

Manufacturing and Marketing Interdependence in the New Venture Firm: An Empirical Study

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Abstract:

This research addresses the interdependent nature of manufacturing and marketing decisions in new venture firms. Based on an empirical study of new venture firms in the communications and computer equipment manufacturing industry, the research first shows that the perception of key aspects of the environment, entry barriers, and hostility does not differ between successful and unsuccessful new venture firms. Such a finding suggests that new venture success is based on much more than an accurate perception of the environment. In contrast, differences in performances are more likely to be attributable to the manner in which the firms constitute and implement their strategies, given their perceptions of the environment.

The research also reveals no underlying difference in manufacturing and marketing breadth between successful and unsuccessful new venture firms. The research thus, does not support the proposition that successful new ventures must be limited in scope to a narrow product range, a small market segment, a narrow geographic market, and a limited number of distribution channels. A successful firm in this industry may strategically “focus” on alternative competitive advantages such as customization, delivery speed, product development and innovation. Such a concept of focus is not based on the notion of a narrow product mix for a particular market niche, but on a coherent set of tasks based on market requirements.

This research illustrates the importance of the interaction between manufacturing and marketing decisions in predicting new venture firm success. However, the study also suggests that consistency among manufacturing decisions alone may be insufficient to predict firm success. Likewise, consistency among marketing decisions alone is insufficient to predict firm success. As a result, any study that purports to predict new venture firm success based only on an analysis of manufacturing decisions is suspect. The interaction of manufacturing and marketing decisions is only moderately successful in predicting firm success, indicating that the manufacturing and marketing interface is important, but still doesn't provide a complete picture of firm synergy. A

more complete model for predicting firm success should likely incorporate other strategic, interdependent relationships with manufacturing and marketing decisions (i.e., the firm's human resource management strategy, financial strategy, R and D posture, etc).

Keywords: manufacturing | marketing | new venture firms

Article:

INTRODUCTION

Hill (1989) has emphasized the importance of consistency between manufacturing strategy and the overall business unit strategy as well as the importance of consistency between manufacturing strategy and marketing strategy within the business. He notes that manufacturing managers must understand and appreciate “order winners” and that manufacturing decisions should be driven by the relevant order winning criteria for the markets being served.

Hayes and Wheelwright (1984) also support the importance of the manufacturing and marketing interface in describing the relationship between the manufacturing process choice and the product life cycle. In their product-process matrix, they advocate that firms consciously relate manufacturing process choice to the product life cycle. Likewise, for many years, Skinner (1974, 1986) has advocated that manufacturing decisions should be driven by market factors; otherwise, manufacturing policies and procedures may work against the marketing plan.

Most basic business policy textbooks describe in some detail the necessary synergistic relationships among the functional units of the firm, particularly between manufacturing and marketing (Pearce and Robinson (1991)). Thompson (1967) has referred to this relationship in which the performance of one group is dependent on the performance of the other group as “reciprocal interdependency.” Such a reciprocity implies that an output from manufacturing should serve as an input for marketing and vice versa. A distinguishing feature of this type of reciprocity is that each unit presents a contingency for the other, and each unit must constantly make mutual organizational adjustments based on the actions of the other unit. In fact, Thompson suggests that the presence of reciprocal interdependency between marketing and manufacturing presents the most cumbersome, demanding and complex coordination problems for a manufacturing firm.

Anecdotal evidence and case reports support the proposition that compatibility between manufacturing and marketing strategies is related to firm success. One need only make a casual observation of a McDonald's restaurant to see marketing and operations compatibility in a high performance firm. Production of hamburgers is performed in batches using automatic controls and buzzers to indicate when french fries are done and hamburgers should be turned. Such procedures and controls are designed to deliver standardization, uniformity and consistency to the customer. In contrast, a Wendy's restaurant uses a worker-paced production operation, within the customers' view, to produce each hamburger on a customized basis to customer specifications. Both firms are successful using different production strategies that match their marketing strategies. In manufacturing, a lack of consistency may have marketing promoting “customized” offerings within the firm's product line while manufacturing is emphasizing the

firm's standardized off-the-shelf products through assembly line operations and special purpose equipment requiring longer machine set up times.

Based on case studies, Skinner (1969, 1974) has offered prescriptive observations of the relationship between operations strategy and firm success. During the past few years, manufacturing strategy research has focused primarily on the identification of strategy process variables (Swamidass (1986); Schroeder, Anderson and Cleveland (1986); and Miller and Roth (1988)). In general, structured empirical studies that investigate the relationships among manufacturing variables and firm performance are not available and represent an important missing element in the manufacturing strategy literature (Adam and Swamidass (1989)). A recent exception is an empirical study by Swamidass and Newell (1987) that relates environmental uncertainty, the role of manufacturing managers in strategic decision making, and flexibility to business performance. However, the interdependent role of marketing and manufacturing was not considered in the Swamidass and Newell study.

The prescriptive literature, supported strongly by managerial intuition, suggests that close coordination between manufacturing and marketing is a prerequisite to high firm performance. In spite of the literature and managerial intuition, marketing and manufacturing often pursue functional goals that are conflicting with each other and counterproductive to the performance goals of the firm (Shapiro (1977)). In practice, it is as though functional objectives simply get in the way of systems objectives. From the perspective of the manufacturing manager, marketing always seems to want a broader product line—a proliferation of new products without bound. From the perspective of the marketing manager, operations always wants to restrict production to the standard products—the products easiest to make. This classic conflict is complicated by a schizophrenic reward system inflicted upon manufacturing and marketing by top management. That is, manufacturing is often rewarded based upon minimizing manufacturing costs, which can create a cost orientation rather than a profit orientation. Marketing is often rewarded based upon market share growth, which can create a sales orientation rather than profit orientation. In early research, Lawrence and Lorsch (1967) did indeed find such a difference in the functional concerns, and even the social concerns of sales and production managers.

In addition to simple inter-functional coordination, manufacturing and marketing strategy decisions must be linked to the business strategy of the firm. A hierarchical view of strategy implies a cascading effect whereby the functional strategies flow from, and are intertwined with, business unit strategy (Hofer (1975); Hofer and Schendel (1978)). Empirical research indicates that compatibility between manufacturing strategy and business unit strategy is related to new venture firm success (Deane, Gargeya, and McDougall (1990)). That research does however suggest a serious shortcoming in the ability to predict firm success based only on looking at consistency among manufacturing decisions. That is, consistency in manufacturing decisions appears to be a necessary, but not sufficient condition for success. A lack of consistency among manufacturing decisions can often lead to firm failure. However, consistency among manufacturing decisions does not by itself insure firm success. Other research is suggestive of a similar relationship between marketing strategy and firm success (Schnaars (1991)). In this research, it is hypothesized that the synergy between manufacturing and marketing strategy decisions should more closely relate to firm success than either manufacturing or marketing strategy decisions alone. Using a sample of entrepreneurial firms in the computer and

communications equipment manufacturing industries, this paper examines the synergy among manufacturing strategy, marketing strategy, and business unit strategy as depicted in Figure 1.

FIGURE 1
MODEL OF MANUFACTURING AND MARKETING INTERACTION



THE NEW VENTURE MANUFACTURING FIRM

A review of the manufacturing strategy literature indicates that past research on manufacturing strategy has focused primarily on established firms, either ignoring new venture firms or failing to treat these firms separately (D'Souza, McDougall, and Deane (1990)). In contrast, strategic management researchers have begun to examine new ventures separately (see e.g., Biggdike (1979); MacMillan and Day (1987); Keeley and Roure (1990)). Strategy researchers frequently isolate particular groups of firms because they are of special importance or because their uniqueness requires that they be examined separately. For instance, low market share businesses (Woo (1980); Hammermesh, Anderson, and Harris (1978)) firms in declining industries (Harrigan (1980)), high technology firms (Maidique and Hayes (1984)) not-for-profit organizations (Odom and Boxx (1988); Hatten (1982)), and multinationals (Doz, Bartlett, and Prahalad (1981)) have merited special study.

The valuable role of new ventures in the creation of new jobs (Birch (1979); Birley (1986)), the generation of wealth (Swain (1985)) and the diffusion of innovation (Drucker (1985); Kamien and Schwartz (1982)) is well documented in the literature. But, more germane to this study of manufacturing strategy, it is important to examine new ventures separately because these firms face unique challenges and opportunities. Not only must the new venture pay the price of overcoming structural entry barriers, but the new venture faces the risk that existing firms will retaliate as well. From the early works of Bain (1956) to the recent integration of entry barrier theory into the strategic management framework by Porter (1980), the height of entry barriers has been viewed as having a major impact on the performance of new ventures in an industry. Entry barriers such as economies of scale, minimum efficient plant size, patents, and proprietary processes are directly related to the manufacturing strategy of the firm. The results of Biggdike's (1979) study underline the difficulty of entry with the disclosure that twelve years are needed before ventures generate cash flows similar to those of mature businesses.

NEW VENTURE MANUFACTURING AND MARKETING BREADTH

Of major concern in this paper is the degree to which manufacturing and marketing decisions are aligned in new venture firms. Given the inherent coordination problems posed by the reciprocal interdependent relationships between manufacturing and marketing, compounded by the normal problems facing new venture firms, it is natural to investigate an important threshold issue, the strategic breadth of operations. Skinner (1969, 1974) offers seminal articles in the early manufacturing strategy literature advising manufacturing managers to pursue a narrow focus or “breadth” of operations. Skinner argues that a factory that focuses on a narrow product mix and a particular market niche will outperform the conventional plant, which attempts a broader mission. Hill (1989) and others have suggested that focus is actually a more comprehensive concept than that of a narrow product mix. Specifically, manufacturing focus implies providing a constant set of work tasks. In fact, “it is the homogeneity of tasks and the repetition and experience within manufacturing of completing these which is the basis of focused manufacturing” (Hill (1989, p. 99)).

It seems clear that a manufacturing focus based on a narrow product mix could, by implication, imply a narrow marketing focus as well. In fact, some of the examples of poor manufacturing focus offered by Skinner represent, in reality, what seems to be poor coordination between manufacturing and marketing. For example, a custom printed circuit board maker accepts a large order for a more standard product, creating an incompatibility with current operations. A major portion of Skinner’s early article on manufacturing focus addresses product proliferation, clearly a marketing problem as well as an manufacturing problem (Skinner (1974)). In essence, a call for manufacturing focus incorporates not only the principle that a firm can’t be all things to all customers, but also a recognition of the need to closely coordinate manufacturing and marketing decisions.

More recent operations strategy literature (Wheelwright (1981); Schroeder, Anderson and Cleveland (1986); Roth (1987); and Sharma (1987)) suggests that firms can, and perhaps must, compete along several dimensions simultaneously. In fact, Garvin (1983) as well as others, advocate that high quality and low cost should not be considered as incompatible goals within the firm. Global automobile competitors offer intuitive, but compelling evidence in support of competing simultaneously on multiple dimensions. Given the broader definition of focus described above, this evidence is not only compatible with but provides a conceptual fit with manufacturing focus. Markets create different demands and manufacturing focus is based on the need to recognize and organize to meet these market differences.

The earlier entrepreneurship literature, like the earlier operations literature, also admonishes new ventures to pursue a narrow breadth of manufacturing and marketing operations (Cohn and Lindberg (1972); Hosmer (1957)). Specific suggestions for achieving narrow breadth have included a focus on specialized products, localized business operations, narrow market segments, higher levels of customer service, unique product customization, or operations too small to be of interest to large economy-of-scale firms. In contrast, more recent entrepreneurship studies have suggested that new ventures may do better by serving a more broadly defined market with a broad product line (Miller and Camp (1985); MacMillan and Day (1987)).

Based on (1) the contradictions of breadth prescriptions in the new venture literature, (2) the lack of empirical research addressing the manufacturing and marketing focus intersection, and (3) the importance of focus in the operations strategy literature, an additional objective of this research is to examine the degree of manufacturing and marketing breadth practiced by new venture firms.

RESEARCH ISSUES AND APPROACH

This research addresses two general issues for new venture firms in the computer and communications equipment industry:

- (1) Is there a difference between successful and unsuccessful new venture firms in terms of the breadth of their manufacturing and marketing operations'?
- (2) Is there an interactive effect between strategic manufacturing and marketing decisions that serves as a determinant of new venture firm performance?

The research was conducted in two phases. Phase I examines the difference between successful and unsuccessful new venture firms in terms of the breadth of their manufacturing and marketing operations. As a preliminary analysis in phase I, two key environmental issues perceived environmental hostility and manufacturing and marketing entry barriers-were examined to determine whether the key decision makers in the successful and unsuccessful firms differed significantly in their perceptions of the environment. The influence of the environment on the strategy of the firm is well recognized in the literature (Swamidass and Newell (1987); Khandwalla (1977); Sandberg (1984); Covin and Slevin (1988)). Differences in the perception of the environment could substantially alter the firm's strategy. For example, a strategic decision maker who perceives an environment to be hostile would logically adopt a different strategic posture from one who views his or her environment to be non-hostile or benign. Therefore, it is necessary to first compare the environmental perceptions of the two groups. If significant differences exist, then the decision makers's perceptions of the environment could become a confounding factor in the analysis, and a possible alternate explanation of performance differences.

Environmental hostility and the height of entry barriers are of particular relevance to the new venture manufacturing firm. With the high failure rate of new ventures, survival is a critical issue in the venture's early years. Khandwalla (1977) describes a hostile environment as risky, stressful, dominating, requiring a careful strategy, and one in which it is easy to fail. A hostile environment is characterized by intense competition and the relative lack of exploitable opportunities.

In contrast, non-hostile or benign environments offer the new venture a safe setting due to its overall level of munificence and richness in investment and marketing opportunities (Khandwalla (1977); Miller and Friesen (1983)). As recent market entrants, new ventures have had to overcome entry barriers, and in many cases may still be operating at a cost disadvantage to incumbents.

Phase II of the research addresses the general proposition that manufacturing strategy decisions, marketing strategy decisions and business strategy are important determinants of new venture firm success. As such, additive and integrative multivariate models of firm performance are examined. More specifically, three different explanatory models of new venture firm performance are considered in this phase of the research. Model I includes manufacturing decision variables along with a key business strategy decision variable--degree of emphasis placed on price leadership. Interaction terms are also included in this model. Model II includes marketing decision variables along with the business strategy decision variable. Again, interaction terms are included in Model II. Model III is a fully integrative model containing manufacturing, marketing and the business strategy decision variable, along with interactions.

RESEARCH METHODOLOGY

Sample

This research is part of an on-going, comprehensive study of new venture firm strategy and performance. The research data base was compiled from surveys validated in a pilot study which were mailed to new venture manufacturing businesses using addresses obtained from Dun and Bradstreet. The targeted new ventures operated in nine SIC codes in the computer and communications equipment manufacturing industries. Consistent with prior research, a firm was considered a "new" venture if it was eight years old or less (Biggadike (1979); Miller and Camp (1985)).

The data base was checked for representativeness by comparing the research data base with the population of all Dun and Bradstreet new ventures in the industries studied. A chi-square analysis confirmed that the survey respondents did not differ significantly ($p = 0.05$) from nonrespondents on firm size or geographical location. Additionally, a follow-up telephone survey of 23 nonrespondents was conducted. There were no significant differences in any of the basic characteristics describing nonrespondents and the participants.

Reliability was examined using a sample survey of second respondents. At the request of the researcher, a different senior executive in fifty randomly selected new ventures in the sample completed an abbreviated survey form. Pearson correlation coefficients of the strategy variables for each of the fifty pairs of respondents were used as a measure of reliability. High correlations between the pairs of respondents within each firm would argue for a high degree of reliability of the instrument. The average of these fifty correlation scores was 0.58. For an extensive discussion of the data base see McDougall and Robinson (1990).

In studying new ventures it is important to distinguish between ventures started by an entrepreneur or team of entrepreneurs (independents) and those ventures which are corporate-sponsored (McDougall, Deane, and D'Souza (1992)). Independent and corporate sponsored new ventures face different challenges when entering an industry (Hines (1957); Bevan (1974); Heflebower (1951)). For example, corporate-sponsored ventures may have greater access to capital, skilled management, synergy with the parent's existing products or technologies, and more staying power (Caves and Porter (1977); Hines (1957)). Independents typically are unencumbered by existing process technology, have a clear decision process, and lack

bureaucratic inertia (Weiss (1981); Fast (1981); Stocking and Watkins (1951)). Also, the corporate level strategy of the parent may confound the manufacturing strategy of the new venture. Therefore, the first step in the analysis was to exclude the corporate-sponsored new ventures from further study.

Measures

Six manufacturing strategy and six marketing strategy variables were examined in this study. Respondents indicated on a seven point bi-polar scale the emphasis the business unit placed on each strategic manufacturing and marketing variable when compared to other firms in the industry. The manufacturing strategy and marketing strategy variables are presented in Table 1.

TABLE 1
MANUFACTURING AND MARKETING DECISION VARIABLES

Manufacturing Decision Variables	Marketing Decision Variables
1. Emphasis on specialty versus commodity products	1. Size of geographic market served
2. Emphasis on new product development	2. Level of advertising and promotion expense
3. Emphasis on cost reduction	3. Profitability versus market share growth emphasis
4. Size of customer orders	4. Frequency of customer purchases
5. Level of Product Quality	5. Number of customers
6. Long versus short term supplier contracts	6. Number of distribution channels

One type of business strategy-a price leadership strategy-was examined. Sandberg (1984) identifies price leadership as a key generic new venture strategy. Respondents indicated their relevant position on a seven point bipolar scale anchored by “lowest price offering” and “premium price policy.”

The environment was examined using twelve industry variables reflecting entry barriers and environmental hostility. These variables are listed in Table 2. Respondents indicated on a seven point bi-polar scale their perceptions of each industry variable.

TABLE 2
INDUSTRY HOSTILITY AND ENTRY BARRIER PERCEPTION VARIABLES

Variable	Hostility	Entry	Barrier
1. Growth in industry demand	x		
2. Presence of restrictive government policies	x		
3. Presence of industry price wars	x		
4. Extent of domestic competition	x		
5. Extent of international competition	x		
6. Access to distribution channels	x		x
7. Retaliation to new entrants	x		x
8. Industry dominance by large firms			x
9. Efficient manufacturing plant size			x
10. Presence of economies of scale			x
11. Significance of proprietary knowledge			x
12. Customer loyalty			x

Strategic breadth of the new venture firms was analyzed along eight manufacturing and marketing variables. These variables, shown in Table 3, reflect breadth of manufacturing and marketing operations. It was of interest in phase I of the research to determine whether successful and unsuccessful new venture firms exhibit a different degree of strategic breadth in terms of these manufacturing and marketing variables.

TABLE 3
VARIABLES USED TO REFLECT STRATEGIC BREADTH

	Mean Sample Response	Mean Response for Successful Firms	Mean Response for Unsuccessful Firms
1. Range of Products Offered (1 = narrow, 7 = broad)	3.32	3.37	3.23
2. Breadth of Geographic Market Served (1 = limited, 7 = broad)	5.10	4.95	5.40
3. Market Segments Served (1 = one, 7 = numerous)	4.50	4.59	4.30
4. Number of Different Customers Served (1 = small #, 7 = large #)	3.84	4.02	3.47
5. Number of Distribution Channels Served (1 = single, 7 = many)	4.51	4.33	4.87
6. Degree of Backward Integration (1 = none, 7 = extensive)	2.93	2.95	2.90
7. Degree of Forward Integration (1 = none, 7 = extensive)	4.43	4.44	4.40
8. Scale of Market Entry (1 = small, 7 = large)	2.43	2.27	2.77

A new venture performance scale, similar to that used by Dess and Robinson (1984) was included in this study. Respondents were asked to indicate on a five-point percentile scale the performance of their business unit as compared to similar businesses in the industry on return on investment (ROI), return on sales (ROS), sales growth (SG), and market share (MS). The mean score on these criteria was used as the new venture's performance figure.

There are no generally accepted guidelines for measuring performance of new venture firms, and there is little agreement on measures or sources of information (Brush and VanderWerf (1991)). Subjective measures of performance were chosen over objective data for several reasons. First, small firms are often very reluctant to provide hard financial data (Sapienza, Smith, and Gannon (1988); Fiorito and LaForge (1986)); therefore, more complete financial information could be obtained using subjective measures. Second, it would have been impossible to check the accuracy of the reported objective data since financial data for the sampled firms was not publicly available. Most of the ventures in the sample were small to medium size, privately-held firms. Third, the influence of owners' compensation policies on profits of small firms make financial data difficult to interpret (Cooper (1979)).

Research by Dess and Robinson (1984) found a high degree of relationship between perceptual and objectively determined measures of performance for small and medium sized, privately held firms, leading them to conclude that it is appropriate to use subjective measures where objective data are unavailable. Swamidass and Newell (1987) also elected to use subjective measures of performance in studying manufacturing strategy.

ANALYSIS AND RESULTS

In this research, firms omitting performance data or essential manufacturing/marketing data were first eliminated from the sample. Firms were initially classified into “successful” and “unsuccessful” based on the composite measure of ROI, ROS, MS, and TSG. Firms that reported middle range performance were excluded from the data based on the polar extreme approach (Hair, Anderson, Tatham, and Gradlowsky (1979)). The resulting data base was comprised of 63 successful firms and 30 unsuccessful firms.

Phase I

The twelve environmental variables reflecting the hostility of the environment and the height of entry barriers (see Table 2) were examined as a preliminary step to Phase I of the research. A Hotelling’s T2 test (Green (1978)) was conducted to test the significance of the difference between the centroids of the successful and unsuccessful firms. At a significance level of 0.05, the results of the Hotelling’s T2 indicate that successful and unsuccessful firms tend to have the same perceptions of industry entry barriers and the same perceptions of industry hostility. Thus, it is concluded that differences in strategic posture of successful and unsuccessful firms is not directly attributable to differences in perceptions of industry hostility or entry barriers – important factors in analyzing new venture manufacturing.

In Phase I of the research, strategic breadth of successful and unsuccessful new venture firms was analyzed along the eight manufacturing and marketing variables depicted in Table 3. The results of the Hotelling’s T2 test indicate that successful and unsuccessful firms tend to exhibit the same degree of strategic breadth ($p = 0.05$). A narrow breadth of manufacturing and marketing operations therefore does not help predict firm success since unsuccessful firms were just as likely to have selected a narrow manufacturing and marketing breadth as successful firms. The findings of this phase of the research are not surprising based on the literature defining manufacturing and marketing focus. That is, this research offers implicit support for the theory that successful new venture firms may enter markets either at:

- (1) early product life cycle stages where product volumes are low, and a wide product range is typical, or
- (2) later product life cycle stages where product volumes are higher, typically with a narrow product range.

As such, a measure of new venture firm “focus” must not be limited to a simple analysis of the number of products in the product mix or the number of markets served.

Phase II

In phase II of the research, three regression models explaining performance are developed and compared. Variables used in each of the models are as follows:

Model I: Manufacturing strategy decision variables
Business strategy variable-price leadership
Interactions

Model II: Marketing strategy decision variables
Business strategy variable-price leadership
Interactions

Model III: Manufacturing strategy decision variables
Marketing strategy decision variables
Business strategy variable-price leadership Interactions

These models are represented symbolically in figure 2. Model III represents a more integrative model as compared to Models I and II. If there is an important interaction effect between manufacturing and marketing decisions, then Model III should offer an improvement over Model I or Model II in terms of predicting firm success.

A stepwise regression (Neter, Wasserman, and Kutner (1985)) was conducted to determine the best variables for each model. The results of the regression are depicted in Table 4. Each of the three models in Table 4 contains 13 variables. Model I contains five single variables, three business strategy/manufacturing strategy interaction variables and five manufacturing strategy interaction variables. In Model II, there are three single variables, three business strategy/marketing strategy interaction variables and seven marketing strategy interaction variables. Only Model III, the best predictor of firm success, contains variables reflecting the interdependency of manufacturing, marketing and business strategy. Perhaps even more noteworthy, the stepwise regression rejects all single variables in Model III, opting instead to include only interaction terms, most of which represent manufacturing and marketing interdependency. Of the 13 variables in Model III, one is a business strategy/functional strategy interaction variable, four are intra functional strategy variables, and eight are manufacturing strategy/marketing strategy interaction variables.

As shown in Table 4, the R² value of Model III indicates that 30% of the variation in performance can be accounted for by the interaction variables, compared to Model I's R² value of 22% and Model I's R* value of 19%. The "base" Model III (i.e., manufacturing, marketing, and business strategy variables, without interaction terms) offers a considerable lower R* value of 0.21. Thus, the contribution of the interaction terms is important.

FIGURE 2
ALTERNATIVE MODELS OF PERFORMANCE

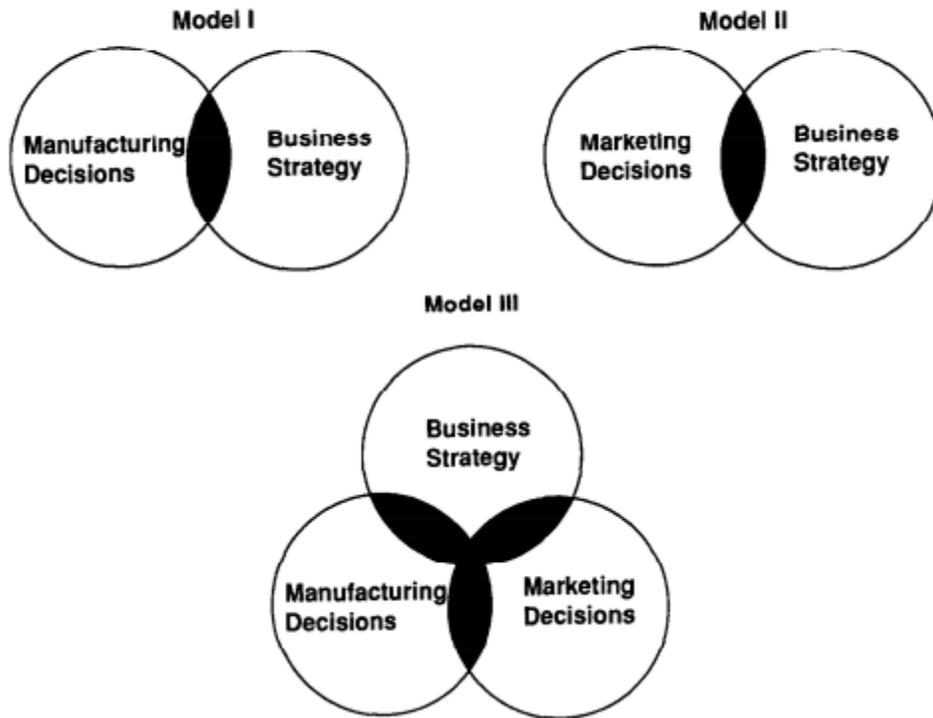


TABLE 4
FIRM PERFORMANCE EXPLANATORY MODEL ANALYSIS

	<i>Model I</i> Manufacturing and business strategy	<i>Model II</i> Marketing and business strategy	<i>Model III</i> Interactive	<i>Base Model</i> Non- Interactive
R ²	0.22	0.19	0.30	0.21
Adjusted R ²	0.16	0.13	0.25	0.14
Single Variables in model	5	3	0	13
Business Strategy x Functional Strategy Interaction Variables	3	3	1	NA
Intra-functional Interaction Variables	5	7	4	NA
Manufacturing Strategy x Marketing Strategy Interaction Variables	NA	NA	8	NA

CONCLUSIONS

This research addresses a practitioner and academic call for more integrative research relating operations with the other functional areas of the firm. More specifically, this research has addressed several aspects of the interdependent nature of manufacturing and marketing decisions

in new venture firms. First, the research shows that the perception of key aspects of the environment, entry barriers and hostility, does not differ between successful and unsuccessful new venture firms. Such a finding suggests that new venture firms do not succeed or fail simply because they perceive the environment differently. In contrast, differences in performances are more likely to be attributable to the manner in which the firms constitute and implement their strategies, given their perceptions of the environment.

Phase I of the research reveals no underlying difference in manufacturing and marketing breadth between successful and unsuccessful new venture firms. The research thus does not support the proposition that successful new ventures must be limited in scope to a narrow product range, a small market segment, a narrow geographic market, and a limited number of distribution channels. It is possible that these results are influenced by the nature of the industry examined. That is, the innovation inherently associated with the electronics industry breeds constant new product development. Many firms in this industry tend to stay perched on the early product life cycle stages for several products simultaneously. As such, the competitive advantage likely offered by such firms is in customization, delivery speed, product development and innovation. Such a successful firm is indeed strategically “focused” based on these competitive advantages. However, this concept of focus is not based on the notion of a “...narrow product mix for a particular market niche.” but on a coherent set of tasks based on a very different set of market requirements.

Finally, this research has specifically addressed the importance of the interaction between manufacturing and marketing decisions in predicting new venture firm success. This study, building upon earlier research (Deane et al. (1990)), suggests that consistency among manufacturing decisions alone may be insufficient to predict firm success. Likewise, consistency among marketing decisions alone is insufficient to predict firm success. Thus, any study that purports to predict new venture firm success based only on an analysis of manufacturing decisions is suspect. Interestingly, one hypothesis, not fully tested but suggested by this research, is that one might be able to predict firm *failure* based on misalignment of key manufacturing decision variables. That is, consistency of key manufacturing decisions is a necessary, but not sufficient condition for new venture firm success. The same is suggested concerning key marketing decisions.

This research makes a contribution to the literature in its attempt to relate firm success to manufacturing and marketing decisions and a price leadership business strategy. The research suffers, however, in not considering the contribution of other functional strategies to firm success. In reality, the other functional areas of the new venture firm contribute significantly to business strategy development, but were not considered directly in the study. The Model III R² value of 0.30 suggests that manufacturing and marketing interaction is important, but still doesn't provide a complete picture of firm synergy. A more complete model for predicting firm success should likely incorporate other strategic, interdependent relationships with manufacturing and marketing decisions (i.e., the firm's human resource management strategy, financial strategy, R and D posture, etc). Subsequent studies will hopefully more fully address this issue. Likewise, this research suggests the need for more definitive studies of “focus” as it applies to new venture manufacturing firms as well as established firms.

Although this research was directed toward new venture manufacturing firms, it is hypothesized that the manufacturing/marketing interaction may be just as important to the success of established firms. However, the testing of such a hypothesis must be left for future research. Future research should also address business strategies other than price leadership.

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