry, or, as
measured in the PIMS Start-Up data base, at the completion of the first full year of operations.

Resource Allocations

One of the most important features of business strategy is the allocation of firm resources. At the business unit level, implementation consists of resource allocations across functional areas. Thus, this study was concerned with the nature of the relationship between new venture strategy as formulated and implementation as the allocation of critical resources across functional areas.

Organizations are comprised of a wide array of resources. However, none is more critical to the success of new business ventures than the financial capital needed to fund the implementation of market entry strategies. A significant part of the successful implementation of new venture strategies is the allocations of financial capital across functional areas. This is commonly referred to as capital budgeting. Conceptually, researchers have argued for a direct link between business level strategy and managerial decisions concerning how to allocate finances across the various functional areas.

The functional level of the organization is comprised of the different areas of operation which combine to form the single business unit. Traditionally, these areas consist of manufacturing, sales and marketing, research and
development, finance and accounting, administration, etc. Manufacturing, marketing, and research and development, however, account for the majority of all financial expenditures in the developing years of a new business. This study explored the relationship between new venture strategy and the allocation of finances during implementation for 1) market development, 2) product and process development, and 3) manufacturing. The period under study consisted of four years preceding and four years immediately following market entry, or the point of initial sale. The specific resource allocation measures are listed below:

**Resource Allocation Variables**

1. Market Development: Comprised of capital expenditures for 1) sales force, 2) advertising, 3) promotion, and 4) other marketing-related expenses in preparing the market for product adoption. Measured as a percentage of total expenditures in each year and averaged for the four years before market entry and the four years after entry.

2. Product and Process Development: Comprised of capital expenditures for 1) product R&D, and 2) process R&D in preparing the product for market. Measured as a percentage of total expenditures in each year and averaged for the four years before market entry and the four years after entry.

3. Manufacturing: Comprised of capital expenditures for 1) direct manufacturing labor, and 2) physical distribution in converting raw material into finished goods. Measured as a percentage of total expenditures in each year and averaged for the four years before market entry and the four years after entry.

Using the annual allocation measures, the analysis identified specific classifications/clusters of capital expenditures across the functional areas over time. The
underlying assumption was that new venture managers are rational in their spending patterns. In order to carry out specific strategies they engage in distinct spending patterns over time consistent with the strategies they are pursuing. Thus, two dimensions were used to identify specific allocation classifications: 1) time, and 2) the percent of total expenditures allocated to a specific functional area. Time was used to profile the actual allocations for each functional area, while the specific functional area was used to characterize the nature of each classification/cluster. The resulting classifications were reflective of realized strategy or strategy as implemented. Thus, it was necessary to test the direct effect of each classification on new venture performance.

New Venture Performance

Strategies are designed to achieve the goals management determines for the firm. Different strategies are designed to achieve different objectives. Measuring the effectiveness of a given strategy to produce management's intended results involves selecting the appropriate measure or measures of performance. However, researchers have shown organizational performance to be a multi-dimensional construct. The trade-off, theoretically, practically, and methodologically, among the different dimensions of performance and the variables used to measure each, are compounded
for new ventures. Researchers have shown that, for new ventures in particular, there are limitations to most performance measures.

Based on the insights provided by Woo and Willard (1983), Miller et al., (1988), and Galbraith and Schendel (1983), this study employed multiple measures of new venture performance to assess the effectiveness of patterns in resource allocations for specific strategies. The measures comprised separate dimensions of organizational performance. The specific measures were 1) return on investment, 2) cash flow, and 3) relative market share.

RESEARCH HYPOTHESES

Based on the previous discussion, the following hypotheses were proposed. They were separated into four major sections: 1) new venture strategy and performance; 2) resource allocations and new venture performance; 3) new venture strategy and resource allocations; and 4) interaction effects of new venture strategy and resource allocations on new venture performance.

New Venture Strategy and Performance

H1: The average level of return on investment achieved in year four will be significantly different for different types of market entry strategies.
H2: The average level of cash flow achieved in year four will be significantly different for different types of market entry strategies.

H3: The average level of relative market share achieved in year four will be significantly different for different types of market entry strategies.

**Resource Allocations and New Venture Performance**

H4: The average level of return on investment achieved in year four will be significantly different for different classifications of capital expenditures.

H5: The average level of cash flow achieved in year four will be significantly different for different classifications of capital expenditures.

H6: The average level of relative market share achieved in year four will be significantly different for different classifications of capital expenditures.

**New Venture Strategy and Resource Allocations**

H7: There will be a significant association between the different types of new venture strategies and the classifications of capital expenditures across functional areas over time.

**Strategy, Resource Allocation, and Performance**

H8: There will be a significant interaction effect between new venture strategies and capital expenditure classifications on new venture performance.
CHAPTER V
RESEARCH DESIGN AND METHODOLOGY

This chapter explores the research design and methodology proposed for testing the hypotheses developed in Chapter IV. The primary purpose of this chapter is to describe the data base, sample selection, variable selection and operationalization, and the unique statistical routines to be used in testing the proposed relationships. The chapter is divided into four major sections. The first section describes the Profit Impact of Marketing Strategies (PIMS) Program. The PIMS data base is uniquely suited for this study in that: 1) its strengths and weaknesses have been well documented in the research literature; 2) data are comprised for new corporate ventures; 3) a distinction is made in capital expenditures between functional areas; 4) data for resource allocations are available for five years prior to and as many as eight years after market entry; and 5) strategy component factors are based on management's perception relative to other competitors in the market. This section includes a brief study of the history of the PIMS Program and a brief review of its limitations.
The second section provides a detailed description of the sample and the variables selected for the strategy and resource allocation constructs. The intent was that the variables be relatively independent of one another to avoid problems associated with multicollinearity. Previous research was used as the theoretical basis for the selection and of the specific variables. New venture strategies are assessed from patterns among 13 separate business conduct variables (Galbraith and Schendel, 1983; Prescott, 1983; Venkatraman and Prescott, 1990). Financial resource allocations were assessed over an eight year period for the key functional areas, i.e., market development, product and process development, and manufacturing. Three separate measures of new venture performance were used to assess the effectiveness of different strategies and allocation patterns.

The third section explores the methods necessary for constructing strategy typologies and classifications of resource allocations. Several different analytical routines were utilized. The fourth and final section outlines the approach to understanding the relationships between the proposed constructs. Due to the exploratory nature of this study, the intent was to explore whether the relationships empirically existed as noted in Chapter IV. Specific characteristics/dimensions of the relationships were not proposed. Without empirical evidence of whether the
relationships exist, it amounted to little more than speculation to try to hypothesize the specific nature of the relationships. It remained the base proposition, however, that unique resource allocation patterns would be significantly related to unique types of new venture strategies, and this relationship would significantly affect new venture performance within the period under study. Table 4 depicts the major research tasks to be completed in this study.

PROFIT IMPACT OF MARKETING STRATEGIES (PIMS) PROGRAM

The exploratory nature of this study demanded a data base which includes cross-sectional/longitudinal multivariate data for each of the proposed constructs. Little research has strived to identify the specific variables which should comprise the business strategy and resource allocation constructs. The development of an empirical taxonomy for business strategy requires the analysis of a number of business conduct variables. Also, in order for allocation patterns to be indicative of strategy as implemented, allocation data must be recorded consistently over time. Thus, there was a legitimate need in this study for a secondary data base which included a wide range of business conduct, resource allocation, and performance variables.
TABLE 4

Overview of the Research Methodology

1. Access to the PIMS Start-Up Data Base.

2. Select new venture strategy, resource allocation, and performance variables.

3. Identify distinct types of new venture strategies used for market entry.

4. Explore differences in performance for different types of new venture strategies.

5. Identify distinct patterns/classifications in the manner in which management allocates capital resources across functional areas over time.

6. Determine the level of association between new venture strategies and patterns in resource allocations.

7. Analyze the interaction effects of new venture strategy and resource allocations on new venture performance.
History of the PIMS Program

The Profit Impact of Market Strategy (PIMS) Program was initiated in the early seventies to study the key business and industry factors which explain operating performance. The primary objectives of the program were to address issues such as: 1) what is a normal rate of return on investment for a given type of firm under given market or industry conditions; 2) what factors explain differences in rates of return among various businesses; 3) how will profitability be affected by changes in strategy; and 4) how will profitability be affected by changes in the competitive environment (Prescott, 1983; Schoeffler, Buzzell and Heany, 1974).

The PIMS data base program is currently maintained by the Strategic Planning Institute (SPI) in Cambridge, Massachusetts. Commonly referred to as the SPI Research Data Base, it consists of the largest single collection of line-of-business data describing several aspects of business units and their served markets (Buzzell and Gale, 1987). Each record in the data base contains more than 500 variables which have been constructed from the basic data collected on the PIMS Data Forms. Prescott (1983: 116) notes that PIMS defines a business unit as:

"a division, product line, or other profit center within its parent company, selling a distinct set of products and/or services to an identifiable group of customers, in competition with a well-defined set of competitors, and for which meaningful separation can be made of revenues, operating costs, investments, and strategic plans."
Prescott (1983) identified the major multivariate analyses employed among PIMS researchers to ascertain the relationships between various factors and three common measures of performance: return on investment, relative market share, and cash flow. He grouped the factors into six major categories: 1) characteristics of the business environment; 2) competitive position; 3) investment productivity; 4) discretionary budget allocations; 5) current changes in market position; and 6) operating results.

Ramanujam and Venkatraman (1984) developed an additional framework for classifying PIMS analyses. Their framework also summarized the major themes in six areas of strategy research: 1) influences on business unit profitability; 2) factors affecting market share, share stability, and strategies; 3) integration of PIMS and BCG approaches; 4) contextual factors moderating the strategy performance linkage; 5) situational factors affecting strategy formulation; and 6) empirical derivation of strategy typologies.

The PIMS Start-Up Data Base

The SPI Start-Up Data Base is similar to the primary SPI Series Data Base described above. Many of the same collection instruments and variables are employed. Like the larger series data bases, data are recorded for financial, competitive, conduct, and performance factors. The Start-Up Data Base is unique, however, in the types of firms
surveyed, namely new corporate ventures. In addition, much of the data consists of business conduct and market conditions prior to market entry or during the conceptualization stage of the new product or business. All of the respondents represent new business ventures started as entrepreneurial efforts of a parent firm. In addition to the data collected directly from the survey instruments, additional data are calculated from the survey responses, including: 1) beginning, ending, and average ratios; 2) point and percentage changes; and 3) cumulative scores for certain longitudinal data.

SPI (1978: 2) defines a corporate venture as:

"a new business launched as either an independent entity, a new profit center within a company which has other established businesses, or a joint venture which satisfies the following criteria: 1) its founders must acquire expertise in products, process, market and/or technology; 2) results are expected beyond the year in which the investment is made; 3) it is considered a new market entrant by its competitors; and/or 4) it is regarded as a new source of supply by its potential customers."

The primary advantages to using the PIMS Start-Up Data Base for this study included:

1. data were available for new corporate ventures for which strategic decisions involving resource allocations are critical;

2. multiple variables were available for appropriately operationalizing strategy, resource allocation, and performance;
resource allocations were designated for the major functional areas, including market development, product/process development, and manufacturing;

4. strategy, resource allocation, and performance data were available for several years including as many as five years prior to and eight years following market entry; and

5. the strengths and weaknesses of the data and the PIMS Program in general were well documented in the strategy research literature.

Limitations of the Data Base

The PIMS Start-Up Data Base is the largest and most comprehensive cross-sectional/time series data base available for studies of corporate ventures (MacMillan and Day, 1987). However, because of their similarities, many of the strengths and weaknesses of the more general SPI data bases apply to the Start-Up Data Base as well (Anderson and Paine, 1978; Hambrick, MacMillan and Day, 1982; MacMillan and Day, 1987; Ramanujam and Venkatraman, 1983). In 1978, Anderson and Paine published a list of the prevailing strengths and weaknesses of the general PIMS SPI data base. The complete listing of their observations is provided below. An asterisk (*) indicates those which were addressed in some fashion in this study:
1. PIMS achieves its usefulness in the analysis and diagnostic appraisal phase of the policy formulation process.

2. The complexity of the PIMS model may lead to problems of interpretation and understanding and to a tendency for the user to rely on the "exactness" of the technique.

3. Analysis of the PIMS data is largely a retrospective approach to strategy formulation. (*)

4. Positive (or negative) effects of synergy are deemphasized.

5. The ROI criterion may not be a suitable global criterion for the measurement of strategic performance. (*)

6. The cross-sectional data base has certain identifiable, inherent weaknesses which can lead to erroneous conclusions. (*)

7. PIMS analysis has not identified intended goals or strategies for which performance was measured. (*)

8. Analysis of independent variables in the absence of remaining model variables may lead to erroneous conclusions due to problems of multicollinearity. (*)

9. Omission of key strategic variables may lead to erroneous conclusions. (*)

10. The standard error of the estimate for the regression model should be specified. (*)

11. The PIMS data base represents the most reliable and accurate data relevant to strategy formulation currently available. (*)

12. Criteria for selection of "similar" businesses appear arbitrary. (*)

13. Differences in management controllability exist among the independent variables found to be directly correlated with ROI.

14. Theoretical frameworks from strategic management and organization theory suggest causal relationships among the independent variable set. (*)
15. Some variables included in the PIMS regression model may have an impact due to their construction rather than to a "true" causal impact. (*)

16. Conclusions derived from the PIMS analysis may be misleading due to omission of certain contingency factors including inconsistencies across industries and neglect of relevant ranges for variables. (*)

Like Anderson and Paine (1978), others criticize the various PIMS data bases for their lack of coverage of an adequate time period to facilitate longitudinal studies (Ramanujam and Venkatraman, 1984). This limitation is not necessarily applicable to the PIMS Start-Up Data Base. In fact, the first 500 variables in the Start-Up data base are composed of the four year averages as recorded in the primary PIMS data bases. Approximately 500 additional variables, however, are composed of yearly items, including business conduct, resource allocations, and performance.

A final limitation worth noting is the manner in which certain constructs have been operationalized using the PIMS data. Often, only a limited number of variables is used to operationalize the strategy, allocation, and performance constructs (Anderson and Zeithamel, 1984; Hambrick, 1983; Ramanujam and Venkatraman, 1984). This is why multivariate analyses were selected for operationalizing the constructs in this study (Biggadike, 1979; Prescott, 1983; Venkatraman and Prescott, 1990). The exact methodologies are detailed later in this chapter.
Researchers generally agree, the PIMS series provides the most comprehensive and scientifically sound empirical data available on business level strategy and performance (Hambrick et al., 1982; MacMillan and Day, 1987; Prescott, 1983; Ramanujam and Venkatraman, 1984). Likewise, for corporate ventures, the quality and reliability of the PIMS Start-Up data is unequalled.

SAMPLE AND VARIABLE SELECTION

There are a total of 129 corporate ventures for which data are maintained on the PIMS Start-Up Data Base. Given the exploratory nature of this study, it was not necessary to categorize the firms according to any classification derived 'a priori' (i.e., industry segment, competitive environment, strategic posture, etc.). However, one of the functional areas for which capital allocations were presumed to be significantly related to entry strategy was manufacturing. Thus, five ventures which, by nature, did not engage in manufacturing functions (e.g., services, retail, wholesale, and distribution) were immediately eliminated from the sample. In addition, three firms were eliminated from the sample because of data errors and extreme values for specific strategy variables. These firms were not significantly different from the remaining sample on any of
the background dimensions. Thus, a total of 121 ventures were included in the final analysis. Table 5 outlines the composition of the corporate ventures included in the Start-Up Data Base.

Variable Selection for New Venture Strategy

Sets of variables were identified for each of the constructs under study. Given the large number of variables in the Start-Up data base, it was necessary to identify the appropriate subset to be used for each construct. Variable selection decisions for each of the proposed constructs have been delineated in the strategy literature. Of the different approaches for operationalizing business strategy, that of Prescott (1983), Galbraith and Schendel (1983) and Venkatraman and Prescott (1990) appeared to be most appropriate given the theoretical development and objectives of this study.

Prescott (1983) surveyed a field of experts on the distinctions between the competitive environment and competitive position. From a correlation analysis designed to reduce the number of strategy positioning variables, the final set of strategy variables was realized. The subset consisted of 17 variables found to be relatively independent of one another. These were the same variables, with slight modifications, later used by Venkatraman and Prescott (1990). Three of the variables, however, involved the
TABLE 5

Background Data on the Corporate Ventures
in the PIMS Start-Up Data Base

<table>
<thead>
<tr>
<th>Variable/Description</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Type of Business</strong></td>
<td></td>
</tr>
<tr>
<td>Durable Consumer Products</td>
<td>12.4</td>
</tr>
<tr>
<td>Non-Durable Consumer Products</td>
<td>10.9</td>
</tr>
<tr>
<td>Capital Goods</td>
<td>25.6</td>
</tr>
<tr>
<td>Raw or Semi-Finished Materials</td>
<td>10.9</td>
</tr>
<tr>
<td>Components for Finished Products</td>
<td>20.2</td>
</tr>
<tr>
<td>Supplies or Other Consumable Products</td>
<td>15.5</td>
</tr>
<tr>
<td>Services</td>
<td>3.9</td>
</tr>
<tr>
<td>Retail and Wholesale Distribution</td>
<td>0.0</td>
</tr>
<tr>
<td><strong>Status of Market Entry</strong></td>
<td></td>
</tr>
<tr>
<td>Pioneer</td>
<td>35.7</td>
</tr>
<tr>
<td>Early Follower</td>
<td>30.2</td>
</tr>
<tr>
<td>Late Entrant</td>
<td>34.1</td>
</tr>
<tr>
<td><strong>Size of Served Market/Number of End Users</strong></td>
<td></td>
</tr>
<tr>
<td>Less Than 999</td>
<td>39.5</td>
</tr>
<tr>
<td>1000 - 99,999</td>
<td>33.3</td>
</tr>
<tr>
<td>100,000 - 999,999</td>
<td>10.9</td>
</tr>
<tr>
<td>1,000,000 - 9,999,999</td>
<td>7.0</td>
</tr>
<tr>
<td>10,000-000 of More</td>
<td>9.3</td>
</tr>
<tr>
<td><strong>Growth of Served Market</strong></td>
<td></td>
</tr>
<tr>
<td>10 Percent or Less</td>
<td>30.2</td>
</tr>
<tr>
<td>11 - 20 Percent</td>
<td>22.5</td>
</tr>
<tr>
<td>21 - 50 Percent</td>
<td>20.9</td>
</tr>
<tr>
<td>51 - 99 Percent</td>
<td>15.5</td>
</tr>
<tr>
<td>More Than 100 Percent</td>
<td>10.9</td>
</tr>
<tr>
<td><strong>Life Cycle Stage of Product Development</strong></td>
<td></td>
</tr>
<tr>
<td>Introduction</td>
<td>24.0</td>
</tr>
<tr>
<td>Growth</td>
<td>53.5</td>
</tr>
<tr>
<td>Maturity</td>
<td>20.9</td>
</tr>
<tr>
<td>Decline</td>
<td>1.6</td>
</tr>
</tbody>
</table>
proportional allocation of capital across functional areas (i.e., R&D, marketing, manufacturing). Given that these variables are used to represent strategy implementation, these three variables were subsequently removed from the initial list of planned strategy component variables.

Galbraith and Schendel (1983) identified a total of 14 strategy posture and 14 strategy change variables in their study of business strategy, many of which were the same as that of Prescott (1983) and Venkatraman and Prescott (1990). Yet, because the hypotheses did not involve the change dimension for strategy content over time, the strategy change variables were subsequently deleted from the list of planned strategy components.

In each of these studies, strategy variables were selected from the PIMS primary business-unit data base. The initial attempt to operationalize these variables in the Start-Up Data Base revealed that at least three of the original variables could not be calculated. They included employee productivity, capacity utilization, and investment intensity. These variables were subsequently not included in the list of strategy component variables. However, data for other variables were measured in the PIMS surveys which were not proposed in the earlier studies, namely distribution strategy, relative advantage, relative compatibility, and relative image. These variables were subsequently added to the list of planned strategy component variables.
The final list of planned strategy content variables is provided in Table 6. Given that these variables have been shown to be relatively independent of one another, this approach addressed the limitations cited of previous PIMS studies of 1) using too few variables to operationalize critical constructs, and 2) controlling for multicollinearity among variable measures (Anderson and Paine, 1978).

Variable Selection for Resource Allocations

In the total spectrum of firm resources, this study was concerned with the allocation of financial resources across functional areas over time. Financial resources were selected for 1) methodological, 2) theoretical, and 3) practical reasons. First, at the exploratory stage of analysis, it would be inappropriate to test the association between new venture strategy and allocation patterns without addressing issues involving the manner in which the resource is operationalized. The selection of a critical tangible resource, such as capital funding, insures that the value or measure of the resource can be objectively assessed with near universal agreement.

Second, resource allocations have been conceptually linked with organizational strategy via capital budgeting. Budgets are most often comprised of functional capital expenditures over a particular time period. Thus,
TABLE 6

Strategy, Performance, and Resource Allocation Variables

**New Venture Strategy**

1. Degree of Vertical Integration  
2. Relative Product Breadth  
3. Type of Customer Market  
4. Relative Number of Customers  
5. Relative Size of Customers  
6. Relative Advantage  
7. Degree of Compatibility  
8. Distribution Strategy  
9. Relative Direct Costs  
10. Relative Price  
11. Relative Service Quality  
12. Relative Quality  
13. Relative Image  

**Resource Allocations (Pre- and Post-Entry)**

1. Market Development/Total Expenditures  
2. Product & Process Development/Total Expenditures  
3. Manufacturing/Total Expenditures  

**New Venture Performance (Fourth Year After Entry)**

1. Return on Investment (ROI)  
2. Cash Flow  
3. Relative Market Share
theoretically, financial resources serve to link business level strategy with the implementation of those strategies.

Third, and more importantly, financial resources comprise the single most significant resource in the establishment and growth of new enterprises. Buzzell & Chussil (1985) report that one of the primary reasons many corporate ventures fail to reach their potential is the lack of finances to fund aggressive strategies. Given the substantial funding requirements for product and market development in specific industries, the need exists to examine the association between capital allocations and entry strategy.

For new ventures, allocations between manufacturing, market development, and product/process development typically account for the majority of all capital disbursements. From the PIMs Start-Up Data Base, expenditures for these three functional areas accounted for as much as 90 percent of total allocation before and after market entry. Allocations for market development consist of the accumulated disbursements for advertising, promotion, sales, and market research. Allocations for product development refer to all appropriations in both product and process necessary to prepare the product for market entry or to meet the changing demands of a growing enterprise (e.g., design engineering, prototype development, testing, tooling and equipment, redesign). Allocations for manufacturing refer
to the investments in plant, equipment, material, and labor necessary for production.

Furthermore, the expenditures for each of these functional areas was measured prior to and immediately following market entry. This dimension related to strategy as a pattern in events over time. The intent was not merely to determine optimum allocations across the organizational functions, but also across time and different strategic decision intervals. The specific variables are listed in Table 6.

There are three fundamental issues with pattern recognition analysis that must be accounted for (Tou and Gonzalez, 1974). The first consists of developing the appropriate representation of input data. In the proposed study, input data consisted of capital allocations across functions. The second issue involves determining the characteristic features or attributes of the input data to be used in explaining the resulting patterns. The specific attributes of capital allocations for this study consisted of 1) annual proportions of total allocations for each functional area, and 2) average annual proportions before and after market entry.

The third issue involves determining the decision criteria to be used to discriminate between patterns (Tou and Gonzalez, 1974). The decision criteria define the boundaries used to recognize different patterns. The boundary
criteria used in this study consisted of 1) the mutually exclusive functional areas, and 2) the strategy typology. In other words, from the conceptual argument presented in Chapters II and III, the content of the planned strategy and the different functional areas were used to define and interpret allocation patterns.

Variable Selection for New Venture Performance

Three distinct measures of new venture performance were selected for this study: return on investment, cash flow, and relative market share (Table 6). These are the three measures most studied by PIMS researchers (Prescott, 1983). Galbraith and Schendel (1983) found differences in strategy effectiveness when studied using multiple measures of performance. As noted in Chapter II, performance is a multi-dimensional construct. It is, thereby, logical to expect differences in levels of performance for different types of strategies, different patterns of resource allocations, and different strategy/allocation combinations.

PREPARING THE DATA FOR ANALYSIS

Due to the nature of the research hypotheses, preparing the data for analysis involved developing a business strategy typology and a classification scheme for profiling
resource allocation patterns over time. Each of these efforts required multiple procedures, each of which is outlined below.

**Developing a Strategy Typology**

Table 7 summarizes the steps necessary in preparing the PIMS data for analysis. The first step in developing a strategy typology was to identify the component/conduct variables which make up business strategy. Consistent with earlier studies (Galbraith and Schendel, 1983; Hambrick, 1982, 1983; Prescott, 1983; Prescott and Venkatraman, 1990), the 13 conduct variables were then used in a variety of procedures to develop a typology for market entry strategies. The first step was to determine if differences in the component variables warranted separate analysis or if similarities would justify reducing the total number of input variables. A principal component analysis was conducted using varimax rotation on the original 13 component variables. Values were then calculated for the resulting factors by multiplying each variable which loaded significantly by its factor score. Thus, for each factor, the value was determined by weighting the relative component variables by their respective factor score.

The second step in developing a strategy typology was to conduct a cluster analysis in order to group the firms according to like strategies. The factors from the
TABLE 7

Steps in Preparing the Data for Analysis

Operationalizing Types of New Venture Strategies:

1. Identifying the strategy conduct variables.
2. Grouping the firms in the PIMS Data Base via Ward's cluster analysis technique.
3. Validating the cluster selection via Fastclus and discriminant analysis techniques.
4. Developing and interpreting the strategy profiles.

Operationalizing Resource Allocation Patterns Over Time:

1. Identifying the resource and allocation measures.
2. Grouping the firms in the PIMS Data Base via Ward's cluster analysis technique.
3. Validating the cluster selection via Fastclus and discriminant analysis techniques.
4. Developing and interpreting the allocation profiles.
principal component analysis served as input into the cluster analysis program using Ward's method. Ward's method seeks to minimize the error sum of squares. The error sum of squares is defined as the distances from each observation to the centroid of its cluster. Determining the number of clusters or strategy types in the data involved two steps suggested by Everitt (1977). First, sharp changes in the error sum of squares were observed when the number of clusters changed. Second, differences were observed in the graphic display of the individual clusters. A third and final step in assessing the proper number of strategy clusters involved observing changes in the cubic cluster criterion from multiple Fastclus procedures while altering the specified number of clusters.

Limitations to the cluster approach, however, could have resulted from the relatively small number of new ventures in the sample (i.e., 121). The problem with small sample sizes is that there may be little or no distinction in the types of entry strategies pursued. In order to account for the issue of sample size, the third stage involved conducting a discriminant analysis on the resulting clusters. Discriminant analysis was used as a partial check on the efficacy of the clustering results. The procedure assigned the firms to a particular strategy type on the basis of the original strategy factors. A high rate of successful classification via discriminant analysis supports
the validity in the choice of the number of clusters. Being that the objective is to derive homogeneous groups of firms pursuing a particular strategy, a criterion of .5 probability of pursuing a particular strategy was used as the cutoff. This criterion is appropriate because if the probability of membership in any strategy was less than .5, then it might be interpreted that the venture was pursuing more than one market entry strategy.

The final stage in developing the strategy typology consisted of interpreting or profiling the resulting strategy types. The profile for each strategy type was compared to the overall mean for each of the strategy factors. The profiles also reveal on which variables the entry strategies differ from one another. The development of the strategy typology demonstrated the unique types of entry strategies firms pursue when entering a market for the first time. The research hypotheses suggest that resource allocation patterns and firm performance will be distinct for different types of strategies.

Classifying Resource Allocation Patterns

Given the exploratory nature of the research questions, it was uncertain what role time played in the relationship between planned strategy and strategic actions. The underlying assumption was that planned strategy dictated the actions of the firm for at least four years prior to and
four years after market entry. The first step in classifying resource allocations was to determine how time would be incorporated in the allocation measures.

Because the allocation variables shared the same base resource (i.e., capital expenditures) they could not be considered independent, although they were later determined not to be highly correlated. As a result, time was included in two separate measures of resource allocations. The first was the proportion of total annual allocations to each of the functional areas. The second was the average annual proportion of total allocations prior to and immediately following market entry. Because of a high incidence of missing data in the early years prior to market entry, only average annual proportions were measured for the four years prior to market entry. For the four years immediately following market entry, however, both the annual proportions and the four year averages were used in the classification approach.

Three distinct patterns were visually observed when the mean allocations for each functional area were plotted for the four years after market entry. The observed patterns included: 1) product and process development expenditures starting low and decreasing; 2) market development expenditures staying steady or slightly decreasing throughout the period; and 3) manufacturing expenditures starting low and increasing rapidly during the four year
period. Thus, the approach to classifying allocation patterns employed a cluster analysis routine of the percent of total allocations disbursed to each of the functional areas in the first year after market entry. Like in the approach to developing entry strategy types, changes in the error sum of squares and visual observation were used to identify the number of clusters. A Fastclus procedure, monitoring the changes in the cubic cluster criterion, was also used to verify the final number of clusters.

Discriminant analysis was then employed to verify the validity of the cluster results. However, in the case of allocation patterns, annual disbursements for all three functional areas for all four years after market entry were entered into the discriminant equation. The resulting clusters were later profiled based on the specific pattern of capital allocations to each of the three functional areas over time.

STUDYING THE PROPOSED RELATIONSHIPS

Studies linking business strategies to resource allocations are limited in both number and in scope. Conclusions drawn from the work of Fryxell (1990) would suggest that a firm pursuing a cost leader strategy would expend a greater proportion of its total cash outlays on product and process
development over market development. Firms pursuing a differentiation strategy might focus on market development over product and process to create and maintain the perception of differences in the marketplace. Finally, firms employing a focus or niche strategy might maintain a balance in proportional expenditures between product and process development and market development.

Lapides and Ottensmeyer (1990) might agree with Fryxell's propositions. From their cursory analysis of the major firms competing in the computer industry, one might assess that firms using a differentiation strategy focus on either or both market development and R&D. Cost leaders, however, would be more content to focus on product and process development over market development in order to maintain efficiency in process and keep costs low. Focus strategies, on the other hand, are more associated with increased market development expenditures to secure and defend the firm's position in a smaller segment of the overall market. These findings do indicate an underlying link between the strategy a firm pursues and the manner in which its limited capital funds are allocated across functional areas.

New Venture Strategy and Performance

As noted in Chapter II, several studies have linked market entry strategy with new venture performance.
Likewise, the literature suggests that different strategies should lead to different levels of performance for specific performance measures. The hypotheses to test these relationships in this study were as follows:

H1: The average level of return on investment achieved in year four will be significantly different for different types of market entry strategies.

H2: The average level of cash flow achieved in year four will be significantly different for different types of market entry strategies.

H3: The average level of relative market share achieved in year four will be significantly different for different types of new venture strategies.

Each of these questions involved a test of the mean differences in performance for different types of strategies. Analysis of variance was the technique of choice for testing the proposed differences.

Resource Allocations and New Venture Performance

As indicative of strategy implementation, it was assumed that new venture performance would vary for different clusters of resource allocations. Thus, the hypotheses for testing the relationship between resource allocations and new venture performance were as follows:

H4: The average level of return on investment achieved in year four will be significantly different for different classifications of capital expenditures.

H5: The average level of cash flow achieved in year four will be significantly different for different classifications of capital expenditures.
H6: The average level of relative market share achieved in year four will be significantly different for different classifications of capital expenditures.

Like the relationship between strategy and performance, the relationship between resource allocation classifications and performance involve a test of mean differences. Thus, analysis of variance was also used to test the significance of the differences proposed in these hypotheses.

**New Venture Strategy and Resource Allocations**

As noted, resource allocations represent the actions in carrying out planned strategy. The hypothesis tested in this study regarding the relationship between strategy and resource allocations was as follows:

H7: There will be a significant association between the different types of new venture strategies and the classifications of capital expenditures across functional areas over time.

The Pearson chi-square statistic and its significance were computed as a measure of the degree of association between strategy types and expenditure classifications.

**New Venture Strategy, Resource Allocations, and Performance**

The underlying assumption in this study was that specific strategies lead to distinct resource allocation patterns, which lead to distinct levels of performance. The final hypothesis was designed to test for differences
between different combinations of strategy and resource allocation patterns (i.e., interaction effect):

H8: There will be a significant interaction effect between types of new venture strategies and classifications of capital expenditures on the level of new venture performance.

The analytical technique for testing this hypothesis included a two-way analysis of variance. Due to unequal cell sizes, the computerized statistical routine involved general linear modeling. The following chapters outline the results of the actual analysis.
CHAPTER VI

RESULTS

This chapter presents the results of the research analysis as proposed in Chapter V. The chapter is divided into two sections. The first records the results of the procedures used to construct the new venture strategy typology and the resource allocation classifications. This portion of the chapter is divided into several sub-sections which follow the proposed research approach. The second section documents the results of the hypothesis testing. This section is also divided into several sub-sections all relating to the nature of the relationships between new venture strategy, resource allocations, and performance. Discussion of the results and the implications for strategy research and practice follows in Chapter VII.

DEVELOPING STRATEGY AND ALLOCATION CLASSIFICATIONS

The first step in establishing a strategy typology was to insure that the selected input variables were theoretically significant to the research question and relatively
independent of one another. The 13 selected variables were deemed theoretically significant based on previous conceptual arguments and empirical typologies in the literature as cited in Chapters IV. A zero-order correlation matrix is presented in Table 8 which indicates the degree of independence among the original 13 variables. Table 9 lists the means and standard deviations.

Identifying Independent Strategy Component Variables

As the matrix indicates, at least five of the original strategy variables are correlated relatively highly with other variables. These variables include Type of Customers, Relative Number of Customers, Relative Size of Customers, Relative Direct Costs, and Relative Image. There are a total of 24 significant (p < .05) correlations, nine for which the correlation coefficient is greater than .25. Thus, given the need to identify relatively independent strategy components on which to profile distinct types of new venture strategies, a principal component analysis was conducted using orthogonal varimax rotation on the original 13 strategy components. To eliminate scale effects, only standardized scores were entered into the factor analysis.

Table 10 provides the results of the initial principal component analysis. Factor loadings were deemed significant if greater than plus or minus .5. As the results in Table 10 demonstrate, all variables except Relative Direct Costs
TABLE 8

Zero-Order Correlation Matrix of
Strategy Component Variables

1. Degree of Vertical Integration  
2. Relative Product Breadth  
3. Type of Customer Market  
4. Relative Number of Customers  
5. Relative Size of Customers  
6. Relative Advantage  
7. Degree of Compatibility  
8. Distribution Strategy  
9. Relative Direct Costs  
10. Relative Price  
11. Relative Service Quality  
12. Relative Quality  
13. Relative Image

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loaded significantly on at least one factor. Because it failed to load greater than .5 on any factor and because of its high degree of correlation with several other strategy components (e.g., Relative Product Breadth, Type of Customer, Relative Price, and Relative Image), Relative Direct Costs was removed from further analysis on the strategy components. Results of the principle component analysis of the remaining variables is provided in Table 11.

The six resulting factors were labeled from the input variables and the manner in which each variable was operationalized in the original data base. The factor labels and their descriptions are included in Table 12. "Product/Market Breadth" (Factor 1) includes input variables Relative Product Breadth, Type of Customer Market, and Relative Number of Customers and accounts for management's assessment of the breadth of the product/service offering and market coverage. "Relative Quality" (Factor 2) includes input variables Relative Advantage and Relative Quality and accounts for management's assessment of the contribution that product quality makes to the firm's competitive position in the marketplace. "Perceived Image" (Factor 3) includes input variables Relative Service Quality and Relative Image and accounts for management's assessment of the customers' perception of the firm's image and reputation relative to other competitors. "Market Penetration" (Factor 4) includes input variables Degree of Vertical Integration
TABLE 10
Principal Component Analysis of the Original Strategy Variables

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Orthogonal Varimax Rotated Factor Pattern

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* Highest factor loading, but not greater than the .5 criterion.
TABLE 11
Principal Component Analysis of the Remaining Strategy Variables

1. Degree of Vertical Integration
2. Relative Product Breadth
3. Type of Customer Market
4. Relative Number of Customers
5. Relative Size of Customers
6. Relative Advantage
7. Degree of Compatibility
8. Distribution Strategy
9. Relative Price
10. Relative Service Quality
11. Relative Quality
12. Relative Image

Orthogonal Varimax Rotated Factor Pattern

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and Relative Size of Customers and accounts for management's assessment of the extent to which the firm has become entrenched in a particular product market. "Market Fit" (Factor 5) includes input variables Compatibility and Distribution Strategy and accounts for management's assessment of the degree to which the competitive approach matches the existing purchasing, product application, and distribution structures in the marketplace. Finally, "Relative Price" (Factor 6) includes only the Relative Price input variable and accounts for management's assessment of the firm's average selling price relative to its major competitors.

In order to calculate values for each of the six strategy factors, factor scores were obtained for the significant variables for each factor. These scores are listed in Table 13. These scores were used to weight the contribution of each variable to the final value of its respective factor, i.e., each variable was multiplied by its corresponding factor score and the new values combined for the factor value. Thus, for example, the value of "Product/Market Breadth" consisted of:

\[
\text{Relative Product Breadth} \times (.45909) + \text{Type of Customer Market} \times (.42243) + \text{Relative Number of Customers} \times (.37093)
\]

\[= \text{Product Market Breadth}\]
| FACTOR1 - "Product Market Breadth" | Includes input variables Relative Product Breadth, Type of Customer Market, and Relative Number of Customers and accounts for management's assessment of the breadth of product/service offering and market coverage. |
| FACTOR2 - "Relative Quality" | Includes input variables Relative Advantage and Relative Quality and accounts for management's assessment of the contribution that product quality makes to the firm's competitive position in the marketplace. |
| FACTOR3 - "Perceived Image" | Includes input variables Relative Service Quality and Relative Image and accounts for management's assessment of the customers' perception of the firm's image and reputation relative to other competitors. |
| FACTOR4 - "Market Penetration" | Includes input variables Degree of Vertical Integration and Relative Size of Customers and accounts for management's assessment of the extent to which the firm has become entrenched in a particular product market. |
| FACTOR5 - "Market Fit" | Includes input variables Compatibility and Distribution Strategy and accounts for management's assessment of the degree to which the competitive approach matches the existing purchasing, product application, and distribution structures in the marketplace. |
| FACTOR6 - "Relative Price" | Includes the input variable Relative price and accounts for management's assessment of the average selling price relative to its major competitors. |
### TABLE 13
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A zero-order correlation matrix of the six strategy factors is provided in Table 14. Means and standard deviations are listed in Table 15. Given the relative degree of independence reflected in the correlation table, it was determined that the principal component analysis was successful in 1) reducing the number of input variables, 2) insuring that the resulting factors were independent of one another, and 3) insuring that the factors were theoretically significant to the research question.

**Developing and Validating Strategy Types**

In order to examine differences in resource allocations for specific strategies, it was first necessary to identify distinct types of new venture strategies. As noted in Chapter V, cluster analysis via Ward's method was used to identify the different types of entry strategies used among the start-up firms in the PIMS Data Base. The six strategy factors were used as input into the cluster analysis. The procedure resulted in the identification of two distinct strategy clusters. The selection of two clusters was made under the two criteria suggested by Everitt (1977). The first criterion suggests that the identification of the number of clusters can be made by examining large changes in the error sum of squares when the number of clusters changes. The second requires a visual inspection of the cluster results. Both approaches revealed two distinct
TABLE 14

Zero-Order Correlation Matrix of the Strategy Factors

1. Product/Market Breadth
2. Relative Quality
3. Perceived Image
4. Market Penetration
5. Market Fit
6. Relative Price

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* p < .05
TABLE 15

Means and Standard Deviations for Independent Strategy Factors

(n=121)

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<tr>
<th>Factor</th>
<th>Mean</th>
<th>Standard Deviation</th>
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<tr>
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<td>Relative Quality</td>
<td>1.660</td>
<td>0.99</td>
</tr>
<tr>
<td>Perceived Image</td>
<td>-1.740</td>
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</tr>
<tr>
<td>Market Penetration</td>
<td>-0.008</td>
<td>0.97</td>
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<tr>
<td>Market Fit</td>
<td>-0.005</td>
<td>0.95</td>
</tr>
<tr>
<td>Relative Price</td>
<td>-0.001</td>
<td>0.78</td>
</tr>
</tbody>
</table>
strategy clusters. The means and standard deviations for the six strategy factors are listed for each strategy cluster in Table 16.

Two separate analytical routines were employed to assess the validity of the two cluster selection. The first involved conducting multiple Fastclus routines by altering the specified number of clusters to be created. In this procedure, the analysis looks for the maximum value in the cubic cluster criterion as the number of clusters changes (Milligan and Cooper, 1985). To validate the two cluster pattern identified using Ward's method, Fastclus procedures were carried out under two, three, four, five and six cluster specifications. The results, provided in Table 17, indicate that the largest cubic cluster criterion was obtained when the number of clusters was restricted to two. Thus, Fastclus results support the initial conclusion that the firms in the PIMS Start-Up Data Base employ two primary market entry strategies. The two strategies are classified later in the report.

The second approach to validating the number of strategy clusters was to conduct a discriminant analysis using the six strategy components as the discriminating factors. The discriminant analysis procedure correctly classified 94.6 percent of the firms in cluster one and 95.5 percent of the firms in cluster two. The high rate of correct classifications by the discriminant procedure
TABLE 16
Means and Standard Deviations of the Strategy Factors for Each Strategy Cluster

<table>
<thead>
<tr>
<th></th>
<th>CLUSTER1 (n=55)</th>
<th></th>
<th>CLUSTER2 (n=66)</th>
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<td></td>
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<td>Standard Deviation</td>
<td>Mean</td>
<td>Standard Deviation</td>
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<td>0.54</td>
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<td>0.89</td>
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<td>0.81</td>
<td>0.48</td>
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<td>Market Fit</td>
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<td>Cubic Cluster Criterion</td>
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<tr>
<td>6</td>
<td>-5.97</td>
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</table>

**TABLE 17**

Cubic Cluster Criterion for Multiple Fastclus Procedures With Strategy Factors
suggested that the validity of the two strategy clusters was relatively high.

Profiling the Strategy Clusters

A total of 55 firms were clustered in strategy one. The market entry strategy employed by these firms can be categorized as:

- narrow product/market focus;
- high relative quality;
- differentiation based on product performance with less emphasis on building the customer's perceived image;
- little vertical integration and market specialization toward smaller, less numerous customer markets;
- maximizing the advantage of existing product compatibility and distribution channels; and
- maintaining a high relative price.

Except for minor differences in the strategy factors under consideration, this strategy appears to be most consistent with Porter's (1980) "niche" strategy. Thus, this entry strategy will be referred to as "Niche" throughout the remainder of the analysis and discussion.

A total of 66 firms were clustered in strategy two. This strategy can be profiled as:
o wide product market breadth serving all types of customers with multiple product/service offerings;
o less emphasis on product quality and competitive advantage in product performance;
o increased effort in creating a high level of perceived image in the market via differentiation;
o extensive market penetration through backward and forward integration focusing on large customers;
o willing to innovate in product application, product compatibility, and distribution; and
o emphasizing mass production and increased penetration through a relatively low competitive price.

Except for slight differences in the component variables under consideration, this strategy appears to be most similar to Porter's (1980) generic "differentiation" strategy. Thus, this strategy will be referred to as "Differentiation" throughout the remainder of the research analysis and discussion.

Analysis of variance procedures revealed significant differences between the Niche and Differentiation strategy clusters for four of the six strategy factors: Product/Market Breadth; Relative Quality; Perceived Image; and Market Penetration (Table 18). Differences were not significant for Market Fit and Relative Price (Table 18).
## Table 18

### Analysis of Variance Results for Strategy Clusters

**Components:**

1. **Product/Market Breadth** = "PMBRDTH"
2. **Relative Quality** = "RELQUAL"
3. **Perceived Image** = "PERIME"
4. **Market Penetration** = "MKTPENT"
5. **Market Fit** = "MRKTFIT"
6. **Relative Price** = "RELPRIC"

<table>
<thead>
<tr>
<th>Strategy Component</th>
<th>Model</th>
<th>df</th>
<th>Mean Squares</th>
<th>F</th>
<th>w2</th>
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<tbody>
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<td>26.05</td>
<td>32.41***</td>
<td>.21</td>
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<td>Error</td>
<td>119</td>
<td>0.80</td>
<td></td>
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<tr>
<td>RELQUAL</td>
<td>Strategy</td>
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<td>15.78</td>
<td>18.26***</td>
<td>.13</td>
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<td></td>
<td>Error</td>
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<td>0.86</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PERIME</td>
<td>Strategy</td>
<td>1</td>
<td>23.41</td>
<td>29.24***</td>
<td>.20</td>
</tr>
<tr>
<td></td>
<td>Error</td>
<td>119</td>
<td>0.80</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MKTPENT</td>
<td>Strategy</td>
<td>1</td>
<td>34.94</td>
<td>53.40***</td>
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</tr>
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<td>Error</td>
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<tr>
<td>MRKTFIT</td>
<td>Strategy</td>
<td>1</td>
<td>1.15</td>
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<td>Error</td>
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</table>

*** p < .0001
Developing Resource Allocation Classifications

The steps in establishing resource allocation classifications were similar to that executed for strategy types. The first step was to insure that the variables were theoretically significant to the research question and that the variables were relatively independent of one another. The allocation variables selected in this study were considered theoretically significant based on the literature, cited in previous chapters, which depicted capital allocations as 1) a critical dimension of business strategy, 2) indicative of strategy implementation, and 3) critical to the success of new ventures. Correlations of the original resource allocation variables are presented in Table 19. Means and standard deviations are provided in Table 20. Because the allocations are ratio measures derived from the same resource pool, the variables are naturally not independent of one another as indicated by the number of large and significant correlation coefficients (Table 19).

Because of the high degree of dependence among the allocation measures and the desire to establish relatively independent measures of the resource allocation construct, attempts were made to reduce the allocation ratios to distinct classifications. It was assumed that allocation classifications could be developed which were significantly different from one another. In order to determine if


### TABLE 19

**Correlation Matrix of Resource Allocation Variables**

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<tr>
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<tr>
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* p < .05
TABLE 20

Means and Standard Deviations for the Resource Allocation Variables

(n=120)

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>Standard Deviation</th>
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<td>Market Expenditures Before Entry</td>
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<td>0.39</td>
</tr>
<tr>
<td>Product Expenditures Before Entry</td>
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</tr>
<tr>
<td>Manufacturing Expenditures Before Entry</td>
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<td>0.18</td>
</tr>
<tr>
<td>Market Expenditures in Year One</td>
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<td>Market Expenditures in Year Three</td>
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</tr>
<tr>
<td>Market Expenditures in Year Four</td>
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<td>0.19</td>
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<td>0.24</td>
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<td>Product Expenditures in Year Three</td>
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<td>0.14</td>
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<td>Product Expenditures in Year Four</td>
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<td>0.13</td>
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<td>Manufacturing Expenditures in Year Four</td>
<td>0.43</td>
<td>0.21</td>
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</table>
patterns existed across the proposed functional areas over time, a preliminary analysis was conducted which involved plotting the means for each variable for each of the four years after market entry. The ratios were plotted separately for firms above and below the four year average expenditure for each functional area. Thus, six plots were constructed (i.e., market expenditures above and below the sample median, product expenditures above and below the sample median, and manufacturing expenditures above and below the sample median).

Three patterns were found (i.e., visually observed) to be consistent in each of the plots: 1) average market development expenditures often accounted for a greater portion of total expenditures in the first two years after market entry and then declined in years three and four; 2) product development expenditures consistently accounted for the smallest percentage of total allocations and its portion continually declined during the four years after entry; and 3) manufacturing expenditures often accounted for the second largest portion of total allocations, however, its portion rapidly increased during the four year period after market entry. For each scenario, the descending order of proportional allocations in the fourth year after entry included manufacturing process, market development, and product development. However, the descending order of proportional allocations prior to market entry included
Identifying Resource Allocation Clusters

The consistency in which these patterns emerged supported the initial assumption that unique patterns could be identified in the capital allocations using a more sophisticated grouping technique. Like in the case of strategy types, cluster analysis was employed using the Ward's method. The proportional allocations for each functional area in year one after market entry were selected as input into the initial cluster routine. Because of extreme values on two of the three input variables, one observation had to be eliminated from the cluster analysis. This left a total sample of 120 start-up firms. Based on the decision criteria proposed by Everitt (1977) and the assumptions derived from the results of the initial plots, the cluster analysis revealed three distinct allocation clusters. Means and standard deviations for the input variables are listed for each cluster in Table 21.

As in the approach to developing a strategy typology, Fastclus and discriminant analysis techniques were used to validate the three cluster selection. Fastclus routines were conducted while altering the specified number of clusters created. Changes in the cubic clustering criterion were observed for two, three, four, five and six cluster
### TABLE 21

Means and Standard Deviations of the Year One Allocation Variables for Each Allocation Cluster

<table>
<thead>
<tr>
<th></th>
<th>CLUSTER1 (n=36)</th>
<th></th>
<th>CLUSTER2 (n=59)</th>
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<th>CLUSTER3 (n=25)</th>
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<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>SD</td>
<td>Mean</td>
<td>SD</td>
<td>Mean</td>
<td>SD</td>
</tr>
<tr>
<td>Market Development</td>
<td>0.63</td>
<td>0.18</td>
<td>0.22</td>
<td>0.13</td>
<td>0.17</td>
<td>0.11</td>
</tr>
<tr>
<td>Product Development</td>
<td>0.14</td>
<td>0.14</td>
<td>0.12</td>
<td>0.12</td>
<td>0.61</td>
<td>0.21</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>0.12</td>
<td>0.11</td>
<td>0.48</td>
<td>0.19</td>
<td>0.11</td>
<td>0.10</td>
</tr>
</tbody>
</table>
TABLE 22
Cubic Cluster Criterion for Multiple Fastclus Procedures
With the Initial Resource Allocation Variables

<table>
<thead>
<tr>
<th>Number of Clusters</th>
<th>Cubic Cluster Criterion</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>0.26</td>
</tr>
<tr>
<td>3</td>
<td>10.35</td>
</tr>
<tr>
<td>4</td>
<td>9.04</td>
</tr>
<tr>
<td>5</td>
<td>6.44</td>
</tr>
<tr>
<td>6</td>
<td>6.44</td>
</tr>
</tbody>
</table>
specifications. The results, provided in Table 22, indicate that the largest cubic cluster criterion was obtained when the number of clusters was restricted to three. Thus, the Fastclus results supported the initial conclusion that the firms in the PIMS Start-Up Data Base employ at least three distinct approaches to allocating financial resources across functional areas.

In order to assess the validity of the allocation clusters for the entire four year period after market entry, discriminant analysis was conducted using the separate annual allocation measures for each of the three functional areas for the four years after market entry (i.e., market expenditures in years 1-4, product expenditures in years 1-4, and manufacturing expenditures in years 1-4). The discriminant analysis procedure, based on the 12 input variables, correctly classified 100 percent of the firms in cluster one, 98.3 percent of the firms in cluster two, and 96 percent of the firms in cluster three. The high rate of correct classifications by the discriminant procedure suggested that the validity of the three allocation clusters was relatively high.

Profiling the Allocation Clusters

A total of 36 firms were classified in allocation cluster one. The profile for this cluster is described as:
heavy emphasis on market development throughout the four years following market entry (averaged approximately 57 percent of total expenditures);

little emphasis on product development throughout the four years following market entry (averaged approximately 11 percent of total expenditures);

and

moderate and increasing emphasis on manufacturing process throughout the four years following market entry (averaged approximately 22 percent of total expenditures).

This profile is most consistent with the "market pull" approach to new venture development. In market pull, emphasis is placed on creating or increasing demand within the market for a particular product offering. The focus is off product enhancement and more on developing market perceptions of existing product offerings.

Fifty-nine (59) firms were classified in allocation cluster two. This cluster can be described as:

moderate and slightly increasing emphasis on market development for the four years following market entry (averaged approximately 24 percent of total expenditures);

little and decreasing emphasis on product development for the four years following market
entry (averaged approximately 11 percent of total expenditures); and

- heavy and slightly increasing emphasis on manufacturing process for the four years following market entry (averaged approximately 50 percent of total expenditures).

This profile is most consistent with the efficiency approach to resource allocations. Little emphasis is placed on technology development, while only a moderate amount of focus is placed on market development. The major focus is on growth in order to maximize efficiency in the manufacturing process and to ultimately reduce costs and improve profit margins.

A total of 25 firms were classified in the third allocation cluster. This cluster is described as:

- moderate and slightly decreasing emphasis on market development for the four years following market entry (averaged approximately 23 percent of total expenditures);

- high and decreasing emphasis on product development for the four years following market entry (averaged approximately 39 percent of total expenditures); and

- low but rapidly increasing emphasis on manufacturing process for the four years following market
entry (averaged approximately 27 percent of total expenditures).

This cluster is most consistent with the "technology push" approach to resource allocation. In technology push the focus of resource allocation is on product development with little or only a moderate degree of attention given to market considerations. Manufacturing process receives increasing attention throughout the development phase as new technologies are prepared for market entry or improved market applications.

Thus, the three allocation clusters were labeled "Market Pull," "Process Efficiency," and "Technology Push." Means and standard deviations of the input variables are listed in Table 23 for each allocation cluster. One-way analysis of variance procedures revealed significant differences between the allocation clusters for all 12 of the post-entry allocation measures (Table 24). When conducting multiple pairwise comparisons, Duncan's test was used to control the type I comparisonwise error rate. The mean proportion of total expenditures allocated to market development in years one through four were significantly different (p < .05) between allocation cluster Market Pull and both Technology Push and Process Efficiency. The average market development allocation proportions were not significantly different, however, between the Technology
<table>
<thead>
<tr>
<th></th>
<th>Market Development:</th>
<th>Product Development:</th>
<th>Manufacturing:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Year 1</td>
<td>Year 1</td>
<td>Year 1</td>
</tr>
<tr>
<td></td>
<td>Year 2</td>
<td>Year 2</td>
<td>Year 2</td>
</tr>
<tr>
<td></td>
<td>Year 3</td>
<td>Year 3</td>
<td>Year 3</td>
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<tr>
<td></td>
<td>Year 4</td>
<td>Year 4</td>
<td>Year 4</td>
</tr>
<tr>
<td>Market Pull</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(n=36)</td>
<td>0.63 0.18</td>
<td>0.14 0.14</td>
<td>0.12 0.14</td>
</tr>
<tr>
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</tr>
<tr>
<td></td>
<td>0.53 0.16</td>
<td>0.09 0.09</td>
<td>0.11 0.10</td>
</tr>
<tr>
<td></td>
<td>0.50 0.66</td>
<td>0.10 0.10</td>
<td>0.12 0.14</td>
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<tr>
<td>Process Efficiency</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>(n=59)</td>
<td>0.22 0.13</td>
<td>0.12 0.12</td>
<td>0.48 0.19</td>
</tr>
<tr>
<td></td>
<td>0.24 0.13</td>
<td>0.12 0.13</td>
<td>0.50 0.21</td>
</tr>
<tr>
<td></td>
<td>0.25 0.14</td>
<td>0.10 0.11</td>
<td>0.48 0.19</td>
</tr>
<tr>
<td></td>
<td>0.23 0.14</td>
<td>0.08 0.09</td>
<td>0.52 0.20</td>
</tr>
<tr>
<td>Technology Push</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(n=25)</td>
<td>0.17 0.11</td>
<td>0.61 0.21</td>
<td>0.11 0.10</td>
</tr>
<tr>
<td></td>
<td>0.27 0.17</td>
<td>0.40 0.17</td>
<td>0.24 0.15</td>
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<tr>
<td></td>
<td>0.25 0.14</td>
<td>0.30 0.16</td>
<td>0.32 0.18</td>
</tr>
<tr>
<td></td>
<td>0.39 0.16</td>
<td>0.27 0.17</td>
<td>0.42 0.20</td>
</tr>
</tbody>
</table>
TABLE 24

Results of the Analysis of Variance of Annual Post-Entry Allocation Measures by Allocation Cluster

1. Market Development = "MRKT"
2. Product Development = "PROD"
3. Manufacturing Process = "MFTG"

<table>
<thead>
<tr>
<th>Functional Areas</th>
<th>Model</th>
<th>df</th>
<th>Mean Squares</th>
<th>F</th>
<th>w2</th>
</tr>
</thead>
<tbody>
<tr>
<td>MRKT: Year 1</td>
<td>Allocation</td>
<td>2</td>
<td>2.31</td>
<td>113.92***</td>
<td>.66</td>
</tr>
<tr>
<td></td>
<td>Error</td>
<td>117</td>
<td>0.02</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Year 2</td>
<td>Allocation</td>
<td>2</td>
<td>1.29</td>
<td>56.90***</td>
<td>.49</td>
</tr>
<tr>
<td></td>
<td>Error</td>
<td>117</td>
<td>0.02</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Year 3</td>
<td>Allocation</td>
<td>2</td>
<td>0.98</td>
<td>46.34***</td>
<td>.44</td>
</tr>
<tr>
<td></td>
<td>Error</td>
<td>117</td>
<td>0.02</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Year 4</td>
<td>Allocation</td>
<td>2</td>
<td>0.90</td>
<td>39.51***</td>
<td>.40</td>
</tr>
<tr>
<td></td>
<td>Error</td>
<td>117</td>
<td>0.02</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PROD: Year 1</td>
<td>Allocation</td>
<td>2</td>
<td>2.31</td>
<td>109.82***</td>
<td>.65</td>
</tr>
<tr>
<td></td>
<td>Error</td>
<td>117</td>
<td>0.02</td>
<td></td>
<td></td>
</tr>
<tr>
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<td>Allocation</td>
<td>2</td>
<td>0.63</td>
<td>35.03***</td>
<td>.38</td>
</tr>
<tr>
<td></td>
<td>Error</td>
<td>117</td>
<td>0.02</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Year 3</td>
<td>Allocation</td>
<td>2</td>
<td>0.38</td>
<td>26.90***</td>
<td>.32</td>
</tr>
<tr>
<td></td>
<td>Error</td>
<td>117</td>
<td>0.01</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Year 4</td>
<td>Allocation</td>
<td>2</td>
<td>0.32</td>
<td>24.43***</td>
<td>.30</td>
</tr>
<tr>
<td></td>
<td>Error</td>
<td>117</td>
<td>0.01</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MFTG: Year 1</td>
<td>Allocation</td>
<td>2</td>
<td>1.99</td>
<td>88.30***</td>
<td>.60</td>
</tr>
<tr>
<td></td>
<td>Error</td>
<td>117</td>
<td>0.02</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Year 2</td>
<td>Allocation</td>
<td>2</td>
<td>1.13</td>
<td>33.24***</td>
<td>.36</td>
</tr>
<tr>
<td></td>
<td>Error</td>
<td>117</td>
<td>0.03</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Year 3</td>
<td>Allocation</td>
<td>2</td>
<td>0.67</td>
<td>22.24***</td>
<td>.28</td>
</tr>
<tr>
<td></td>
<td>Error</td>
<td>117</td>
<td>0.03</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Year 4</td>
<td>Allocation</td>
<td>2</td>
<td>0.56</td>
<td>16.64***</td>
<td>.22</td>
</tr>
<tr>
<td></td>
<td>Error</td>
<td>117</td>
<td>0.03</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*** p < .0001
Push and Process Efficiency resource allocation profiles/clusters.

Duncan's test for differences in mean proportion of total expenditures allocated to product development after entry revealed that the Technology Push allocation cluster was significantly different from both Market Pull and Process Efficiency. Differences in the average proportional allocations to product development were not significant, however, between Market Pull and Process Efficiency.

For the proportions of total expenditures allocated to manufacturing in each of the four years after market entry, the Process Efficiency cluster was significantly different from both Market Pull and Technology Push except in year one. As expected, however, the proportional allocations to manufacturing in years one through four were not significantly different between the Market Pull and Technology Push clusters except in year four. Table 25 provides the results of the Duncan Multiple Range Tests.

RESULTS OF HYPOTHESIS TESTS

The previous section documented the results of the procedures used to construct the new venture strategy typology and resource allocation classifications. In contrast, this section presents the test results of the
**TABLE 25**

Duncan's Multiple Range Test (DMRT) for Allocation Clusters

<table>
<thead>
<tr>
<th>Allocation</th>
<th>Market Pull (a)</th>
<th>Process Efficiency (b)</th>
<th>Technology Push (c)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>DMRT</td>
<td>Mean</td>
</tr>
<tr>
<td>Market Development</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre-Entry</td>
<td>0.19 b,c</td>
<td>0.06 a</td>
<td>0.03 a</td>
</tr>
<tr>
<td>Year 1</td>
<td>0.63 b,c</td>
<td>0.22 a</td>
<td>0.17 a</td>
</tr>
<tr>
<td>Year 2</td>
<td>0.57 b,c</td>
<td>0.27 a</td>
<td>0.24 a</td>
</tr>
<tr>
<td>Year 3</td>
<td>0.53 b,c</td>
<td>0.25 a</td>
<td>0.25 a</td>
</tr>
<tr>
<td>Year 4</td>
<td>0.50 b,c</td>
<td>0.24 a</td>
<td>0.23 a</td>
</tr>
<tr>
<td>Product Development</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre-Entry</td>
<td>0.26 c</td>
<td>0.24 c</td>
<td>0.61 a,b</td>
</tr>
<tr>
<td>Year 1</td>
<td>0.14 c</td>
<td>0.12 c</td>
<td>0.61 a,b</td>
</tr>
<tr>
<td>Year 2</td>
<td>0.12 c</td>
<td>0.11 c</td>
<td>0.37 a,b</td>
</tr>
<tr>
<td>Year 3</td>
<td>0.10 c</td>
<td>0.09 c</td>
<td>0.29 a,b</td>
</tr>
<tr>
<td>Year 4</td>
<td>0.09 c</td>
<td>0.08 c</td>
<td>0.27 a,b</td>
</tr>
<tr>
<td>Manufacturing</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre-Entry</td>
<td>0.03 b</td>
<td>0.13 a,c</td>
<td>0.09 b</td>
</tr>
<tr>
<td>Year 1</td>
<td>0.12 b</td>
<td>0.48 a,c</td>
<td>0.11 b</td>
</tr>
<tr>
<td>Year 2</td>
<td>0.22 b</td>
<td>0.50 a,c</td>
<td>0.24 b</td>
</tr>
<tr>
<td>Year 3</td>
<td>0.25 b</td>
<td>0.48 a,c</td>
<td>0.32 b</td>
</tr>
<tr>
<td>Year 4</td>
<td>0.30 b,c</td>
<td>0.52 a,c</td>
<td>0.42 a,b</td>
</tr>
</tbody>
</table>

Letter codes indicate significant (p ≤ .05) differences in the respective means.
hypotheses proposed in Chapters IV. Consistent with the manner in which the hypotheses were developed, the results are separated into four major areas: 1) the main effect of new venture strategy on performance; 2) the main effect of resource allocations on performance; 3) the direct association between new venture strategy and resource allocations; and 4) the interaction effect of strategy and allocations on new venture performance.

New Venture Strategy and Performance

As noted in Chapter V, multiple one-way analysis of variance routines were employed to test the significance of differences in the mean level of performance achieved in year four after market entry for different types of new venture strategies. The hypotheses included:

H1: The average level of return on investment achieved in year four will be significantly different for different types of market entry strategies.

H2: The average level of cash flow achieved in year four will be significantly different for different types of market entry strategies.

H3: The average level of relative market share achieved in year four will be significantly different for different types of new venture strategies.

Mean performance levels for both Niche and Differentiation entry strategies are listed in Table 26. From the table, it would appear as though the Niche strategy, while leading to higher levels of cash flow and relative market
share, sacrifices return on investment in comparison to the Differentiation strategy. The Differentiation strategy, on the other hand, though leading to higher average levels of ROI, sacrifices considerable cash flow. Higher levels of cash flow under the Niche strategy may result from the higher relative price and subsequent margins.

Table 26 also presents the results of the separate one-way analysis of variance procedures designed to test, consistent with Hypotheses 1, 2 and 3, whether the differences in the average level of performance depicted in Table 26 were significant. As the results indicate, there were no significant differences in the average level of performance achieved in year four between the different types of market entry strategies. Thus, the main effect of new venture strategy on the fourth-year level of return on investment, cash flow, and relative market share was not significant.

Resource Allocations and New Venture Performance

As indicative of strategy implementation, it was assumed that new venture performance would vary for different clusters of resource allocations. Thus, the hypotheses for testing the relationship between resource allocations and new venture performance were as follows:

H4: The average level of return on investment achieved in year four will be significantly different for different classifications of capital expenditures.
TABLE 26

Results of the Analysis of Variance of Entry Strategy and New Venture Performance

Performance Measures:

1. Return on Investment = "ROI"
2. Cash Flow = "CASH"
3. Relative Market Share = "SHARE"

<table>
<thead>
<tr>
<th>Performance</th>
<th>Model</th>
<th>df</th>
<th>Mean Squares</th>
<th>F</th>
<th>w2</th>
</tr>
</thead>
<tbody>
<tr>
<td>ROI</td>
<td>Strategy</td>
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<td>.00</td>
</tr>
<tr>
<td></td>
<td>Error</td>
<td>118</td>
<td>5504.44</td>
<td></td>
<td></td>
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<tr>
<td>CASH</td>
<td>Strategy</td>
<td>1</td>
<td>3008625.05</td>
<td>1.39</td>
<td>.01</td>
</tr>
<tr>
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<td>Error</td>
<td>118</td>
<td>2162991.24</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SHARE</td>
<td>Strategy</td>
<td>1</td>
<td>0.03</td>
<td>0.01</td>
<td>.00</td>
</tr>
<tr>
<td></td>
<td>Error</td>
<td>114</td>
<td>5.14</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: None of the F values are significant.

Means and Standard Deviations for Each Performance Variable by Strategy Type

<table>
<thead>
<tr>
<th>Performance</th>
<th>Niche (n=55)</th>
<th>Differentiation (n=66)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>SD</td>
</tr>
<tr>
<td>ROI</td>
<td>-11.38</td>
<td>61.81</td>
</tr>
<tr>
<td>CASH</td>
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<td>1712.28</td>
</tr>
<tr>
<td>SHARE</td>
<td>0.69</td>
<td>3.27</td>
</tr>
</tbody>
</table>
H5: The average level of cash flow achieved in year four will be significantly different for different classifications of capital expenditures.

H6: The average level of relative market share achieved in year four will be significantly different for different classifications of capital expenditures.

The mean and standard deviations of the performance variables are listed for each allocation classification in Table 27. A cursory review of the performance means suggests that the cost control and volume growth dimensions associated with the Process Efficiency allocation pattern lead to higher levels of return on investment and cash flow. Because of the common need to pioneer new markets created by technological advancements, the Technology Push classification appeared to lead to higher relative market share at the cost of substantially lower levels of return on investment and cash flow. Though contrary to what may be expected, the Market Pull allocation classification did not lead to a higher level of relative market share.

Table 27 also reveals the results of the analysis of variance procedure designed to test the significance of the observed differences in performance between allocation classifications. As depicted, the differences between allocation classifications approach significance (p < .10) for both return on investment and relative market share. Differences are not significant, however, for average level of cash flow achieved in year four after entry. Results of
TABLE 27

Results of the Analysis of Variance of Allocation Classification and New Venture Performance

Performance Measures:
1. Return on Investment = "ROI"
2. Cash Flow = "CASH"
3. Relative Market Share = "SHARE"

<table>
<thead>
<tr>
<th>Performance</th>
<th>Model</th>
<th>df</th>
<th>Mean Squares</th>
<th>F</th>
<th>w2</th>
</tr>
</thead>
<tbody>
<tr>
<td>ROI</td>
<td>Allocation</td>
<td>2</td>
<td>15896.60</td>
<td>3.00*</td>
<td>.05</td>
</tr>
<tr>
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<td>Error</td>
<td>116</td>
<td>5305.12</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CASH</td>
<td>Allocation</td>
<td>2</td>
<td>4425314.23</td>
<td>2.06</td>
<td>.03</td>
</tr>
<tr>
<td></td>
<td>Error</td>
<td>117</td>
<td>2149542.74</td>
<td></td>
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</tr>
<tr>
<td>SHARE</td>
<td>Allocation</td>
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<td>14.42</td>
<td>2.90*</td>
<td>.05</td>
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<tr>
<td></td>
<td>Error</td>
<td>112</td>
<td>4.97</td>
<td></td>
<td></td>
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</tbody>
</table>

* p < .10

Means and Standard Deviations for Each Performance Variable by Allocation Classification

<table>
<thead>
<tr>
<th>Market Pull</th>
<th>Process Efficiency</th>
<th>Technology Push</th>
</tr>
</thead>
<tbody>
<tr>
<td>(n=36)</td>
<td>(n=59)</td>
<td>(n=25)</td>
</tr>
<tr>
<td>Mean</td>
<td>SD</td>
<td>Mean</td>
</tr>
<tr>
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<td>70.57</td>
</tr>
<tr>
<td>CASH</td>
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<td>947.32</td>
</tr>
<tr>
<td>SHARE</td>
<td>0.27</td>
<td>0.33</td>
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</tbody>
</table>
Duncan's Multiple Range Test for differences in multiple pairwise comparisons are illustrated in Table 28. The average level of return on investment in year four was greatest for the Process Efficiency allocation classification. The average return achieved for Process Efficiency (7.82) was significantly different from the average return achieved by the Technology Push allocation cluster (-31.35). The average return for Process Efficiency was not significantly different, however, from the average level of return achieved for the Market Pull classification (-18.08), nor was the difference between the Technology Push and Market Pull classifications significant (Table 28).

There were no significant differences in the average level of cash flow achieved in year four between the allocation clusters. The average level of relative market share achieved in the Technology Push allocation cluster (1.57), however, was significantly different from that of Market Pull (.27) and Process Efficiency (.39). A mean value greater than one for relative market share means that firms pursuing a Technology Push allocation approach dominated (i.e., were share leaders in) their respective markets.

New Venture Strategy and Resource Allocations

As noted, resource allocations represent the actions in carrying out planned strategy. As such, the literature
TABLE 28

Duncan's Multiple Range Test (DMRT) for Differences in Performance for Allocation Clusters

Performance Measures:
1. Return on Investment = "ROI"
2. Cash Flow = "CASH"
3. Relative Market Share = "SHARE"

<table>
<thead>
<tr>
<th>Performance</th>
<th>Market Pull (a)</th>
<th>Process Efficiency (b)</th>
<th>Technology Push (c)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>DMRT</td>
<td>Mean</td>
</tr>
<tr>
<td>ROI</td>
<td>-18.08</td>
<td>7.82 c</td>
<td>-31.35</td>
</tr>
<tr>
<td>CASH</td>
<td>-477.00</td>
<td>2.40</td>
<td></td>
</tr>
<tr>
<td>SHARE</td>
<td>0.27 c</td>
<td>0.39 c</td>
<td>1.57</td>
</tr>
</tbody>
</table>

Letter codes indicate significant (p ≤ .05) differences in the respective means.
suggests at least a conceptual link between the strategy planned and the actions involved in implementation. The literature defines resource allocations as a critical dimension in strategy implementation. The hypothesis proposed in this study regarding the relationship between strategy and resource allocations was as follows:

H7: There will be a significant association between new venture strategy and capital expenditures across functional areas over time.

A chi-square analysis was conducted, as proposed in Chapter V, to test the degree of independence between new venture strategy and resource allocations patterns. The resulting Pearson chi-square statistic and its significance are reported as a measure of the degree of association between strategy types and expenditure classifications. The results of the chi-square analysis are presented in Table 29.

Contrary to much of the conceptual argument concerning the relationship between strategy formulation and strategy implementation, the chi-square results suggest that the level of association between new venture strategy as planned and the manner in which limited start-up resources are allocated is not significant. The non-significant chi-square suggests that entry strategy and resource allocations, as modeled in this study, are independent of one another. In other words, the manner in which start-up firms allocate resources across functional areas over time
### TABLE 29

Chi-Square Test of Association Between New Venture Strategy and Resource Allocations

<table>
<thead>
<tr>
<th>STRATEGIES</th>
<th>Market Pull</th>
<th>Process Efficiency</th>
<th>Technology Push</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Niche</td>
<td>18</td>
<td>24</td>
<td>13</td>
<td>55</td>
</tr>
<tr>
<td>Differentiation</td>
<td>18</td>
<td>35</td>
<td>12</td>
<td>65</td>
</tr>
</tbody>
</table>

Chi-Square:

\[ df = 2 \]
\[ Value = 1.266 \]
\[ Probability = 0.531 \]
appears not to be dependent upon the type of strategy pursued. This is somewhat surprising given the intuitive basis on which researchers discriminate between Niche and Differentiation strategies.

New Venture Strategy, Resource Allocations, and Performance

The primary underlying assumption in this study was that specific strategies would lead to distinct resource allocation patterns, which, in turn, would lead to distinct levels of performance. The hypothesis designed to test the interaction between new venture strategy and resource allocations was stated as:

H8: There will be a significant interaction between new venture strategy and allocation classifications on new venture performance.

The analytical technique proposed for testing the interaction effects included a two-way analysis of variance. Due to unequal cell sizes in the resulting two-by-three factorial design, however, general linear modeling was utilized. The results of the analysis are presented in Table 30.

The interaction between strategy and allocation approached significance (p < .10) for average return on investment in year four. The interaction was not significant, however, for either cash flow or relative market share. The respective performance means are listed in Table 31 for each strategy/allocation combination in the
### TABLE 30

Results of the Test for Interaction Between New Venture Strategy and Resource Allocations on Performance

**Performance Measures:**

1. Return on Investment = "ROI"
2. Cash Flow = "CASH"
3. Relative Market Share = "SHARE"

<table>
<thead>
<tr>
<th>Model</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>w2</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ROI</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Strategy X Allocation</td>
<td>2</td>
<td>9399.37</td>
<td>1.78*</td>
<td>0.08</td>
</tr>
<tr>
<td>Error</td>
<td>113</td>
<td>5278.92</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>CASH</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Strategy X Allocation</td>
<td>2</td>
<td>1082262.65</td>
<td>0.50</td>
<td>0.05</td>
</tr>
<tr>
<td>Error</td>
<td>114</td>
<td>2159606.11</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>SHARE</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Strategy X Allocation</td>
<td>2</td>
<td>0.75</td>
<td>0.15</td>
<td>0.05</td>
</tr>
<tr>
<td>Error</td>
<td>109</td>
<td>5.10</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* = p < .10
TABLE 31

Duncan's Multiple Range Test (DMRT) for Differences in Performance for Strategy and Allocation Interactions

Performance Measures:

1. Return on Investment  = "ROI"
2. Cash Flow  = "CASH"
3. Relative Market Share  = "SHARE"

<table>
<thead>
<tr>
<th>Performance by Strategy</th>
<th>Market Pull</th>
<th>Process Efficiency</th>
<th>Technology Push</th>
</tr>
</thead>
<tbody>
<tr>
<td>Niche</td>
<td>Mean  Mean  Mean</td>
<td>DMRT   DMRT   DMRT</td>
<td>b   a   b</td>
</tr>
<tr>
<td>Different'n</td>
<td>-30.37 c   4.59 a 4.59 a</td>
<td>-50.86 b</td>
<td></td>
</tr>
<tr>
<td></td>
<td>-5.79 9.94 c c c</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

ROI:                      |

CASH:                     |

SHARE:                    |

Letter codes indicate significant (p ≤ .05) differences in the respective means.
two-by-three factorial design. The results of Duncan's Multiple Range Test conducted for multiple strategy/allocation pairwise comparisons are also reported.

The results presented in Table 31 suggest that the greatest level of average return on investment was achieved by those firms maintaining a Process Efficiency approach to resource allocations while pursuing a Differentiation strategy (9.94). However, this level was not significantly different from firms maintaining the same approach to allocating resources while pursuing a Niche strategy (4.59). This finding is consistent with the individual analysis of variance tests, which indicated that differences in the level of performance were not significant for different types of strategies but were moderately significant for different allocation patterns. In support of the moderate strategy/allocation interaction effect for average return on investment, differences were significant between those firms maintaining a Technology Push approach to allocations while pursuing a Differentiation strategy and all firms pursuing a Process Efficiency approach to allocations regardless of the type of strategy formulated. However, the negative sign for the average level of return achieved using a Technology Push approach to resource allocations while pursuing a Differentiation strategy (-50.86) indicates that this is the worst effect on ROI of all strategy/allocation combinations.
The greatest level of cash flow (373.90) was achieved via a Process Efficiency approach to resource allocations while pursuing a Niche entry strategy. However, none of the differences studied in the multiple pairwise comparisons was significant for the average level of cash flow achieved in the fourth year. The greatest level of relative market share was achieved by those firms employing a Technology Push approach to resource allocations while pursuing a Niche entry strategy (2.10). This level of relative market share was significantly different for all comparisons except for that of firms pursuing a Differentiation strategy while also employing a Technology Push approach to allocating capital (.94). This, again, supports the conclusion derived from the one-way analysis of variance tests, which suggested that the manner in which a firm allocates resources (i.e., strategy implementation) has a greater influence on new venture performance than the type of strategy formulated. A detailed discussion of these findings and the likely implications for strategy research follows in Chapter VII.

SUMMARY

In order to test the hypotheses as proposed it was necessary to structure entry strategy typology and resource allocation classifications. Two distinct entry strategies
were identified. From the component variables and earlier research literature it was determined that these strategies were most consistent with Porter's generic strategies of Niche and Differentiation. Analysis of variance procedures on the six input factors revealed that the strategies were distinct from one another with respect to Product/Market Breadth, Relative Quality, Perceived Image, and Market Penetration. Though differences were observed in the mean values for both Market Fit and Relative Price, the differences were not significant between strategy types.

Three distinct resource allocation patterns were identified from the average proportions of total expenditures allocated to market development, product development, and manufacturing in each of the four years after market entry. The patterns were labeled Market Pull, Process Efficiency, and Technology Push. Analysis of variance procedures revealed significant differences between the allocation clusters for all of the input measures. Results of Duncan's Multiple Range Test indicated that the proportion of total expenditures allocated to market development was significantly higher for the Market Pull allocation cluster. The proportion of total expenditures allocated for product development was significantly higher for the Technology Push allocation cluster. The proportion of expenditures allocated to manufacturing was greatest for the Process Efficiency allocation cluster.
The research hypotheses suggested that both strategy and resource allocations would lead to distinct levels of new venture performance. The results indicated, however, that the level of performance was not influenced by the type of strategy pursued. Significant differences in performance were obtained, however, under different resource allocation classifications. The average level of return on investment was greatest for the Process Efficiency allocation classification. While there were no significant differences in the average level of cash flow achieved, the average level of relative market share achieved via Technology Push was significantly greater than that achieved under either Market Pull or Process Efficiency.

Perhaps most surprising, given the arguments presented in the research literature, was the lack of association between the type of entry strategy and the manner in which critical resources are allocated. Chi-square results were insignificant, indicating that entry strategy and resource allocations are independent phenomenon in venture start-up.

For the most part, tests of the interaction effects of strategy and allocations on new venture performance were also insignificant, though the effect for return on investment did approach significance. Duncan's Multiple Range Test indicated that the Process Efficiency approach to resource allocations led to the highest level of return on investment, regardless of the type of strategy pursued. The
ROI achieved for these combinations, however, was significantly different from only the level of return achieved via the Technology Push approach to allocations while pursuing a Differentiation strategy.
CHAPTER VII
DISCUSSION AND CONCLUSIONS

This chapter presents a detailed discussion of the research findings, presents conclusions drawn from the analyses, and identifies specific implications of the results. The chapter is divided into six major sections. The first discusses the findings concerning differences in new venture performance for different entry strategies. The second details the findings concerning the association between strategy types and resource allocation patterns. The results of a series of post hoc analyses are also reported for both strategy and performance and strategy and allocations.

Section three presents an insightful look at the findings regarding the interaction effects between strategy type and allocation classification on new venture performance. The fourth section documents the major theoretical issues surrounding the research findings, particularly the issues of strategic control, organizational learning, the complexity of the performance construct, and role of managerial intentions. Section five highlights the primary methodological considerations which might have
contributed to the findings, including the complexity of the PIMS model, omission of key strategic variables, retrospective and cross-sectional analyses, and a lack of consideration for contextual factors. Future research directions are also explored on the basis of the major theoretical and methodological issues identified in sections four and five. The chapter concludes with a brief look at the major implications of the research findings for practicing managers.

STRATEGY AND PERFORMANCE

The fact that differences in performance were not observed between types of entry strategies is inconsistent with much of the previous research linking business strategy and performance. As noted in Chapter III, MacMillan and Day (1987) concluded that levels of most of the key strategy options selected at the point of market entry are significantly correlated with return on investment in the fourth year of operations. Contrasting Porter's (1980) generic strategies, Sandberg (1986) and Sandberg and Hofer (1986) found that a differentiation strategy was superior to both a cost leadership and focus strategy. Van de Ven et al. (1984), however, associated new venture success with a niche or focus start-up and incremental expansion.
For corporate new ventures in particular, Williams et al. (1991) showed that the interaction of strategy and certain intangible assets was significant in explaining the variation in new venture performance. Miller and Camp (1985) found that adolescent businesses pursuing a differentiation strategy had higher profits than all other firms. Biggadike (1979), exploring how firms enter their chosen markets, noted that an aggressive entry was highly correlated with superior returns on investment. Hobson and Morrison (1983) confirmed Biggadike's findings that aggressive marketing maneuvers were correlated with success in market share gain among new ventures.

**Post Hoc Analyses**

Because of the inconsistency with the findings in this study and those of previous studies, post hoc analyses involved regressing each measure of firm performance against the original components used to derive the strategy typology. This provided insight into which components were most influential on firm performance within each strategy cluster. The question arose as to whether the strategy components which were used to derive strategy types were significant determinants of new venture performance. Results of the post hoc regression procedures for return on investment, cash flow, and relative market share are reported in Tables 32, 33, and 34 respectively.
### TABLE 32

Results of the Regression Analysis Relating Return on Investment to the Component Variables for Strategy Types

<table>
<thead>
<tr>
<th></th>
<th>Estimated B</th>
<th>Standard Error</th>
<th>Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Return on Investment</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Niche: (n=55)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intercept</td>
<td>-7.74</td>
<td>8.54</td>
<td>.37</td>
</tr>
<tr>
<td>Product/Market Breadth</td>
<td>11.00</td>
<td>8.81</td>
<td>.22</td>
</tr>
<tr>
<td>Relative Quality</td>
<td>-2.80</td>
<td>6.15</td>
<td>.65</td>
</tr>
<tr>
<td>Perceived Image</td>
<td>13.20</td>
<td>6.85</td>
<td>.06</td>
</tr>
<tr>
<td>Market Penetration</td>
<td>-18.33</td>
<td>7.85</td>
<td>.02</td>
</tr>
<tr>
<td>Market Fit</td>
<td>9.46</td>
<td>5.80</td>
<td>.11</td>
</tr>
<tr>
<td>Relative Price</td>
<td>-9.35</td>
<td>7.58</td>
<td>.22</td>
</tr>
</tbody>
</table>

Adjusted R-Square = .15

**Differentiation: (n=66)**

<table>
<thead>
<tr>
<th></th>
<th>Estimated B</th>
<th>Standard Error</th>
<th>Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>-15.35</td>
<td>20.48</td>
<td>.46</td>
</tr>
<tr>
<td>Product/Market Breadth</td>
<td>17.50</td>
<td>12.09</td>
<td>.15</td>
</tr>
<tr>
<td>Relative Quality</td>
<td>7.03</td>
<td>18.56</td>
<td>.71</td>
</tr>
<tr>
<td>Perceived Image</td>
<td>-3.53</td>
<td>16.96</td>
<td>.84</td>
</tr>
<tr>
<td>Market Penetration</td>
<td>1.38</td>
<td>17.04</td>
<td>.94</td>
</tr>
<tr>
<td>Market Fit</td>
<td>-36.80</td>
<td>17.68</td>
<td>.04</td>
</tr>
<tr>
<td>Relative Price</td>
<td>39.20</td>
<td>19.59</td>
<td>.05</td>
</tr>
</tbody>
</table>

Adjusted R-Square = .07
TABLE 33

Results of the Regression Analysis Relating Cash Flow to the Component Variables for Strategy Types

<table>
<thead>
<tr>
<th>Cash Flow</th>
<th>Estimated</th>
<th>Standard Error</th>
<th>Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Niche: (n=55)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intercept</td>
<td>-313.06</td>
<td>269.14</td>
<td>.25</td>
</tr>
<tr>
<td>Product/Market Breadth</td>
<td>-58.64</td>
<td>276.58</td>
<td>.83</td>
</tr>
<tr>
<td>Relative Quality</td>
<td>21.62</td>
<td>192.88</td>
<td>.91</td>
</tr>
<tr>
<td>Perceived Image</td>
<td>-115.01</td>
<td>213.83</td>
<td>.59</td>
</tr>
<tr>
<td>Market Penetration</td>
<td>-241.68</td>
<td>246.00</td>
<td>.33</td>
</tr>
<tr>
<td>Market Fit</td>
<td>-56.27</td>
<td>182.80</td>
<td>.76</td>
</tr>
<tr>
<td>Relative Price</td>
<td>-34.98</td>
<td>234.58</td>
<td>.88</td>
</tr>
</tbody>
</table>

Adjusted R-Square = .00

Differentiation: (n=66)

<table>
<thead>
<tr>
<th>Cash Flow</th>
<th>Estimated</th>
<th>Standard Error</th>
<th>Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>-386.48</td>
<td>290.38</td>
<td>.19</td>
</tr>
<tr>
<td>Product/Market Breadth</td>
<td>-10.30</td>
<td>171.35</td>
<td>.95</td>
</tr>
<tr>
<td>Relative Quality</td>
<td>344.01</td>
<td>263.04</td>
<td>.20</td>
</tr>
<tr>
<td>Perceived Image</td>
<td>-219.65</td>
<td>240.36</td>
<td>.37</td>
</tr>
<tr>
<td>Market Penetration</td>
<td>284.16</td>
<td>241.57</td>
<td>.25</td>
</tr>
<tr>
<td>Market Fit</td>
<td>-284.31</td>
<td>250.67</td>
<td>.26</td>
</tr>
<tr>
<td>Relative Price</td>
<td>509.13</td>
<td>277.69</td>
<td>.07</td>
</tr>
</tbody>
</table>

Adjusted R-Square = .06
TABLE 34

Results of the Regression Analysis Relating Relative Market Share to the Component Variables for Strategy Types

<table>
<thead>
<tr>
<th></th>
<th>Estimated B</th>
<th>Standard Error</th>
<th>Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Niche: (n=55)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intercept</td>
<td>0.95</td>
<td>0.41</td>
<td>.02</td>
</tr>
<tr>
<td>Product/Market Breadth</td>
<td>0.24</td>
<td>0.42</td>
<td>.56</td>
</tr>
<tr>
<td>Relative Quality</td>
<td>-0.76</td>
<td>0.30</td>
<td>.01</td>
</tr>
<tr>
<td>Perceived Image</td>
<td>-0.38</td>
<td>0.32</td>
<td>.24</td>
</tr>
<tr>
<td>Market Penetration</td>
<td>0.42</td>
<td>0.39</td>
<td>.29</td>
</tr>
<tr>
<td>Market Fit</td>
<td>0.85</td>
<td>0.28</td>
<td>.00</td>
</tr>
<tr>
<td>Relative Price</td>
<td>-1.55</td>
<td>0.36</td>
<td>.00</td>
</tr>
</tbody>
</table>

Adjusted R-Square = .29

**Differentiation: (n=66)**

<table>
<thead>
<tr>
<th></th>
<th>Estimated B</th>
<th>Standard Error</th>
<th>Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>0.18</td>
<td>0.18</td>
<td>.32</td>
</tr>
<tr>
<td>Product/Market Breadth</td>
<td>0.31</td>
<td>0.11</td>
<td>.01</td>
</tr>
<tr>
<td>Relative Quality</td>
<td>-0.26</td>
<td>0.17</td>
<td>.14</td>
</tr>
<tr>
<td>Perceived Image</td>
<td>0.22</td>
<td>0.16</td>
<td>.19</td>
</tr>
<tr>
<td>Market Penetration</td>
<td>0.03</td>
<td>0.15</td>
<td>.82</td>
</tr>
<tr>
<td>Market Fit</td>
<td>-0.03</td>
<td>0.16</td>
<td>.83</td>
</tr>
<tr>
<td>Relative Price</td>
<td>-0.01</td>
<td>0.17</td>
<td>.95</td>
</tr>
</tbody>
</table>

Adjusted R-Square = .19
For the average level of return on investment achieved in year four after market entry, the majority of the components were not significant for both the niche and differentiation strategies (Table 32). For a niche strategy, the key determinants of return on investment were Perceived Image and Market Penetration. For differentiation, on the other hand, the key determinants were Market Fit and Relative Price. These results suggest that firms pursuing a niche strategy and which are perceived favorably in the marketplace and focus on a smaller number of large customers should generate increased levels of return on investment. For firms pursuing a Differentiation strategy, however, the results suggest that the level of return on investment is determined by whether the products are compatible with the existing applications in the market, whether the existing supply chain is utilized, and whether the price is relatively higher than the leading competitors.

Neither of the strategy components proved to be significant determinants of the average level of cash flow achieved in the fourth year after market entry (Table 33). For relative market share, however, the significant components under the niche strategy were Relative Quality, Market Fit and Relative Price (Table 34). For differentiation, Product/Market Breadth was the only significant determinant of the fourth-year level of market share achieved relative to the leading competitors.
At least part of the explanation for why the findings of this study are inconsistent with those of earlier studies examining strategy and performance in new ventures may depend upon Porter's (1980) contention that niche and differentiation strategies are not mutually exclusive. Differentiation, as the name implies, involves creating a defensible competitive position by differentiating product/service offerings along dimensions that are valued in the marketplace. The core of the niche strategy is "built around serving a particular target very well, and each functional policy is developed with this in mind" (Porter, 1980). Niche strategies consist of establishing a cost leadership or differentiation position within a select segment of the total industry. Thus, for start-up ventures entering a new market, it is possible that little difference would be observed in a firm pursuing differentiation industry-wide (i.e., differentiation strategy) and a firm pursuing differentiation for a particular segment of the industry (i.e., niche strategy).

Similarities in niche and differentiation strategies also influence the level of performance achieved under each strategy, respectively. Porter (1980: p. 39) noted that a firm achieving a niche strategy may "potentially earn above-average returns for its industry." Likewise, "differentiation, if achieved, is a viable strategy for earning above-average returns" (Porter, 1980: p. 37). Porter (1980: p.
38) also states that because of a perception of exclusivity, "achieving differentiation may sometimes preclude gaining a high market share." Though differences were observed in the return on investment and relative market share between ventures pursuing niche and differentiation strategies, these differences were not significant (Table 26).

STRATEGY AND RESOURCE ALLOCATIONS

Perhaps the most significant finding of this study was the lack of association between strategy types and resource allocation patterns. The degree to which allocation patterns are independent from the type of strategy pursued challenges much of the strategic management literature which suggests that implementation follows, and is uniquely dependent upon, formulation. The difficulty stems from the logic that business strategy leads to performance through the actions of the firm. From the results of this study, questions arise concerning the "true" (i.e., scientific) link between strategy and performance if the actions required to carry out planned strategy are in no way unique to that strategy.

The normative aspect of strategic management requires that implementation actions be consistent with strategy as planned. If we can conceptually distinguish between firms
by type of strategy, how is it that those differences would not be consistent in the decisions required to carry out those strategies? Niche and differentiation strategies are generally argued to represent unique competitive postures in the marketplace and the findings of this study would empirically support that proposition. However, the findings of this study also suggest that the differences between niche and differentiation strategies as planned do not influence the manner in which critical resources are allocated across functional areas.

With regard to the relationship between strategy and resource allocations, the findings of this study are inconsistent with several previous studies. Rumelt (1974) and Hofer (1973) argued that the success of business level strategy is dependent upon critical resource deployments. Buzzell and Chussil (1985), likewise, reported that one of the primary reasons why corporate ventures fail is the lack of financial resources to fund market entry strategies. Kuratko et al. (1990) identified resource availability as one of three factors crucial to successfully implementing entrepreneurial ventures within corporations. In a detailed study of new product innovation, Knight (1987) found similar results, that successful firms devote adequate time and resources to implementing creative ideas.

Bart (1987) conducted an in-depth study of products managed by product managers in five large consumer packaged
goods companies. The study showed that products managed under a growth strategy had more advertising related activities, while those managed under a harvest approach employed more trade-related activities. In a similar manner, Parry et al. (1991) and Kluyver and Pessemier (1986) studied the budgeting techniques used for implementing various marketing strategies. Both studies empirically linked marketing budgets with specific marketing strategies.

As noted in Chapter II, Lapides and Ottensmeyer (1990) linked business level strategy with resource allocations in new ventures. They found that higher levels of research and development expenditures corresponded with technology-based strategy. Also, high levels of advertising expenditures represented marketing-based strategy, while increases in fixed assets represented manufacturing-based strategy. They showed empirically that through the analysis of spending patterns a firm's competitive strategy could be identified.

Porter (1980) noted that successfully implementing differentiation and niche strategies requires different resources and different skills. This proposition further suggests that how resources and skills are allocated should be associated with each strategy. Results of the chi-square test of association, however, suggests that no such association exists. As with differences in performance between types of strategies, a partial explanation for no association between allocations and strategy type could be the fact
that the two strategies may only differ in terms of product/market breadth. This explanation is challenged by the results of the discriminant analysis, however, which correctly discriminated between niche and differentiation strategies for over 95 percent of the ventures on the six strategy components.

Post Hoc Analyses

Post hoc strategy and allocations analyses were derived from the assumption that, though resource allocation patterns may not be directly associated with particular strategies, differences should be observed in specific annual expenditures in different functional areas for different types of entry strategies. If strategies as planned are related to strategies as implemented, as suggested in the research literature, this relationship should be observed in the association between the content of the strategy formulated and management's efforts to carry out that strategy within the same unit of analysis. In other words, though there was no association with unique allocation patterns, differences should emerge in the specific component measures used to derive those patterns. The hypotheses designed to test for these differences were:

H1: The average proportion of total expenditures allocated to market development in each year after market entry will be significantly different for different entry strategies.
H2: The average proportion of total expenditures allocated to product development in each year after market entry will be significantly different for different entry strategies.

H3: The average proportion of total expenditures allocated to manufacturing in each year after market entry will be significantly different for different entry strategies.

In addition to differences in specific allocation measures, it was also hypothesized that the average annual proportions of expenditures for each functional area would be unique before and after market entry for different types of new venture strategies. The hypotheses designed to test for such differences were as follows:

H4: The average annual proportion of total expenditures allocated to market development prior to market entry will be significantly different for different entry strategies.

H5: The average annual proportion of total expenditures allocated to market development after market entry will be significantly different for different entry strategies.

H6: The average annual proportion of total expenditures allocated to product development prior to market entry will be significantly different for different entry strategies.

H7: The average annual proportion of total expenditures allocated to product development after market entry will be significantly different for different entry strategies.

H8: The average annual proportion of total expenditures allocated to manufacturing prior to market entry will be significantly different for different entry strategies.

H9: The average annual proportion of total expenditures allocated to manufacturing after market entry will be significantly different for different entry strategies.
Multiple one-way analysis of variance procedures were employed to test for the differences proposed in Hypotheses 1 through 9. When testing for differences in proportions between strategy types, the proportions were assumed to be normally distributed. The normal approximation is appropriate 1) if the number of firms times the average proportion for each expenditure is greater than or equal to five (i.e., \( n(p) \leq 5 \)), and 2) if the number of firms times one minus the average proportion for each expenditure is greater than or equal to five (i.e., \( n(1-p) \leq 5 \)) (Hildebrand and Ott, 1991). All of the allocation measures for each strategy type adhered to these criteria. Thus, the normal approximation was considered valid for the analysis of variance procedures. Means and standard deviations for each of the allocation measures are listed by strategy in Table 35. The results of the analysis of variance tests for Hypotheses 1-3 are listed in Table 36. The results for Hypotheses 4-9 are listed in Table 37.

As the results indicate, none of the differences in the specific allocation measures proved to be significant between types of entry strategies. The difference in the proportion of total expenditures allocated to manufacturing in the first year after market entry, however, did approach significance (\( p < .10 \)). The lack of significant differences suggests that the manner in which firms allocate limited
TABLE 35  
Means and Standard Deviations for Specific Allocation Measures by Strategy Type

<table>
<thead>
<tr>
<th>Niche Differentiation</th>
<th>Mean</th>
<th>SD</th>
<th>Mean</th>
<th>SD</th>
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<tr>
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<td>0.07</td>
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</tr>
<tr>
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<td>0.27</td>
<td>0.33</td>
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<tr>
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<td>0.34</td>
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</tr>
<tr>
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<td>Year 4</td>
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<td>Product Development:</td>
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<td></td>
</tr>
<tr>
<td>Average Before Entry</td>
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</tr>
<tr>
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<td></td>
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<tr>
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<td>Strategy</td>
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<td>0.00</td>
<td>0.04</td>
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<tr>
<td></td>
<td>Error</td>
<td>119</td>
<td>0.04</td>
<td></td>
</tr>
</tbody>
</table>

*p < .10
TABLE 37
Results of the Analysis of Variance of Annual Post-Entry Allocation Measures by Strategy

1. Market Development = "MARKET"
2. Product Development = "PRODUCT"
3. Manufacturing Process = "MANUFACTURING"

<table>
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<th>Model</th>
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<th>Mean Squares</th>
<th>F</th>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MARKET:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre-Entry</td>
<td>Strategy</td>
<td>1</td>
<td>0.00</td>
<td>0.09</td>
<td>.00</td>
</tr>
<tr>
<td></td>
<td>Error</td>
<td>119</td>
<td>0.05</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Post-Entry</td>
<td>Strategy</td>
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<td>0.01</td>
<td>0.40</td>
<td>.00</td>
</tr>
<tr>
<td></td>
<td>Error</td>
<td>119</td>
<td>0.04</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PRODUCT:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre-Entry</td>
<td>Strategy</td>
<td>1</td>
<td>0.01</td>
<td>0.09</td>
<td>.00</td>
</tr>
<tr>
<td></td>
<td>Error</td>
<td>119</td>
<td>0.15</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Post-Entry</td>
<td>Strategy</td>
<td>1</td>
<td>0.00</td>
<td>0.01</td>
<td>.00</td>
</tr>
<tr>
<td></td>
<td>Error</td>
<td>119</td>
<td>0.02</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MANUFACTURING:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre-Entry</td>
<td>Strategy</td>
<td>1</td>
<td>0.02</td>
<td>0.66</td>
<td>.01</td>
</tr>
<tr>
<td></td>
<td>Error</td>
<td>119</td>
<td>0.03</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Post-Entry</td>
<td>Strategy</td>
<td>1</td>
<td>0.03</td>
<td>0.69</td>
<td>.01</td>
</tr>
<tr>
<td></td>
<td>Error</td>
<td>119</td>
<td>0.04</td>
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<td></td>
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</tbody>
</table>
financial capital in the pursuit of specific entry strategies is not different between strategies.

Despite the significant conceptual differences between niche and differentiation strategies as formulated, no differences exist in the amount of money allocated to market development, product and process development, or manufacturing during implementation. Thus, not only is there no direct association between distinct strategies and distinct resource allocation patterns, but no significant differences can be found in the manner in which firms, under different strategic initiatives, allocate limited start-up capital. These findings confirm the lack of association found in the chi-square analysis presented in Chapter VI.

**Strategy, Allocations, and Performance**

The results of this study suggest that not only is there no direct association between strategy and resource allocation patterns, but the interaction effects are also not significant with regard to performance. For the most part, differences in mean level performance were not significant between the six strategy/allocation classifications in the two by three factorial design. These findings not only challenge the formal systems approach to strategic planning, but, for various theoretical reasons, also challenge the strategic management paradigm as a whole.
Currently, the strategic management paradigm holds that firm performance is dictated by strategy implementation, while implementation directly follows formulation (Schendel and Hofer, 1979). Strategies are formulated to produce the stated goals and objectives of the firm. The research literature identifies two feedback mechanisms which serve to complete the strategic management process by linking firm performance with the process of goal formulation. These mechanisms include strategic control and organizational learning. Both strategic control and organizational learning provide valuable insight into why the findings in this study were inconsistent with much of the understanding of the relationship between strategy and performance.

Explanations for the inconsistency between the findings of this study and those of earlier studies of the relationship between strategy, allocations and performance include both theoretical and methodological issues. Theoretical issues include the role of emergent strategy, logical incrementalism, strategic control/learning, the role of managerial intentions, and selecting appropriate performance measures. Methodological issues, on the other hand, are comprised of the complexity of the PIMS strategy model, omission of key component variables, retrospective and cross-sectional research design, and contextual considerations. The theoretical and methodological issues are discussed in the following sections, respectively.
THEORETICAL ISSUES

In an attempt to explain the findings of this study, four theoretical issues currently being discussed in the strategy literature are reviewed for their insight. The issues include: 1) deliberate versus emergent strategy; 2) logical incrementalism; 3) operationalizing the performance construct; and 4) strategic intentions. Each of these issues is discussed below. In addition, the emphasis of emergent strategy and logical incrementalism on the learning process requires a brief look at the nature of strategic control/learning.

**Emergent Strategy**

Mintzberg and Waters (1985) identified two types of business strategies: intended and realized. A realized strategy that is identical to the strategy that management intended is said to be 'deliberate.' Realized strategies that are different from that which was intended, however, are referred to as 'emergent.' As a result of realizing a strategy that was not intended, Mintzberg and Waters (1985) defined emergent strategy as "unintended order." The concept, they argue, is not meant to infer that management has lost control of the organization. Rather, quite the contrary, management's on-going strategic decisions and the resulting organizational actions lead to a sense of purpose
and direction which could not have been intentionally determined.

At first, it appears as though the concept of emergent strategy is suggesting that it is difficult to distinguish between strategies formulated and strategies implemented. However, the findings of this study indicated that the two are in no way associated with one another. In order to understand the contribution that emergent strategy makes in light of the results of this study, we must go back, as Mintzberg (1991) says, to the point at which we, as researchers, create for ourselves the distinction between formulation and implementation. In emergent strategy, the two processes are derived from the same dimension. However, the traditional systems approach to strategic planning distinguishes between the two as thought (formulation) and action (implementation). Where emergent strategy seems to have its greatest impact is in changing how researchers perceive of the processes. If they both are from the same dimension, the question concerning the relationship between them is unnecessary.

**Logical Incrementalism**

Quinn's (1980) concept of logical incrementalism is similar to Mintzberg's 'emergent strategy' and also provides insight into the research findings. However, where emergent strategy serves to identify the type of strategy a firm has
realized relative to its intentions, logical incrementalism describes the process by which these types of strategies evolve. Based on his research involving several detailed case studies, Quinn (1980) argued that the process firms employ to arrive at a particular strategy is typically fragmented, evolutionary, and largely intuitive. He noted that an incremental approach may provide a more powerful normative model of strategic decision making than the formal systems planning approach so often studied (Quinn, 1980).

Under the process of logical incrementalism, a firm's strategy might begin with specific plans for achieving stated goals. However, as implementation and evaluation occur, as previously unforeseen issues and opportunities arise and are either avoided or resolved, and as changes occur both internal and external to the firm, the strategy, though initially well defined, tends to evolve from this series of actions and cognitions. As a result, it becomes difficult to precisely know what strategy the firm is pursuing at any one point in time. It also becomes difficult to distinguish between formulation and implementation efforts. Wernham (1985) also argued that implementation and formulation do not follow a rational/sequential process, but rather are more interactive. Tregoe and Tobia (1990) suggested a similar concept in their proposition that managers link visions for the organization with operational plans on a single continuum.
Given the uncertainty associated with corporate start-ups, logical incrementalism might at least partially explain why the manner in which start-up firms allocate finances across functional areas was not directly associated with entry strategy. As the firm engages the market, certain events and the decisions made in response to them serve to redefine the strategy. This study attempted to test the assumption of the formal systems planning model which suggests that strategy implementation is derived from strategy formulation. However, logical incrementalism suggests that entry strategy accounts for only those decisions at start-up. Perhaps, the on-going strategic decisions as reflected in the allocation of start-up capital across functional areas are more reflective of the true entry strategy.

**Strategic Control/Learning**

Both logical incrementalism and emergent strategy rely on the concepts of control and learning to explain the dynamics of business strategy. Mintzberg and Waters (1985) noted that "defining strategies as intended and conceiving them as deliberate, . . . effectively precludes the notion of strategic learning." However, this is precisely how strategy was operationalized in this study.

Strategic control is concerned with whether a strategy is being implemented as intended, and whether the results are occurring as planned (Schendel and Hofer, 1979). Stra-
tategic control systems consist of procedures which act together to ensure that actual performance is comparable to the objectives specified. From a management perspective, it consists of "assessing the relevance of the organization's strategy to its progress in the accomplishment of its goals" (Lorange et al., 1986). Though the concept is well defined, few studies directly link firm performance to the objectives for which the strategy was intended (Hofer, 1983). As a result, theoretical issues raised by the selection of performance variables may also provide insight into the findings and the need for additional research.

Though similar to control, strategic learning is said to be composed of four related but separate processes: 1) knowledge acquisition, 2) information distribution; 3) interpretation; and 4) memory (Huber, 1991). The information acquisition process consists of five additional subprocesses: congenital learning; experiential learning; vicarious learning; grafting and searching; and noticing. The distribution of information within the organization not only includes existing knowledge, but also includes the additional knowledge which is gained when synergetic "pieces" of information are combined.

Burgelman (1988) argued that strategy formulation in the emergent stage of a new venture (i.e., market entry) represents a social learning process "in which managerial action and cognition are intrinsically intertwined." Like
emergent strategy and logical incrementalism, he suggests that through the success and failures of implementing their ideas, firms shape their strategy. Like Burgelman, Mintzberg and Waters (1985) argued that "strategic learning must combine intention with realization."

Learning is what motivates incrementalism and provides for emergent realized strategy. Learning is more than feedback, though feedback is a big part of the control and learning process. From the perspective of realized strategy, it is evident that these dimensions should be incorporated in any study designed to ascertain the association between the intended strategy and the actions of the firm.

When realized strategy is inconsistent with intended strategy, strategic control/learning suggests that not only might the strategy be incorrect, but the intentions for which it was derived could be misleading as well. Double loop learning, when included in the strategic control process, serves to compensate for the inherent risk in the selectivity of planning (Schreyogg and Steinmann, 1987). However, when feedback signals the need for a change, the control process must distinguish between required process changes and required changes in goals. These changes will be deemed necessary only in light of the discrepancy between the performance results of the current strategy and management's intentions. Thus, it is critical that management's intentions be incorporated in the control process.
Performance and Intentions

For a strategy to be completely deliberate, three conditions have to be present: 1) management's intentions have to be precisely stated, 2) these intentions have to be common throughout the organization, and 3) the intentions would have to be realized exactly as intended (Mintzberg and Waters, 1985). However, failure to identify management's intentions with respect to goals and strategies was cited as one of the primary limitations of PIMS-based strategy research (Anderson and Paine, 1978).

Based on a detailed review of the performance literature in general, Hofer (1983) noted that few studies used management objectives (i.e., strategic intentions) as the critical measure of performance and none considered the theoretical or managerial reasons for using a particular measure. Hitt and Ireland (1985) found that different measures resulted in different conclusions regarding the impact of strategies on firm performance. In addition, Prescott (1986) found that, in certain contexts, traditional indicators such as profitability or market share are not appropriate measures of firm performance. Dubofsky and Varadarajan (1987) found that accounting and market-based measures of performance often give conflicting results.

Performance issues of this nature are even more critical with corporate start-ups where the situation is made more complex by the expectations of the parent firm.
Many corporate ventures are initiated by parent firms for reasons other than profitability, cash flow and market position (McGrath, Venkataraman and MacMillan, 1992). McGraw et al. (1992) argued that often "the significance of corporate venturing as a mechanism for enhancing long-term firm viability is underemphasized in favor of other, typically financial, performance measures. They proposed a multidimensional approach to the assessment of venture performance which reflected the objectives (i.e., intentions) of creating new productive combinations of resources. Derived from the parent firm's intentions, the measures consisted of 1) the market value achieved by the venture's offerings, 2) the value of the venture to the parent firm, and 3) the degree of competitive insulation created by the venture.

Performance measures of these types are appropriate within the current theoretical discussion because they more accurately reflect the intentions for which the ventures were founded. Assessing performance relative to intentions provides for a more powerful role of control/learning and serves to enhance the normative planning model. However, in light of management's intentions and strategy as decision making over time via learning, perhaps a more important question concerns the way in which researchers frame business level strategy in order to appropriately determine its effectiveness for achieving these more practical ends.
What does strategy designed to accomplish these types of objectives look like? What are the key components? And, what becomes of the current conduct variables and the manner in which they are operationalized to devise business strategy? Theoretical issues of this nature are likely to shape future research in this area for years to come.

**Strategic Planning at TLG Electronics, Inc.**

It is important to note that various studies of a more qualitative nature have led to many of the same conclusions addressed above. Pascale (1984) found that the successful strategy for Honda emerged from a series of misguided efforts to introduce certain products in the U.S. market. Mintzberg & Waters (1982) conducted a case study of the emerging strategies of an entrepreneurial firm. They identified strategies and changes in strategies by projecting and analyzing patterns in managerial decisions over a period of 60 years. The detailed case and the resulting patterns were used 1) to highlight weaknesses in the planned or intended strategy perspective; 2) to propose the alternative perspective of emergent strategy; and 3) to encourage researchers to explore alternative ways of viewing entrepreneurial strategy. Likewise, Camp and Sexton (1992) found similar results in their case study of the strategic planning process within a young, rapidly growing entrepreneurial firm. Details of the case are discussed below.
TLG Electronics, Inc. specialized in the design, fabrication, and assembly of wiring harnesses, cable assemblies, and electronic control panels. Its products serve as component parts to several manufactured goods, including office automation systems, household appliances, telephones, computers, and communications equipment. Initiated in 1978 under a different name and management, the firm became TLG Electronics when it was acquired in 1988 by an outside entrepreneurial team with significant participation on behalf of a venture capital firm.

Within four years from the date of the acquisition, the number of employees had increased from 40 to approximately 175, and annual revenues had increased from $3 million to more than $6 million. More than 150 new clients were added, and no one company accounted for more than 35 percent of total revenues. The firm conducted business in as many as eight product markets, and had increased its product offering to include microwave communications systems, telephone switching stations, mobile phone units, and battery cables, among others. An experienced marketing manager was hired in 1989 to oversee the firm's direct sales force and to negotiate arrangements with manufacturers representatives around the country. A new facility was leased in 1990, providing 40,000 square feet with arrangements for an additional 40,000 square feet as needed. As of year end 1991, total assets were estimated at $2.2 million up from $900,000.
in 1988, and net income had increased approximately 33 percent. Forward integration efforts were undertaken in 1990 with the purchase of a Columbus-based control panel business.

TLG's accomplishments under the new management had come despite a significant and continuing downturn in the electronic component products industry as a whole. The demand in the domestic market for such components continued to decline in 1991, forcing both prices and margins lower. Much of the industry had been responding to the slow growth period by initiating dramatic cuts in personnel and operational expenses. The industry downturn forced many older, more established firms to decrease inventories, reduce personnel, and scale down operations. Select others, however, had been able to innovate, increase margins by specializing in unique wire and cable configurations, and focus on implementing technologies to improve product quality and delivery schedules. For many of the more aggressive firms like TLG, the economic downturn, given the maturity of the industry, had provided an opportunity to exploit new, high-margin niches, which led to sales gains in the realm of 20 to 30 percent per annum.

As part of a detailed case study, the strategic planning process at TLG was documented and analyzed as it occurred during the four-year period between 1988 and 1991. The acquisition in 1988 served as a definitive beginning of
the strategic planning phase for TLG. In the two years immediately preceding the acquisition, the firm had experienced a significant decline in both sales and profitability. Despite legitimate attempts to attract new business, only one client accounted for nearly 95 percent of total revenues as of 1988.

During the acquisition phase, the pursuing managerial team conducted a detailed analysis of the company's situation. The analysis was focused on legitimizing the company's financial and operational records, identifying internal strengths and weaknesses, assessing the efficiency in administrative and manufacturing processes, exploring the relationships with key customers and suppliers, and determining the effectiveness of previous marketing programs. Results of the analysis were used 1) to determine if the firm possessed the necessary potential for growth, 2) to outline the specific changes necessary for growth to be realized, and 3) to establish specific growth objectives.

During the first eighteen months under the direction of the new management team, several changes were implemented to equip the firm for meeting increased customer demand. Changes included: relocating to new plant facilities; improving production efficiencies in inventory planning and material handling; enhancing quality control; hiring, reassigning, and training management personnel; expanding the product offering; eliminating low margin products;
penetrating new segments; and vertically integrating via the acquisition of a control panel business in 1990.

Much of management's efforts during the initial planning period also involved creating the socio/political environment needed to support growth and change. Several of these changes are listed below:

Managerial. A marketing manager was added with specific direction to increase sales revenues. Leadership and decision making functions were centralized, and an open door policy was instituted between the new CEO and plant personnel.

Political. Old channels of allegiance were dismantled. Employees were given direct responsibility for job performance and a formal evaluation program instituted. Job descriptions were rewritten and individual responsibilities were increased. Many of the managers that remained after the acquisition were reassigned to new positions. Nearly half of the previous management personnel was dismissed.

Cultural. Values and norms shifted to a more entrepreneurial, opportunistic, growth orientation as a result of the leadership style of the new CEO and much of the senior management. Job descriptions were directed at insuring customer service and product quality over role satisfaction.

Logistical. Reporting procedures were enhanced throughout the organization at all levels. Employee accountability measures were initiated and enforced. A computerized cost control system was implemented for tracking specific project costs. Consignment contracts were developed with large suppliers to minimize inventory costs during the growth cycle.

Based on the results of the initial analysis and the success of the firm's preparation for growth, specific strategies were formally proposed and discussed for their effectiveness in achieving management's objectives. Though multiple strategies were proposed, detailed analysis was
limited to those few which management perceived to have the greatest potential for achieving the growth objectives. The CEO/entrepreneur was intimately involved in the formulation process, despite the fact that most of the emerging strategies were centered in specific functional areas (e.g., administration, production, shipping, marketing, finance, and sales). Though objectives were developed for as many as five years future, detailed cash budgets were generally projected for no more than one year. The short time frame was partly due to management's concerns over cash flow, but was also appeared to be the result of the functional-nature of the strategy directives.

The detailed annual budgets were used to guide resource acquisitions. Strategy implementation was dependent on what resources were available or accessible. If the resources were inadequate to implement the strategy as intended, the strategic directives were implemented to the extent possible. The linear fashion in which the planning process is often modeled was not evident at TLG. As management worked to devise the overall strategy, specific strategic directives were being formulated and implemented within functional areas. The grand strategy seemed to emerge from the on-going process. Contrary to strategic planning theory, the strategy formulation and evaluation processes appeared to occur simultaneously, leading to a more emergent strategy as Mintzberg & Waters (1982) suggested.
Performance evaluation consisted of comparing actual results with intended results. The primary emphasis was not in determining if a particular strategy had been carried out successfully, but rather whether or not specific objectives had been achieved. This served to deemphasize the role of the intended strategy. When specific objectives were not achieved, management vacillated between focusing its planning attention on the intended or emergent aspects of the overall strategy.

The pattern of strategic planning events at TLG are unique to current strategic planning theory in several respects:

- The process was clearly influenced by the early intentions of the entrepreneur team and their ability to manage growth and change.
- The entrepreneur was intimately involved throughout the planning process, and not only in determining management objectives.
- The process was centralized at the senior management level and was tightly controlled.
- Most of the strategic analysis was focused internally; the research that was externally focused concentrated more on market demand characteristics than on competitive position.
- A great deal of the planning process involved developing the internal mechanisms (i.e., managerial, political, cultural, logistical) necessary to support growth and change.
- The resulting strategies were functionally-oriented, which made the overall or "gestalt" business-level strategy difficult to discern.
- The process focused on achieving specific goals (ends) as opposed to carrying out specific strategies (means).
It was difficult to discern between formulation and implementation processes; what is conceptually a linear process was less apparent due, in part, to the functional-nature of the chosen strategies.

METHODOLOGICAL ISSUES AND FUTURE RESEARCH DIRECTIONS

Anderson and Paine (1978) argued that failure to include management's intentions in the evaluation of strategy effectiveness was one of the primary limitations of PIMS-based strategy research. From a methodological standpoint, however, at least six other limitations cited by Anderson and Paine could have directly influenced the results in this study. These limitations include: 1) the complexity of the PIMS model; 2) omission of key strategy variables; 3) differences in the degree of controllability among component variables; 4) retrospective analysis; 5) cross-sectional analysis; and 6) failure to consider contextual factors.

Each of these issues, though first recognized in 1978, are still discussed in the strategy literature as reasons for expanding the research paradigm. As a result, these six issues provide the framework for exploring methodological issues in this study. The first five of the six issues are discussed below. Because of the volume of strategy research conducted since 1978 which has addressed environmental issues, considering contextual factors (i.e., issue six) is addressed in a separate section immediately following.
Model Complexity

Anderson and Paine (1978) noted that "the complexity of the PIMS model may lead to problems of interpretation and understanding and to a tendency for the user to rely on the 'exactness' of the technique." The PIMS model incorporates over 1000 variables related to new venture strategy, resource allocations and performance. However, the vast complexity of the model does not derive only from the large number of components, but also from the myriad of relationships that exist between them. It is unreasonable to think that the dynamics of such relationships could be captured in a single study. It is possible that, given the level of complexity, the true relationship between strategy and resource allocations was not established.

Both strategy types and resource allocation classifications were derived via data reduction techniques such as factor and cluster analysis. These techniques are designed to reduce the number of input variables and, thereby, reduce the level of complexity in the model. However, in the process, a great deal of information pertaining to the relationships between the variables is lost. Thus, the lack of association between strategy type and resource allocation pattern found in this study may have resulted from the manner in which the constructs were operationalized. By reducing the number of input variables and eliminating much of the interaction between them, perhaps the operationaliza-
tions failed to incorporate those dimensions on which the two constructs are actually related.

Component Variables: Omission and Controllability

Anderson and Paine (1978) also noted concern for the omission of key strategic variables and differences in the degree to which management controlled specific variables. These two limitations are combined in this section because both can lead to erroneous conclusions concerning the relationships between strategy, allocations, and performance.

Twelve component variables were used to construct the strategy typology in an attempt to address the concern over the possible omission of key strategic variables. The input variables were identified from previous research. Though the list of input variables was consistent with previous research, no mention was made concerning other variables that should have been included in the grouping procedures.

For this study, strategy was said to consist of patterns within management's decisions concerning the allocation of financial resources. However, as with the possibility of omitting important variables, little or no consideration was given to the extent management was able to control the specific variables used. Though decisions are commonly made concerning which product markets to enter, it is not firmly established whether management can control factors such as the type of market entered, the number of
customers in a particular market, the average size of the
customer, or purchase frequency.

Retrospective and Cross-Sectional Analysis

Anderson and Paine (1978) also cited the dependence
upon retrospective and cross-sectional analyses as a
limitation to the PIMS-based research. Maintaining a retro­
spective perspective primarily stems from the underlying
assumption that strategy implementation follows strategy
formulation. The problem with the retrospective approach is
1) it assumes that management can "know" its internal and
external environment so that the appropriate strategy can be
devised, and 2) as a result, does not adequately account for
learning over time (i.e., strategic control).

Like Anderson and Paine (1978), others criticize PIMS-
based research for its lack of coverage of an adequate time
period (Ramanujam and Venkatraman, 1984). Anderson and
Paine (1978, 604-605) note:

"Researchers have pointed to a better methodology which
would involve time series (trends) on every firm as
well as cross-sectional comparisons. . . . There are
important considerations for the time series approach
which may discount validity of current conclusions
derived from the cross-sectional analysis. First, the
goals -- strategies employed by an organization --
change over time, and these changes must be documented
and compared to results."

This limitation served as part of the underlying
motivation for this study and follow-up studies to explore
business level strategy as a pattern in the allocation of
resources over time. However, even in this study the annual allocation measures were only used to validate the cluster selection derived from the first year allocations. The limited application of times-series or longitudinal designs in PIMS-based research is mostly a function of how the data bases are used and not necessarily a limitation of the data. The first 500 variables in the Start-Up data base, for example, are composed of the four year averages as recorded in the primary PIMS data bases. Approximately 500 additional variables are composed of yearly items, including business conduct, resource allocations, and performance.

Because of a limited number of other studies from which to derive a precedence concerning the role of time in the implementation of new venture strategies, the effect of time may not have been adequately incorporated in this study. The high level of discrimination between allocation classifications for multiple years did suggest that the patterns found in year one were likely to be consistent over the four year period under study. However, changes in those patterns were observed also. These changes, however, were not studied for their direct effect on the link between 1) strategy and resource allocations or 2) strategy, allocations and performance.

The majority of the observations cited by Anderson and Paine (1978) are relevant to the predictive and causal PIMS studies of factors affecting profitability. Prescott (1983)
suggested that the concerns are centered on statistical analysis, generalizability, and data quality. In the initial stages of exploratory studies of this nature, however, the intention of the research is not to determine causality directly. The initial intent is to determine the degree and direction of association. Until a direct relationship is empirically validated one can only speculate about its causal dimensions. With cross-sectional data alone, even validating the relationship does not insure that the conclusions concerning causality are anything more than speculative. Given the longitudinal, dynamic nature of the research question presented and those to be presented in future studies, the appropriate analytical design should provide insight into the causal dimension critical to the strategy and performance relationship.

This is precisely the research question involving the often "rival" perspectives of planned and realized strategy. Planned or intended strategies are traditionally measured cross-sectionally in the research literature as strategy "content." Emergent or realized strategies are often measured longitudinally as patterns in events over time. Linking the theoretical debate underlying this research issue with an appropriate research methodology and a unique source of empirical data which permits the simultaneous analysis of the cross-sectional and time series dimensions, provides tremendous insight into how business strategy
influences long-term firm performance. Galbraith and Schendel (1983: 57) note:

"A combined cross-section time-series data base . . . has advantages over simple cross-section data in that the diachronic and dynamic nature of strategy can be explored by having the necessary data in a form readily manipulated along the time dimension."

Scholars generally agree that there has been an overemphasis on cross-sectional research in strategic management (Venkatraman and Prescott, 1990). Strategic management is a process-oriented phenomenon. The study of process-oriented phenomenon often requires time series or longitudinal research designs. Robinson & Pearce (1983) identified a need for exploratory longitudinal research to examine the value of strategic planning. They suggested that longitudinal studies would enhance the understanding of past findings by examining the planning process over time in the face of changing strategic decisions.

CONTEXTUAL CONSIDERATIONS

Anderson and Paine (1978) noted that much of the PIMS-based analyses on strategy and performance neglected to study the impact of contingency factors, including inconsistencies across market settings. However, unlike the previous methodological issues identified by Anderson and Paine, the study of the influence of various contingency
factors on strategy and firm performance has received considerable attention in the last few years. Therefore, this limitation has been separated from the other methodological issues so that many of the studies which have been conducted since Anderson and Paine's critique could be adequately reviewed.

The findings of this study support the proposition that contextual conditions moderate the relationship between strategy and resource allocations. When validating the strategy typology developed in the pre-analysis phase of this study, no significant differences were found between strategy types for Relative Price and Market Fit. That differences were not significant for Relative Price is consistent with Galbraith and Schendel's (1983) conclusion that relative price is an important predictor of success across strategies in all types of competitive situations.

The lack of any significant difference in Market Fit between strategy types, however, suggests that, regardless of the type of entry strategy maintained, the strategy will be consistent with the conditions of the marketplace. The act of entering a market for the first time imposes certain limits on areas of market "fit" such as compatibility and distribution approaches. This is consistent with the focus of the environmental "fit" research stream, which argues that firms must strive to develop internal competencies which are congruent with environmental conditions. Start-up
firms, in particular, are more likely to work with existing market structures than to risk having to create market mechanisms to insure success. These findings suggest that studying the effects of distinct aspects of the market might lead to greater understanding of the impact of Market Fit in the relationship between planned and realized strategies.

The Competitive Environment

Researchers have shown that the effectiveness of a given strategy to achieve management's directives is often dependent on the structural condition of the competitive market in which the firm operates (Pfeffer and Salancik, 1978). Stevenson and Gumpert (1985) acknowledged the effects of environmental constraints on the pursuit of entrepreneurial strategies by major firms. They note that in rapidly changing environments, strategies based only on what management is familiar with can jeopardize a firm's survival. Such an environment requires that a firm develop a spirit of entrepreneurship that encourages flexibility, creativity, and risk taking (Stevenson and Gumpert, 1985). Traditional management stresses risk reduction and the effective management of existing resources. Entrepreneurial management, on the other hand, emphasizes the identification of new opportunities, how they may be exploited, what resources are needed, and how they will be acquired (Stevenson and Gumpert, 1985).
Covin and Slevin (1991) proposed a conceptual model of entrepreneurship as firm-level behavior. The environmental variables said to influence the process included 1) technological sophistication, 2) environmental dynamism, 3) environmental hostility, and 4) the stage of the industry life cycle. Tsai et al. (1991) noted that an investigation of the relationship between strategy and environment to market share shows that: 1) industries with late life cycle stages, fragmented markets, and high competitor dependence should be entered cautiously; 2) high market growth rates did not yield share gain; and 3) a market dominated by a few competitors with high market share need not be a handicap.

**Industry Life Cycle**

The industry life cycle is the composite measure of change in industry sales over time (i.e., market growth rate). During the emergent stage of the cycle, industry sales are slow but approaching rapid growth. As the industry passes through the growth stage, sales are increasing at an increasing rate. As growth begins to slow, however, the industry is said to be reaching maturity. A decrease in the industry base is said to represent the decline stage of evolution and the completion of the life cycle. Miller and Camp (1985) cited literature which highlighted the critical factors in the competitive environment which served to influence new venture strategies. They noted that the most
significant measure is market growth. Porter (1980) suggests that rapid industry growth ensures that firms can improve results by keeping up with the industry rather than in fighting with the competitors.

Miller et al. (1989) studied entry order and the stage of industry at the point of market entry. They found that market pioneers generally out performed either early entrants or late followers. Pioneers had higher market shares and stronger competitive positions (i.e., higher quality, more differentiated products, and better service), than followers. Lambkin (1988) found similar results, namely that market pioneers out performed their rivals. Sanberg and Hofer (1986) also found that the effect of strategy on venture performance was dependent upon the structure of the industry in which the firm was entering. They found that: 1) early-stage industries are more attractive for entry than mature industries; 2) new ventures are more successful in industries that have heterogenous products; and 3) new venture performance is improved when disequilibrium factors are expected to increase entry barriers.

Factors other than the market growth rate have also been found to distinguish the stages of the industry life cycle (Eisenhardt and Schoonhoven, 1990; Gale and Branch, 1987, MacMillan, 1986; MacMillan and Day, 1987; Porter, 1980; Roure and Keeley, 1990). The most noted include: 1) the degree of product change; 2) the degree of market uncer-
tainty, 3) competitive pressures, 4) strategies for success, and 5) access to critical resources (Anderson and Zeithaml, 1984; Eisenhardt and Schoonhoven, 1990).

For example, Eisenhardt and Schoonhoven (1990) characterize mature industries as being large with stable or slightly increasing demand. Customers are familiar with the major suppliers and the dominant product designs. Technological changes tend to be incremental. Changes in competitive position are usually infrequent and market share levels are relatively stable. Anderson and Zeithaml (1984) identify success strategies for firms competing in mature industries as improving process efficiency, differentiating products and services, and enhancing product quality.

MacMillan and Day (1987) examined the external market factors that were related to market share aspirations and subsequent strategy options. The factors they found to be most indicative of the environment from previous literature included: 1) the number of competitors; 2) industry growth rate; and 3) the extent to which the largest competitor depends upon the target market. Porter (1980) suggests that the greater the number of competitors the more rivalrous the industry. MacMillan and Day (1987) found significant support for the hypothesis that the greater the number of competitors the less aggressive the entry strategy should be for new ventures.
Porter (1980) also argued that the slower the industry growth rate the more competitive the industry would be. MacMillan and Day (1987) also found support for Porter's (1980) proposal that the slower the growth of the industry, the less aggressive the entry strategy will be. When the entry of a new venture seriously threatens the target market of the leading competitor, the competitor is likely to be more aggressive in protecting its interests. MacMillan and Day (1987) found support for the hypothesis that the more dependent the leading competitor is on the target market, the less aggressive the entry strategy for a new venture.

Researchers have combined environmental factors shown to influence corporate venturing into two areas: inhibiting and facilitating (Cooper, 1979a; MacMillan, 1986). Specific factors are listed below for each area.

**Inhibiting:**
- competitive, dynamic markets
- rapid rates of new product introduction
- a high proportion of satisfied customers
- highly fragmented markets
- industries with major technological innovation

**Facilitating:**
- high market growth rates
- customers who interact with the parent firm
- markets rich in technological opportunities
- markets in which their are dominant competitors
- markets where customers initiate new product ideas

**Market Growth and Change**

Gale and Branch (1987) note that much of the capital allocation decision is based on cash flow and profitability
projected for the given endeavor. They cite three key determinants of venture profitability, namely competitive position, operational effectiveness, and market attractiveness. Market attractiveness consists of two variables: market growth and customer bargaining power. Gale and Branch (1987) noted that growth tends to increase margins on sales. The bargaining power of customers impacts price, which, subsequently, impacts profitability.

In addition to market growth, competitive hostility, and the stage of the industry life cycle, the degree of environmental dynamism has been studied for its effects on new venture strategy. Dynamism is characterized as the perceived instability of a firm's market because of continuing changes (Covin and Slevin, 1991; Keats and Hitt, 1988; Zahra, 1991). Zahra (1991) proposed that increased dynamism was conducive to the pursuit of corporate venturing, because it led to increased opportunities in the marketplace as a result of rapid and continuous change. Environmental dynamism also intensifies the rivalry among competitors as a result of the increase in new entry as firms seek to exploit the profit potential.

The rapid rate of change and uncertainty associated with environmental dynamism is common to the study of new venturing in high-technology industries. Maidique and Hayes (1984) found that managers of high-technology type firms faced additional challenges from the marketplace over the
typical new venture. They concluded that success in the high-technology environment requires that managers be adept at balancing between periods of continuity and chaos. Roure and Keeley (1990) studied the predictors of success in new technology-based ventures. They proposed that new ventures entering technology markets face considerable time pressures and uncertainty. They study the effects of several environmental factors common to such markets, namely the level of competition (i.e., hostility), market share, and buyer concentration (based on Pfeffer and Salancik's (1978) resource dependency theory). They found that each of the environmental factors was significantly related to the success of high technology ventures.

Because of the unique aspects of high technology markets, Buzzell and Chussil (1985) found that the lack of adequate, long-term funding was cause for the high rate of failure among high-tech corporate ventures. Roberts (1990) conducted an in-depth exploration of the sources, needs, and uses of financing for technology ventures. He concludes that most high-technology ventures find it difficult to attract adequate capital to fund long-term strategic plans. Maidique (1986) characterized the setting for high technology ventures as highly uncertain, structurally ill-defined, and exerting periods of rapid growth and change. Given the limited resources of the high technology firm and the uncertain and rapidly changing market setting, firm resources
must be carefully directed and deployed to adequately position the firm in the marketplace (Maidique, 1986).

Summary

These studies highlight the fact that the link between business strategy and performance is mediated by certain contextual considerations. Is it any less likely that the relationship between strategy formulated and the allocation of resources is mediated by the nature of the environment in which the firm competes. It is likely, given the numerous studies cited, that contextual factors such as competitive hostility, market growth, stage of the product life cycle, and market dynamism would influence the manner in which firms allocate limited resources during start-up.

IMPLICATIONS

Chapter I identified the potential contributions this study could make to the practice of strategy formulation and implementation. The contribution was framed by three important concepts surrounding the successful development of corporate ventures. The first involved the importance of adequate start-up capital to fund aggressive market entry strategies. The second concerned the risk and uncertainty associated with entering new markets. The third concept
involved the combined effects of allocating limited finances under uncertain market conditions. The presumption was that if strategies are devised to insure certain competitive positions and to enhance firm performance, researchers should link specific strategies with the managerial decisions involved in carrying out (i.e., implementing) those strategies. Thus, within this framework, it was proposed that:

"The findings should link specific patterns of capital allocations with specific business strategies. In addition, the findings should suggest which patterns lead to improved performance in the areas of profitability, cash flow, and relative market share."

As noted in Chapter VI, the results of this study did not support either of the original propositions. In fact, the results were, for the most part, contrary to what has been suggested conceptually in the previous literature. From the formal systems approach, there are at least three general explanations for these findings. First, strategy and allocations are linked in reality and there are certain methodological reasons to explain why that relationship was not evident in this study. Several of such methodological issues are discussed earlier in this chapter. Second, the relationship exists in reality but is contingent upon other factors which were not included in this study. The influence of such contextual considerations was also explored earlier in this chapter. The third possible explanation, which is more difficult to account for, is that the
rational/sequential nature of the systems approach is not reflective of the "true" relationship between strategy formulation and implementation.

Scholars have previously concluded that the current paradigm for strategic planning may not be appropriate for advancing theory and practice. Mintzberg (1991) argued that systematic planning, though popular among researchers, distorts the true strategy processes and misguides organizations that adopt it. Quinn (1980) likewise, supports the notion that systematic sequential planning is not reflective of the real strategy process. He argues, rather, that through incrementalism, formulation and implementation processes merge into a "fluid process of learning" through which dynamic strategies evolve.

These conclusions suggests that one of the more significant limitations to how researchers study and practitioners come to understand strategic management is the assumption that the planning process is sequential and systematic. The assumption that implementation follows formulation does not permit the two processes to occur simultaneously or to be studied for opposite effects. Thus, the benefit of the strategic control process is limited to monitoring and evaluations continue to neglect managerial intentions. The assumption that the process is linear is not consistent with the findings of this study.
From the results of this study, it would appear that the resource allocation pattern (i.e., strategy as implemented) more directly influences firm performance than strategy as formulated. This leads to the unique proposition that functional level strategies may be more critical to the success of new ventures than business level strategies. Performance may not be so dependent on how the resources are allocated within the firm, but on how each allocation is administered within its own domain. In other words, the differences between the proportions of expenditures allocated to market development, product development, and manufacturing may not be as important to implementation as how the dollars are disbursed within each functional area. For example, two firms may allocate equal proportions of their total expenditures to market development. However, one may choose to spend the largest share of this allocation on advertising, while the other may prefer higher levels of spending for the direct sales force.

There are two problems with this proposal in light of the current study. First, because the allocations within each functional area are dependent upon the allocations across each functional area, the relationship between strategy and resource allocations should still be significant at the business-unit level. One would expect the relationship to hold as conceptually presented and little would be gained by switching the focus of the analysis. The second problem
stems from the fact that by examining allocations within each functional area we have switched levels of analysis. According to systems perspective, strategy is formulated at the business-unit level and implemented at the functional level. Though not only challenging methodologically, this is contrary to the current understanding. Many scholars consider functional level activities to be outside of the mainstream of strategy research.

As a final test of the practical implications of this study, the start-up firms were classified into high, medium, and low categories for each of the fourth-year performance measures. Analysis of variance routines were used to test for differences in the mean allocations for each functional area for the different levels of performance. Tables 38, 39 and 40 portray the results of the analyses for ROI, cash flow, and relative market share, respectively. Except for mean allocations for product development in year four and manufacturing in years two and three, none of the allocations were significantly different for different levels of return on investment. In addition, except for product development in year four, none of the allocations were significantly different across levels of cash flow. Finally, except for product development in year two, none of the allocations were significantly different for the different levels of relative market share.
TABLE 38
Results of the Analysis of Variance of Annual Post-Entry Allocation Measures by Level of ROI

1. Market Development = "MRKT"
2. Product Development = "PROD"
3. Manufacturing Process = "MFTG"

<table>
<thead>
<tr>
<th>Functional Areas</th>
<th>Model</th>
<th>df</th>
<th>Mean Squares</th>
<th>F</th>
<th>w2</th>
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</thead>
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<tr>
<td>MRKT: Year 1</td>
<td>Allocation 2</td>
<td>2</td>
<td>0.01</td>
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<td>.00</td>
</tr>
<tr>
<td></td>
<td>Error</td>
<td>116</td>
<td>0.06</td>
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<td>Allocation 2</td>
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<td></td>
</tr>
<tr>
<td>Year 3</td>
<td>Allocation 2</td>
<td>2</td>
<td>0.00</td>
<td>0.09</td>
<td>.00</td>
</tr>
<tr>
<td></td>
<td>Error</td>
<td>116</td>
<td>0.04</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Year 4</td>
<td>Allocation 2</td>
<td>2</td>
<td>0.00</td>
<td>0.05</td>
<td>.00</td>
</tr>
<tr>
<td></td>
<td>Error</td>
<td>116</td>
<td>0.04</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PROD: Year 1</td>
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<td>0.02</td>
<td>0.31</td>
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<td>0.03</td>
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* p < .05
** p < .01
### TABLE 39

Results of the Analysis of Variance of Annual Post-Entry Allocation Measures by Level of Cash Flow

1. Market Development = "MRKT"
2. Product Development = "PROD"
3. Manufacturing Process = "MFTG"

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* p < .05
### TABLE 40

Results of the Analysis of Variance of Annual Post-Entry Allocation Measures by Level of Relative Market Share

1. Market Development = "MRKT"
2. Product Development = "PROD"
3. Manufacturing Process = "MFTG"

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* p < .05
Summary

For the most part, therefore, the major implications of this study are methodological and impact future strategy research more so than practice. For practicing managers, little can be said about how the link between implementation and formulation influence performance as a result of this study alone. However, in the effort to explain these findings, future research of certain theoretical constructs may produce implications worth considering. Strategic control, for example, has moved beyond the linear assumption of implementation follows formulation. The new emphasis on double-loop learning has added validity to the concept of emergent strategy and simultaneous formulation and implementation. From a control perspective, this results in a focus on both means and ends when evaluating the effectiveness of a particular strategy.

The focus on both means and ends appears to be moving closer to the core of strategy implementation -- accomplishment. Focusing on the accomplishment of stated goals and objectives shifts the emphasis away from strategy to strategic intentions. Incorporating strategic intentions insures that the normative domain of strategic management theory is consistent with that of practitioners. Adding intentions to the equation also changes the view of what constitutes organizational performance and how specific performance measures should be selected.
In addition, various contextual factors likely influence the relationships. Thus, contextual factors shown to influence strategy and performance should be incorporated in future studies. Also, more longitudinal designs are needed to incorporate the aspects of change in strategy, change in allocations, and change in performance. Given the extended role of strategic control and the clear need to address management intentions in performance reviews, it is likely that the real relationship between strategy as planned and strategy as implemented may reside within the changes that occur over time as the organization progressively learns how to accomplish that for which it was established.
APPENDIX

OPERATIONAL DEFINITIONS OF STRATEGY VARIABLES

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255-262, Operational Definition of Strategy Variables

University Microfilms International
REFERENCES


