

PATTERNS IN THE DIFFUSION OF STRATEGIES ACROSS ORGANIZATIONS: INSIGHTS FROM THE INNOVATION DIFFUSION LITERATURE

HUGH M. O'NEILL

University of North Carolina

RICHARD W. POWDER

Clemson University

ANN K. BUCHHOLTZ

University of Georgia

Firms often adopt strategies in spite of mixed evidence about the strategy's performance and of evidence that the strategy leads to inefficient outcomes. Here, we describe the conditions prompting the spread of inefficient strategies through a population of firms, as well as the characteristics of individual firms that affect their propensity to adopt efficient and inefficient strategies. We focus on one pattern that appears common to strategic adoptions: a pattern where the number of unsuccessful adoptions exceeds the number of successful adoptions. We note how the failure to consider diffusion patterns in empirical strategic research limits use of that research as a source of prescriptive theory.

Strategic researchers often express surprise when the adoption rate for popular strategies, such as downsizing (Cascio, 1993) or mergers (Lubatkin & Lane, 1996), persists despite apparent evidence of their ineffectiveness or inefficiency. The widespread diffusion of such strategies is evident (Hwang, 1991), yet strategy researchers have examined only partially why organizations continue to adopt and retain poorly performing strategies. One reason for the scant attention to the spread of unsuccessful strategies is scholars' assumption, frequently present in strategic perspectives, that strategy selections are based on a rational choice perspective, which presumes that outcomes are known a priori and that managers are efficiency oriented. Viewed from perspectives less reliant on assumptions of rationality, the persistence of inefficient strategy choices is unsurprising.

Because strategic choices are similar to innovations, research on the diffusion of innovations offers insights as to why such strategies as mergers and downsizing might continue to spread through populations, despite their inefficiency. Pioneering studies by Abrahamson (1991, 1996) and Abrahamson and colleagues (1993, 1994) broadened our understanding of how administrative innovations are diffused

or are rejected within organizational groups. Abrahamson and his colleagues described administrative innovations as structural and cultural changes that organizations prescribe for mediating between organizational inputs and outputs. The selection of a strategy is more encompassing than an administrative innovation: *a strategy substantially broadens or narrows the domain of an organization in a new way*. The domain of the organization refers to the products or services that the organization produces and the population it serves (Thompson, 1967). Although not always the case, most strategic choices will tend to have greater economic impact on an organization than administrative innovations. This great impact occurs because strategies such as mergers, downsizing, and privatization generally are implemented in short time frames and have significant up-front costs. Through the considerable expansion or shrinkage engendered by these changes, the organization is subject to a potentially rapid and visible shift in performance.

In this article we draw on Abrahamson's (1991) notion of paradoxical theoretical explanation; following Poole and Van de Ven (1989), Abrahamson recognizes that paradoxes can be resolved if

researchers "(a) clarify levels of analysis, (b) take time into account, and (c) introduce new terms" (1991: 601). The paradox addressed here is that, at a single point in time, a set of strategies can include both efficient and inefficient incidents of adoption. For strategy scholars, this paradox is most vexing when a widely adopted strategic choice is dominated by inefficient applications, wherein the majority of adoptions are inefficient. We address this paradox by moving from an organizational level of analysis to a population level of analysis, by considering the impact of time on strategic adoption, and by introducing new terms into conversation about strategy. We base these new terms on the concept of differences in diffusion patterns triggered by the adoption of strategies. Our discussion of diffusion applies Abrahamson's work to specific issues in strategic management and applies an institutional perspective to the issue of strategic adoptions at the firm level. In addition, our discussion draws on organizational learning and organizational memory literatures to help explain firm-level adoptions of strategies.

Here, we address three important questions: (1) What does an institutional perspective, as contrasted with conventional strategy perspectives, imply about the efficiency of strategies diffused through a population? (2) What conditions cause the adoption and persistence of inefficient, rather than efficient, strategies? (3) What are the implications of variance in diffusion patterns for research and managerial practice? We suggest answers to these research questions as follows: First, we review the institutionally based explanations of the diffusion of change. Second, we discuss different processes that promote the emergence of efficient and inefficient adoptions of strategies and then describe how these processes give rise to different diffusion patterns. In explaining mixed patterns of efficient and inefficient adoptions, we develop, in the third section of the paper, a model that focuses on environmental and organizational influences on adoption processes. In the fourth section we examine specific research opportunities drawn from our model of strategy diffusion patterns. We conclude the article with a discussion of how managers might benefit from the model's implications. Throughout, we use the strategies of merger, downsizing, and privatization to illustrate our points.

INSTITUTIONAL EXPLANATIONS OF THE DIFFUSION OF CHANGE

In their classic piece on isomorphism and collective rationality, DiMaggio and Powell (1983) note that innovations spread through organizational fields via mimetic processes. They write:

[E]arly adopters of organizational innovation are commonly driven by a desire to improve performance. But new practices can become, in Selznick's words (1957:17), 'infused with value beyond the technical requirements of the task at hand.' As innovation spreads, a threshold is reached beyond which adoption provides legitimacy rather than improves performance. (1983: 148).

The diffusion process DiMaggio and Powell describe implies that the nature of innovation in (and perhaps across) organizational fields¹ changes in character as norms of legitimacy build over time. At first, organizations adopting the change do so because of the impact of that change on performance. Once the change reaches a critical mass of acceptance within the field of organizations, it attains further widespread acceptance with less regard to its performance impact. A high proportion of firms adopting the change do so because other organizations have adopted it and because stakeholders define the change as accepted practice.

Oliver (1991), based on a comparison of institutional and resource dependence perspectives, describes how firms resist institutional pressures to conform to the use of popular strategies. Institutional pressures emerge from a variety of sources in the environment, including regulatory structures, governmental agencies, laws, courts, professions, interest groups, and public opinion (Meyer & Rowan, 1977; Scott, 1987; Zucker, 1987). She proposes that some organizations resist institutional pressures to act in specified ways through such tactics as avoidance and defiance. The variables that predict organizational resistance include the multiplicity of the organization's constituents and the organization's interconnectedness with the source of the change. For example, organizations de-

¹ DiMaggio and Powell focus their discussion on innovations within fields. Abrahamson and Rosenkopf focus on collectivities: collections of organizations that have knowledge of each other's innovations. Our focus here is on strategies, which spread within and across fields and collectivities.

pendent on powerful stakeholders will resist changes inimical to the interests of those stakeholders. In contrast, organizations will be quick to adopt changes suggested by powerful customers.

Oliver's model implies a partial diffusion of institutionally induced changes, where some organizations adopt a newly legitimated change, whereas other organizations resist that same change. Her thesis shows that the diffusion of change is time dependent and that the time dependency is shaped (in part) by the relationships between the characteristics of the change and those of the organizational population. The model predicts organizational resistance to a change. A corollary point is that some organizations do not resist. More importantly, not all organizations embracing a change match the conditions required to achieve a level of technical efficiency in the adopting organization.

Whereas Oliver depicts resistance to institutional pressures, Abrahamson and Rosenkopf (1993) describe factors that create bandwagon effects. Bandwagons are diffusion processes wherein adopters choose an innovation not because of its technical properties but because of the sheer numbers of adoptions that have already taken place. As more firms adopt innovations, pressure increases for other firms to adopt them. Bandwagons create self-reinforcing loops because the bigger the bandwagon gets, the larger the number of organizations tending to join the bandwagon. In turn, the larger the number of organizations, the larger the bandwagon's effects. In their work Abrahamson and Rosenkopf (1993) use mathematical modeling to demonstrate that minor variations in the distribution of expected returns from a given innovation trigger bandwagon effects and, therefore, wider diffusion of the innovation. Similarly, the greater the uncertainty surrounding an innovation, the greater the diffusion.

Taken together, Oliver's and Abrahamson and Rosenkopf's works provide a foundation for describing a system of countervailing forces in the diffusion of strategies across organizational populations. Although uncertainty triggers bandwagon pressures, some firms resist the social pressures triggered by bandwagons. Ultimately, the interplay of institutional forces and resource dependencies leads to differing patterns of strategy diffusion. Conventional approaches to strategy imply that most adoptions

are efficient. However, there can be differing patterns of diffusion.

One diffusion pattern—that generally assumed in strategy studies—occurs when all adoptions are efficient. A second pattern occurs when all adoptions are inefficient. But mixed or hybrid patterns also occur. In this article we define two hybrid patterns of diffusion. We define the hybrid diffusion pattern occurring when the number of efficient adoptions exceeds the number inefficient adoptions as "dominant efficient." When the number of inefficient adoptions exceeds the number of efficient adoptions, we define the diffusion pattern as "dominant inefficient."

The most interesting, and perhaps most realistic, diffusion patterns are the hybrids. They are interesting because conclusions based on analysis of these patterns, but lacking recognition of their hybrid character, can be misleading. For example, most scholars of strategy, in their studies, group firms together on the basis of those firms' adoption of a specific strategy. Based on the average performance across the groupings used, their studies make a prescriptive conclusion. For a hybrid pattern such a conclusion can be misleading, unless the conclusion identifies boundary conditions specifying the difference between efficient and inefficient adoptions in the group under study. An understanding of diffusion patterns can help provide those boundary conditions.

Mergers, downsizings, and privatizations apparently exhibit hybrid diffusion patterns. Mergers often fail to meet their intended ends or frequently fail to achieve break-even levels of performance (Haspeslagh & Jemison, 1991; Lubatkin & Lane, 1996; Nahavandi & Malekzadeh, 1988; Porter, 1987; Ravenscraft & Scherer, 1987). Similarly, downsizings have not worked in a majority of applications (Cameron, Freeman, & Mishra, 1991; Cascio, 1993). Finally, Pollit (1991) notes that advocacy of privatization frequently is an expression of an ideology; therefore, firms privatize without regard for the specific contextual factors that might determine privatization's utility (Pouder, 1996). Diffusion processes provide at least some explanation for the varied levels of success in these strategies.

PROCESSES THAT PROMOTE EFFICIENT AND INEFFICIENT ADOPTIONS

Major innovations are rarely, if ever, fully documented at their source. Rather, *ex post* investigations reconstruct the "facts" of the initial innovation. These reconstructions show that innovations result from serendipity, strategic choice, entrepreneurship, or desperation (Kaufman, 1985). Once initiated, innovations spread. Kimberly writes: "Imitation is likely to play a more significant role in the diffusion and adoption of managerial innovation than technological innovation" (1981: 87). Our focus here is on strategic actions as managerial innovations.

Successful strategic actions prompt imitation by other organizations because these actions are rarely patentable and often portable. Portable change must meet two conditions. First, the change must have been visible in the organization of origin. Without visibility, the change would not stand out among the many random changes taking place in the normal flow of organizational events. Second, the mimicking organizations must have some perceived need for change. Without this need, inertial properties in the adopting organization would countervail the change. In addition, organizations sensing a need for change may scan their environments more actively, thereby increasing the possibility of observing changes made elsewhere.

Repeated successes among organizations adopting a change prompt other organizations to consider the same change, especially in competitive environments (Kimberly & Evanisko, 1980). The initial pattern of success triggers a form of the bandwagon effect, which can vary in strength. In early stages the growth in the rate of diffusion may not debilitate the performance-enhancing properties of a strategic choice. However, as diffusion continues, returns to the strategy sometimes atrophy. Returns dissipate if the diffusion of the change limits its rent-producing potential. As resource economists note, the rent-producing property of an asset is tied to the unique nature of that asset (Barney, 1988). Once the asset can be imitated, all owners of the asset have the same production functions and the same cost structures. In turn, increasing rates of adoption lead to price reduction pressures that lessen the value of the innovation.

However, as Abrahamson and Rosenkopf (1993) demonstrated in a computer simulation,

success is not a prerequisite for diffusion of the innovation or change. We presumed above that initially adopted strategic changes are successful, based on the limited empirical evidence available to explain the diffusion of strategic innovations (Rumelt, 1974). However, diffusions can exhibit the characteristics of the "blind leading the blind."² For example, in bandwagons triggered by competitive pressures, firms may adopt inefficient innovations based on their fear that other firms will use them successfully. Also, firms may conclude that the cost of adopting an inefficient innovation is less than the cost of not adopting it.

Competitive bandwagon patterns can trigger diffusion patterns for inefficient innovations, but conditions favoring a consistently efficient pattern also exist. In the case of positive externalities, increasing rates of adoption trigger increasing rates of return for the population of adopters (Hill, 1997). For at least some window of time, then, the diffusion of these innovations follows a pattern in which all adoptions are efficient.

Our main interest, in this article, is in patterns in which both inefficient and efficient adoptions occur. What processes explain why inefficient adoptions frequently follow efficient adoptions? Initially, innovations tend to diffuse in a logical context (Rogers, 1995), which is most often the local environment where problem search occurs (Cyert & March, 1963). Inefficient adoptions frequently follow efficient adoptions as the diffusion of a change leads to its application in contexts different from its initial application. As a specific change becomes more widespread, knowledge of that change crosses the boundaries of different organizational fields. Put differently, awareness of the change penetrates the bounds of an increasing number of different populations of organizations.

Bounded rationality contributes to the emergence of inefficient adoptions following efficient ones. Limits to the rationality of decision makers within organizations act as blinders on the decision process. Late adopters fail to notice the difference in context as they apply the strategy, and, as a consequence, the strategy may not fit the context. Given these forces, we find it not

² We are grateful to anonymous reviewers for this and related insights.

surprising that DiMaggio and Powell could write that "strategies that are rational for individual organizations may not be rational if adopted by large numbers of organizations" (1983: 148).

Processes of organizational learning also foster the emergence of inefficient adoptions following efficient ones. Levinthal and March (1993) describe how the successes of pioneering organizations often become public goods, with the result that an attractive option for any individual organization is to exploit the successful imitation of others. As more organizations do this, the value of the innovation declines.

PATTERNS IN THE DIFFUSION OF A STRATEGY: A MULTILEVEL MODEL

The focus of this article is on distributions containing more inefficient than efficient adopters (dominant inefficient). We use four measures to characterize the pattern dominated by inefficient adoptions. First, *speed* measures the rate at which the distribution reaches the point when the number of inefficient adoptions exceeds the number of efficient adoptions. Second, *breadth* measures the proportion of potential adopters of a strategy adopting the strategy. Third, the *size of the efficiency gap* is a measure of the difference between the number of inefficient and efficient adoptions, and the *persistence of the efficiency gap* measures the extent to which the difference is temporal or persistent. Finally, *strategy* refers to an organizational change that substantially broadens or narrows the domain of an organization in a new way, such as downsizing, merger, privatization, or major attempts to capture share. We describe three major factors jointly influencing the properties of the diffusion pattern: (1) the environment, (2) characteristics of the adopting organization, and (3) characteristics of the strategy itself.

Environmental Influences

To understand diffusion patterns of strategy, we need knowledge of conditions that foster contrasting orientations toward stability or search for change within organizations. Environmental uncertainty is one condition or construct that influences the predisposition of organizations toward stability or change.

"Environmental uncertainty" is the degree of unpredictability in future environmental states (Pfeffer & Salancik, 1978). As Oliver (1991) notes, low environmental uncertainty increases the tendency of organizations to remain stable or to avoid change. In times of low uncertainty, organizations are confident in their ability to produce future returns. The predictability of outcomes provides management with the illusion of control and some sense of comfort with the status quo.

Similarly, institutional theorists argue that managers have a strong need for certainty and stability (DiMaggio & Powell, 1983). Predictable or certain environments rate high in munificence, high in stability, and low in complexity (Dess & Beard, 1984; Keats & Hitt, 1988). Environments low in uncertainty provide managers with the luxury of avoiding the selection of major new strategic directives. This notion of persistence in past patterns is consistent with models of organizational reorientation and transformation, which show that during times of convergence (which implies a high amount of certainty about the environment), organizations do not adopt new patterns of behavior often (Mintzberg & Waters, 1985; Tushman & Romanelli, 1985). If many organizations resist change, both the speed and breadth of diffusion slows down.

Conversely, in times of high uncertainty, organizations may seek change and are more likely to imitate other organizations, especially if those organizations are norm setters (DiMaggio & Powell, 1983). Adopting actions similar to those found in other organizations affords management a measure of credibility, especially if the actions provide some publicity (Kimberly, 1981). Specific strategies become the fashion or norm for dealing with uncertainty, and stakeholders begin to expect managers to adopt these strategies (Abrahamson, 1996). Indeed, the uncertainty may prompt once compliant stakeholders to take a more active position, thereby increasing the pressure on management to adopt strategies used by norm-setting firms. During times of uncertainty, managers engage in activities to reduce the perception or impact of uncertainty, such as scanning or diversification (Aguilar, 1967; Fahey & Narayanan, 1986; Rumelt, 1974). Each technique increases the organization's exposure to changes in the environment. As organizations actively search for options and

mimic each other in times of high uncertainty, the speed and breadth of diffusion increase.

One reason why diffusion patterns vary is that the response to environmental uncertainty unfolds at an uneven pace across a population of organizations. For example, in several industry-specific studies, researchers found that strategic change occurred less frequently than expected as environments shifted from low to high uncertainty following deregulation in railroads (Smith & Grimm, 1987) and in savings and loan institutions (Jarvidan, 1984). In contrast, Zajac and Shortell (1989) did find that 55 percent of hospitals changed strategies in response to environmental uncertainties.

Importantly, the impact of uncertainty varies in the early and late stages of the diffusion process. Bandwagon effects occur when increasing numbers of firms adopt a strategy. Early adopters, however, must adopt the strategy before the bandwagon effects emerge. At this early point, the presence of uncertainty implies risk and therefore increases the expected returns a firm might require before adopting a strategy. Firms that select strategies early in the diffusion process may be well matched to the requirements of those strategies as the fear of the risk repels less well-matched firms. These early adopters should earn some returns on their strategy, especially in the presence of first mover advantages or in the absence of imitators. This very success, though, eventually leads to imitators as the success becomes more widely known. However, late adopters may not be well matched to the requirements of the strategy, and imitation may lead to lower economic returns.

Of course, not all first adopters need be well matched to the requirements of the strategy. Early adopters can be inefficient. Also, efficiency among early adopters could be the result of lucky accidents. Finally, the conditions prompting success could be unique to the early adopting firms. For example, Ford's early successes with quality management processes might have been influenced by Ford's fear of failure. These adoptions, even though they are inefficient or prompted by unique circumstances, also spread because uncertain environments complicate analysis. Strategies will spread in uncertain environments, regardless of the influence of subtle differences in adoption contexts.

Proposition 1a: Environmental uncertainty is positively related to the speed and breadth of a strategy's diffusion.

Just as uncertainty influences the tendency to change among organizations, environmental uncertainty affects the properties of the diffusion pattern. Environmental uncertainty is positively related to the size and persistence of the efficiency gap, because when uncertainty is high, organizations find it difficult to assess the utility of strategies (Perrow, 1986). As uncertainty increases, managers are less able to analyze or understand the relationship between organizational actions and outcomes. The level of uncertainty clouds the evaluation of both newly adopted strategies and conventional activities within the organizations. Since uncertainty affects both novel and routine actions, management quickly loses its ability to differentiate among the performance impacts of novel actions. This being the case, organizations tend to persist in the use of strategies because it is more difficult to assess their utility.

The dynamic nature of competition also influences the persistence of the efficiency gap. If the early adopters of the innovation fail to obtain some form of permanent advantage, their initial returns will begin to dissipate in the presence of increased competition, which leads to a downward spiral in performance (Levinthal & March, 1993). If the firms initially efficient become inefficient, the size of the efficiency gap increases. The reputation effects triggered by the success of the early entry may linger, though, so that other firms continue to mimic the strategy, which will increase the persistence of the efficiency gap. The dynamic process is similar to that proposed in models of hypercompetition, which suggest that economic advantages dissipate quickly (D'Aveni, 1994).

Proposition 1b: Environmental uncertainty is positively related to the size and persistence of the efficiency gap.

The media of change or the transmission channels providing opportunities for change (Kaufman, 1985) and organizational networks influence the opportunities for the diffusion of change.

A firm's set of competitors and suppliers is its closest source of ideas. This network of com-

petitors and suppliers has been described as the firm's "macroculture." Abrahamson and Fombrun define a macroculture as the "relatively idiosyncratic, organizational-related beliefs that are shared among top managers across organizations" (1994: 730). Since macrocultures share similar beliefs and face similar constraints, adoption of strategies within them should spread quickly, as compared to adoptions across cultures. This is because members of a macroculture have more information about each other so that mimicry occurs easily. Macroculures, by definition, are highly interconnected, and the level of interconnectedness promotes the voluntary diffusion of ideas and norms (DiMaggio & Powell, 1983; Oliver, 1991). Interconnectedness is a result of the resource dependencies among suppliers and buyers, as well as among competitors, within a macroculture. For example, one competitor may adopt a strategy that becomes valued by customers; other competitors, seeking the same customers, then need to consider adopting that strategy. Similarly, one supplier may announce a plan to become more efficient by downsizing; quickly, other suppliers face pressures to do the same.

Changes or innovations cross macroculture borders less quickly, with the speed of change determined by the nature of interconnects between the macrocultures. For example, different macrocultures might be linked by vertical transactions among members of each macroculture. The greater the number of links between macrocultures, the more frequent and more meaningful the interchange (Burt, 1982, 1987; Fombrun, 1986). Dense links provide an excellent medium for transmitting information about strategies.

Direct transactions are not the only links between macrocultures. Information about strategy travels through formal and informal communications channels. Specific institutions specialize in the transmission of information and include professional schools, professional trade associations, consultant firms, investment banks, and some government agencies. Information about strategies should travel quickly between macrocultures sharing identical information channels. For example, members of two different macrocultures sharing the same investment bank have access to similar information about mergers adopted in other macrocultures served by the bank.

Macroculures vary in the extent of homogeneity of beliefs about boundaries and strategic

issues. Homogeneous macrocultures tend to have very similar strategic agendas (Dutton & Duncan, 1987), which are listings of the most important issues facing the industry. A similarity of beliefs about agendas leads to a similarity of beliefs about necessary actions to take in response to that agenda. Therefore, firms in a homogeneous macroculture are likely to adopt similar strategies. Conversely, where there is some disparity in beliefs about the boundaries and agendas, there are differences among firms regarding strategies adopted.

Although information about adoptions is readily portable across macroculture borders, the adoptions themselves may be less portable. Differences in technology across macrocultures affect the utility of any specific strategy: an action that performs well in an environment with highly developed technological paradigms may not perform as well as in an environment with a poorly developed paradigm (Kimberly, 1981). Strategic actions that work well at one end of the vertical chain may not work at all at the other end of the vertical chain because of differences in the shared dominant logics at each end (Prahalad & Bettis, 1986). The greater the differences between macrocultures, the more likely that adoptions of strategies common to one will be inefficient for the other. For example, the effects of downsizing should differ in capital- and labor-intensive industries.

Discussion of macrocultures and the diffusion of strategies holds interesting implications for the notions of "seeding" ideas of strategy change or best practice. Firms facing a changing environment often are advised to change strategies. For example, firms in the defense industry are advised to adopt diversification strategies, or firms in recovering economies are counseled to adopt western strategies. To the extent that diversification or western strategies represent different macrocultures for the defense firm or the firm in a recovering economy, the chances that the adoption of the suggested strategy will be inefficient increase.

Similarly, lead firms in a macroculture may try to impose strategies on other firms. The firms likely to resist the imposition are those not dependent on the lead firms for resources. In turn, these nondependent firms (and nonadopting) may be the better managed firms in the group. The firms adopting the suggested routines may have less skillful managers than the nonadopt-

ing firms and, therefore, may be less likely to benefit from the change. Also, the benefits from the change may not make the adopters as strong as those firms resisting the change. To the extent that the lead firm replaces stronger non-adopters with weaker adopters, the net result could be a decline in performance.

Proposition 2a: Adoptions spread more quickly within macrocultures than across macrocultures.

Proposition 2b: The more links between macrocultures, the more quickly adoptions will spread.

Proposition 2c: The greater the homogeneity within a macroculture, the greater the speed and breadth of adoptions within that macroculture will be.

Proposition 2d: The greater the difference between macrocultures, the greater the size and persistence of the efficiency gap will be.

Organizational Factors

To this point we have discussed the influence of the environment. Organizations exhibit many unique patterns, and, as a result, the impact of the environment is not equally distributed among all organizations. Therefore, the following propositions refer to an organization level of analysis to describe those organizational factors influencing the character of diffusion patterns. At the organizational level "speed" is the rapidity of a specific organization's adoption of a newly popular strategy, in contrast to the speed with which that strategy spreads through the population of organizations. "Persistence" refers to the length of time a specific organization pursues an inefficient strategy. The variable "breadth" has no application in this organization-specific context since it refers to diffusion across a set of organizations.

An organization's past success influences its receptivity to change and learning. For example, Levinthal and March (1993) describe learning myopia in organizations. Organizations with a long history of success promote individuals who have been successful, and these individuals attribute the cause of their success internally (Miller & Ross, 1975). The success patterns

lead managers to overestimate the value of past routines. Thus, organizations overinvest in exploitation of past learning and underinvest in the "folly" of exploration (Levinthal & March, 1981). Organizations with a long history of success, then, are unlikely to adopt new strategies.

If these organizations do adopt new strategies, the pattern of success and the attribution patterns lead to an overconfidence in their ability to manage the new strategies. Successful managers in successful organizations tend to underestimate risks and overestimate returns. Once the organization adopts an innovation, these managers' tendencies favor the persistence of adoption in the presence of objective evidence of its failure. A history of success leads to confidence that causes decision makers to reinterpret results "to make them more favorable" (Levinthal & March, 1993: 104). Sitkin (1992) uses the term "liabilities of success" to describe how successful organizations restrict their search and devote low levels of attention to difficult problems.

Proposition 3: An organization's past success is negatively related to the speed and positively related to the persistence of adoption of a strategy.

Just as an organization's success influences its adoption patterns, the relationships between an early adopter and later adopters influence the patterns in adoption. Organizations learn by looking at other organizations. One criterion that organizations use to evaluate adoptions is the adoption behavior of other firms. Firm decision makers will be prompted to study "ideal" organizations, looking for incidence of best practices, which will prompt higher levels of mimetic behavior toward ideal organizations (DiMaggio & Powell, 1983) and quicker adoption of strategies observed in modal organizations. Simultaneously, the comparison to ideal organizations should prompt less resistance within the adopting organization, thereby adding to the likelihood of speedy adoption.

However, mimicry does not create performance. Levinthal and March (1993) argue that when firms form their aspirations on the basis of comparison to superior performers, those high aspirations cause the firms to fall short of attaining their aspirations. Generally, this induces more risk-seeking behavior—a behavior consistent with maintaining investment in an

inefficient adoption. In these situations firms may be willing to increase their commitment to failing strategies (Staw & Ross, 1987).

The proposal that quick mimicry of other organizations will follow performance shortfalls may appear to run counter to assertions that rigid behavior follows performance declines (Starbuck, Greve, & Hedberg, 1978; Staw, Sandelands, & Dutton, 1981). However, performance shortfalls need not be signals of decline. Firms react differently to modest shortfalls and steep declines (Fombrun & Ginsberg, 1990). Possibly, the rigid behaviors follow a period of unsuccessful mimicry, when organizational actors begin to devalue innovation and rely on past routine.

The diffusion of adoptions from leaders to laggards and the persistence of these adoptions lead to two interesting issues regarding strategic change. First, leaders may be limited in the range of options they consider, inducing a conservatism that extends to their imitators. For example, Cooper and Schendel (1976) demonstrated how established firms rarely adopt new technologies. Second, to the extent that adoptions persist within an organization, the adoptions may outlast the careers of the original decision makers; the reasons for the adoption get lost in history as managers progress or retire. New managers may lack sufficient perspective to understand previous decisions or reasons for their inefficiency.

Proposition 4: The size of the performance difference between the first adopter and competing organizations is positively related to both the speed of adoption and the persistence of an inefficient strategy.

Our propositions, to this point, presume that organizations are myopic learners. Although Levinthal and March (1993) plead for conservatism in expectations about organizational learning, we believe it is possible that some organizations are better learners than others or better mimics than others. Sitkin (1992) provides arguments detailing how organizations can avoid patterns of myopic learning: organizations engaging in frequent experiments and learning from the failure of some of those experiments should build their confidence in adopting new strategies, as well as their ability in evaluating new strategies. Sitkin labels these experiments "small failures." We expect that firms engaging

in small failures will adopt new strategies but will not persist in the pursuit of inefficient strategies.

It is not clear why some firms experience and tolerate small failures, whereas others do not. Cohen and Levinthal (1990) use the term "absorptive capacity" to describe an organization's ability to learn. Capacity increases via the use of internal and external networks. Experience through the networks provides the organization with information about alternatives. In turn, consideration and deliberation about the alternatives counter tendencies to restrict information or to reject contrary data. In a sense, firms with high levels of absorptive capacity use their internal and external networks to directly experience some small failure and, perhaps more importantly, to understand and learn from the small failures experienced by others in the network.

Regarding strategy, we could possibly argue that effective organizational learning is a requirement for survival in hypercompetitive environments. Where the attainment of a semi-permanent competitive advantage is possible in an environment of limited competition, the advent of hypercompetition leads to erosion in historically based advantages and to a requirement to create more advantages. Organizations that understand the dynamics of adopting and evaluating novel strategies should have some advantage in a hypercompetitive world.

Proposition 5: A history of small failures is positively related to the speed of adoption and negatively related to persistence of inefficiency.

"Organizational memory" also influences adoption behavior and outcomes. The influence occurs because organizational memory determines the information an organization is likely to observe and the response the organization will have to the information. For example, the foregoing discussion was based on an implicit assumption about behavior based on organizational memory. The discussion presumed that organizations would notice information about modal organizations and would respond by modeling the behavior of those organizations.

Walsh and Ungson define organizational memory as a "retention facility, the information stored in it, the processes of information acquisition and retrieval, and its consequential ef-

fects" (1991: 61). Organizational memory affects the speed of adoption of strategies and the characteristics of the efficiency gap for those strategies. The two retention bins most relevant for the adoption and performance of strategies are those Walsh and Ungson label "structures" and "external memory."

Structure refers to the set of roles, and inter-relationships within those roles, comprising the set of acceptable behaviors within the organization. The roles become "patterned over time to depict task differentiation and control" (Walsh & Ungson, 1991: 66). Put a bit differently, the structure reflects the software codes that program the organization's responses to external stimuli. These codes act at both a cognitive and reflexive level. We presume that most of the code is reflexive and that it represents a form of shared perceptions about the appropriate patterns for task differentiation and control.

With regard to strategic changes, those that match existing structural schema in the organization are more quickly adopted. In turn, those innovations not fitting existing structural schema lead to a larger efficiency gap, and persist longer in the presence of poor performance, than those innovations fitting existing structural schema.

We base these predictions about the impact of memory structures on the memory's influence on information acquisition and information retention. The organization can absorb and evaluate information that fits its structure quickly and easily, as compared to the task of absorbing and evaluating information that does not fit its structure. In contrast, when adopting an innovation that does not fit the memory structure, the firm needs to replace previous associations and relationships with new ones. The scope of the task complicates evaluation. Inefficient solutions are tolerated longer as the organization learns to do things differently.

Little is known about how firms might manage memory and about the conditions that make memory liberating or constraining. Some writers note that memory is an enemy of organizations, since memory constrains both perception and behavioral repertoires (Argyris & Schon, 1978). At the same time, though, the routines imposed on the organization by memory become automatic and, thereby, efficient. An unavoidable cost of being well matched to one environment may be great difficulty in adjusting to other environments. One answer to this dilemma may be

developing a capacity for flexible or adaptive memory. Another answer may be recognizing that memories are not infinitely elastic: some adaptations may not be possible. Given the emotional commitments of stakeholders to their organizations, powerful stakeholders will persist in their attempts to adapt organizations. These emotion-driven decisions then trigger the decision behaviors that lead to persistence.

Proposition 6: Adoptions that fit with the organizational memory are positively related to an organization's speed of adoption and negatively related to the persistence of inefficiency.

The Source of the Strategy

In addition to the environment and the organizations, the properties of a strategy influence its diffusion pattern. For example, highly visible activities permeate the population quickly. This occurs because organizations live in a competitive and public world. Competition influences managers to seek new sources of gain. Novel strategies, especially those that cause gain, attract public attention and create a positive reputation effect. To the extent that novel activity can be duplicated by other organizations, the copying organization hopes to capture the same reputation effects, or at least to neutralize the advantage of the first adopter, in those cases where network externalities do not apply. MacMillan, McCaffery, and Van Wijk (1985) have found that visible actions are copied quickly by competitors, especially those most threatened by the action.

If a strategy is indeed fully visible—that is, the major components of the strategy are known to the adopting organization—then success in imitation should be attained easily. Frequently, however, many of the details of a strategy innovation are not visible. For example, managers often express surprise about developments after installing strategies that apparently had succeeded elsewhere. The surprise emerges because the administrative details accompanying highly visible strategies are less visible than the strategies themselves (Cascio, 1993; Haspeslagh & Jemison, 1991). The persistence of inefficiency in these cases is related to the proportion of value added by these postadoption administrative activities. If substantial portions

of the value are captured after adoption and the paths to that value are not visible to adopting organizations, then the efficiency gap will be wide. Given the visibility of the initial action, the gap will persist, in part, because the cause of the postadoption inefficiency is difficult to diagnose. A second reason for the gap's persistence is that reversals of a highly visible action can be interpreted as failure or lack of control, and managers need to appear in control (Salancik & Meindl, 1984).

MacMillan et al. (1985) describe how a competitive response is delayed by organizational inertia in competitors. They found that complex products and products that challenge existing norms among competitors are less frequently imitated. Dewar and Dutton (1986) also have found that complexity affects adoptions. These same variables can be used to predict when imitative adoptions might be inefficient; they will be inefficient when they mimic complex strategies or strategies that do not fit prevailing norms. The portability of a strategy affects diffusion patterns in a manner similar to that noted for visibility. Highly portable actions will pervade the organizational population quickly.

Proposition 7a: The visibility and portability of the strategy, as well as the reputation of the strategy's source, are positively related to the speed and breadth of diffusion.

Just as the purchase of easel and paints does not make the owner an artist, the appropriation of a portable strategy does not make its new adopter successful. Knowledge about the strategy may be embedded in a complex web of unarticulated routines (Badaracco, 1991; Perrow, 1986) within the organization of origin. Where knowledge is tacit, strategies will not travel well. Put differently, visible elements of the strategy may travel across organizational borders, but the embedded context of the innovation stays with the originator. In these instances the efficiency gap will be great, and the persistence of the gap will be directly related to the organization's ability to learn the techniques that support the strategy and to the organization's tolerance for "failed" innovation. As noted above, this tolerance will be higher in the case of highly visible adoptions.

Proposition 7b: The visibility and portability of the strategy, as well as the reputation of its source, is positively related to the size and persistence of the efficiency gap.

CONCLUSION

Research Implications

Here we first discuss research implications within the context of the model as presented and then research impacts across a broader context. In the final section we discuss managerial implications of the model. In the model the environment, the organization, and the type of strategy used combine to help us predict the adoption and diffusion of strategies. One research opportunity based on the model, then, is to compare the adoption rates and diffusion patterns of different types of strategies. We use the merger and privatization examples to compare adoption rates and diffusion rates for these two types of strategies.

Environmental uncertainty influences adoption rates and diffusion rates (Proposition 1). In the case of the merger wave of the 1980s, sources of funding increased. In turn, the increased availability of debt fueled many mergers (Ravenscraft & Scherer, 1987), which increased uncertainty about competition, since the merging firms might have had some advantage over nonmerging firms. The initial mergers triggered other mergers, in bandwagon-like manner. For government services, changes in ideology and changes in political regimes posed uncertainties during the 1980s (Orminski, 1994; Pollit, 1991). These changes prompted diffusion of privatization strategies.

A priori, it is difficult to compare levels of environmental uncertainty in environments that differ as drastically as competitive and political environments. The level of environmental uncertainty in the two environments might be compared on the basis of their predictability—a variable often used as a measure of environmental uncertainty (Wholey & Brittain, 1989). Consolidations and the creation of new types of debt instruments are less predictable than election outcomes (because of the limited number of candidates compared to the number of potential consolidations). Therefore, the environment surrounding mergers and acquisitions is more un-

certain, and they should spread through populations more quickly than privatization. Also, the efficiency gap should be larger for mergers, and should persist longer, than that observed for privatization decisions.

Properties of the macroculture also influence adoption rates and diffusion rates (Proposition 2). In the case of business firms, macrocultures are frequently homogeneous and frequently linked. Concerning the latter, some authors note that investment banks face perverse agency incentives that lead them to overemphasize merger and acquisition options (Kesner, Shapiro, & Sharma, 1994). In addition, the popular press trumpets the growth of mergers.

Comparatively speaking, privatization has a less defined medium for the diffusion of change. There are fewer visible, motivated, and powerful proponents spreading the seeds of this change through the population of public organizations. Moreover, attempts to privatize may be stifled by public unions (Pouders, 1996). These differences in the medium of change cause merger waves to spread more quickly than privatization waves.

The theme continues through the influence of organizational memory (Proposition 6) and the characteristics of the change (Proposition 7). Investment bankers promoting mergers and acquisitions are part of the external archives (i.e., memory) of the company considering the wave. In contrast, politicians proposing privatization are well removed from the active core of organization memory for those units that eventually undergo privatization. Mergers are visible and portable strategies, adopted by elite organizations. In comparison, privatization is less visible and transportable.

We suggest, because of the characteristics of different types of distributions, a second type of research based on the model. One important implication of the model is that some strategies persist in their rate of diffusion through organizational populations, even when adoption of the strategy fails to obtain a favorable performance for a firm. Our assumption to this point has been that adopting managers are unaware of the potential performance problems induced by adopting the change or, if not unaware, are convinced of their invulnerability to the hazards of the change. In addition, we have assumed that the efficiency gap eventually will disappear as knowledge of the strategy's ineffectual perfor-

mance spreads. In some instances, though, decision makers persist in adopting actions, fully aware of those actions' overall negative impact on performance. These individuals are trapped by the structure of the situation—trapped because incentives within the firm cause them to adopt inefficient actions. Similarly, competitive dynamics might trigger a decision situation in which all options available to the decision maker are inefficient.

Consider the case of the airline industry (Labich, 1994). Each competitor is faced with high fixed costs; cutting prices is an attractive method for increasing revenues. Eventually, all competitors cut their prices to a point where a majority of competitors fails to recover fixed costs. All decision makers in the industry may know that this will happen, yet they persist in their behavior. Economists refer to this as an unstable pricing situation. It is a phenomenon that can lead to the presence of what Meyer and Zucker (1989) term "permanent failure."

The possibility exists, then, for at least two different diffusion patterns: stable and unstable. The stable pattern occurs when the number of inefficient adoptions of a strategy eventually sinks to zero. In contrast, the unstable pattern occurs when the incidence of inefficient adoptions persists. Both diffusion patterns are important and worthy of investigation.

As Abrahamson (1991) notes, considerations of the level of analysis and timing help resolve research paradoxes. The paradox presented herein is the incidence of the widespread adoption of strategies that are apparently inefficient. The solution to the paradox emerges in gaining an understanding of strategy diffusion at a population level, rather than at the organizational level, and in understanding the timing effects of diffusions. Diffusion patterns vary.

The variance in diffusion patterns holds important implications for strategy researchers, who frequently use organizational level measures of performance for assessing widely used strategies. These measures of performance include stock market valuations or accounting data. Stockmarket data may be subject to the same bandwagon effects that occur in the adoption of organizations, since the market makers are an interwoven part of the network defining the fads and fashions. Accounting measures are less subject to bandwagon pressures but, at best, are only gross measures of the value of any

specific action, because accounting data are aggregated across all activities for fixed units of times. In contrast, the strategies are discrete activities that represent one of hundreds of actions undertaken in a given space of time. In fact, the loose links between an action taken in a given year and that year's accounting returns contribute to the sense of organizational uncertainty surrounding a strategic action. Accounting data, then, although not directly subject to bandwagon pressures, create the conditions in which bandwagons occur.

These "performance" data, presumed to be independent of the strategies evaluated, often are used to build prescriptive theory. To the extent that the performance data are subject to the same bandwagon pressures as the strategy under investigation, the prescriptions that derive from this analysis serve to reinforce the bandwagon effect. Even if the performance data are truly independent of the bandwagon phenomena, the sample results reflect the characteristics of the diffusion pattern rather than the objective value of the strategy per se. Put differently, the finding that mergers or downsizings perform poorly may mean that the population sampled is one that has a persistently large efficiency gap. One cannot gain meaningful insight about the value of mergers or downsizing (or other strategic options) for a specific firm without direct investigation of the conditions surrounding the diffusion of the strategy. Useful prescriptions for specific firms require understanding not of the performance mean but the performance variance. If efficiency gaps are common or persistent in response to the diffusion of strategies, researchers must give them much more attention when designing research samples. At a minimum, scholars should consider differences in the timing of adoptions as a test for the presence of changes in the distribution.

Most authors of strategic studies presume the presence of efficient selection processes and outcomes, rather than study the processes or outcomes directly. Abrahamson defines efficiency on the basis of comparing options A and B. A is more efficient if, "with equal level of tacit knowledge and skill on how to use A and B, technology A transforms equal inputs into greater outputs than does technology B" (1991: 588). To assess efficiency in strategy adoptions, then, researchers should directly compare

firms choosing different options. The comparison is difficult, because firms rarely have the same level of tacit knowledge and skill. As a substitute of comparing firms that adopt options A and B, researchers might find it beneficial to compare firms that adopt option A with a matched sample of firms that do not adopt option A.

An alternate way of defining efficiency is to compare cost and benefit. Some researchers, in strategic studies of mergers and downsizing, rely on stockmarket returns at the time of the merger or downsizing (Lubatkin, 1983; Worrell, Davidson, & Sharma, 1991). If these stockmarket returns do not reflect full costs, they are poor measures of efficiency. In the case of both types of strategies, costs climb as the adoption is implemented with the organization. A more direct test of the efficiency of these strategies, then, might include the purchase costs and an estimate of the transaction costs. Benefits might be estimated on the basis of changes in sales or profits directly attributed to the action. If benefits decline with diffusion, the assessment of the benefits should include an allowance for the decline in value.

It is important to note that dominant inefficient patterns may have value for a population of firms. Levinthal and March write that "it is relatively unusual for a strategy that maximizes the prospects for survival of the components of a system to be the same as a strategy that maximizes the survival of the system as a whole" (1993: 103). The presence of an efficiency gap is not sufficient evidence to judge a strategy as "bad." An innovation that is inefficient for a majority of organizations may be good for the population of organizations or for the clients they serve (Abrahamson & Rosenkopf, 1993). For example, downsizing may not lead to positive outcomes in the majority of organizations adopting downsizing strategies, but it might increase the net efficiency of the entire population. Similarly, individual mergers might fail frequently, but, overall, the market for control induced by mergers might serve as an efficient method for eliminating managerial excesses (Walsh & Seward, 1990). Strategy scholars' general focus on outcomes at the individual firm level may be overly narrow if that focus is used to make normative conclusions about a strategy. At a minimum, attempts at evaluation should consider both firm-level and system-wide effects.

One way to test population effects for downsizing, for example, is to observe patterns in job movements at the national level. Upon observing only downsizing firms, an observer can conclude that middle managers absorb a disproportionate amount of downsizing. Yet Gordon (1996) notes that most of these managers are reabsorbed in the economy and that the middle management ranks have actually grown during the downsizing of the 1990s. Aggregate data (job reductions and job creations) and the study of movements of labor (input-output differences across industries) provide researchers with the means to study population effects.

We suggest that a final illustration of fruitful research would be an attempt to study temporal shifts in the types of strategies adopted. For example, in longitudinal studies researchers might investigate why bandwagon effects appear for different types of mergers in close succession: the rise and fall of conglomerate mergers in the 1960s and related mergers in the 1980s. With our propositions as guideposts, researchers could compare, for each period, the importance of environmental and organizational variables as predictors of diffusion patterns. This or similar research might help predict the diffusion pattern that might be expected in the current wave of business mergers.

Managerial Implications

Although there are many management implications in the model presented here, one appears dominant. Can managers improve their chances of attaining the intended performance in adopting strategies? The answer to this question depends on remedies for cognitive limits and the capability to copy well.

The major cause of the efficiency gap is failure to recognize and respond to the influence of cognitive biases in the face of uncertainty. Actually, managers may be only minimally aware that they are copying strategies in these situations. Increased understanding of the causes and effects of decision biases might increase management sensitivity to the issues posed by this model. That sensitivity, combined with good governance procedures, could minimize the incidence of long-lasting gaps. There has been a wealth of research directed at the issue of cognitive biases, and protections against these biases, at the individual and group level (Einhorn

& Hogarth, 1978; Miller & Ross, 1975; Walsh, 1988; Zajac & Bazerman, 1991). However, little of this research deals directly with issues in strategic management.

If adoptions are mimetic, can managers learn to copy well? Evidence to answer this question has not been accumulated directly. Zajac and Bazerman (1991) and Zahra and Chaples (1993) describe "blind spots" in competitive analysis. Zajac and Bazerman suggest that the blind spots generally are strong tendencies (1991: 52)—a conclusion we interpret as difficult to reverse. Three different paths to reversal seem possible though. One path is based on acceptance of blind spots as a natural barrier in decision making and on eliminating reliance on poorly seen, distant data. A second path is based on theories of information processing (Daft & Lengel, 1986). Information processes should match the characteristics of the problem studied. For example, adopters should seek information about competitors (Amit, Domowitz, & Fershtman, 1988).

A third path to better copying is based on a learning perspective. Learning requires experience and time (Barkema, Bell, & Pennings, 1996; Sitkin, 1992). To copy well, a firm or manager must copy long. Dierickx and Cool (1989) describe time compression effects in learning, or diminishing returns to attempts to speed up the process. Managers who copy well adopt long-term perspectives and tolerate early inefficiencies in the process.

In summary, we have suggested that certain strategy choices spread through organizational fields and become legitimized, without full regard to the performance outcomes accruing to these innovations. Both scholars and managers would benefit from knowledge of how to successfully differentiate performance-enhancing from performance-inhibiting strategies early in their diffusion wave.

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Hugh M. O'Neill is an associate professor of management at the Kenan-Flagler Business School, University of North Carolina. He received his Ph.D. in strategy and policy from the University of Massachusetts. His current research interests include international diversification, international entrepreneurship, and strategic performance reversals.

Richard W. Poudier is an assistant professor of management at Clemson University. He earned his Ph.D. at the University of Connecticut. His research applies strategic, institutional, and cognitive perspectives to such areas as innovation and downsizing.

Ann K. Buchholtz is an assistant professor of management at the Terry College of Business, University of Georgia. She completed her Ph.D. in strategic management at the Stern School of Business, New York University. Her current research interests are in the area of corporate governance, with emphasis on managerial stewardship.