• *Academy of Management Journal*
1989, Vol. 32, No. 3, 489–515.

STRATEGIC CHANGE: THE EFFECTS OF FOUNDING AND HISTORY

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The research reported here examined the evolution of strategy over time and the conditions under which change in strategy is likely. Findings show that characteristics of an organization's founding imprint its initial strategy by contributing to an internal consensus around a given strategic approach. Conditions subsequent to founding also influence the degree to which an initial strategy is perpetuated. The study examined perspectives on organizational change and inertia and further developed them to explain the role of history and precedence in shaping strategic action.

The evolution of organizational strategy and the extent to which strategy is amenable to change are issues of central interest to strategy theorists (Mintzberg & Waters, 1982; Schendel & Hofer, 1979). Despite extensive debate in the literatures of organizational theory and strategic management over the extent to which organizations can be characterized as possessing inertial or adaptive tendencies (Hambrick & Finkelstein, 1987; Hannan & Freeman, 1984; Singh, House, & Tucker, 1986; Tushman & Romanelli, 1985), little empirical work has examined organizational inertia or adaptation within the context of strategic change. This study explored the relative usefulness of inertial and adaptive views of organizations by examining the evolution of strategy over time and the conditions under which change in strategy occurs.

THEORY DEVELOPMENT AND HYPOTHESES

Organizational researchers seem to vary rather widely in the extent to which they view organizations as adaptive or inertial. Although there has been some convergence of the two views in recent years (Hambrick & Finkelstein, 1987; Tushman & Romanelli, 1985), the assumptions underlying each perspective are quite distinct (Scott, 1981; Singh et al., 1986). Within the field of strategy, two similarly distinct perspectives characterize theory and

This research was supported by grants ISI-8218013 and SES-8510277, from the National Science Foundation, to John Freeman and Michael Hannan. I would like to thank Jerry Goodstein for help with both data collection and comments and Ellen Auster, Glenn Carroll, Jim Fredrickson, John Freeman, Don Hambrick, Mike Tushman, and three anonymous reviewers for their helpful comments on an earlier draft of this article.

research on strategic change. Those who argue for the predominance of *strategic choice* emphasize the role that managers play in monitoring environmental changes and modifying organizations' strategies to match those changes better (Andrews, 1971; Child, 1972; Schendel & Hofer, 1979). In its most extreme form, a strategic choice perspective suggests that organizations change their strategies immediately to reflect changing conditions in their environments (Chaffee, 1985). An organization's managers are viewed as assessing external and internal conditions and adjusting the strategy of the organization to maintain "satisfactory alignments of environmental opportunities and risks, on the one hand, and organizational capabilities and resources, on the other" (Miles, 1982: 14). Thus, management of strategy is seen as the means through which organizations deal with changes in their external environments.

Other strategy theorists have characterized strategy as relatively *inertial* and have argued that organizations are constrained in their ability to adapt. According to this perspective, organizations have a general tendency to preserve strategy rather than radically change it (Quinn, 1980). Miller and Friesen (1984) discussed strategic momentum, a tendency toward persistence that makes organizations slow in adapting to environmental changes. As Starbuck noted: "When an organization adopts one class of strategies, it automatically makes the adoption of other strategies difficult or impossible" (1965: 470). For example, Porter (1980) identified mobility barriers in industries that act as deterrents to the unencumbered movement of firms from one strategic position to another. Researchers have also noted that strategy influences the structure of organizations (Chandler, 1962; Rumelt, 1974), which in turn may limit the range of future strategies considered and implemented (Fredrickson & Iaquinto, 1989). Investment in personnel, capital, and other resources required to pursue a particular strategy can be significant, in turn limiting an organization's ability to change strategy easily (Freeman & Boeker, 1984). Furthermore, over time a given strategy attracts and fosters a set of managerial values and philosophies that are wedded to the strategy (Guth & Taguri, 1965), limiting the range of future strategic choices that are considered.

To the extent that organizational strategy can be characterized as inertial, the strategy that an organization first adopts will circumscribe later strategic change. If past organizational strategies have bearing on the present, the logical place to begin an investigation of the determinants of strategic change is the earliest phase of an organization's existence, its founding (Romanelli & Tushman, 1986). Kimberly noted the importance of the founding of organizations, observing that "just as for a child, the conditions under which an organization is born and the course of its development in infancy have important consequences for its later life" (1979: 438).

Directing attention to an organization's founding also highlights the importance of history in determining future actions (Hannan & Freeman, 1977). Several organizational researchers have noted the importance of history. Lawrence (1984) and Zald (1987) argued that an organization's history

is crucial to its future development and that organizations can only be understood in light of their early phases and subsequent evolution. Selznick (1957) described how early political and social processes largely determine organizational strategy and patterns of subsequent activities. Stinchcombe (1965) noted that events surrounding the creation of a new organization have a long-lasting effect on its future development. Given these potentially powerful historical effects, an important predictor of an organization's current strategy may be its strategy at founding.

The apparent contrast between a strategic choice perspective and an inertial perspective suggested an examination of the conditions under which strategic change can and does occur. This study examined the extent to which organizational strategies exhibit patterns of stability or change by examining the evolution of strategy among firms in the semiconductor industry between the time of their founding and the time of the study. By examining organizational foundings and the histories of organizations from founding on, I attempted to identify the specific conditions that influence changes in strategy.

Strategic Types

Recent work in strategy has often examined the construct of business-level strategy—how firms compete in a business or industry—through strategic typologies (Porter, 1980). Such typologies are especially useful for parsimoniously conveying fundamental differences in the strategic approaches taken by organizations (Hambrick, 1980). Ansoff and Stewart (1967) first introduced a strategic typology specifically created for technology-based industries, and Maidique and Patch (1982) extended it. Extensive pretesting of strategic typologies in the semiconductor industry, including Porter's (1980), Miles and Snow's (1978), and Maidique and Patch's typologies, indicated that the last had the greatest content validity.[1] Maidique and Patch defined four broad strategies commonly found in high-technology industries in terms that are relevant to a technology-intensive environment. Although each of the strategic types they defined was distinct, Maidique and Patch noted that firms could compete using more than one strategy simultaneously. The four strategies are as follows:

(1) The first-mover, or first-to-market, strategy attempts to introduce a product to the market before the competition does so. It provides the advantages of a temporary monopoly in exploiting a new technology during the period preceding the adoption of the new technology by competitors.

(2) The low-cost producer, or cost-minimization, strategy achieves a relative cost advantage over competitors through economies of scale in manufacturing and distribution, through process and product-design modifications to reduce costs, and through overhead minimization and operating-cost control.

[1] See the Methods section for a more detailed discussion of content validity and reliability.

(3) The second-mover, or fast-follower, strategy involves quick imitation of innovations pioneered by a competitor. The emphasis is generally on attracting customers away from the technical innovator. Second-movers attempt to learn from the innovator's mistakes in order to develop an improved, more reliable product that may include features customers desire, and avoid products that have proved to be market failures.

(4) The niche strategy focuses on serving small pockets of customers with special applications of a basic technology.

This study examined the initial strategies that semiconductor manufacturers adopted when they were founded and the conditions under which those initial strategies changed. Before discussing specific variables and their hypothesized effects on the stability of strategy from founding, a point should be clarified. I expected adaptation and change in organizational strategy to be temporal. Younger organizations are more likely to have retained their initial strategies and thus to exhibit less change in strategy than older organizations, which will have had more time to deviate from their initial strategies. The hypothesized effects of age are discussed explicitly below and accounted for in the analysis of the data. The hypotheses assume organizations of the same age.

Development of Hypotheses

Stinchcombe (1965) noted that pressures for the permanence of organizational characteristics are the result of two separate sets of influences: (1) conditions at the time of an organization's founding, which he called "imprinting forces," that strongly define initial characteristics and create internal consensus around the initial form of the organization and (2) events subsequent to founding—"traditionalizing forces"—that tend to preserve previously adopted organizational characteristics. This study examined these two sets of influences for their effects on the permanence of organizational strategies adopted at founding.

Conditions at Founding

The circumstances of an organization's founding play an important role in imprinting the initial form of the organization and limiting later organizational change (Kimberly, 1975; Stinchcombe, 1965). Previous research (Boeker, 1988) has examined the role a firm's environment and founding entrepreneur play in shaping its initial strategy. Organizations set on a course at founding from which change may be costly or difficult, suggesting that early patterns of organizing may limit the range of future strategic actions that firms are likely to consider.

The extent to which consensus develops around a strategy at founding may make the strategy less open to subsequent questioning or redirection by organizational participants. The literature on strategic change suggests several factors that can influence the imprinting of an organization's strategy: the extent to which the initial strategy is dominant, the distribution of influence in the organization, and the ownership of the organization.

Dominant initial strategy. When an organization adopts a particular strategy, a great number of interests simultaneously become vested in that way of doing things, and the organization's strategy can take on the character of an independent, autonomous goal (Selznick, 1957). This is especially true when an organization adopts a single or dominant strategy, which may restrict the range of future strategies that the organization might consider. By focusing on a single strategic approach when it is founded, an organization limits the range of issues it must be concerned with. Porter, describing his three generic strategies of cost leadership, differentiation, and focus, noted that implementing each strategy requires different resources and skills: each strategy "implies different organizational arrangements, control procedures, and incentive systems" (1980: 40).

Maidique and Patch (1982) described each of their four strategic types as requiring different functional competencies in a technology as well as different types of resource commitments. For example, firms pursuing a first-mover strategy require a high level of competence in the basic technology, whereas low-cost producers place much more emphasis on cost-efficient production and require a much lower level of resource commitment to the basic technology (Maidique & Patch, 1982: 279).

Because the adoption of a particular strategy requires specific skills as well as investment in facilities and personnel that may only be marginally useful if a firm adopts a different strategy, firms adopting a single or dominant strategy may be less likely to change their strategy than firms pursuing several strategies simultaneously. For example, a firm pursuing only a first-mover strategy when it begins will likely have developed a strong consensus regarding the appropriateness of this strategy, will have acquired equipment, facilities, and resources uniquely suited for the pursuit of a first-mover strategy, and will have little knowledge about the competencies and skills required to pursue other strategies. Such a firm may be less likely to deviate from this strategic approach than one that attempted to pursue several strategies simultaneously when it began and already possesses competencies in several areas.

Theoretical literature from a wide variety of perspectives supports the notion that adoption of a dominant initial strategy will lead to little subsequent change in that strategy. The literature on individual-level commitment demonstrates that strong early commitment to a particular course of action makes subsequent change more difficult (Rusbult & Farrell, 1983; Salancik, 1977). As Staw (1981: 580–581) noted, there are general cultural norms supporting the notion that good leaders and managers are consistent and remain committed to decisions once they have made them. In addition, work on the escalation of commitment (Brockner & Rubin, 1985; Staw, 1976) has suggested that large initial investments of resources to a particular course of action may lower the likelihood of change in that course of action. Organization-level research on inertia and institutionalization has contended that organizational characteristics and processes that are strongly established when a firm begins become institutionalized over time (Hannan & Freeman,

1984; Meyer & Scott, 1983). Finally, from an economics perspective, Arrow (1974) and Nelson and Winter (1982) discussed how early patterns of activity become routinized as repertories in which there is only limited change.

Hypothesis 1: Organizations that adopt a dominant strategy at founding will exhibit less subsequent change in that strategy than firms not adopting a dominant strategy.

Distribution of influence. The distribution of power and influence in an organization at founding can act as a source of potential support for its initial strategy. Miles and Snow (1978) found that chief executives' perceptions of the top three functions vital to their organizations' competitive success were different depending on the strategy pursued by the organizations. Hambrick (1981), using the Miles and Snow typology, found support for an association between the strategy an organization pursued and the influence of functions within the organization. Hitt, Ireland, and Palia (1982) provided similar evidence in support of a bivariate relationship between organizational strategy and the importance of specific functional groups. Finally, Snow and Hrebiniak (1980), also using the Miles and Snow typology, measured the construct of distinctive competence in terms of organizational strengths in particular areas, such as marketing or manufacturing. They empirically demonstrated that, to be successful, an organization's strategy must be supported by the appropriate distinctive competencies. For example, an efficiency-oriented strategy—in Miles and Snow's terminology, a defender strategy—required a functional orientation aligned with efficient exploitation of an established set of products and markets. Under such a strategy, the functions of manufacturing and production became critical contingencies and acquired great power. Over time, an organization's strategy can become further reinforced and institutionalized through the influence of powerful functional groups that are themselves supported by that strategy (Pfeffer, 1981).

In firms founded with a dominant strategy, the distribution of influence in favor of functions that support the dominant strategy can help maintain that strategy over time. To the extent that an organization pursues a dominant strategy and the distribution of functional influence in the organization is aligned with that strategy, the initial strategy will exhibit less subsequent change than will occur when those conditions do not exist. Thus, an interaction can be posited between the extent to which a firm pursues a dominant strategy and the internal distribution of functional influence: compared to other organizations, those in which the initial distribution of functional influence supports a dominant initial strategy should exhibit less change in strategy since founding.

Braun and MacDonald (1981) noted that, within the semiconductor industry, most firms include three major types of line functions: research and development, manufacturing and production, and marketing and sales. Maidique and Patch (1982) described the competencies that each of the four strategies requires in terms of several of these functions.

First-movers are expected to place high emphasis on research and development. Organizations that rely heavily on innovativeness and being first

to the market with a new product should exhibit a high level of functional expertise in research and development. Consequently, a dominant first-mover strategy will more likely be perpetuated in organizations with a strong research and development function at founding, which will provide a basis of continuing support for that strategy.

> *Hypothesis 2a: Firms in which a first-mover strategy is dominant and in which the research and development function has relatively high influence will exhibit less change in the first-mover strategy from founding than firms in which those conditions are lacking.*

Low-cost producers are likely to emphasize manufacturing and production activities. Organizations that rely heavily on efficiency and low-cost production are expected to have a high level of functional expertise in manufacturing and production. In turn, a dominant low-cost strategy is likely to gain support and be perpetuated in organizations that begin with a strong production or manufacturing function.

> *Hypothesis 2b: Firms in which a low-cost strategy is dominant and in which the manufacturing and production function has relatively high influence will exhibit less change in the low-cost strategy from founding than firms in which those conditions are lacking.*

Managers of firms pursuing a *second-mover* strategy attempt to create imitations (often improved imitations) of products that other organizations have introduced. Successful second-movers serve unmet customer needs by creating slightly modified imitations of existing products. Second-movers will emphasize the functions of marketing and sales, and a second-mover strategy is likely to have more support in organizations where the marketing and sales functions are relatively strong.

> *Hypothesis 2c: Firms in which a second-mover strategy is dominant and in which the marketing and sales function has relatively high influence will exhibit less change in the second-mover strategy from founding than firms in which those conditions are lacking.*

The *niche* strategy also attempts to satisfy specific customer needs that are not served by existing organizations. When pursuing a niche strategy, a firm actually focuses on a small subset of a market; this strategy is similar to Porter's (1980) focus strategy. Customer and market knowledge is especially important, and the dominant competencies required are in marketing, sales, and customer service. Organizations with functional strengths in the areas of marketing and sales are more likely to maintain a niche strategy.

> *Hypothesis 2d: Firms in which a niche strategy is dominant and in which the marketing and sales function has relatively high influence will exhibit less change in the niche strategy from founding than firms in which those conditions are lacking.*

Management ownership at founding. Useem (1984) noted that if an

organization's managers control ownership at founding, the extent of subsequent deviation from an initial strategy may be less than if owners are not managers. Owner-managers are likely to play a highly active role in the activities of a company and be very involved in the formulation of its founding strategy. This personal involvement may make them unwilling to attempt significant changes in the original strategy. Salancik (1977) noted that individuals tend to behave in ways that are consistent with implications of their past behavior and that one of the effects of commitment is to make an earlier-adopted action open to little change. Thus, owner-managers who helped formulate an initial strategy may be less likely to change it than managers who are not owners. Conversely, owners who are not managers may have little personal interest in maintaining an initial strategy that they were not involved in formulating.

Economists interested in principal-agent relationships have also investigated differences between the expected behaviors of managers who are owners and managers who are not owners. Agency theory defines the relationship between owners and managers as a contract between agents and principals in which the incentive structures that are explicitly or implicitly incorporated in the contract condition the agents' behavior. Theories of agency cost further predict that individuals will make operational decisions that maximize their own personal utility (Fama & Jensen, 1983). As Jensen and Meckling pointed out, the benefits derived by an owner-manager may involve "non-pecuniary aspects of entrepreneurial activities" (1976: 312), such as the ability to initiate, build, and maintain an organization with a strategy that the owner-managers themselves have conceived and defined. Thus, founding owners who are also managers may show less willingness to deviate from an organization's initial strategy than owners who are not managers.

> *Hypothesis 3: Organizations in which managers have a high proportion of firm ownership at founding will exhibit less change in strategy than organizations with less management ownership.*

Conditions Subsequent to Founding

To this point, the extent to which initial strategy may resist subsequent change has been related to founding conditions. A more complete understanding of the process by which firms either retain or change their strategies can be gained by considering events subsequent to founding that may also influence the extent of organizational change. Stinchcombe (1965) described such events as "traditionalizing forces." Three factors that may influence the extent to which a firm deviates from an earlier adopted strategy are its performance, its age, and the length of its founding entrepreneur's tenure after founding.

Organizational performance. "If it isn't broke, don't fix it" is a common adage that seems to apply to the manner in which many organizations are managed. As Oster noted: "As long as profit performance is satisfactory,

firms will continue to allocate internal resources using whatever rules of thumb they've used in the past" (1982: 377). Mintzberg (1983) noted that high-performing organizations are seldom faced with stakeholders who advocate fundamental changes in basic operating procedures. Of course, if an organization fails to achieve a sustainable level of performance, it may be forced into a fundamental reordering of activities (Tushman & Romanelli, 1985). For example, Chandler (1962) described the manner in which strategic changes emerged in Standard Oil of New Jersey, E. I. duPont de Nemours and Company, and the General Motors Company as a response to poor performance.

Firms will retain their founding strategies to a greater extent when their performance since founding has been satisfactory, leading to few internal and external pressures for change. During performance declines, organizational members may be more willing than they were previously to initiate and undertake change in the existing strategic direction of their firms.

Hypothesis 4: Organizations with poor performance since founding will exhibit greater change in strategy than organizations with high performance since founding.

Environmental variation and organizational age. Since all the firms in this study operated in the same industry and thus were under similar influences, it was difficult to make specific a priori predictions concerning which environmental changes would lead to changes in strategy for specific firms. If environmental variation takes place at the industry level and a group of firms are operating within the same industry, the total amount of environmental change any organization will have experienced since it was founded should be associated with the type and number of distinct environmental periods the organization has passed through. Carroll suggested that changes in organizational characteristics are to a large extent a result of an organization's having encountered a succession of environmental changes, stating: "Organizational age will coincide roughly with the amount of environmental change experienced by an organization" (1983: 313). Thus, aging may be a surrogate measure of an organization's exposure to environmental change.

To the extent that environmental changes are temporal, the age of a firm offers some indication of the amount of environmental variation it may have experienced. Older organizations will have had more time and thus will have faced more pressure to deviate from a strategy adopted early.

Hypothesis 5: Younger organizations will exhibit less change in strategy since founding than older organizations.

Entrepreneur's tenure. Research on executive tenure (Goodstein & Boeker, 1988; Helmich & Brown, 1972) has demonstrated that the occurrence of executive succession leads to organizational changes. Grinyer and Spender (1979) found that organizations initiated basic changes in strategy or structure only after the replacement of senior managers or the departure of their founding entrepreneur. Sarason (1972) argued that entrepreneurs who stay with a firm after founding for a lengthy period are able to institu-

tionalize initial strategic and structural decisions. After examining newspaper organizations, Carroll (1984) empirically demonstrated that the departure of a founding entrepreneur increased the probability of firm failure. The length of time that the founder remains with a firm can influence the extent to which an initial strategic direction becomes a well-defined and accepted manner of operating that may resist future change.

> *Hypothesis 6: Organizations in which the founding entrepreneur has a long tenure after founding will exhibit less change in strategy since founding than organizations whose founding entrepreneur has a short tenure.*

Figure 1 depicts a model of the effects on the extent of change from an organization's initial strategy to its current strategy of the three conditions at founding and three events subsequent to founding studied here.

METHODS

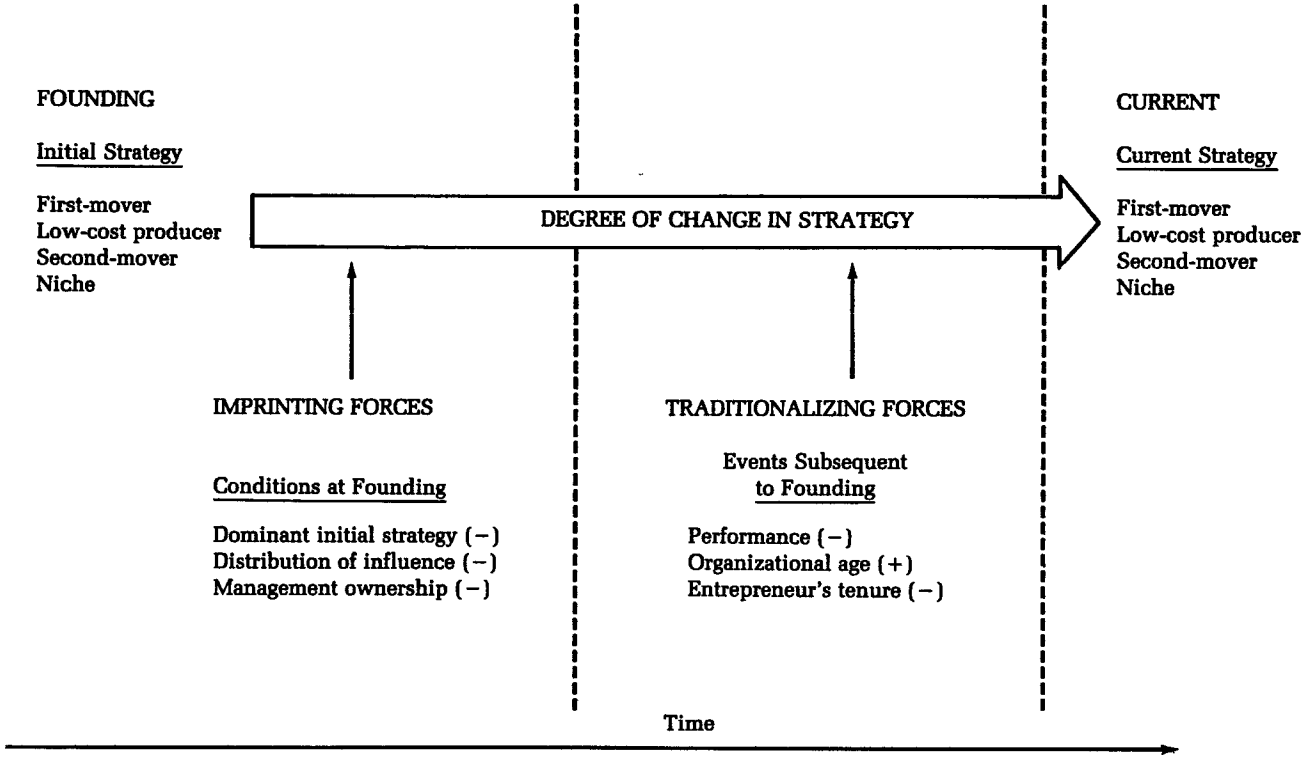
The model was tested on 51 semiconductor producers operating in 1984 in the Santa Clara–San Jose area of California known as Silicon Valley. All the organizations were basically single-business firms that were almost exclusively involved in the semiconductor industry. We initially solicited the participation of 56 semiconductor firms, which constituted the entire population of such businesses that could be identified in the target area.[2] However, 5 firms refused to participate. Chi-square tests comparing the small number of firms that did not participate with the participating firms indicated that the nonparticipants did not differ significantly from the group studied in terms of performance, size, age, or ownership.

One limitation of the data is that all the firms examined were survivors. As Freeman (1986) noted, studying only surviving firms can create biases if survivors vary from nonsurvivors on critical dimensions being studied. Unfortunately, as a practical matter, it is nearly impossible to obtain accurate historical measures of business strategy for semiconductor firms that have failed, particularly those that failed some time ago. A study by Dataquest (1984) of all Silicon Valley semiconductor organizations started since 1977 showed that none had failed yet. Although a low failure rate certainly does not obviate the problems of survivor bias, it does limit the effect it might have on the results obtained, particularly since performance was not a dependent variable in the present study.

Data were collected from three sources: (1) personal interviews with top managers of the organizations, typically including the president or chief executive officer; (2) information collected by and made available through three of the four largest market research firms serving the semiconductor industry; and (3) information from articles in the electronics and business press.

[2] Jerry Goodstein conducted interviews at one-half of the semiconductor organizations in the study.

FIGURE 1
A Model of the Relationship Between Founding and Current Organizational Strategies[a]



[a] Plus and minus signs following variables indicate the hypothesized direction of the relationship between that variable and the degree of change.

Measures

The most important criterion for choosing a typology to measure or evaluate business-level strategy is content validity—in this case, how adequately does a typology describe differences in the ways that firms compete in the semiconductor industry? I completed extensive pretests of the content validity of the Maidique and Patch (1982) typology and other strategic typologies one year before the actual study. The chief executives of five semiconductor firms were asked to judge the extent to which three business strategy typologies accurately represented the manner in which firms competed in their industry. The typologies were from Miles and Snow (1978), Porter (1980), and Maidique and Patch (1982). Each chief executive received a list of potential strategies from each typology and a short description of each specific strategic type. For Miles and Snow's typology, the strategies were prospector, defender, analyzer, and reactor; for Porter, they were cost leadership, differentiation, and focus; and for Maidique and Patch, they were first-mover, second-mover, low-cost producer, and niche. There was unanimous agreement among the five chief executives that the Maidique and Patch typology best described how firms in the semiconductor industry compete.[3]

In order to increase the external validity of the strategy measure, responses from individuals outside each firm were used to evaluate its current strategy, and responses from individuals within each firm were used to evaluate its initial strategy.

Current strategy. Following Snow and Hambrick's (1980) and Harrigan's (1983) suggestions that outside appraisers should validate measures of organizational strategy, I asked independent judges from three of the four largest market research firms that monitor the semiconductor industry to evaluate the current strategies of the 51 firms studied. The current strategy of each firm was measured proportionally on a 100-point scale, which appears in the Appendix. Each judge, one from each of the three market research firms, allocated points representing the extent to which an organization could be characterized as pursuing one of the four Maidique and Patch strategies. For example, if a firm currently pursued only a first-mover strategy, it received a 100 points for first-mover strategy and no points for the other three strategies. A firm that was evenly split between pursuing a first-mover and a second-mover strategy received 50 points for each strategy. The firms studied had values of zero in one of the four strategy types in approximately 90 percent of the cases and values of zero in two or more of the four strategy types in over 70 percent of the cases.

The three judges were sufficiently familiar with the semiconductor or-

[3] Using a strategic typology that is more applicable to technologically intensive industries has both advantages and disadvantages. Avoiding more abstract strategy categories may enhance the quality and accuracy of the responses. However, the Maidique and Patch typology may not be as generalizable as other typologies.

ganizations studied that at least two measures of strategy could be obtained for each firm. I constructed the measurement of current strategy by averaging the scores of all the judges for each firm. Thus, each organization's current strategy score represents the outside judges' average appraisal of the extent to which the firm pursued each of the four strategies.

Since the responses were from three individuals associated with three different outside organizations, informant bias was limited. Because this study attempted to evaluate firms pursuing different strategies by using assessments from several independent sources, the consistency of the responses of different judges (interrater reliability) presented an important issue in terms of both construct validity and the validity of the measurement approach that was taken. Pearson correlation coefficients for interrater reliability were all greater than .80; those coefficients indicate a high degree of agreement among the judges on the strategic approaches of the 51 organizations and lend further support to the validity of the Maidique and Patch typology.

Initial strategy. To measure the initial strategy of the semiconductor firms, we asked the founding entrepreneurs or members of founding teams what they recalled their initial strategy to be. In approximately 75 percent of the firms, we were able to interview either the entrepreneur or a member of the founding team. In all other cases, we interviewed either the current president or a top executive of the firm who knew about the founding. Obviously, recall data have inherent limitations, among the most significant being hindsight bias (Fischoff, 1975). To increase the salience of founding in the informants' memories, we first asked other questions regarding more objective events occurring at that time, such as which products the company first produced and shipped. Questions about the organization's strategy at founding followed. All respondents were asked to judge their firms' initial strategies on the same 100-point scale that was used to measure current strategy. One firm was dropped from this portion of the analysis because the executive interviewed was unable to evaluate the firm's initial strategy reliably.

A second approach for assessing initial strategy involved the collection and examination of articles and press accounts written about each organization at the time of its founding. As Harrigan (1983) noted, comparisons of how various firms within a given industry compete can often be made by investigating media and trade journal coverage of the industry. I examined articles from the business and electronics press for statements regarding what products would be produced and what competitive approach would be used—for example, competition on cost, innovation, or custom applications. Statements about the competitive approach of individual semiconductor firms at the time of their founding were quite common; most semiconductor firms seem eager to generate publicity and increase their legitimacy at founding by making frequent public statements about their competitive approach—several had even hired public relations firms.

The recall perceptions of initial strategy were compared to press statements made at the times of founding. These comparisons showed a high degree of consistency, suggesting that hindsight bias was low.

As a final means of validating the initial strategy measure, the market research executives who judged each firm's current strategy were asked to judge the initial strategies of firms they were familiar with. At least one market researcher rated 48 of the 51 firms, or 94 percent, on initial strategy; 82 percent of the firms received ratings from two individuals; and 61 percent received ratings from all three external judges. I averaged responses from all judges for each of the firms and compared them to the average rating of initial strategy given by the founding managers. Pearson product-moment correlations indicated fairly high correlations between the two ratings (.82 for first-mover, .57 for second-mover, .74 for low-cost producer, and .68 for niche), providing further evidence of the validity of the initial strategy measure. However, since the rating of initial strategy was done after each judge had rated the firm's current strategy, the possibility of priming, or response-response bias, exists, so this validity check needs to be interpreted with caution.

Dominant initial strategy. A firm was evaluated as having a dominant strategy if its rating for initial strategy was at least 50 points out of 100 points in any one of the four strategy categories. On this basis, I categorized 38 firms in the study as having a dominant strategy. Firms with a dominant strategy received 1 in that strategy type and 0 in the three other categories. Firms without a dominant strategy received a 0 in all four categories.

An implication of the dominant strategy hypothesis is that firms that attempt several strategies are likely to show a greater range of variation in the types of skills and resources used than those attempting a single strategy. The amount of variation in the functional backgrounds of the members of a founding group offers some indication of the breadth of skills available to a firm. To examine variation among firms in the functional dispersion of founding members, I compared the functional dispersion of the founding groups of firms with a dominant strategy to that of those without dominant strategies. Founding group members were grouped by functional responsibility into six major categories: research and development, manufacturing and production, marketing and sales, finance, general management, and others. Because functional backgrounds are categorical, I used the Gibbs-Martin index (Blau & Schwartz, 1984) to assess the functional dispersion of founding groups.

The Gibbs-Martin index of heterogeneity is defined as $1 - \Sigma\, p_i^2$, where p is the proportion of the total group that each category represents. I computed Gibbs-Martin indexes for the functional dispersion of each organization's founding group, and performed chi-square tests to determine if there were differences in the amount of functional dispersion between firms with dominant strategies and those without dominant strategies. The results of the chi-square tests demonstrated significant differences between firms with a dominant strategy (Gibbs-Martin index = .66) and those without a domi-

nant strategy (Gibbs-Martin index = .82). This computation provides additional evidence that the functional expertise of the founding groups of organizations without a dominant initial strategy varies more than the expertise of the founders of organizations that have a dominant initial strategy.

Distribution of functional influence. Measurement of the influence of specific functions requires some knowledge of the relative level of resources devoted to various functional areas (Mintzberg, 1983). One construct for determining resource allocation is the level of staffing in various functions relative to staffing in other organizations in the same industry (Pfeffer, 1981). The functional areas that are regarded as most important within an organization are likely to receive a disproportionate share of employees.

As in many other industries, the founding of a semiconductor firm is typically the work of a single individual who then assembles a founding group that forms the core of the organization's initial top management. The composition of the founding group offers an indication of the earliest functional orientation of the firm. Organizations that place great emphasis on a given function are likely to begin with a founding group containing a disproportionate share of people with that particular type of functional experience. Differences among semiconductor organizations in the functional composition of their founding groups provide a measure of differences in each firm's initial functional emphasis and orientation. For example, a firm in which research and development is emphasized may initially have a higher proportion of founding group members involved in research and development activities than other semiconductor firms.

The distribution of functional influence at founding was measured as the proportion of founding group members, excluding the initial entrepreneur, who were engaged in the areas of (1) research, design, and development; (2) production and manufacturing; and (3) marketing, sales, and customer service. Information on the functional backgrounds of members of the founding group of each firm studied was available from two of the semiconductor market research firms.

Performance. Since many of the firms studied were privately held, financial performance data, such as information on profitability, are often not available. However, because many semiconductor manufacturers are willing to operate at a low level of profitability while building market share, sales are often a better indicator of performance than profits (Dataquest, 1984).

Performance for each year an organization had operated was measured by comparing the rate of change in sales from year to year to average changes in sales levels for the entire group for that year. For each year of operation, I categorized firms as poor performers if their rate of increase in sales was more than one standard deviation below that of the average rate of sales increase for the group as a whole in that year. The number of years of poor performance was then summed over the number of years the organization had been operating and the sum divided by the number of years of operation. The resulting measure is the number of years in which a firm has experienced poor performance divided by the age of the firm. To eliminate ambi-

guity, performance is reversed-coded in the reported results so that higher performance scores represent better performance. Two of the firms studied did not provide sales data and were eliminated from this portion of the analysis.

Other variables. *Organizational age* was measured as the number of years since a firm was incorporated. *Entrepreneur's tenure* was the number of years the founding entrepreneur had remained with a firm after its founding, divided by the age of the firm. *Management ownership* was the proportion of firm ownership that members of the founding group initially controlled. Ownership data were unavailable from two firms.

Analyses

The effects of conditions at and after founding on the persistence of initial strategies (Figure 1) were tested by examining the effect of each set of variables on the degree of change in strategy from founding. As an operational measure of the extent to which a strategy had changed from founding, I used a difference score, the absolute value of the difference between each firm's measure of initial strategy and current strategy for each of the four strategic types. For example, if a given organization's measure for first-mover strategy at founding was 70 points and its measure for current first-mover strategy was 50 points, its difference score for first-mover strategy—representing the amount of change in that strategy—would be 20.

The advantages of difference, or gain, scores, particularly when evaluating panel data, are well documented (Huck & McLean, 1975).[4] A potential limitation to this measure of strategy is the use of a fixed (100-point) scale to measure initial and current strategy. A fixed scale results in an ipsative measure, since the scale has fewer degrees of freedom than variables. In this study, for example, if an organization's scores for first-mover, second-mover, and low-cost strategies are known, the niche strategy score can be determined since all four scores total 100 points. However, as Block (1957) and Hicks (1970) pointed out, ipsative scales can be used to make intraindividual or intrafirm comparisons, such as the present comparisons of the strategy pursued by a single organization at two points in time.

Since each firm studied received measures for both initial and current strategy across the four strategic types, I estimated four separate difference scores, one each for the first-mover, low-cost producer, second-mover, and niche strategies, for each firm. Difference scores for each of the four strategic types were regressed against the variables predicted in Hypotheses 1 through 6 to influence the extent of change in strategy from founding. The functional form of the model used to estimate the difference score is as follows:

$$|\text{difference between initial and current strategy}| = f(\text{dominant initial strategy, functional influence, dominant strategy} \times \text{func-}$$

[4] One potential problem with difference scores is the normality of distribution of the scores. Kolomogorov-Smirnof D-statistics indicated that assumptions of normality were not violated.

tional influence, management ownership, organizational performance, organizational age, and entrepreneur's tenure).

RESULTS

Table 1 indicates group means and standard deviations and the correlations among the variables. With age not controlled, correlations between initial and current strategies indicate that the two strategy measures are fairly closely related, although they represent assessments of strategy at different points in time and from different sources.

Table 2 represents results of the tests of Hypotheses 1–6. Hypothesis 1 predicted that firms that adopt a dominant strategy at founding will maintain this initial strategy over time. The coefficients for the effect of dominant initial strategy on strategic change were significant in three of the four equations. Compared to organizations with no dominant founding strategy, organizations with a dominant low-cost, second-mover, or niche strategy at founding exhibited less change in each of these three strategies since founding, indicating general support for Hypothesis 1.

Tests of Hypothesis 2 demonstrate that the interaction of functional influence at founding with the dominance of an initial strategy is a significant predictor of strategic change in two of the four equations. Findings supported both Hypothesis 2a, concerning the effects of research and development influence on the maintenance of a first-mover strategy, and Hypothesis 2b, on the effect of manufacturing and production influence on the maintenance of a low-cost strategy, indicating that firms with both a dominant initial strategy and patterns of subunit influence that are aligned with that strategy show less change in strategic approach than firms lacking that configuration. Conversely, Hypothesis 2c, which concerned the effect of marketing and sales influence on the maintenance of a second-mover strategy, and Hypothesis 2d, on the effect of marketing and sales influence on the maintenance of a niche strategy, received no support. Main effects for the distribution of functional influence alone, although not hypothesized, were also tested in each of the four models and are shown in Table 2. Results for the main effect of functional influence indicate that functional influence at founding was unrelated to the degree of change in organizational strategy.

Tests of the effect of ownership on the difference between current and founding strategy (Hypothesis 3) demonstrate significant effects in two of the four equations. In the case of both the first-mover and niche strategies, a high level of ownership by founding managers was associated with low change in initial strategy, supporting the hypothesis. The ownership of an organization did not significantly influence the association between low-cost and second-mover initial and current strategies.

A limitation of the specification of ownership in this model is that only ownership at founding was used to predict the retention of founding strategy. Obviously, not only ownership at founding, but subsequent change in ownership, will influence the extent to which change in organizational strat-

TABLE 1
Correlations Between Variables[a]

Variables	Means	Standard Deviations	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Difference scores																									
1. First-mover	16 23	4 34																							
2 Low-cost producer	14 46	3 24	37																						
3 Second-mover	21 42	5.67	10	.13																					
4 Niche	13 61	3 42	31	18	19																				
Initial strategy																									
5 First-mover	22 38	13.58	− 26	− 11	14	03																			
6 Low-cost producer	23 80	12 53	18	− 43	09	− 10	− 18																		
7. Second-mover	21 49	10 18	.06	09	− 38	07	− 09	− 15																	
8 Niche	32 34	15 82	− 09	05	− 03	−.40	08	− 12	.07																
Current strategy																									
9 First-mover	21 61	11.28	− 19	12	10	− 04	47	− 11	− 19	− 17															
10 Low-cost producer	29 84	17 37	11	− 21	08	− 02	− 14	54	− 12	− 09	−.11														
11. Second-mover	17 37	12 51	05	.00	− 31	03	− 08	− 13	44	− 10	− 08	−.04													
12 Niche	31 19	16 16	− 08	.01	11	− 18	− 03	− 07	05	.51	03	− 12	− 01												
Dominant initial strategy																									
13. First-mover	0 20	0 27	−.21	− 15	.16	03	.56	− 14	− 06	03	.38	− 11	− 05	− 11											
14 Low-cost producer	0 19	0 25	19	− 47	07	− 12	− 15	49	− 12	−.09	−.13	42	− 07	− 02	−.31										
15 Second-mover	0 17	0 23	09	07	− 39	10	− 12	− 16	43	08	− 06	−.07	.36	− 05	− 27	− 18									
16 Niche	0 19	0 25	− 14	07	− 04	− 43	05	− 15	.05	48	.00	− 02	02	40	− 20	− 19	− 13								
Distribution of influence																									
17 R&D	0 31	0 08	− 28	−.05	.09	13	31	− 10	− 09	05	24	− 17	− 06	08	33	− 10	−.06	04							
18 Manufacturing-production	0 23	0.06	− 16	− 36	.01	07	− 14	.29	− 12	− 11	− 15	31	03	− 04	− 12	27	−.07	− 10	− 18						
19 Marketing-sales	0 29	0 08	.10	12	− 19	− 21	− 08	− 03	18	22	− 03	− 09	29	25	− 09	− 04	14	17	− 16	− 21					
Other moderators																									
20 Organizational age	10 90	6 67	31	.35	40	45	− 03	− 12	08	11	− 08	−.03	11	05	−.02	− 09	06	08	− 07	08	.00				
21 Initial ownership	0 43	0 21	− 35	− 19	− 28	−.39	− 02	12	07	05	12	− 03	− 06	.01	00	10	05	03	05	−.02	−.04	−.02			
22 Current ownership	0 26	0 15	− 21	− 15	− 21	− 23	.03	05	− 03	09	09	− 01	− 04	.03	03	04	− 01	06	06	.00	− 03	− 17	36		
23. Performance	0 17	0 11	− 12	−.41	− 39	− 16	11	− 04	− 06	.09	06	01	− 10	04	09	− 01	− 03	.04	02	−.05	04	14	− 07	−.16	
24 Entrepreneur's tenure	3 70	2.31	− 32	− 19	− 02	− 14	17	08	− 08	− 02	10	.04	−.07	− 03	16	07	− 06	00	.09	− 01	− 05	25	.18	24	.11

[a] $N = 48$, all correlations above $r = .25$ are significant at $p < .05$

egy takes place. If owner-managers relinquish their ownership control soon after founding, an organization will be open to more influence from outside owners. Theoretically, two conditions would seem to be required for ownership to have an influence on the maintenance of a founding strategy: founding managers must both own a significant share of an organization at founding (Hypothesis 3) and subsequently retain ownership of the firm. Thus, the level of current ownership by founding group members is also important.

However, the bivariate correlations of current ownership with strategy difference scores (Table 1) showed no effect of current ownership. When the models in Table 2 were estimated a second time to include both the main effects of initial and current ownership and the interaction of founding and current ownership, there were no significant effects for any of the ownership variables. Both the number of firms studied and the limited collinearity among the three ownership variables (initial ownership, current ownership, and the interaction of initial and current ownership) may account for the lack of significant effects. Other models using various combinations of the ownership variables, singly as well as in pairs, also proved inconclusive. Thus, for this study, only initial ownership appears to be a significant antecedent of subsequent strategic change.

Firm performance is significant in two of the four equations, providing moderate support for the prediction that poor firm performance results in greater pressure for deviation from a founding strategy (Hypothesis 4). Organizational age (Hypothesis 5) shows consistent and significant effects on the extent to which organizations change strategy from founding: in all four equations, older organizations demonstrate more change. Although the significant effects of neither performance nor age on strategic permanence are counterintuitive, they do highlight the importance of a temporal assessment of strategic change and the important role that poor performance plays in motivating strategic change.

Tests of the effect of a firm's founding entrepreneur's tenure on the relationship between founding and current strategy were significant only in the case of the first-mover strategy, providing minimal support for Hypothesis 6. Although entrepreneur's tenure is associated with strategic permanence for the first-mover strategy, any explanation of causal ordering must remain tentative. One explanation, supporting the introductory theoretical argument, is that if entrepreneurs leave soon after founding, those remaining find it easier to initiate changes in the founding strategy. An alternative view is that change in strategy occurs first, and the perhaps disenfranchised entrepreneur then either leaves or is forced out. Without specific event histories of the timing of entrepreneurs' departures and strategic changes, any causal argument must remain tentative.

Finally, although no specific effects were hypothesized, the empirical data were also examined for any evidence of a specific direction in strategic change. It may be easier for firms adopting a particular initial strategy to

TABLE 2
Results of Hierarchical Regression Analysis[a]

Variables	Difference Scores[b]											
	First-Mover Strategy			Low-Cost Producer Strategy			Second-Mover Strategy			Niche Strategy		
	b	R^2	ΔR^2	*b*	R^2	ΔR^2	*b*	R^2	ΔR^2	*b*	R^2	ΔR^2
Constant	22.3			20.5			29.6			26.3		
Dominant initial strategy[c]	−.02	.02	.02	−.10*	.07	.07	−.06*	.06	.06	−.09*	.07	.07
	(.03)			(.05)			(.03)			(.04)		
Distribution of influence[d]	−.05	.03	.01	−.01	.07	.00	−.07	.07	.01	−.02	.07	.00
	(.07)			(.06)			(.09)			(.04)		
Dominant stategy × distribution of influence[e]	−.21**	.12	.09	−.18*	.15	.08	−.06	.08	.01	−.03	.07	.00
	(.07)			(.07)			(.08)			(.06)		
Management ownership	−6.02*	.20	.08	−2.31	.18	.03	−1.20	.09	.01	−8.36**	.16	.09
	(2.41)			(2.03)			(1.36)			(2.79)		
Performance	−.83	.22	.02	−1.57*	.24	.06	−2.01*	.16	.07	−.67	.19	.03
	(.80)			(.76)			(.93)			(.46)		
Organizational age	1.00**	.31	.09	1.15*	.30	.06	1.41*	.22	.06	1.48**	.28	.09
	(.31)			(.55)			(.68)			(.49)		
Entrepreneur's tenure	−.91*	.38	.07	−.41	.32	.02	.03	.22	.00	−.29	.30	.02
	(.39)			(.38)			(.04)			(.30)		
$F_{7,40}$[f]	3.93**			3.42**			2.35*			3.21**		

[a] Unstandardized regression coefficients are reported. Standard errors are in parentheses.

[b] All R^2s are adjusted.

[c] For the first regression equation shown, the dominant initial strategy is the first-mover strategy; for the second, it is low-cost; for the third, second-mover; and for the fourth, niche.

[d] For the four regression equations, the functional influences are, respectively, research and development, manufacturing, marketing, and marketing.

[e] The first regression equation is for the interaction of first-mover strategy and R&D; the second is for low-cost strategy and manufacturing; the third, second-mover and marketing; and the fourth, niche and marketing.

[f] Results are for the full equation.

* $p < .05$

** $p < .01$

move to other specific strategies if an initial strategy is abandoned. For example, unsuccessful first-movers may find it easier to attempt a second-mover strategy than a low-cost producer strategy, which might require completely different resources, facilities, and personnels. Examination of the data, however, showed no relationship between a firm's initial strategy and a specific decline or increase in any of the four strategies over time.

DISCUSSION

The major purpose of this study was to identify conditions under which strategic change occurs in organizations. Results indicate that both founding conditions and events subsequent to founding play important roles in either limiting or encouraging change in strategy. Conditions at founding, including the extent to which an initial strategy is dominant, the distribution of functional influence is aligned with the dominant strategy, and a firm is owned by its founding managers, help to imprint the initial strategy of a firm by building internal consensus around a given strategic approach. The adoption of a dominant strategy at founding limits the range of future strategic change that occurs, possibly as the result of a high level of commitment to and investment in facilities, personnel, and other resources uniquely suited to that strategy. The effects of the interaction of dominant strategy and functional influence demonstrate the manner in which the distribution of power and influence in an organization at founding can serve as an important source of continuing support for the organization's strategy. Organizations in which the distribution of functional influence is aligned with the chosen strategy at founding tended to retain their founding strategy over time. Finally, there was relatively less change in initial strategy when the founding owners of an organization were also members of the organization's management, possibly because such individuals were likely to be closely involved in the formulation and implementation of the organization's initial strategy and thus less willing to change it than managers who had not been founders would have been.

Conditions subsequent to founding, including an organization's performance, its age, and the length of the tenure of its founding entrepreneur, also influence the degree to which a founding strategy is perpetuated. Organizations with poor performance were more likely to change their initial strategy in the case of low-cost producer and second-mover strategies, providing some support for the hypothesis that it may be easier for managers to initiate changes in an existing strategy when performance is poor, since internal resistance to the change is likely to be weak. Given that past research has demonstrated that poor performance is significant in motivating strategic change (e.g., Chandler, 1962; Mintzberg, 1978), the present results actually appear to be rather limited. Organizational age is the only consistent antecedent of strategic change across all four strategies, supporting the intuitive notion that older organizations will have had a greater chance to deviate from their initial strategy. Finally, at least in the case of the first-mover strategy, entrepreneurs who remain with a company for a greater length of

time appear somewhat better able to personally institutionalize the organization's initial strategy, resulting in less subsequent change in strategy than occurs in firms whose founding entrepreneurs have a shorter tenure.

The founding of an organization provides an initial strategic direction, setting constraints on the manner in which the firm is operated and partially limiting subsequent change in strategy. The present research demonstrates empirical support for Stinchcombe's (1965) and Kimberly's (1975) earlier work examining the critical role of founding. We similarly discovered that founding decisions play an important role in imprinting organizational characteristics that are perpetuated over time. Strategy researchers must recognize the important role that these constraints place on strategic adaptation, given that organizations have at least some tendency toward inertia.

The findings of this study also have important implications for practicing managers. Managers of organizations must recognize that they operate within constraints, many of which come from the initial establishment of structures, routines, and repertories that become institutionalized over time (Hambrick & Finkelstein, 1987; Hannan & Freeman, 1984; Nelson & Winter, 1982). Although history and past practice set important limitations, founding decisions do not entirely predetermine strategic direction. Change in strategy occurred most extensively when there had been relatively less opportunity for consensus to develop around a particular strategic approach. For example, greater change in strategy occurs when (1) firms lack a dominant initial strategy, (2) the influence of functions in an organization is not aligned with the initial strategy, (3) outside ownership interests predominate, and (4) the founding entrepreneur has remained in control for a greater portion of an organization's lifetime than is the case in other firms. It is important for managers to be aware of the implications of power and influence in affecting the rate and direction of strategic change. Much past work has characterized strategic change as a reaction to changing technological or environmental demands. One of the more interesting findings of this study is that the extent of strategic change also appears to be an important consequence of the interests of intraorganizational constituencies.

A potential limitation specific to this study concerns the use of the Maidique and Patch (1982) typology to differentiate and measure the strategies adopted by semiconductor firms. The main advantage of the typology is that it seems particularly relevant to describing differences in strategic approaches in technology-intensive industries. The concomitant disadvantage is that it may not be as generalizable as other typologies. The single-industry data also create inherent limitations in the generalizability of the findings. I chose to study only the semiconductor industry because it exhibited many characteristics that made it attractive for this study: its relatively recent history, its rapid rate of environmental change, and the important role played by individuals in establishing new organizations. Work in other industries on the development of organizations has also pointed to the importance of the founding period. Kimberly's works on rehabilitation organiza-

tions (1975) and the creation of a new medical school (1979) and Clark's (1972) work on the histories of several colleges demonstrate the important role played by founding in shaping the initial direction of organizations.

Future Research

As Fredrickson and Iaquinto (1989) noted, researchers have undertaken few longitudinal studies of strategy and have typically used qualitative methods for such work (Mintzberg, 1978; Mintzberg & Waters, 1982; Quinn, 1980). Although this study examined the evolution of strategy from founding as well as identifying several factors that may perpetuate given strategies, much more detailed longitudinal research is needed. For example, specific information on the timing of changes in environmental characteristics like uncertainty and munificence and concomitant changes in strategy would be useful. One limitation to this study is that it is difficult to make precise cause-and-effect arguments since organizational strategy was examined at only two points in time. Additionally, measures of functional influence other than staffing would offer more rigorous assessment of the role of power in influencing organizational change.

Past research on strategic change has invoked theoretical arguments that assume dynamic processes but has typically employed empirical models that assume static equilibrium. Knowledge about the specific timing of events predicted to encourage strategic change as well as the timing of strategic changes themselves would aid development of a more complete understanding of the underlying temporal process. Future research needs to develop more complete event histories of industries and organizations in order to test dynamic models of industry evolution and strategic change processes.

Two alternative perspectives, strategic choice and inertia, characterize much of the recent literature on strategic change. As Child and Kieser (1981) noted, the interesting question in that debate is not who is right but, rather, under what conditions is one view a better description of the observable reality than the other. In attempting to address that issue directly, this study demonstrated that both founding conditions and events subsequent to founding play important roles in limiting or encouraging strategic change. Further empirical work examining the process of strategic change within a historical framework offers a better understanding of strategic change and the circumstances under which either inertia or adaptation is likely.

REFERENCES

Andrews, K. R. 1971. ***The concept of corporate strategy.*** Homewood, Ill.: Richard D. Irwin.

Ansoff, H. I., & Stewart, J. 1967. Strategies for a technology-based business. ***Harvard Business Review,*** 45(6): 71–83.

Arrow, K. 1974. ***The limits of organization.*** New York: Norton.

Blau, P. M., & Schwartz, J. E. 1984. ***Crosscutting social circles.*** Orlando, Fla.: Academic Press.

Block, J. 1957. A comparison between ipsative and normative ratings of personality. ***Journal of Abnormal and Social Psychology,*** 54: 50–54.

Boeker, W. 1988. Organizational origins: Entrepreneurial and environmental imprinting at the time of founding. In G. Carroll (Ed.), ***Ecological models of organizations:*** 33–51. Cambridge, Mass.: Ballinger Publishing.

Braun, E., & MacDonald, S. 1981. ***Revolution in miniature.*** Cambridge, Eng.: University Press.

Brockner, J., & Rubin, J. 1985. ***Entrapment in escalating conflicts.*** New York: Springer-Verlag.

Carroll, G. 1983. A stochastic model of organizational mortality. ***Social Science Research,*** 12: 303–329.

Carroll, G. 1984. Dynamics of publisher succession in newspaper organizations. ***Administrative Science Quarterly,*** 29: 93–113.

Chaffee, E. 1985. Three models of strategy. ***Academy of Management Review,*** 10: 89–98.

Chandler, A. 1962. ***Strategy and structure.*** New York: Doubleday & Co.

Child, J. 1972. Organizational structure, environment and performance: The role of strategic choice. ***Sociology,*** 6: 2–22.

Child, J., & Kieser, J. 1981. Development of organizations over time. In P. Nystrom & W. Starbuck (Eds.), ***Handbook of organizational design:*** 28–64. Oxford: Oxford University Press.

Clark, B. 1972. The organizational saga in higher education. ***Administrative Science Quarterly,*** 17: 178–184.

Dataquest. 1984. ***Semiconductor startups since 1977.*** Internal company memo, Santa Clara, Calif.

Fama, E., & Jensen, M. 1983. Separation of ownership and control. ***Journal of Law and Economics,*** 26: 301–325.

Fischoff, B. 1975. Hindsight does not equal foresight. ***Journal of Experimental Psychology,*** 1: 288–299.

Fredrickson, J. W., & Iaquinto, A. 1989. Inertia and creeping rationality in strategic decision processes. ***Academy of Management Journal,*** 32: 516–542.

Freeman, J. 1986. Data quality and the development of organizational social science: An editorial essay. ***Administrative Science Quarterly,*** 31: 298–303.

Freeman, J., & Boeker, W. 1984. The ecological analysis of business strategy. ***California Management Review,*** 26(3): 73–110.

Goodstein, J., & Boeker, W. 1988. ***A new perspective on executive dynamics: The effects of chief executive succession, ownership change, and change in the board of directors on organizational change.*** Working paper, University of Illinois, Urbana.

Grinyer, P. E., & Spender, J. 1979. ***Turnaround.*** London: Associated Business Press.

Guth, W. D., & Taguri, R. 1965. Personal values and corporate strategy. ***Harvard Business Review,*** 43(5): 123–132.

Hambrick, D. C. 1980. Operationalizing the concept of business-level strategy in research. ***Academy of Management Review,*** 5: 567–575.

Hambrick, D. C. 1981. Environment, strategy and power within top management teams. ***Administrative Science Quarterly,*** 26: 253–276.

Hambrick, D. C., & Finkelstein, S. 1987. Managerial discretion: A bridge between polar views of organizational outcomes. In B. M. Staw & L. L. Cummings (Eds.), ***Research in organizational behavior,*** vol. 9: 369–406. Greenwich, Conn.: JAI Press.

Hannan, M., & Freeman, J. 1977. The population ecology of organizations. ***American Journal of Sociology,*** 32: 929–964.

Hannan, M., & Freeman, J. 1984. Structural inertia and organizational change. ***American Sociological Review,*** 2: 149–164.

Harrigan, K. R. 1983. Research methodologies for contingency approaches to business strategy. ***Academy of Management Review,*** 8: 398–405.

Helmich, D. L., & Brown, W. B.. 1972. Successor type and organizational change in the corporate enterprise. ***Administrative Science Quarterly,*** 17: 371–381.

Hicks, L. 1970. Some properties of ipsative, normative and forced-choice normative measures. ***Psychological Bulletin,*** 3: 167–184.

Hitt, M., Ireland, R. D., & Palia, K. A. 1982. Industrial firm's grand strategy and functional importance: Moderating effects of technology and uncertainty. ***Academy of Management Journal,*** 25: 265–298.

Huck, S., & McLean, R. 1975. Using a repeated measures ANOVA to analyze the data from a pretest-posttest design. ***Psychological Bulletin,*** 82: 511–518.

Jensen, M., & Meckling, W. 1976. Theory of the firm: Managerial behavior, agency costs and ownership structure. ***Journal of Financial Economics,*** 3: 305–360.

Kimberly, J. 1975. Environmental constraints and organizational structure: A comparative analysis of rehabilitation organizations. ***Administrative Science Quarterly,*** 20: 1–9.

Kimberly, J. 1979. Issues in the creation of organizations: Initiation, innovation and institutionalization. ***Academy of Management Journal,*** 22: 437–457.

Lawrence, B. 1984. Historical perspective: Using the past to study the present. ***Academy of Management Review,*** 9: 307–312.

Maidique, M., & Patch, P. 1982. Corporate strategy and technological policy. In M. Tushman & W. Moore (Eds.), ***Readings in the management of innovation:*** 273–285. Marshfield, Mass.: Pitman.

Meyer, J., & Scott, W. R. 1983. ***Organizational environments.*** Beverly Hills: Sage Publications.

Miles, R. E., & Snow, C. C. 1978. ***Organizational strategy, structure and process.*** New York: McGraw-Hill Book Co.

Miles, R. E. 1982. ***Coffin nails and corporate strategies.*** Englewood Cliffs, N.J.: Prentice-Hall.

Miller, D., & Friesen, P. 1984. ***Organizations: A quantum view.*** Englewood Cliffs, N.J.: Prentice-Hall.

Mintzberg, H. 1978. Patterns in strategy formation. ***Management Science,*** 24: 934–949.

Mintzberg, H. 1983. ***Power in and around organizations.*** Englewood Cliffs, N.J.: Prentice-Hall.

Mintzberg, H., & Waters, J. 1982. Tracking strategy in an entrepreneurial firm. ***Academy of Management Journal,*** 25: 465–499.

Nelson, R. R., & Winter, S. G. 1982. ***An evolutionary theory of economic change.*** Cambridge, Mass.: Belknap Press.

Oster, S. 1982. Intraindustry structure and the ease of strategic change. ***Review of Economics and Statistics,*** 64: 376–384.

Pfeffer, J. 1981. ***Power in organizations.*** Marshfield, Mass.: Pitman.

Porter, M. 1980. ***Competitive strategy.*** New York: Free Press.

Quinn, J. B. 1980. ***Strategies for change: Logical incrementalism.*** Homewood, Ill.: Dow-Jones-Irwin.

Romanelli, E., & Tushman, M. 1986. Inertia, environments and strategic choice: A quasi-experimental design for comparative longitudinal research. ***Management Science,*** 32: 608–621.

Rumelt, R. 1974. ***Strategy, structure, and economic performance.*** Cambridge, Mass.: Harvard University Press.

Rusbult, C., & Farrell, D. 1983. A longitudinal test of the investment model. ***Journal of Applied Psychology,*** 68: 429–438.

Salancik, G. 1977. Commitment. In B. Staw & G. Salancik (Eds.), ***New directions in organizational behavior:*** 1–54. Chicago: St. Clair Press.

Sarason, S. B. 1972. ***The creation of settings and the future societies.*** San Francisco: Jossey-Bass.

Schendel, D., & Hofer, C. 1979. ***Strategic management: A new view of business policy and planning.*** Boston: Little, Brown & Co.

Scott, R. W. 1981. ***Organizations: Rational, natural and open systems.*** Englewood Cliffs, N.J.: Prentice-Hall.

Selznick, P. 1957. ***Leadership in administration.*** New York: Harper & Row.

Singh, J. 1986. Performance, slack, and risk-taking in organizational decision making. ***Academy of Management Journal,*** 29: 562–585.

Singh, J., House, R., & Tucker, D. 1986. Organizational change and organizational mortality. ***Administrative Science Quarterly,*** 31: 612–632.

Snow, C. C., & Hrebiniak, L. G. 1980. Strategy, distinctive competence, and organizational performance. ***Administrative Science Quarterly,*** 25: 317–336.

Snow, C. C., & Hambrick, D. C. 1980. Measuring organizational strategies: Some theoretical and methodological problems. ***Academy of Management Review,*** 5: 527–538.

Starbuck, W. 1965. Organizational growth and development. In J. G. March (Ed.), ***Handbook of organizations:*** 451–533. Chicago: Rand McNally & Co.

Staw, B. M. 1976. Knee deep in the big muddy: A study of escalating commitment to a chosen course of action. ***Organizational Behavior and Human Performance,*** 16: 27–44.

Staw, B. M. 1981. The escalation of commitment to a course of action. ***Academy of Management Journal,*** 6: 577–587.

Stinchcombe, A. L. 1965. Social structure and organizations. In J. G. March (Ed.), ***Handbook of organizations:*** 142–194. Chicago: Rand-McNally & Co.

Tushman, M., & Romanelli, E. 1985. Organization evolution: A metamorphosis model of convergence and reorientation. In B. M. Staw & L. L. Cummings (Eds.), ***Research in organizational behavior,*** vol. 7: 171–172. Greenwich, Conn.: JAI Press.

Useem, M. 1984. ***The inner circle.*** Oxford: Oxford University Press.

Zald, M. 1987. ***History, sociology, and theories of organization.*** Working paper, University of Michigan, Ann Arbor.

APPENDIX

The scale used to assess current strategy was the following: The following four descriptions of strategy are often used to characterize different ways in which firms compete in technology-intense industries. To what degree do each of the following four descriptions fit your organization at the time it was founded? Show their relative importance by allocating shares of 100% of your effort.

_____ A. Aim to get the product to the market before the competition. We are the first to introduce new products or major innovations.

_____ B. Attempt to quickly create improved imitations of innovations that are pioneered by competitors.

_____ C. Try to achieve a relative cost advantage over our competitors, thereby permitting us to offer our products at a lower price.

_____ D. Rather than attempting to serve the entire market, focus on serving small pockets of demand with special applications of the basic technology.

100%

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