STRATEGIC DECISION PROCESSES IN HIGH VELOCITY ENVIRONMENTS: FOUR CASES IN THE MICROCOMPUTER INDUSTRY*

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How do executives make strategic decisions in industries where the rate of technological and competitive change is so extreme that market information is often unavailable or obsolete, where strategic windows are opening and shutting quickly, and where the cost of error is involuntary exit? How do top management teams divide the decision making responsibility? And how is risk of strategic error mitigated? What we report here is a set of hypotheses induced from a field investigation of four microcomputer firms, where we studied how each of the top management teams went about making major decisions. Our goal was to extend prior work on strategic decision making to what we term high velocity environments. Our results consist of a set of paradoxes which the successful firms resolve and the unsuccessful firms do not. We found an imperative to make major decisions carefully, but to decide quickly; to have a powerful, decisive CEO and a simultaneously powerful top management team; to seek risk and innovation, but to execute a safe, incremental implementation. Despite the apparent paradox, effective firms do all of these simultaneously. These paradoxes are presented in the form of propositions and testable hypotheses.

STRATEGIC DECISION MAKING; TOP MANAGEMENT TEAMS; ENVIRONMENTAL CHANGE; MICROCOMPUTER INDUSTRY; STRATEGY IMPLEMENTATION

Many approaches to developing strategy rely on processing industry information as part of the strategy development process (e.g., Hofer and Schendel 1978; Porter 1980), and numerous studies on strategic processes have been conducted in settings where market data were plentiful enough to permit such analyses. For example, Fredrickson (1984) studied paints and forestry; Miles and Snow (1978), book publishing and hospitals; Jemison (1981), food processing and banks.

However, there are other industries where the rate of change is so extreme that information is often of questionable accuracy and is quickly obsolete. The question addressed by this study is: How do executives make strategic decisions in conditions at this extreme, conditions which we term high velocity environments? By high velocity environments we mean those in which there is rapid and discontinuous change in demand, competitors, technology and/or regulation, such that information is often inaccurate, unavailable, or obsolete.¹

The microcomputer industry is one such industry. At the time we started our study (1984), it had an unusually high rate of change. The industry did not exist seven years previously (Apple was founded in 1977) and the dominant player (IBM) had been in the market for only three years. Technological substitution was a frequent occurrence. Between 1980 and 1985, the UNIX and DOS operating systems supplanted CP/M; 16 and 32 bit microprocessors replaced the standard 8 bit; and the 64K RAM, the Win-

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¹In high velocity environments there is continuous “dynamism” (Dess and Beard 1984), or “volatility” (Bourgeois 1985), but these are overlaid by sharp and discontinuous change (Meyer 1982; Sutton et al. 1986). Using this definition, microcomputers, airlines, and banking are high velocity industries. In contrast, although they score high on dynamism and volatility indices (Dess and Beard 1984; Bourgeois 1985), cyclical industries such as forest products and machine tools are not.

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chester disk drive, and numerous computer architectures such as RISC emerged (Bell 1984, 1986).

Growth rates were explosive. The home computer segment grew by 805 percent in 1982 while the U.S. educational segment grew by 325 percent. Projections made in 1984 were for a “slowing” of demand to a compound annual growth rate of 29 percent (Creative Strategies International 1983). Firms continuously entered and exited the industry, and their relative competitive positions fluctuated constantly. In order of decreasing size, the leading firms in 1983 were Texas Instruments, Commodore, Sinclair/Times, Atari, Apple, and IBM. By 1984, only IBM and Apple were still major players, Sinclair no longer existed, and TI had exited the business. With these discontinuities in technology and competition and these extremes of growth, the information available for strategy was often of dubious quality (Future Computing, Inc., personal communication, 1985).

Strategic decision making is problematic in this kind of environment not only because change is so dramatic, but also because it is difficult to predict the significance of a change as it is occurring (Sutton, Eisenhardt, and Jucker 1986). As a result, it is particularly easy to make poor strategic judgments. A traditional way to avoid strategic errors is to simply wait to see how events unfold, or to imitate others (Bourgeois and Eisenhardt 1987). However, in this environment, the “wait and see” and “me too” decision strategies may also result in failure, as competitive positions change and windows of opportunity close. The dilemma of strategic decision making in this environment is that it is easy to make a mistake by acting too soon, but equally ineffective to delay decision making or to copy others. So, how do decision makers cope?

Based on our field investigation of four microcomputer firms, we induced several hypotheses. We discovered a series of paradoxes which successful firms resolve and unsuccessful firms do not: We found an imperative (1) to make strategic decisions carefully, but quickly; (2) to have a powerful, decisive chief executive officer (CEO) and a simultaneously powerful top management team; and (3) to seek risk while executing a safe, incremental implementation. The empirical derivation of these paradoxes is the subject of this article.

**Background**

There are two predominant views on how executive teams should make key decisions (Mintzberg 1973; Bourgeois 1980; Fredrickson and Mitchell 1984). The “rational-comprehensive” approach assumes that top management can agree on goal priorities, search thoroughly for alternatives, and then integrate the optimal choice into existing strategy (Fredrickson and Mitchell 1984). The alternative approach is based on “political incrementalism,” in which there is no necessary *a priori* goal consensus (Lindblom 1959; Quinn 1978), search is problemistic and constrained (Cyert and March 1963), and choice is either satisficing (Simon 1957) or delayed (Quinn 1980). Under this approach, strategy is made piecemeal, adaptively, and in small increments, rather than comprehensively and in large, purposeful chunks.

The contrasts between these two approaches suggest several perspectives which might be taken when investigating strategic decision processes in high velocity environments. For example, the Rational Actor model (Allison 1971) suggests that strategic success depends on careful analysis and planning before action is taken. This suggests a picture of a contemplative, deliberative group of managers. In his book “groupthink,” Janis (1982) argues that extensive consideration of goals and a wide range of alternatives is a prerequisite to sound decision making. George (1980) describes superior decision making among U.S. presidents and their advisors in terms of the rational model. As all three studies focus on crisis and time-constrained decision making, one might conclude that “rational” processes are appropriate for high velocity environments.
However, many authors criticize this model as unrealistic, particularly in rapidly changing environments with their lack of information or time to process it. Both cognitive and resource limits force us to abandon comprehensive, rational analysis (Simon 1957; Cyert and March 1963). At best, viability of the rational model is seen as contingent upon a stable environment and bureaucratic organization (Mintzberg 1973), a view supported empirically by Fredrickson and Mitchell (1984). Further, Fredrickson's subsequent research suggested that incremental processes should be used in unstable environments (Fredrickson 1984). If we generalize from this literature, we might expect incrementalism to be more effective in high velocity industries.

Our dilemma is that the literature cited could suggest either approach—rational or incremental—as appropriate for high velocity environments.

Another set of questions revolves around the role of the CEO. Should the CEO act as "commander" by dictating strategy; as a consensus-builder who involves the entire team in making strategic decisions; or as a premise-setter who stands back after articulating general guidelines, letting the top management team make strategy (Bourgeois and Brodwin 1984; Mintzberg and McHugh 1985; Mintzberg 1987)? It is often suggested in both the strategic management and group dynamics literatures that decisions should be a product of management team involvement and consensus (Bourgeois 1980; Leavitt 1951; Bavelas 1951), and that firms with consensus CEOs will be more successful, particularly under conditions of high uncertainty. In its treatment of how organizations should be structured, the environmental contingencies literature also supports the idea that firms should be less centralized and mechanistic under conditions of high uncertainty and change (Burns and Stalker 1961; Lawrence and Lorsch 1967). However, building consensus takes time, and conditions of high velocity suggest a continual crisis orientation, a condition conducive to centralized, CEO dominated decision making (Mintzberg 1979).

The dilemma, again, is that while the literature on decision making and organization design is suggestive of general research questions, it is a problematic source of hypotheses because it supports a variety of conflicting predictions. Moreover, few field studies of actual corporate strategic decision making have been conducted in high velocity environments. This led us to pursue the inductive, case study approach described next.

Research Method

Research Design

We chose to study the dynamics of strategic decisions in their natural setting by investigating four microcomputer firms. Our design was what Yin (1984) has termed "embedded multiple case" design. Embedded design denotes several units of analysis. We conducted our investigation at three levels: (1) the firm (its strategy and performance); (2) the top management team (personalities within and interactions among the group); and (3) the strategic decision (tracing a recent decision). While an embedded design is complex, it provides greater richness and multiple perspectives in explaining behavior.

Multiple case design allows a "replication" logic (Yin 1984)—that is, the logic of treating a series of cases as a series of experiments—each case study serves to confirm or disconfirm the inferences drawn from previous ones. While a multiple case design is more demanding than a single case, it permits induction of more reliable models.2

2 A major challenge in case study research is to ensure that data collection and analysis meet tests of reliability, construct validity, and external and internal validity (Yin 1984). We promoted reliability by (1) using a case study protocol in which all firms and all informants were subjected to the same sequence of entry and exit procedures and interview questions (see "Data Gathering" section), and (2) by creating similarly
Data Gathering

In each firm, we traced the making of a recent strategic decision through documents, extensive interviews with every top management executive, and, occasionally, observation of decision making meetings. After asking CEOs to identify two or three recent or ongoing major decisions, we would select one with the following characteristics: it should (1) involve strategic repositioning or redirection of the firm; (2) have high stakes, that is, outcomes which the executives believe will significantly affect the firm’s performance; (3) involve as many of the functions of the firm as possible; and (4) the decision should be considered representative of “major” decisions taken by the firm. The decisions we studied included entering a new product market, altering a firm’s established identity, betting the firm on a totally new product, and going public. (These decisions will be described fully in the next section.)

By tracing the decision from the perspective of every participant, using a standard set of interview questions, we were able to construct what we call “stories” about each of the decisions. The questions were oriented towards developing a timeline for the decision (e.g., Neustadt and May 1987). The questions concentrated on facts and events, rather than on respondents’ interpretations, using standard courtroom interrogation (e.g., “What did you do? When? Who said what to whom?”), and were pretested with executives who teach part-time at Stanford. (The full interview protocol is available from the authors.)

Each interview was conducted in tandem (two investigators), with one investigator primarily responsible for the interview and the other responsible for taking notes and filling in gaps in the questioning. Immediately after the interview, the investigators recorded and cross-checked facts, as well as their impressions. We followed several rules for within-case analysis (Yin 1984). The “24-hour rule” required that detailed interview notes and impressions were completed within one day of the interview. A second rule was to include all data. The third rule was to add our own impressions, but to separate them from the respondent’s story. In addition, we asked ourselves open-ended questions (“What did we learn?” “How does this compare to prior interviews?”) to generate richer impressions. Finally, when available, archival data documenting the decision were also collected.

Our combination of methods and tandem interviewing address some of the criticisms of relying upon executives’ recollections (Huber and Power 1985). Although we studied only one decision per firm, previous researchers have indicated that a firm tends to make consequential, strategic decisions in an observably consistent manner (Fredrickson and Mitchell 1984; Miles and Snow 1978). That is, although individual strategic decisions might differ in substance, executive teams will follow a consistent pattern across decisions, patterns which persist even as individual positions in the team experience turnover (Weick 1979).

In addition to tracing a strategic decision in each company, we obtained extensive qualitative and quantitative data from each executive, including descriptions of their colleagues and their interactions, as well as descriptions of decision-making sessions in terms of climate, conflicts, consensus, and so forth.3 This provided us a sense of the top management team culture.

organized case data bases for each firm we visited. Construct validity was enhanced by using the multiple sources of evidence described, and by establishing a chain of evidence as we concluded each interview. External validity was dealt with by the multiple case research design itself, whereby all cases were firms from the same industry and relatively similar in size and age. Finally, we addressed internal validity by the “pattern matching” data analysis method described (Yin 1984).

3 We also obtained questionnaire data from each executive. We measured goals, interaction patterns, political behavior, and power. The power question consisted of a matrix in which key decision areas were
Data Analysis and Presentation

Unlike positivist research, there is no accepted general model for communicating interpretive research. Similarly, few guidelines exist for conducting the inductive process central to interpretive research (Hudson and Ozanne 1986). We used the following approach: having collected both qualitative and quantitative data from each firm, each author independently analyzed one or the other data type. In effect, we treated them as separate studies. For each firm, one author calculated group-level scores of conflict, consensus, power, coalition formation and so forth. He or she then analyzed these data for patterns. The other author combined the qualitative responses into narratives. Profiles for each executive were developed from the descriptions given by each member of the top management team, with traits mentioned by more than one executive included in the narrative. For example, Don (CEO of Alpha Computers) was described as “extremely bright” by all of his colleagues, and “very impatient” and “caring” by 3 of 4. These traits were included in Don’s profile, whereas other traits which were mentioned by only one person (e.g., “large ego”) were dropped. This approach was also used to profile the decision climate and style.

Decision “stories” were developed by combining the accounts of each executive into a timeline beginning with decision initiation. We included all events mentioned. In each story, there was agreement around the critical issues of when the decision began, when it was made, and how it was made. Again, using Alpha as an example, the executives all agreed that the impetus for the decision was a board meeting with the corporate officers, that the CEO made the decision alone, and that he did so just before the annual May planning conference. Also, all Alpha executives (including the President) agreed that the decision was unpopular. Although they were few, conflicts in the stories were preserved. These usually concerned one person’s assumptions about another person’s motives or opinions, and not observable actions and events. For example, as reported in the Alpha story, the Vice President of Sales perceived that the Vice President of R&D supported the decision when, in fact, he did not.

Once each of us developed preliminary hypotheses from our respective data sets, we exchanged analyses. We then posted our stories, profiles, and tabulations on the walls around a small meeting room, and searched for patterns in the data.

The search for patterns was assisted by (1) taking pairs of firms and listing similarities and differences between each pair, and (2) by categorizing the firms on a variety of dimensions: public vs. privately held; founder-run vs. professional management; size; first vs. second product generation; and so forth. Although it was not our intention to be normative, one variable which sorted both the quantitative and qualitative data into consistent patterns was a crude measure of performance.

We assessed performance by (1) market acceptance of each company’s major product (order backlog), (2) CEO’s numerical self-report of company “effectiveness” (0–10 scale) compared to ratings given to competitors, and (3) sales and profitability. In all

listed down one side of the sheet and the executive titles were listed across the top. After indicating how important (0–10) each decision area was to the long-run health of their firm, executives were asked to assign scores to each manager on each decision in terms of how much influence that manager had on each decision. This item was introduced during the interview by stating that although most managers have titles that indicate their functional responsibility, many executive teams operate with managers influencing decisions in areas that are not strictly under their titular control.

Power scores for each executive were computed by taking the mean of scores assigned to the executive by every other respondent. Two steps were taken: First, individual influence scores were multiplied by decision importance rating. Second, a mean power score for each person on each decision was computed. Decisions were then grouped according to functional area (e.g., marketing strategies and new product introductions were grouped under “marketing”), and a mean computed. (These scores appear later in Tables 2 through 5.)
cases, market success (as judged by recent revenue growth) paralleled CEO self-ratings. Recognizing the tentativeness of conclusions regarding "performance" with such a small sample and before an industry shakeout has run its course, we nevertheless were able to draw some inferences regarding strategic decision behavior of effective firms in this environment.

Although space prevents our providing "thick descriptions" of each case (McClin- tock et al. 1979), we will describe the four firms, their strategies, executives, and decision dynamics, set within the context of a recent strategic decision.

Four Companies and Their Strategic Decisions

The Alpha Company: Should We Be IBM-Compatible?

The Alpha Company manufactures a broad line of microcomputers and related software for financial applications. The firm has a nationwide direct sales force and is privately held.

The President of Alpha is seen as dominating decision making within the firm. He is described as extremely bright (perhaps brilliant), very impatient, and yet a caring, nice person. Because of his pervasive influence over all decision areas, the prevailing attitude regarding major decisions at Alpha can be described as "Let Don (the President) do it—he will anyway." This is consistent with the fairly relaxed atmosphere we observed and the resignation to Presidential domination which we heard so often.

Communication centers around the President, who imparts information to the top management executives individually. In frustration, the VPs set up Friday afternoon "outlaw staff meetings" among themselves to share information and to get around Don's preference for conducting business in one-on-one settings. Also apparent among Alpha executives are stable coalitions between the VPs of Sales and Operations, who are relatively new to the firm, and the VPs of R&D and Finance, who have been with Alpha for many years.

The strategic decision we traced was: Should Alpha expand product compatibility to IBM computers? The issue first surfaced at an off-site planning conference in May 1983. Several board members and the VP of Marketing expressed interest in tapping the large IBM market. Alpha was not doing as well financially as hoped and some thought that the move to IBM, with its large installed base, would help. The issue brought much argument. The result of the meeting was that Don, personally and alone, investigated the relevant technical problems and market potential.

The President became knowledgeable especially about the technical and market issues. However, he did not attempt to gain information from his functional VPs about issues such as resource availability in R&D, nor did he explore other alternatives. In early 1984, he developed a plan by which the firm would expand its product line to IBM. Prior to announcing his decision in a group setting, Don solicited—and thought he had gained—individual support for the plan. To his surprise, the rest of the officers (except the VP of Marketing) opposed the plan when he presented it to the group. Their objection was that the move to IBM would require far more R&D resources than the firm had. They also objected to Don's dominating manner on this issue and in general. However, the Marketing VP strongly backed the switch to IBM. His strident support of the move to IBM served as a rally point for the opposition of others. (The Marketing VP was a "hot shot MBA" with prestige consulting firm experience, but the others, including Don, had little regard for him, primarily due to his constant need to collect and analyze information beyond the time when a decision was needed.) The decision stayed in limbo for several months. Since Don scheduled few group meetings, several of the other VPs used the time to lobby directly with him. Although the R&D and Sales VPs
were the major opponents of Don’s plan, they were unaware of each other’s opinion and thus made no attempt to form an alliance.

The annual May planning conference forced the final decision. The President thought that he needed to give the company focus and direction at that meeting. He chose not to move to IBM except for one PC-related product. The decision was made solely by the President. One VP described the decision as “pushed down our throats,” and as still representing too much of a commitment to IBM. All of the VPs were unhappy with the decision. However, they expressed relief in having a renewed sense of focus and that Don did back down somewhat in his thrust towards IBM. The Marketing VP (like many of his predecessors in that position) was let go and has not been replaced.

The Alpha decision was made over a relatively long time although few options were actually considered. The President dominated the decision from beginning to end. He formulated the problem, gathered the facts, and made the choice. As Don said: “I made the final decision on my own, despite opposition from most everyone. I decided ‘the hell with it, let’s go with the PC interface.’” Natural alliances which might have formed around this decision (e.g., VP Sales and VP R&D) cut across traditional coalition boundaries and did not occur. Rather, each VP used the familiar pattern of one-on-one influence attempts with the President, and each VP was unaware of the opinions of the other VPs. The stable coalitions blocked information flow within the group. In the end, the President just decided and the decision was unpopular.

Alpha’s performance has not measured up to the President’s expectations. Alpha carries a strong balance sheet, but its growth has been declining and profitability has dropped steadily over the past four years from 17% to 6%. In both market tests (growth) and CEO self-rating, Alpha was the lowest performer in our sample.

First Corporation: Do We Need a New Name?

The First Corporation is a manufacturer of supermicro computers for professionals. The firm has always oriented its products towards the sophisticated user. Thus, the firm sells directly to OEMs and systems integrators.

The Chairman and CEO is the founder of First. He is seen as both brilliant and volatile. As described by one VP, “Geoff is sometimes like a gun that goes off, but you never know in what direction he will fire.” The 51-year-old President and COO plays a complementary role to that of the Chairman. He appears to mediate the relationship between the President and the rest of the officers. Several respondents referred to him as “Pop,” describing him as controlled, organized—characteristics opposite to those of the Chairman. Several of the officers pass ideas through Pop rather than meeting with Geoff directly.

First executives place a premium on being decisive and “getting on with it,” and (as in Alpha) criticize their big-corporation-oriented VP Sales for excessive deliberativeness. As Pop said: “The VP Sales has to have all his facts in before anything can be done.” By contrast, “I got ahead at First because I act.” As in Alpha, First has stable coalitions—between the VPs of Finance and Operations (school friends) and between the President and Chairman. Also as in Alpha, the chief executive dominates every decision.

The ambience at group meetings was described to us as “violent” and frustrating. Several of the officers view meetings with the Chairman with great trepidation, and claim that the meetings are good for small issues, but that major issues are avoided as Geoff goes off on tangents. Most are reluctant to disagree with Geoff in front of a group for fear of being dressed down, but some are willing to do so “one-on-one.” As in Alpha, the officers now hold regular meetings without the Chairman in order to get important issues resolved, as well as to avoid his mercurial outbursts. The dominant attitude at First is: “It’s pretty wild around here—I hope that Pop can keep us together.”
The focal strategic decision at First was: Should the established name of the firm be changed? There had been a long standing dislike of the firm’s name by the officers. The issue had first surfaced 20 months previously when a study concluded that the name was difficult to remember and hard to spell. Some officers just did not like it; as one VP told us, “The name is dumb.” However, the final impetus for the decision was not its unpopularity nor the study, but a letter received in Summer 1984. In it, the attorneys for another company charged First with service mark infringement upon their name. Only a few months earlier, First had problems with a client who confused them with a bankrupt company with a similar name. Although the service mark infringement charge did not have a strong legal basis, it stimulated the Chairman and President to sit down in early September and examine the benefit, costs, and risks of a name change (the cost was estimated to be about 5 to 10% of annual sales). They reportedly decided to change the name at this meeting, but most officers believe that the Chairman had decided to change before this. Later, several VPs, the President, and the Chairman lined up meetings with three name change consultants to select a new name. The first consultant was dismissed for personal style reasons; the second appealed to Geoff, so the third was cancelled. Many names were discussed and everyone offered opinions. The Chairman chose his own favored option and placed the President in charge of the implementation. The time from the initial consultant’s study to final choice took about 20 months.

All of the officers, including Pop, opposed the Chairman’s decision to change the name at this time. Name recognition is a very valuable asset for small firms in the industry, and First had a strong name. The officers feared the loss of marketplace name recognition at the crucial time during which the firm was switching from one type of computer to another. Only the Finance VP made an effort to change the Chairman’s mind. However, as the President said, “This is not a democratic company.”

First’s latest product line has met with only modest enthusiasm from the market. Financial performance has been steady, but unspectacular. Although its profitability is greater than Alpha’s, First is a mediocre performer in terms of sales growth and CEO self-report.

First’s decision process has some similarities to Alpha’s. The decision was dominated by the Chairman and there was complete opposition to the decision among the VPs. As at Alpha, identifiable political coalitions and outlaw staff meetings emerged in defense against a decision process which was dominated by the CEO. Despite the important impact of the decision, there was almost negligible discussion among the VPs themselves or the VPs with the Chairman and the President. A name change was the only alternative considered and it was not extensively analyzed. Also, executives who were described as analytically-oriented (VPs of Marketing and Sales at Alpha and First, respectively) were the least appreciated in each firm and were let go. In other words, both the constrained decision process itself and the short careers of analytical executives indicate a low value placed on “rational” or comprehensive decision processes in these two firms. Finally, both decisions were made over a relatively long time period—12 months at Alpha, 20 months at First.

Whereas Alpha and First shared some similarities in their decision processes and management styles, these were distinctly different from those at Maverick and Zap.


The Maverick Computer Company manufactures networked microcomputer systems for small business. Maverick systems are marketed worldwide through value added resellers, and Maverick has recently emerged with an exciting product. As one VP told us, Maverick’s distinctive competence was expertise in its management team. Bill, the current President of Maverick, was described as “very competitive, very strong,
a master strategist.” All of the VPs had experience at large computer firms and were relatively new to Maverick. The president did a “housecleaning” of the prior management and personally hired each of the new VPs as part of the strategy formation process.

There is a very high level of agreement on policy issues among Maverick executives. As one executive put it, “everyone is working on one common thing—to make that machine the best thing in the market.” Despite the high level of agreement, there is also relatively active challenging of each other’s positions on policy. Unlike at First however, the policy challenges do not occur in the open forum of exasperating group meetings. According to our informants, the Maverick executives tended to disagree with each other “off line” in private, usually after group meetings adjourned. There was a concerted effort by Maverick executives to maintain a team congeniality in group forums and to avoid challenges that may appear to “assign blame”. In concert with this, Bill is known to push for consensus on decisions. The feeling at Maverick is one of a committed team. The dominant decision climate is “Analyze, get consensus, do it.”

The focal strategic decision at Maverick was: What is our new business strategy? As a glamour start-up in the late 70’s, Maverick was expected to have several years of dynamic growth followed by a public offering which would allow all involved to become wealthy. It didn’t happen. Sales went flat, the company managers panicked, and they narrowed the focus of the product. Maverick ended up with an obsolete product in a small market.

Venture capitalists get impatient in scenarios like this. They removed the founders and hired Bill, the current President, to develop a new business plan and a new management team. Bill took charge of both. He quickly instituted weekend planning meetings. As the executives describe the process, it was classic rational strategic planning: (1) analyze the competition, (2) identify the firm’s strengths and weaknesses, (3) identify a target market, (4) understand user requirements, and (5) develop a product strategy. Although we initially interpreted this description as retrospective rationalizing on the part of the President (our first interview at Maverick), we found all respondents independently providing similar accounts.

At the same time, the President systematically assembled a new management team of experienced professionals, several of whom had worked together before. The implementation of the strategy was worked out as each functional executive was brought on board.

The group met each weekend over a three-month period. As one officer described it:

People automatically bought into the plan because the meetings were held outside the normal work time and the group itself actually developed the plan. Bill directed us to the end, but we made the decisions. At each step of the way, Bill would achieve consensus before moving on.

The output of the decision was the business plan for the new “Pineapple” line of networked microcomputers. The pressure to reach a final decision came from the venture capitalists. Maverick executives used three meetings with most company managers to finalize the plan. The decision ended with a company-wide meeting of all employees.

The resulting plan was risky. It called for a leap to an unproven microprocessor technology, adoption of an improved operating system, and a non-IBM compatible system architecture. Nonetheless, all of top management supported the decision and each had a clear understanding of his role in implementation.

Several points are apparent from the Maverick decision. One is that Maverick executives used a highly rational decision making process and a highly participative one. They analyzed many alternatives in detail. Our interviews with these executives became tutorials on the alternatives available in the microcomputer business in finance, mar-
keting, and so on. The Pineapple decision took a relatively short time (3 months), and had high management support. Execution of the decision, however, is being carried out over an extended period, with functional strategies being decided by each VP in a sequential manner. For example, the distribution channel was chosen by the Sales VP several months after the extent of vertical integration was decided by the Manufacturing VP.

Although Maverick had been a mediocre performer prior to Pineapple, its current performance can be characterized as a turnaround: orders for the Pineapple are strong and accelerating. The CEO rated Maverick’s performance as superior to that of his main competitors.

**Zap Computers: Should We Go Public?**

Zap manufactures supermicro computers for professionals. (First and Zap are competitors.) The firm sells directly to a small number of large OEMs and universities. Zap’s key business problem is maintaining its market position through technology as major computer firms enter Zap’s niche.

The President of Zap is very young and nontechnical. He holds an MBA from a prestigious program, and is regarded as bright, people-oriented, and a consensus style manager. The top management team has been assembled during the past three years and includes seasoned veterans from a variety of corporations. The Sales and Engineering VPs apparently give “fatherly counsel” to the President on an informal basis and the President uses them as sounding boards and as a proxy for experience. There are no identifiable coalitions among Zap managers. Coalitions, when they arise, are decision specific. One VP describes their meetings as “very vocal. We all bring our own ideas. The meetings are constructive. We scream a lot, then laugh, then resolve the issue.”

Zap executives are driven. There is an air of breathlessness in the executive suite that is characterized by bursts of energy, rapid communications, and short sentences. There is a no-time-for-BS orientation among Zap executives, who place a premium on getting consensus and acting in “real time.” Communication is often by electronic mail.

The focal strategic decision at Zap was: Should the firm go public? Going public—eventually—has always been part of Zap’s game plan. However, Zap managers did not begin to focus on this issue until May 1984 (three years after initial financing), when they observed potential cash flow problems during their budgeting process for fiscal 1985. Zap managers, especially the President, pay close, even daily, attention to key performance indicators such as bookings and the status of important development projects.

With his finance background, the President spearheaded this decision. He discussed it over the course of the summer with Board members and several of the experienced VPs on an informal basis. The President used his staff meetings to outline the status of the decision, but not really to discuss it. The officers used the staff meeting to question the President on the status of the decision. Although most stood to gain substantial financial rewards, there were mixed feelings about the timing of a stock offering. One VP, an Osborne veteran, wanted to do it immediately. Both the Engineering VP and the Treasurer wanted to remain private, as going public would have profound effects: revenues and earnings would have to be smoothed for reporting purposes (Wall Street punishes volatility), which would constrain manufacturing, sales, and R&D operations and reduce flexibility throughout. The distinguishing feature at Zap is that everyone knew the positions of others and every one backed the President.

In late summer on an airplane trip, the President and the Sales and Engineering VPs came up with an alternative to going public. The alternative was to seek out either a major supplier or customer to buy a significant piece of the firm. This was the so-called “strategic alliance” option. The President used the Sales and Engineering VPs to clarify
his ideas in subsequent meetings. He laid out a calendar, convinced the Board, and negotiated a deal with a major customer in rapid succession. During the Fall the deal was consummated on schedule. The firm still plans to go public, but has structured the going public decision on a quarter-to-quarter basis—depending upon specific earnings, market, and competitive results. In other words, the decision is programmed to occur, given some key contingencies and specific triggers. In the eventuality that the triggers are encountered, each officer has been given a set of tasks to manage so that Zap could go public very rapidly if that were appropriate.

Zap’s decision was triggered by the formal budgeting system, not be external events. The President considered a relatively wide range of options for Zap’s projected cash flow problems—including additional venture capital financing and bank loans. He also analyzed the quantitative as well as intangible factors. As he told us: “We tend to over-MBA it around here.” The final decision was made quickly and was well-supported and understood by the top management team.

Zap’s performance has been spectacular, with growth fluctuating from 25% to 100% per quarter. Zap is considered to be a star in the industry. Right now, Zap has sold more computers than it can make.

Zap’s decision process has some similarities to Maverick’s. The decision was analyzed extensively and several alternatives were considered. The CEOs of both firms appeared to apply “rational” or business textbook analysis to their decisions. Second, both decisions were innovative—Maverick’s technology leapfrog and Zap’s discovery of what is currently termed a “strategic alliance” were both bold. Third, both decisions were taken over a relatively short time period, three months. Fourth, the execution of both decisions was delayed until either the appropriate functional VP could formulate his own strategy (Maverick) or until certain performance thresholds were crossed (Zap). Finally, both decisions were fully supported by relatively apolitical top management teams. A summary of these similarities, as well as those between Alpha and First, is given in Table 1.

Propositions and Hypotheses

The decision to enter a new product-market (Alpha), alter a firm’s identity (First), leapfrog a technology (Maverick), and postpone relinquishing control to public stockholders (Zap), were all critical decisions which had major impact on the firms. The patterns we observed across these decisions allowed us to draw inferences regarding strategic processes in high velocity environments. Here, we present five general propositions, each of which summarizes a set of inferences as a theme. We then develop each proposition into specific hypotheses.

**Proposition 1.** In high velocity environments, effective firms use rational decision making processes.

Earlier, we cited research suggesting that high performing firms in fast paced environments would use incremental approaches to strategic decision making (e.g., Cyert and March 1963; Mintzberg 1973; Fredrickson and Mitchell, 1984). The argument was that, in conditions of instability and information scarcity, strategists would be unable to engage in the structured deliberation and analysis implied in formal strategic planning. Instead, they must react adaptively, dealing with competitive situations only as they arise and with information only as it becomes available.

The picture that emerges from our data is quite different. That is, as the speed of environmental change accelerates, effective executives deal with their extremely uncertain world by structuring it. This is done by employing a thorough, analytic process. In our study, both Maverick and Zap searched well beyond a single alternative and used
computational analyses in their evaluation of strategies. The information gathering by Maverick was a classic textbook strategic planning effort. Maverick executives (1) analyzed their industry, (2) conducted a competitor analysis, (3) identified the firm’s strengths and weaknesses, (4) identified the target market, and (5) developed the strategy. Similarly, Zap’s President often commented that, perhaps, they “over MBA” the organization, from creating a business plan and hitting every target, to measuring every possible activity and performance indicator. The going public decision arose from the formal planning system and was the result of a careful analysis of alternative financing plans. In more formal terms:

H1.1. In high velocity environments, the more analytic the strategic decision making process, the better the performance of the firm.

Our argument has a parallel in psychoanalytic prescription, where persons stressed by a fast, disordered and unstable personal environment are advised to “put their world in order” through a rational process of identifying goals and setting priorities, collecting information, and generating and evaluating alternatives, in order to gain a sense of control (deBoard 1978). Similarly, high velocity environments force executives to structure their cognitive maps and to form their theories regarding which strategies will succeed, as well as to cope psychologically with the instability.

The difference between our results and those of Fredrickson and Mitchell (1984) may be due, in part, to our differing methods (theirs was a scenario-based field study in the forest products industry). Another explanation may be that the computer industry may have a higher velocity than forest products, which, in turn, creates enhanced pressures for a more rational approach. Applying the Dess and Beard (1984) definition of “dynamism,” which is based on aggregate industry demand figures, it appears that the insta-
bility of the forest products industry is caused largely by cyclical demand for a commodity product rather than by the more extreme instability of discontinuous change in the microcomputer industry. Possibly, then, rational-analytic processes may be most appropriate at the extremes of industry stability (stable paints, high velocity microcomputers), while incremental processes are more appropriate at the mid-range of instability (e.g., unstable forest products).

As alluded to in our literature review, some authors juxtapose the behavioral theory of the firm as a major alternative to normative "rational" decision models (Cyert and March 1963; Bower 1970; Allison 1971). Our data also indicate that the behavioral model does indeed describe strategic decision making behavior. However, in this environment it characterizes the behavior of poor performers. Both Alpha and First examined a constrained set of options without much reliance on analytic detail. In classic satisficing behavior, Alpha considered only two alternatives (IBM compatibility or not), and stopped gathering information when the President was satisfied with whatever amount he had collected at a point in time. In First, there was no search at all undertaken for alternatives to a name change. In fact, although three consulting firms were contacted, a satisficing search pattern was evidenced. First's CEO rejected the first firm for emotional reasons and accepted the second firm because it "looked reasonable," causing the cancellation of any consideration for the third firm. Thus,

**H1.2.** In high velocity environments, the more comprehensive the search for strategic alternatives, the better the performance of the firm.

Finally, the firms also differed in the extent to which the senior executives could articulate their companies' goals. In First, there was no particular strategic goal involved, just the chairman's opportunistic reaction to a questionable lawsuit. By contrast, executives mentioned Maverick's goal as the "Best damn machine on the market." Zap's goal was the "largest possible war chest" with the fewest possible strings attached. In each firm, more than one executive volunteered the goal without our prompting. Note that both of these goals are proactive, reaching ("best," and "largest"), whereas First and Alpha were both reacting to negative stimuli (a lawsuit and declining profits, respectively) and did not articulate goals, let alone positive ones. In times of rapid change, people need an anchor for their actions, and clear, explicit goals provide this. Thus,

**H1.3.** In high velocity environments, the clearer and more explicitly articulated the institutional goal, the better the performance of the firm.

**PROPOSITION 2.** *In high velocity environments, effective firms try new things.

The "threat-rigidity" hypothesis in organization theory suggests that under conditions of environmentally-induced stress, firms will exhibit a tendency toward well-learned or habitual responses (Staw, Sandelands and Dutton 1980). This is due, in part, to executives' tendency to centralize authority and tighten internal control when faced with environmental change or turbulence (Bourgeois, McAlister and Mitchell 1978), which in turn leads to "rigidity" in response. These habitual, or rigid, responses will be maladaptive if the environment is undergoing radical change (Gladstein and Reilly 1985).

One form of environmental "threat" is severe time pressure associated with decision making (Gladstein and Reilly 1985)—a condition characteristic of the microcomputer industry. Under these circumstances, the "natural" response of executives is to centralize authority and to continue previous strategies, not to pursue new strategies or innovative alternatives. In Cyert and March (1963) terms, firms engage in problemistic search—i.e., they search for solutions to problems in the neighborhood of old solutions before searching for untested ones.
The evidence from this study suggests that the effective firms are able to resist the rigidity response and to experiment—sometimes at high risk—with their environments. For example, Zap pioneered the concept of strategic alliance, in which a much larger external partner is sought as an alternative to traditional external financing. Similarly, Maverick pioneered a new technology in the Pineapple. In contrast, lower-performing Alpha followed an imitation strategy by examining an alternative—IBM compatibility—already prevalent in the industry.

H2.1. In high velocity environments, the more innovative and risky the set of strategic alternatives examined and chosen, the better the performance of the firm.

Taken together, Propositions 1 and 2 seem to present something of a paradox. Effective firms act rationally, but seek innovation and risk. Several authors suggest that rational and analytical planning often suffocates innovation and creativity (Weick 1979; Peters and Waterman 1982; Mintzberg and Waters 1982). How are these reconciled? One answer lies in Proposition 3.

PROPOSITION 3. In high velocity environments, effective firms make strategic decisions quickly.

What we found seems counter-intuitive. Essentially, in high velocity environments, the need for rational planning seems critical, in that it sets a general direction for the firm and allows the top management team and the rest of the organization to focus on execution, or, at least, on watching for decision threshold triggers (see Proposition 4 below). In both Maverick and Zap we found the President taking and announcing a dramatic decision with execution involving the adaptation and sometimes reformulation of strategy by the rest of the top management team as events occurred and new information was available to the firm. This contrasts with Quinn's (1978, 1980) conclusion that effective CEOs make major strategic decisions privately, and subsequently reveal these decisions over a possibly long period of time as subordinates expose "corridors of indifference" through their own proposals. Quinn's model probably holds in very large corporations in more mature industries (his sample included Chrysler, GM, Xerox). However, our data indicate that a high velocity environment leaves no room for this wait-and-nurture strategy.

H3.1. In high velocity environments, the shorter the time frame in which strategic decisions are made, the better the performance of the firm.

The key to resolving the paradox of rational planning versus innovation (Propositions 1 and 2) is the relationship of time to decision and implementation. Effective executives make decisions rapidly. For example, the CEOs of Zap and Maverick made major, strategic decisions in less than three months. Each had a tight cycle of analysis, planning and decision making. Zap was characterized by an atmosphere of breathless pace and intense focus. Maverick executives dedicated three months to developing a new strategy. By contrast, the decision at Alpha (the lowest performer) lasted 12 months, while First took 20 months from initial sensing to final decision. The more effective firms use a short, focused and intensive planning process in which an often bold, overall decision is set. This short, intensive process may well induce a kind of "risky shift" in the decision making which encourages innovation. But this also presents another paradox: How can firms do careful, rational planning (Proposition 1), which suggests time invested in search and analysis, yet act boldly (Proposition 2) and swiftly (Proposition 3)?

PROPOSITION 4. In high velocity environments, effective firms build in decision execution triggers.

Effective firms appear to put structure onto a stream of unstructured decisions. The CEO makes an initial, decisive choice, but also lays out subsequent decisions to be
triggered by a schedule, milestone, or event. Zap would go public only after certain quarterly results were attained; the going-public decision would be postponed whenever strategic alliances (financial infusions from corporate partners) could be found. The Maverick CEO had set in place a grand strategy and had programmed the recruiting of top functional managers and the critical decisions in those functions. In both cases, the execution decisions were to be postponed until the appropriate managerial resources could be focused on them. By contrast, neither Alpha nor First used decision triggers, although their decisions were amenable to them.

H4.1. In high velocity environments, the greater the articulation of implementation triggers at the time a strategic decision is taken, the better the performance of the firm.

Execution triggers allow firms to keep implementation options open as long as possible without diverting management attention from other activities. Execution triggers help to control the risk of innovative decisions made quickly. What emerges is a model of swift and rational planning with adaptive execution. Analytical thinking orders a fast-moving world (Proposition 1), and provides a psychological coping mechanism. Threshold-triggered execution decisions prevent premature commitments to irretrievable action (this proposition), which provides a behavioral adaptation mechanism. The former provides order, the latter prevents error. Certainty is attained at a meta, or intellectual level; while uncertainty is maintained at the action, or behavioral level. In high velocity environments, the latter allows the pieces of a strategy to be changed as the environment or the requirements of the situation change.

PROPOSITION 5. In high velocity environments, effective firms vest power to implement strategy in the top management team.

Vroom and Yetton’s (1973) model of effective decision making makes links fast decisions with autocratic leadership. So it was not surprising that, in this fast-paced environment, all four of the decisions we studied were made by the CEO. Although there was a fair degree of consultation with the top management team in Maverick and Zap, the CEO was always in charge, and acted as something of a “dictator”. Moreover, in all firms the decisiveness provided a “let’s get on with it” attitude on the part of the top management team, accompanied by a sense of relief and focus. So, although the CEO seemed to be dictatorial on occasion, the top management team saw some benefits in this.

What differs across firms was the extent to which execution of the decision was put squarely in the hands of the functional vice presidents. In Maverick and Zap, the execution triggers described above were identified and planned for by the functional executives, not the CEO. For example, Maverick’s VP Software chose the Pineapple’s operating system, the VP Marketing decided on the distribution channel, and the VP Manufacturing decided the extent of vertical integration. Thus,

H5.1. In high velocity environments, the greater the delegation of execution triggers the top management team, the better the performance of the firm.

This conclusion is further supported by our quantitative data on power distribution within the executive teams. As shown in the power matrices given in Tables 2 and 3, Alpha and First (the low performers) centralized all policy-level decision making in the CEO. (Footnote 3 explains how we computed power scores.) By contrast, Maverick and Zap exhibit power patterns in which the CEO is frequently only the second most powerful executive on several decisions. The greatest power over a functional area generally resides in the functional vice president (see Tables 4 and 5).

The picture captured by our power matrices shows an empowered group of senior executives among the high performers, and an emasculated top management team among the low performers. In formal terms,
TABLE 2

Alpha Power Matrix

<table>
<thead>
<tr>
<th></th>
<th>President</th>
<th>VP Sales</th>
<th>VP Finance</th>
<th>VP Ops</th>
<th>VP R&amp;D</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marketing</td>
<td>8.8**</td>
<td>6.7</td>
<td>4.7</td>
<td>2.7</td>
<td>4.1</td>
</tr>
<tr>
<td>R&amp;D</td>
<td>8.0**</td>
<td>3.8</td>
<td>3.7</td>
<td>2.9</td>
<td>5.6</td>
</tr>
<tr>
<td>Finance</td>
<td>4.2**</td>
<td>2.0</td>
<td>3.6</td>
<td>2.1</td>
<td>1.5</td>
</tr>
<tr>
<td>Operations</td>
<td>4.8**</td>
<td>2.0</td>
<td>2.7</td>
<td>3.3</td>
<td>2.9</td>
</tr>
<tr>
<td>Organization</td>
<td>7.1**</td>
<td>4.7</td>
<td>4.6</td>
<td>2.8</td>
<td>3.6</td>
</tr>
<tr>
<td>Total Power</td>
<td>6.6</td>
<td>3.8</td>
<td>3.9</td>
<td>2.8</td>
<td>3.5</td>
</tr>
</tbody>
</table>

Conclusion: CEO (President) is the most powerful executive in every decision area, with functional VPs being second-most powerful in their respective fields.

** = highest power score in top management team on each decision area.

H5.2. In high velocity environments, the more the power to make functional strategy decisions is delegated to the functional executives, the better the performance of the firm.

Thus, while we see the autocratic decision pattern suggested by Vroom and Yetton (1973) for fast paced decisions, we also see the decentralized pattern of decision authority advocated by contingency theorists (Burns and Stalker 1961; Lawrence and Lorsch 1967) for highly uncertain environments. The effective firms are able to operate with both patterns of decision making simultaneously.

As exhibited by the less effective firms, one consequence of keeping power from the top management executives is compensating behavior: Alpha and First seemed more inclined to either engage in behind-the-scene political behavior through stable coalitions (Alpha), or to vent emotions in psychologically destructive ways (First's "gun about to go off"). Also, both top management teams formed "outlaw meetings" to circumvent their CEOs' power-centralizing tendencies, exhibiting clear self-preserving political actions.

H5.3. In high velocity environments, the greater the power centralization in the chief executive, the greater the level of political behavior among the top management team.

But in high velocity environments, political behavior is associated with poor performance. Thus,

TABLE 3

First Power Matrix

<table>
<thead>
<tr>
<th></th>
<th>Chairman</th>
<th>VP Sales</th>
<th>VP Finance</th>
<th>VP Ops</th>
<th>President</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marketing</td>
<td>8.1**</td>
<td>6.3</td>
<td>3.4</td>
<td>3.2</td>
<td>3.3</td>
</tr>
<tr>
<td>R&amp;D</td>
<td>8.5**</td>
<td>6.0</td>
<td>1.7</td>
<td>1.3</td>
<td>2.0</td>
</tr>
<tr>
<td>Finance</td>
<td>3.0**</td>
<td>1.2</td>
<td>3.0</td>
<td>1.4</td>
<td>1.9</td>
</tr>
<tr>
<td>Operations</td>
<td>3.4**</td>
<td>0.7</td>
<td>2.3</td>
<td>2.6</td>
<td>1.5</td>
</tr>
<tr>
<td>Organization</td>
<td>5.2**</td>
<td>1.2</td>
<td>3.2</td>
<td>1.1</td>
<td>3.4</td>
</tr>
<tr>
<td>Total Power</td>
<td>5.6</td>
<td>3.1</td>
<td>2.7</td>
<td>1.9</td>
<td>2.4</td>
</tr>
</tbody>
</table>

Conclusion: CEO (Chairman) is most powerful executive in every decision area.

** = highest power score in top management team on each decision area.
**TABLE 4**  
Maverick Power Matrix

<table>
<thead>
<tr>
<th></th>
<th>President</th>
<th>VP Sales</th>
<th>VP Finance</th>
<th>VP Manuf</th>
<th>VP Engr</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marketing</td>
<td>9.7**</td>
<td>8.7</td>
<td>6.0</td>
<td>5.5</td>
<td>8.0</td>
</tr>
<tr>
<td>R&amp;D</td>
<td>8.7</td>
<td>7.5</td>
<td>4.8</td>
<td>7.2</td>
<td>9.7**</td>
</tr>
<tr>
<td>Finance</td>
<td>7.8** (tie)</td>
<td>2.8</td>
<td>7.8** (tie)</td>
<td>3.5</td>
<td>3.4</td>
</tr>
<tr>
<td>Operations</td>
<td>5.0</td>
<td>2.0</td>
<td>4.7</td>
<td>5.7**</td>
<td>4.9</td>
</tr>
<tr>
<td>Organization</td>
<td>8.4**</td>
<td>5.1</td>
<td>6.2</td>
<td>4.2</td>
<td>3.8</td>
</tr>
<tr>
<td>Total Power</td>
<td>7.9</td>
<td>5.3</td>
<td>5.9</td>
<td>5.2</td>
<td>6.0</td>
</tr>
</tbody>
</table>

Conclusion: except for Sales VP, functional VPs are the most powerful in decision areas associated with their major function.  
** = highest power score in top management team on each decision area.

H5.4. In high velocity environments, the greater the political behavior among the top management team, the poorer the performance of the firm.

Taken together, Propositions 4 and 5 have similarities to the logical incremental model proposed by Quinn (1978, 1980), in which the details of a strategy become known to the organization (and to the CEO) as events unfold. The primary difference in our conclusions lies in the locus of control over the details. In Quinn’s model, the CEO is always the master, but a master of subtlety. The CEO is tentative, suggesting partial solutions, opportunistically broadening support, awaiting the emergence of champions. The formal commitment to a strategy and its announcement come as the *last* action in his model (see 1980, Diagram 3, p. 104). By contrast, our data suggest that formal commitment and explicit announcement are made *early* by the CEO (Proposition 3), but the details of execution *follow from* this rather than *build toward* it. Our effective CEOs make a strong and clearly articulated strategic choice early on. And, the locus of authority for implementation decisions is delegated to the functional vice presidents, not retained by the CEO. The effective CEO’s “let go” of their strategies after the major decision has been made.

**Conclusion**

We began this paper with the question: How do executives make strategic decisions in high velocity environments? Many scholars of decision making have focused their efforts on large corporations in stable environments (e.g., Quinn 1980; Mintzberg and Waters 1982) or on nonprofit organizations (Pfeffer and Salancik 1974; March and

**TABLE 5**  
Zap Power Matrix

<table>
<thead>
<tr>
<th></th>
<th>President</th>
<th>VP Sales</th>
<th>VP Finance</th>
<th>VP Ops</th>
<th>VP Engr</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marketing</td>
<td>5.9</td>
<td>7.8**</td>
<td>3.4</td>
<td>4.1</td>
<td>7.5</td>
</tr>
<tr>
<td>R&amp;D</td>
<td>5.7</td>
<td>5.5</td>
<td>3.2</td>
<td>3.7</td>
<td>9.2**</td>
</tr>
<tr>
<td>Finance</td>
<td>5.1**</td>
<td>2.1</td>
<td>4.1</td>
<td>2.7</td>
<td>3.5</td>
</tr>
<tr>
<td>Operations</td>
<td>5.7</td>
<td>3.5</td>
<td>4.2</td>
<td>7.1**</td>
<td>5.4</td>
</tr>
<tr>
<td>Organizations</td>
<td>5.6**</td>
<td>2.8</td>
<td>2.6</td>
<td>2.6</td>
<td>4.9</td>
</tr>
<tr>
<td>Total Power</td>
<td>5.6</td>
<td>4.3</td>
<td>3.5</td>
<td>4.0</td>
<td>6.1</td>
</tr>
</tbody>
</table>

Conclusion: except for Finance, functional VPs are the most powerful in their respective fields.  
** = highest power score in top management team on each decision area.
Olsen 1976; Mintzberg and McHugh 1985). But the constraints faced by business firms in high velocity environments are different. Strategic decision making is difficult in this environment because mistakes and delays are costly. Once behind, it is difficult to catch up. Imitation is often not viable either, as it implies both waiting and jumping into an occupied niche. Thus, this environment puts a premium on high quality, fast, and innovative decisions.

Several of our propositions focus on the quality of decision making. For example, rational analysis serves this function (Proposition 1), as do decentralizing power to functional VP’s (Proposition 5) and establishing decision threshold triggers (Proposition 4). Rational analysis improves the initial quality of the decision, while decentralized power and decision triggers foster quality through flexibility to changing circumstances. At the same time, delays are avoided through the CEO’s willingness to be decisive and to move quickly (Proposition 3). Innovativeness is achieved by experimentation in the face of threat (Proposition 2), and by keeping the strategic decision cycle short, intense, and focused (Proposition 3).

The overall lessons are a series of apparent paradoxes: Plan carefully and analytically, but move quickly and boldly. CEOs should be decisive, but also delegate. Choose and articulate an overall strategy quickly, but put it in place only as it becomes necessary. Although some authors have described trade-offs between decision quality vs. speed vs. implementation (Vroom and Yetton 1973; Janis 1982), such trade-offs are less accessible to managers in high velocity environments. Rather, these executives must attain all three simultaneously.

We offer these paradoxes as propositions and hypotheses induced from our data. As presently constituted, these propositions and hypotheses are at least one step short of theory formation. At minimum, they are what Merton (1957) and Wallace (1971) refer to as empirical generalizations—they summarize observed uniformities of relationships between variables. At best, they suggest a rudimentary model of strategic decision making in high velocity environments, a model we have summarized in Figure 1.

The fast-moving nature of the microcomputer environment presents the firms in this industry with unique challenges. Given the recent trend toward technological discontinuity, deregulation, and global competition, it is possible that other industries will soon be facing similar rates of change. To the extent that our results are valid and can be

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**Figure 1. A Model of Strategic Decision Making in High Velocity Environments.**

*Associated proposition number*
supported by the data from our next research phase, we think that a normative theory of strategic decision making in high velocity environments can be built.4

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