

INDUSTRY DETERMINANTS OF THE "MERGER VERSUS ALLIANCE" DECISION

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Mergers and acquisitions (M&As) and alliances are potential alternative choices for managers. We propose that three dimensions of industry conditions are likely to be influential in such choices: (1) industry demands on firms to make significant commitment, (2) the environmental pressures for flexibility, and (3) the limitations on firm choices stemming from industry concentration and institutional conditions. We develop propositions about how differences across these three dimensions influence the choices that firms make between M&As and alliances.

When a firm decides to expand its operations or develop new capabilities, its managers have choices about how to proceed. Growth can be internal or can involve joint actions with other firms. Important cooperative efforts with other firms will involve risky investments and tend to be organized as contracts. Joint ventures and strategic alliances (hereafter called "alliances") are examples. Sometimes cooperative efforts may be sufficiently complex and risky that participants combine under common ownership in a merger or acquisition. While firms can also grow through internal development, they do not tend to do so through making the particular contractual decisions to associate or acquire that characterize alliances or mergers and acquisitions (M&As). This makes it more difficult to compare internal development programs with M&As and alliances. Instead, in this paper we focus on interorganizational collaboration and attempt to clarify the basis for a choice between M&As and alliances.

We refer to an *alliance* as an agreement between two or more firms to jointly manage assets and achieve strategic objectives. Some alliances involve the creation of a separate jointly owned entity. This is a *joint venture*, which we

consider a form of alliance. We examine alliances that refer to a group of interfirm linkages ranging from joint ventures to a variety of contractual agreements. Alliances are to be distinguished from M&As, which involve the combination of all of the assets of participating firms under common ownership. This can refer to the merging of two more or less equal firms, as well as acquisitions where one firm obtains majority ownership over another firm (Hagedoorn & Duysters, 2002).

M&As and alliances have only infrequently been compared as substitutes. While there are many differences in practice between M&As and alliances on such dimensions as size, industry, relatedness, riskiness, length of time, degree of integration, scope of overlap (whole versus part of the organization), and structural possibilities, the only fundamental difference concerns ownership, since a merger or acquisition implies a controlling ownership interest whereas an alliance or joint venture does not. There are large alliances and small acquisitions. There are related alliances and diversifying M&As. Sometimes, M&As can become alliances (and vice versa) through small changes in ownership. This suggests that the two types of deals can substitute for each other over some range of activity (Dyer, Kale, & Singh, 2004; Sawler, 2005).

Our concern is how industry-level factors influence the choice of whether to merge or ally. There have been relatively few studies on the effects of the industry environment on M&As and alliances. The few studies at the industry

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level of analysis have examined the effects of resource dependence (Pfeffer, 1972), industry concentration (Pfeffer & Salancik, 1978), market power (Burt, 1980; Galbraith & Stiles, 1984), industry profitability (Christensen & Montgomery, 1981; Park, 2003), and industry constraints (Palmer, Barber, Zhou, & Soysal, 1995) on merger behaviors (Finkelstein, 1997). Such factors as environmental uncertainty (Dickson & Weaver, 1997), technological complexity and volatility (Hagedoorn, 1993), industry growth (Devlin & Bleackley, 1988; Dickson & Weaver, 1997), and demands for internationalization (Dickson & Weaver, 1997) have been identified as correlates of alliances.

We propose that industry environment significantly shapes how these decisions are made. Industry focuses the attention of managers on enduring patterns of behaviors across firms. Industry effects are persistent, relative to business or corporate-parent effects (McGahan & Porter, 1997). Persistent interindustry relationships also help predict M&A activity (Finkelstein, 1997; Pfeffer, 1972). In addition, there is evidence that firms are constrained by the competitive dynamics (Aldrich, 1979; Scherer, 1980) and cultural norms of their industries (Hirsch, 1985; Shearman & Burrell, 1987).

Industry conditions shape decision content as well. M&A and alliance decisions are complex and unusual (Peteraf & Shanley, 1997), with an informational context characterized by incomplete information, agency problems, rapid change, and time pressures (Duhaime & Schwenk, 1985). This suggests that the presence of standard industry practices, common regulatory burdens, and shared values and norms work to reduce uncertainty and shape the content of firms' decisions (North, 2005). The features of a firm's strategy often depend on industry/market characteristics, such as scale, scope, or differentiated demand (Shamsie, 2003).

We are interested in the effects of industry environment on the choice of M&As and alliances. We examine three dimensions of industry environment. The first concerns industry requirements for commitment. The second concerns the environmental pressures for flexibility. The third dimension concerns the extent to which firms' choices are constrained by industry concentration, regulatory, and other institutional forces.

LITERATURE REVIEW

Numerous explanations have been offered for M&As and alliances, including scale/scope economies, resource dependence, transaction costs, institutional pressures, network effects, and organizational learning (Gulati, 1998; Palmer & Barber, 2001; Salter & Weinhold, 1978). To address whether combinations are best organized as M&As or alliances, researchers have used resource dependence theory, transaction cost economics, industrial organizational (IO) theory, and institutional theory.

Resource Dependence and Transaction Costs

Resource dependence theory (Pfeffer & Salancik, 1978) and transaction cost economics (Williamson, 1985) address why firms might choose M&As or alliances rather than open market transactions. Resource dependence theorists argue that firms manage interdependence with other actors by reducing their dependence on others while increasing others' dependence on them (Oliver, 1991; Pfeffer & Salancik, 1978). The choice of a governance arrangement (M&A or alliance) depends on how much control is needed. M&A will be more likely the more control over a partner is needed, such as control over critical suppliers or buyers (Finkelstein, 1997; Pfeffer, 1972). Transaction cost theorists argue that the choice of M&As versus alliances results from a need to decrease the effects of environmental uncertainty on a transaction, especially effects stemming from the opportunism of partners due to market imperfections. In relatively efficient markets and absent asset specificity, neither M&As nor alliances are needed. When market imperfections raise the costs of transactions, alternatives to market transactions must be considered, including M&As and alliances (Williamson, 1985).

These theories have similar implications. Firms become vulnerable as they engage in asymmetric exchanges and come to depend on partners for resources and services. This places them at risk of renegotiation or holdup by partners, who thus gain power. Factor market imperfections give some firms power over others. To reduce their vulnerabilities, firms engage in nonmarket linkages ranging from long-term contracts to M&As (Joskow & Schmalensee, 1988; Pfeffer, 1972; Williamson, 1975). These are often

coupled with efforts to achieve scale or scope economies (Williamson, 1985). These arguments have received consistent research support at the industry level regarding M&As (Burt, 1980; Finkelstein, 1997; Palmer & Barber, 2001; Pfeffer, 1972; Pfeffer & Salancik, 1978).

Resource dependence and transaction cost explanations have also been applied to alliances (Hagedoorn, 1993; Pfeffer & Nowak, 1976). Alliances help firms reduce dependencies. Alliances have greater flexibility and the options to scale up or scale down the investment, depending on the initial results of the collaboration. However, they provide less control over joint resources than do M&As. This creates governance problems, since partners must cooperate to obtain performance benefits. These problems increase with alliance size and complexity, especially when new governance structures are needed for joint entities (Nooteboom, 1999).

Resource dependence and transaction cost theories are applicable at the industry level as well (Davis & Powell, 1992; Finkelstein, 1997). This assumes that "the exchange patterns of the merging firms are reflected in the average of all firms" (Pfeffer & Salancik, 1978: 116). We argue that most firms in a given industry will be subject to similar technological requirements and market dynamics. While these theories are firm level, it is not implausible to expect that firms will look to firms in similar situations for guidance on complex decisions. Cross-industry merger waves have proven difficult to explain with firm-specific theories (Peteraf & Shanley, 1997), since firms in one industry may have trouble learning from the experiences of firms facing very different problems in unrelated industries. However, firms within the same industry can relate to common problems and situations, and industry proclivities toward homogenous strategic changes are more understandable (Armour & Teece, 1978).

There may, of course, be situations where the industry in question is heterogeneous in the demands placed on firms. This would occur, for example, in industries with highly articulated niche structures or where there are significant strategic groups (Dranove, Peteraf, & Shanley, 1998). In such settings, it might be added, there could be considerable disagreement regarding the most appropriate industry definition. Nonetheless, we believe that an industry-level approach to resource dependence theory and

transaction cost economics is useful as a starting point for understanding firm choices regarding M&As or alliances.

The choice of M&As versus alliances involves a cost-benefit analysis of the relative trade-offs of commitment and flexibility. Commitment brings great benefits to firms (Ghemawat, 1991), but it does so at a cost, in terms of both the investment itself and the potential for loss of foregone opportunities due to inflexibility. The same comparison can be made regarding flexibility, in that more flexible arrangements allow firms to take advantage of changed circumstances, but at the cost of less capability to intensively exploit an opportunity. M&A possibilities in a situation can be compared with alliance possibilities to see if the net gain for one, in terms of benefits net of costs, is larger than the net gain for the other. M&As involve greater commitment but less flexibility than alliances. Alliances might be preferred in industries that do not require large investments or that undergo such unpredictable periods of changes that large investments are too risky. In the first situation, interfirm cooperation can be achieved without the costs of M&As. In the second, M&A-related investments risk premature obsolescence because of rapid industry change, making alliances relatively more desirable.

The Role of Industry Constraints: Concentration and Institutional Influences

The discussion so far has concerned decisions made by firms regarding their critical investments in linking with other firms. Also of interest are the industry constraints that firms are subject to when making their decisions. In most cases, firm choices are understandable in terms of the common situations faced by industry participants. Firms will choose based on the industry requirements for commitment or flexibility, and firms in the same industry will tend to choose similarly. In some industry contexts, however, firms may not have a full array of choices open to them. For example, M&As are more likely where there are relatively large numbers of firms competing and, thus, numerous potential partners. Where there are only a few large incumbents, there will be fewer potential partners, and coming to a deal may be more difficult. This aspect of industry constraints, concerning the number, size, and distribution of

competitors, has been covered in studies of industry concentration.

There is more to industry constraints than concentration. Sociologists consider constraints by focusing on rules and regulations governing an industry, informal behavioral norms among competitors, and other factors that establish and maintain order, such as status, imitation, and reputation.

Industry structure. The IO literature suggests that industry structure determines firm conduct (Bain, 1968; Scherer, 1980). Many studies have examined the effects of structure on conduct and performance. Concentration, for example, is one of the most important market structure variables (Bain, 1951; Schmalensee, 1989). Industry concentration is the "combined market share of the 'leading firms'" (Shepherd, 1979: 180). With high levels of concentration, the expectation is that leading firms will be able to coordinate their activities, especially pricing and output. With lower levels of concentration, the expectation is that the industry will be characterized by relatively autonomous and competitive firm behavior, leaving interfirm coordination of pricing and output sporadic and weak (Shepherd, 1979: 63–64).

Mergers, alliances, and concentration are most commonly linked in the IO literature in terms of the potential for collusion. When there are fewer firms in an industry, it becomes easier for incumbents to coordinate their pricing activity to limit rivalry. Weiss (1989) reviewed twenty industry studies and found that prices tended to be higher in more concentrated markets. This sort of collusion is often illegal, and, thus, mergers prompting greatly increased concentration will receive greater antitrust scrutiny for their potential anticompetitive issues. In more concentrated industries, M&As are more difficult and costly to implement, and firms are more likely to pursue alliances.

Overall, the IO literature shows the linkage between industry concentration and the incidence of mergers. Its particular lines of research concerning collusion and antitrust show how the constraining influence of concentration may affect firms' decisions to merge versus ally.

Institutional influences. Institutional theorists argue that firms operate in a socially organized environment. The factors that help to organize the industry include collectively held frameworks of beliefs about how an industry or sector

operates, norms and rules that define the legitimate forms of corporate behavior and sanctions for their violations, and common values regarding important and appropriate behaviors and outcomes (Scott, 2001).

Conformity with institutional values, rules, and norms provides benefits to firms. Institutional frameworks simplify decision making by avoiding disputes or limiting the set of choices that are appropriate in a situation. Conformity with institutional constraints also limits the stress of risky decisions by legitimating them. When there is substantial ambiguity regarding technological opportunities, industry change, or other factors, group-level learning processes will be important influences on actors. For example, firms facing risky decisions without a clear basis for choosing between alternatives may resolve their uncertainty by considering what other firms in their industry have done (Peteraf & Shanley, 1997).

Industry provides a natural basis for social comparisons among managers and is likely to be a focus for regulatory agencies (Fligstein, 1990; Fligstein & Brantley, 1992; Haunschild, 1993; Haunschild & Beckman, 1998; Hirsch, 1986). Firms will tend to be influenced by the shared experiences of others in the industry (Hambrick, 1982; Huff, 1982), leading them to develop norms regarding appropriate behaviors (Spender, 1987).

Institutional influences work to simplify the industry environment and render it more regular and predictable (DiMaggio & Powell, 1983). While their ultimate effect may be to reduce industry uncertainty, the direct effect of institutional influences may well be to make the environment more complex and constraining, especially in times of change (North, 2005: 13–19). For example, if the added costs of regulatory compliance associated with a merger are too high, a firm may choose not to pursue the merger, even if the business case for the combination was promising.

How will incorporating economic and sociological perspectives on industry constraints affect our understanding of the choice between M&As and alliances? Institutional influences may be broadly linked to the underlying technological and economic conditions in an industry (Scott, 1994). For example, it is likely that the level of industry concentration will be associated with the institutional influences. The pat-

terns of norms and behaviors that develop among a few large competitors will be different from those that develop among a larger number of smaller competitors with more limited market power. Given the market power of larger competitors, it is also likely that regulatory regimes will differ depending on the level of concentration. These two aspects of industry constraint will thus have a similar influence on the choice of M&A versus alliance. As the industry context becomes more constrained, either through concentration or through the proliferation of institutional forces, firms will be more likely to choose alliances over M&As. We develop these ideas further in the remainder of the paper.

M&A OR ALLIANCE?

The choice that a firm makes between M&A and alliance involves balancing requirements for commitment with requirements for flexibility. This balancing of commitment and flexibility is subject to the further constraints of the industry structure and institutional forces. We present a framework based on these three dimensions that provides the basis for a set of research propositions.

M&As differ fundamentally from alliances only in degree of ownership, in that a merger or acquisition implies a majority or controlling interest whereas an alliance does not. While there may be other factors that correlate more with M&As than with alliances, it is this difference that is fundamental. This suggests that M&As will be preferred where unified ownership and control rights permit more thorough exploitation of combined organizational resources than would be possible otherwise. This exploitation, however, comes at the cost of greater investments—of physical, human, and intangible resources—and increased governance costs. Alliances generally do not permit as intensive exploitation of joint assets as do M&As, but they are easier to exit if necessary. Alliances also will be preferred where continuing cooperation among partners is beneficial and where centralized control could harm cooperation and destroy a combination's value.

For many transactions, it may not be clear whether the centralized control of M&A is preferable to the flexibility and decentralized control of an alliance, and the two could be viewed as substitutes. For example, a large alliance

may begin with multiple partners who discover, through experience, that centralized control and unified ownership are required for the combination to be successful. Once enough partners have exited, the alliance has become a merged firm. The reverse might also occur, as a firm created out of M&A breaks into separate but cooperating units. There have been few studies to date assessing these transactions as substitutes (Dyer et al., 2004; Hagedoorn & Duysters, 2002; Hennart, 1988; Robinson, *in press*; Sawler 2005; Villalonga & McGahan, 2005; Wang & Zajac, 2007).

Hennart (1988) used transaction cost arguments to explain the choice between joint ventures and acquisitions. He argued that joint ventures are used to reduce management costs and should be chosen over acquisitions if the desired assets each party needs are firm specific and only a subset of those held by its partner. The cost of acquisitions would be particularly high in these circumstances and would be higher for large or extremely diverse targets. In these situations, purchasing the whole firm would commit the acquirer to enter unrelated fields or to suddenly expand in size, posing management challenges for the acquirer independent of the immediate logic of the combination. Joint ventures permit managers to avoid these problems. In such circumstances, firms will prefer the lower costs of sharing power in an alliance to the higher costs of ownership through M&A. The relative size of the assets desired by each party is critical here. Firms will have more at risk in collaborating with other firms when the assets involved are a substantial portion of those held by each partner. Under such circumstances, if there is substantial causal ambiguity (Rumelt, 1984) about the core resources, M&As will be preferable to alliances.

Hagedoorn and Duysters (2002) studied how environmental conditions and firm-specific conditions (i.e., appropriability and routines) influence preferences for M&As or alliances. In high-tech environments requiring learning and flexibility, alliances are preferred as vehicles for acquiring innovative capabilities. In low-tech sectors with less technological change, M&As are preferred for acquiring innovative capabilities. These results suggest that firms need to maintain flexibility in uncertain industry environments with the more flexible organizational arrangements provided by alliances.

Robinson (in press) sees an alliance as the choice to alleviate agency problems brought on when target businesses are significantly riskier than those of the acquirer. In such conditions, parent firm managers can underinvest in underdog projects in the target to ensure their individual performance results. This leads to agency problems, since managerial imperatives to achieve budget objectives override the strategic objectives behind a deal. Governance by M&As in such a setting may actually promote dysfunctional decision making in the combined firm because of perverse incentives. Alliances force parent firm managers to commit investment and other support to the venture. The contractual nature of alliances is a sounder way to ensure postcombination compliance than a bureaucratic regime in which premerger promises may not be fulfilled. Robinson's results suggest that alliances are preferred in high-growth, risky, and research-intensive industries.

Villalonga and McGahan (2005) studied the choices among acquisitions, alliances, and divestitures made by eighty-six Fortune 100 firms between 1990 and 2000. They studied the impact of firm attributes, target/partner attributes, and transaction attributes on the choice of different governance forms. The authors found support for resource explanations—namely, that the target or partner's technological resources are associated with the focal firm's choice of acquisitions over alliances. Study results also suggest the importance of organizational learning explanations. A focal firm's acquisition experience is associated with the choice of acquisitions. The number of prior alliances between the focal firm and the target also is positively associated with the choice of alliances.

Dyer et al. (2004) developed a framework to help executives decide whether they should ally with or acquire potential partners. Their framework suggests that executives must analyze three sets of factors before choosing between M&As and alliances: the resources and synergies they desire, the marketplace they compete in, and their competencies at collaborating. It suggests that acquisitions are preferable to alliances when firms intend to combine tangible resources, such as manufacturing plants. If companies plan to generate synergies by combining human and intangible resources, then alliances are preferable to M&As. When market uncertainty is high, firms should choose alliances to

limit their exposure while maintaining the option to acquire if collaboration yields favorable results.

An Industry Framework for M&A versus Alliance Choice

How does a firm's industry environment facilitate the choice of M&A versus alliance? We believe that three dimensions are influential. The first concerns the degree to which the industry context places demands on firms to make commitments to a given strategic position. The second concerns the degree of environmental uncertainty firms face regarding likely paths of industry evolution, the riskiness of investments, technological uncertainty, and other factors. The third dimension concerns the degree of constraint placed on industry participants by such factors as industry structure, regulatory regimes, and other institutional forces.

Requirements for commitment. Industry requirements for strategic commitments are the exogenous demands for investment that most firms in an industry need to meet in order to succeed—common requirements for success. These requirements may concern the scale and scope of operations, expressed in such ideas as "minimum efficient scale" (MES). They also can refer to the general levels of investment and the types of "asset specificity" (Williamson, 1985) common in the industry, including investments in specialized human assets or in intangible assets, such as reputation and brand equity. These requirements also include investments in governance mechanisms, such as dual sourcing and other risk-sharing arrangements that are made to reduce transaction cost risks.

Identifying a single dimension of industry commitment is complex. Commitment involves two industry characteristics that imperfectly parallel each other: scale/scope requirements and asset specificity. Commitment certainly involves scale and scope requirements common in an industry. Highly capital-intensive industries—for example, steel and autos—would certainly qualify as high-commitment industries, since large amounts of productive assets must be deployed as a basis for competing. Commitment requirements, however, also concern asset specificity, by which we mean the degree that assets can be efficiently redeployed if their initial uses prove infeasible (Teece, 1980, 1982). In-

dustries characterized by high asset specificity impose commitment requirements on incumbents, since once these assets have been deployed, they are costly to redeploy.

Scale/scope requirements and asset specificity are related, in that one refers to the volume of assets committed and the other to the sunkness (Sutton, 1991) or "stickiness" (Ghemawat, 1991) of those assets. We expect that large-scale assets will often involve considerable sunkness and that small-scale assets will be more fungible. However, the association between these two aspects of commitment is not a perfect one. Some assets, such as commercial airplanes, have characteristics conducive to scale and scope economies but can be easily redeployed or even sold if their initial use, such as in new market entry, proves unsuccessful. This is at the heart of the "contestable market" hypothesis developed by Baumol, Panzar, and Willig (1982). Other assets, such as specialized human assets in knowledge-intensive industries, may have high levels of asset specificity and yet not be associated with scale and scope requirements, since firms are not able to own and exploit human assets as they can their physical capital. Thus, while we are generally associating scale/scope and asset specificity, there are also midrange industry situations where the analysis of commitment is more complex.

The greater the requirements for commitment, the more likely it is that firms will pursue inter-firm collaborations through M&As. Firms in these industries generally will produce at high volumes and use significant specific assets. This means that the firms will have more to gain by scaling up their production and distribution via mergers. They will have more at risk in collaborating with other firms, especially where significant relationship-specific assets are involved. This leads to an interest in greater control, which is consistent with the predictions of resource dependence and transaction cost theories and suggests a preference for M&As over alliances. In industries with high commitment requirements, firms will wish to exercise control through M&As.

How do the exceptions mentioned above relate to this general logic? The exception regarding fungible assets with scale/scope potential argues against our logic, provided there are no other bases for required sunk investments in an industry. For example, in the airline industry

there are considerable scale economies associated with the operation of commercial airliners at full capacity. However, airliners can be easily redeployed from unprofitable local routes to profitable ones and can even be shifted from commercial to private or charter use. The fungible nature of airliners would not by itself argue for extensive merger activity. The evolution of the U.S. airline industry, however, was dependent on investments besides those in airliners, and many of these investments involved large specialized assets. Examples of these include investments in central hub facilities, specialized baggage handling equipment, computerized reservation services, local advertising, and high-volume maintenance facilities (Peteraf, 1995; Peteraf & Reed, 1994). As the industry evolved in a "hub and spoke model" after deregulation in 1978, it was these latter sets of sunk investments that arguably drove the extensive M&A activity witnessed in the industry.

A second exception concerns the role of specialized human assets in knowledge-intensive industries. While investments in generalized human resources can be associated with significant scale commitments, specialized human resource investments, while often substantial, do not involve the same commitments. Specialized human resources—for example, expert researchers—can often move freely from firm to firm and across industries. M&A transactions whose value is predicated on combining specialized human resources are especially vulnerable to the exit of key staff during integration.

The biotechnology industry is characterized by smaller firms and relatively fewer M&As than alliances. This is due, in part, to the importance of the specialized expertise of particular researchers or research groups, coupled with the difficulties of integrating such individuals or groups into larger firms. Where specialized expertise is a key objective, an acquirer will have difficulties accessing the expertise of key individuals and will risk their exit if those individuals become dissatisfied, thus placing the value of the merger in peril. This suggests alliances as more appropriate vehicles (Dyer et al., 2004).

Requirements for flexibility. Environmental uncertainty refers to the clarity and predictability of the premises of industry incumbents. It has been viewed as the most relevant environmental characteristic affecting firms' strategic decision making (Dess & Beard, 1984; Emery & Trist,

1965; Lawrence & Lorsch, 1967). This uncertainty is multidimensional: technologies and products may change, market acceptance of a product line may be unclear, and new products may have an impact on future industry operations. While any industry will be associated with some uncertainty, high uncertainty implies the possibility that the environment of an interfirm collaboration may change enough that the fundamental assumptions of that collaboration are challenged or rendered obsolete. Such a change would place the value of the entire collaboration in jeopardy.

Uncertainty has been linked to increased cooperation between firms (Daft & Lewin, 1993; Devlin & Bleackley, 1988; Dickson & Weaver, 1997). When environmental forces create greater turbulence, there is a greater need for interorganizational connections (Daft & Lewin, 1993). Industry participants, when choosing among different modes of interfirm linkages, will attempt to maintain their flexibility and avoid commitments that would be put at risk by unforeseen changes. Dickson and Weaver (1997) found that managerial perceptions of general uncertainty, technological demands and volatility, and demands for internationalization all increased the likelihood that firms would choose alliances. They found that perceived reductions in uncertainty were associated with decreased interest in alliances. Other studies suggest that high uncertainty is associated with alliances among high-technology firms (Li & Atuahene-Gima, 2002; Shan, 1990).

Structural and institutional constraints. The implication of our first two dimensions is that firms will choose between M&As and alliances based primarily on requirements for commitment or flexibility. Firms often must also consider the reactions of their competitors, government regulators, and other stakeholders to their choices. In addition, firms tend to seek legitimacy for their actions and, thus, tend to comply with implicit and explicit norms of industry behavior, which might lead them to one choice over another. This requirement to consider industry constraints is different from firms' need to consider commitment or flexibility requirements. It is a more general moderating condition that indirectly influences the merge versus ally decision by affecting the choices open to firms.

Our third dimension—structural and institutional constraints—concerns the limitations on

firm choices that stem from industry concentration or institutional forces. For example, in more concentrated industries, acquisition options are scarcer and more costly. Moreover, competitors can clearly observe an interfirm collaboration and respond to it such that the value of the collaboration must account not only for its direct costs and benefits but also for the indirect costs of competitor responses.

By "institutional constraints," we mean the implicit and explicit social and regulatory orders governing industry participants. These constraints come from the activities of governmental agencies, professional and industry associations, and the broader social networks in which firms are embedded (Scott, 2001). Institutional constraints are not just regulatory demands and coercive pressures, however; they can also involve more general demands on firms to imitate industry leaders or other dominant firms. Firms care about their reputations and their identities as well (Albert & Whetton, 1985; Dutton & Dukerich, 1991; Fombrun & Shanley, 1990). They can gain reputation and status by an extensive program of M&As (Peteraf & Shanley, 1997). Firms that are acquired or merged often end up losing their identities altogether, as happened to Compaq, Amoco, and Bank One. Industry demands for legitimacy, status, reputation, and identity can influence firm decisions in directions different from those suggested by requirements for commitment and flexibility.

Certain institutional forces, such as the work of regulatory agencies enforcing rules backed by strong sanctions, may have a very distinct influence on firms' choices of M&As versus alliances. Specifically, as regulatory scrutiny increases, firms tend to choose alliances because of the increased costs of regulatory compliance associated with mergers. Other institutional forces, such as the pressure to imitate high-status firms and the need to maintain legitimacy and reputation, however, do not imply a specific preference for M&As or alliances. Instead, pressures for imitation and legitimacy imply a limitation on firm choices such that industries characterized by M&As or alliances in the past are likely to be similarly characterized in the future.

We focus on the regulatory regimes and government mandates for an industry when studying the constraining role of institutional forces

in firms' decisions to merge or ally. The level of regulatory scrutiny is broadly linked to the degree of industry concentration. We expect structural and institutional constraints to influence firm decisions when they are pronounced, such as when an industry is significantly concentrated, when it is subject to extensive regulatory scrutiny, or both. Under high levels of structural and institutional constraints, firms will be more likely to choose alliances rather than M&As. For medium or low levels of structural and institutional constraints, we are not expecting a distinct influence for this dimension. Instead, the decisions of firms regarding M&As versus alliances would be the same as those predicted by requirements for commitment and flexibility without reference to industry constraints.

An exception to our general predictions regarding industry constraints is when there is no dominant influence of either commitment or flexibility requirements. In such a situation, we expect that firms will decide between M&As and alliances based on the choices of other elite and high-status firms in the industry. Uncertainty encourages imitation (DiMaggio & Powell, 1983), and firms will tend to model themselves on other organizations when there is significant

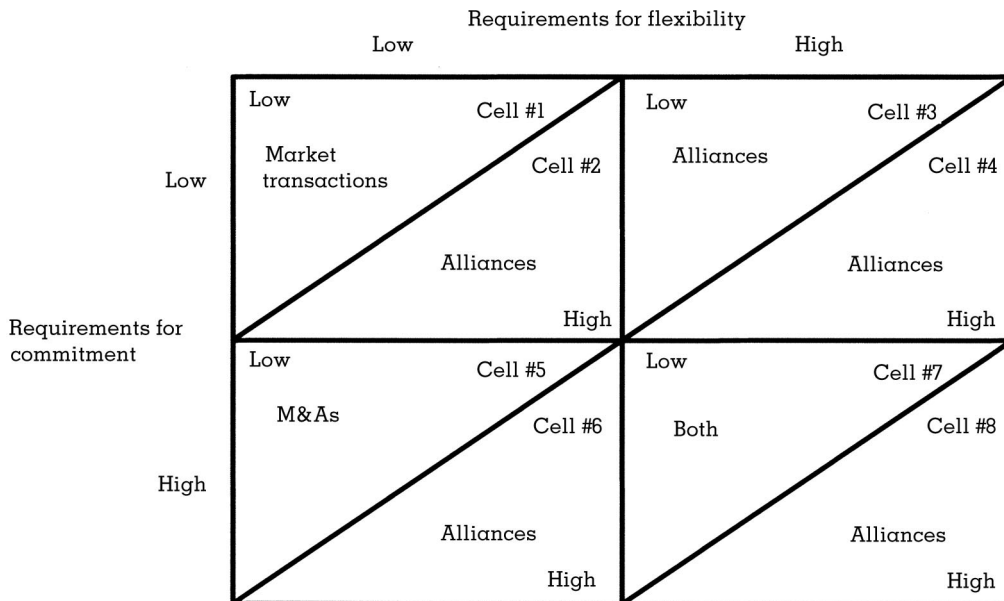
ambiguity regarding the merge versus ally decision.

Conceptual Framework

These three dimensions are represented in Figure 1, using a simple low/high distinction for each dimension. The resulting $2 \times 2 \times 2$ matrix suggests eight situations in which the relative desirability of M&A versus alliance may be assessed. Figure 1 provides the bases for the specific propositions presented in the remainder of the paper.

Cell 1 represents a situation characterized by low needs for flexibility, low requirements for commitment, and low structural and institutional constraints. This condition is akin to that of a competitive market. The economic concept of a "perfectly competitive market" is an extreme example (Besanko, Dranove, Shanley, & Schaefer, 2003). In this context firms are unable to gain a sustainable competitive advantage and generally display "price-taking" behaviors. Firms in these industries will not possess significant strategic assets as a basis for competition. The cell represents a context in which neither M&As nor alliances are likely to create

FIGURE 1
Typology of Industry Contexts



Within-cell split: Structural and institutional constraints

significant and sustainable advantage because of the fragmentation of the market and the fact that industry participants are not called on to make strategic commitments or to adapt to uncertainties in the environment as a condition for success. While both M&As and alliances can occur in such situations, neither is preferable to market transactions, which are less expensive.

Cell 2 represents similar conditions to Cell 1 in terms of low needs for flexibility and low requirements for commitment, with the exception of a high degree of structural and institutional constraints. Such a condition might arise out of first mover advantages, status or prestige differences among firms, location advantages, and restrictive entry regulation. In this situation M&As would not create significant advantage. Alliances, however, may be a preferred mode of collaboration to access reputation, location advantage, or any other advantage to be obtained from the structural and institutional context of the industry. Examples of industries in this cell include localized professional services businesses, such as real estate brokers, booksellers, and dry cleaners, where product and service quality, personal attention, and reputation are valuable and customers are less willing to shop around for additional providers once an acceptable seller has been identified.

For these sorts of businesses, industry constraints may be important, even in the absence of large scale or scope. Among these firms, persistent cooperative relationships, sometimes of a systematic nature, are common. Real estate brokers make agreements to share listings and split fees. Local bookstores often cooperate in sponsoring special events to attract customers. Dry cleaners develop arrangements for sharing capacity in busy times. These are similar to what Phillips (1960) calls "linked oligopolies."

Cell 3 represents an industry setting characterized by high needs for flexibility, low requirements for commitment, and low structural and institutional constraints. This is a situation where value is obtained from investments in the industry, although the best ways to exploit value creation opportunities are unclear, and investments, while entailing some risk, are not too substantial. In such situations interfirm collaborations to manage industry uncertainties may prove valuable, even though participating firms are not called on to make significant strategic commitments and the industry is frag-

mented. Interfirm collaborations will be smaller, more exploratory, and more cooperative in nature. Flexibility will be desirable to accommodate unexpected industry developments. We would expect more alliances than M&As in such a setting.

Research-intensive, knowledge-based industries, such as biotechnology, provide examples for this cell. In the biotechnology industry there are numerous firms, most of them small. Although biotech firms make commitments in assembling and equipping their research teams, these commitments are small relative to those in other research-driven industries, such as semiconductors and pharmaceuticals. The state of knowledge in biotechnology changes rapidly, and biotech firms need to be flexible. Efforts to exploit scale and scope economies in biotechnology have not been as successful as they have been in related industries, such as pharmaceuticals (Dyer et al., 2004). Not surprisingly, alliances have been more common than M&As.

Cell 4 represents conditions similar to those in cell 3, with the exception of a high level of structural and institutional constraints. This situation might result from a heavy emphasis on innovation and adaptation by industry members, with industry structure determined by the prestige or status of established firms or their track records at innovating. Firms in these industries need to invest to gain a favorable market position, but the investments are likely to be smaller in scale and more adaptable than traditional investments in scale- and scope-related capabilities. Examples include investments in specialized human assets or in dynamic capabilities (Teece, Pisano, & Shuen, 1997).

We would expect more alliances than M&As in these industries to maintain flexibility when facing industry changes. High industry uncertainty focuses the attention of firms on the need for redeployable assets and the avoidance of significant commitments. It also focuses the attention of firms on those practices and products that have succeeded in the past. This implies that status based on past performance is an asset in selecting partners for future alliances. Status and reputation become vehicles to better inform potential partners about a firm's capabilities and mitigate the risks and uncertainties involved in an association.

The venture capital industry provides an example for this cell. There are large numbers of

firms participating. These firms are generally small, and there is high turnover of industry participants. While the industry is not highly concentrated, there is evidence of clear status ordering among firms in the industry, based on their track records of backing successful ventures. At the threshold of innovation, venture capital firms face extraordinary uncertainty and need to constantly adjust to technological and economic changes. Venture capital firms often collaborate to share risks and enhance prestige through association with higher-status peers.

Cell 5 represents an industry context characterized by low needs for flexibility, high requirements for commitment, and low structural and institutional constraints. While any industry undergoes change, low uncertainty here implies that the basic premises of the industry, in terms of its products, technology, distribution, and customers, are relatively stable. Firms in these settings can assume sufficient industry continuity to permit substantial commitments. There may even be opportunities for scale and scope economies that have not been exploited by industry incumbents.

High commitment requirements here mean that firms must make significant investments that are costly to reverse as a condition of competing. This suggests that firms in these settings will attempt to exploit scale and scope economies. Flexibility and fluidity will not be as necessary in such situations. The assumed low level of structural and institutional constraints suggests that firms will tend not to be deterred from making necessary commitments on the basis of market power considerations or institutional restrictions. In such a situation, we would expect more M&As relative to alliances.

This situation is relevant for industries with commodity-type products, such as agricultural wholesalers and marketers. Firms such as Cargill and ADM are examples. These industries are characterized by fairly stable market demand and predictable technological advancement. While there are many smaller firms in these businesses, there is also potential for considerable scale and scope economies, especially among industry leaders. Most of these industries are sufficiently large and global in scope that there are few problems with excessive concentration or with antitrust regulation. Price competition is significant, and cost advantages are important for achieving competitive

advantage. We expect M&As to be more prevalent here than alliances because of the importance of scale and scope.

Cell 6 represents similar conditions to those in cell 5, with the exception of a high level of structural and institutional constraints. This implies that there may be limitations on the ability of firms to link with other firms via M&As. The higher the level of structural and institutional constraints, the more likely that scale and scope economies in the industry are present but already being exploited. Furthermore, powerful industry leaders could possibly increase the costs of M&As by tacit collusion or other cooperative interactions. In an industry that is highly concentrated and regulated, the potential anti-competitive effects of further concentration may prompt regulators to increase their scrutiny and raise the costs of M&As over what they would be in more competitive and less constrained markets. We expect alliances to be more likely than M&As in these conditions because of the increased costs associated with M&As.

Examples for this cell would include traditional, mature manufacturing industries, such as steel and heavy metals, automobiles, and tobacco. These industries are highly concentrated and regulated. Most scale and scope opportunities are already exploited by incumbent firms. The gains from industry consolidation that motivate M&A activity are less likely to occur in these industries. As a result, alliances are more prevalent.

Cell 7 represents an industry context of high needs for flexibility, high demands for strategic commitments, and a low degree of structural and institutional constraints. This could happen in an established capital-intensive industry in which innovation and new product development are important and where the industry is undergoing an external shock because of deregulation or significant foreign entry. A newly deregulated or expanded market would allow scale and scope economies to be exploited. Firms participating in such a context will need flexibility but will also need to make significant investments to exploit scale and scope opportunities.

This context places conflicting demands on firms, leading to the expectation that both M&As and alliances could be employed in such a setting. We expect that when firms face conflicting demands between the needs for commitment and the needs for flexibility, they will look to

other firms as a basis for making a decision. Industry-wide practices and institutional rules will therefore be relevant here. We expect that firms will tend to follow institutional cues regarding the choice of M&As and alliances by watching what other firms do, especially highly visible ones, and imitating their choices.

Examples for this cell include such industries as entertainment and motion pictures. In the set of industries generally related to entertainment, there has been very substantial change, including deregulation, technological innovation, and diversification across traditional industry boundaries (Fombrun & Astley, 1982). The effect of these changes has been to create a large entertainment sector that has a strong potential for scale and scope economies, is subject to almost continuous change, and lacks both significant economic concentration and a unified institutional framework. There have been significant mergers among these firms, with TimeWarner being an example of a large entertainment conglomerate. There are possibly even more alliances in this domain, however, as projects and deals come and go. The clearest example of the importance of alliances is in the increasing dominance of small movie production companies that form and reform new associations with dozens of partners on each major film project.

Cell 8 represents conditions similar to those in cell 7, with the exception of a high level of structural and institutional constraints. The coupling of high commitment needs, high flexibility needs, and a high level of structural and institutional constraints will raise the costs for firms to commit significant assets via mergers. Given our expectations for the equal likelihood of M&As and alliances for Cell 7, the increase in costs associated with M&As because of the constrained industry environment will shift the balance of options to alliances and away from M&As.

Examples for this cell include the semiconductor and pharmaceutical industries. The semiconductor industry is heavily concentrated. Even though it is highly innovative, it also places significant demands on participants for investments in scale-intensive facilities. Alliances to set up dedicated generic manufacturing facilities, or "fabs," are common in the industry. The pharmaceutical industry is also characterized by needs for significant commit-

ments in scale-intensive capabilities, as well as needs for significant flexibility given the importance of research and development. The industry is also extensively regulated and concentrated. While there have been some large mergers in the industry in recent years (e.g., Pfizer acquired Pharmacia in 2003, and Sanofi acquired Aventis in 2004), the extent of alliance activity in the industry is much larger. This is due to such factors as regulatory scrutiny, needs for partnering across geographic markets, and needs for securing distribution capabilities.

RESEARCH PROPOSITIONS

To develop the intuitions behind the conceptual framework, it is necessary to further specify different industry conditions characterized by the three dimensions of the typology in terms that can, in principle, be measured and tested. In this section we present eight sets of propositions (eleven in total). The first five concern different types of industry characteristics, including capital intensiveness, specialized human asset intensiveness, combined capital and specialized human asset intensiveness, the importance of tacit knowledge, and the level of technological uncertainty. The next six propositions concern aspects of the structural and institutional constraints.

Requirements for Commitment: Main Effects

Capital intensiveness. Capital intensity refers to the amount of physical capital used to produce a unit of output. Firms in capital-intensive industries will have higher fixed costs and require greater economies of scale and scope to succeed (Chandler, 1977, 1990). Interfirm collaborations in these industries will require unified control over the combined firm, especially in larger transactions with expectations for economies of scale and scope. This will increase the desirability of M&As relative to alliances. These considerations suggest the following proposition.

Proposition 1: M&As will be more likely than alliances in capital-intensive industries.

Specialized human asset intensiveness. Not all value-creating investments are amenable to control through ownership. Investments in spe-

cialized human assets are an example, since it is difficult to control critical employees as one would control fixed assets, intellectual properties, or patents. Employees are free to leave a firm, and firms must secure their cooperation if their specialized human assets are to be put to work. This makes specialized human assets a different situation from traditional settings of labor intensiveness and traditional human resources, which suggests that firms in industries high in specialized human assets will be more likely to use alliances than M&As.

This intuition is true for specialized human assets, even if there is substantial causal ambiguity (Rumelt, 1984) of the core resources of potential partners. Causal ambiguity exists when the precise reasons for success or failure cannot be determined and it is impossible to produce an unambiguous list of the factors of production (Rumelt, 1984). When there is causal ambiguity, firms may prefer ownership through mergers over alliances in order to have more control of the combined resources. However, firms cannot own or control specialized human assets as they can control fixed assets. Value from cooperation based on specialized human assets requires more investment in people, more retention of trained people, and more cooperation between firms over new resources.

Interfirm collaborations through alliances based on specialized human assets will be more flexible and less susceptible to exploitation than linkages controlled through hierarchy, as in M&As. Meanwhile, it has long been recognized that M&As tend to create cultural clashes when they are implemented (Haspeslagh & Jemison, 1991; Zollo & Reuer, 2003), which, coupled with the difficulties of exploiting specialized human assets through hierarchical controls, might increase the turnover of valuable employees from the acquired firms.

Proposition 2: Alliances will be more likely than M&As in industries characterized by a high level of specialized human asset intensiveness.

Capital and specialized human asset intensiveness. What about industries with high levels of both capital intensiveness and specialized human asset intensiveness? Firms in such industries will face conflicting influences. Capital intensiveness will promote M&As, in which major investments can be controlled and scale

economies can be exploited. Specialized human asset intensiveness will be associated with a greater likelihood of alliances because of the needs for cooperation and flexibility. In industries with significant capital and specialized human asset requirements, we expect that managers will be tempted to pursue both M&As and alliances to improve their asset productivity. Trying to fashion cooperation that balances the requirements of capital and specialized human assets intensiveness may prove difficult. The uniform control needed to exploit scale and scope opportunities may work against the flexibility, cooperation, and skill sharing required for joint R&D or new product development (Pautler, 2003). These considerations suggest the following proposition.

Proposition 3: M&As and alliances will be equally likely in industries characterized by high levels of capital intensiveness and specialized human asset intensiveness.

Tacit knowledge. Tacit knowledge is knowledge that is difficult to articulate and communicate and that often requires face-to-face contact for effective transfer (Teece, 2000: 13). Tacit knowledge is also associated with ideas of causal ambiguity (Rumelt, 1984). The presence of extensive tacit knowledge in an interfirm association suggests a higher cost of transferring knowledge and a higher cost of contracting. This will raise the cost of alliances, which depend on contracts, relative to M&As. This may make M&As preferable to alliances. As already suggested, this implies that the assets involved in collaboration are sufficiently large relative to those held by each partner to justify ownership investments.

Proposition 4: M&As will be more likely than alliances in industries characterized by high levels of tacit knowledge.

Requirements for Flexibility: Main Effect—Technological Uncertainty

As the state of knowledge regarding an industry's technology changes, firms will feel pressure to adjust. Technological change will stimulate firms to adapt, but the variability and predictability of technological change will influ-

ence which adaptations are selected (Bourgeois & Eisenhardt, 1988). If technological change is predictable, firms can forge new, long-lasting relationships with other firms through M&As. A predictable trajectory of change will make strategic commitments for adaptation more defensible. When the extent and uncertainty of technological change are high and its trajectory is not predictable, however, M&As will become less desirable because of the concern that the required investments will be negated by subsequent unforeseen changes. This will make alliances more desirable, since they are easier to arrange and reverse.

Technological change may be fairly continuous in some industries but discontinuous and less predictable in others. Research suggests that technological uncertainty contributes to alliance formation (Dickson & Weaver, 1997; Hagedoorn, 1993). Dickson and Weaver (1997) found that high technological demands and volatility increased the odds of alliance use among Norwegian manufacturing firms. Other studies support these expectations (e.g., Eisenhardt & Schoonhoven, 1996; Hagedoorn & Duysters, 2002). These considerations suggest the following proposition.

Proposition 5: Alliances will be more likely than M&As in industries where technological uncertainty is high.

Structural and Institutional Constraints: Moderating Effects

Industry concentration. Industry concentration concerns the number of industry participants and the distribution of their market shares. It is associated with the relative advantage accruing to large firms owing to both scale and scope advantages and to the greater ability of larger firms to restrict competition and benefit from tacit collusion. Thus, we expect a positive association between industry concentration and the likelihood of mergers in the industry. Specifically, a moderate level of industry concentration will be associated with scale and scope economies and will signal potential benefits from M&As.

At high levels of concentration, however, alliances may be more desirable. There may be limits to the gains from M&As. The number of potential merger partners will also be reduced

with increased concentration, and incumbents will be better able to collude without bearing the costs of merging. Antitrust authorities also will be more aware of potential market power gains from M&As among market leaders and, thus, will scrutinize high-concentration industries more intensively.

These points are also consistent with the ecological model of resource partitioning (Carroll, 1985) that, as concentration rises, generalists will tend to compete vigorously for the center of the market, which will create opportunities for specialists to thrive on the periphery. A study of the U.S. wine industry over the period of 1941 to 1980 showed that a mature industry with a high degree of concentration is subject to resource partitioning, with the emergence of distinct generalist and specialist segments (Swaminathan, 2001). In another study of the American brewing industry, Carroll and Swaminathan (2000) suggested that alliances are one way in which firms from these two segments can grow. For instance, Anheuser-Busch, a generalist, has equity stakes in a few microbrewing firms and distributes their products. Previous empirical studies also showed that acquisitions are less likely in highly concentrated industries (Hennart & Park, 1993; Yip, 1982).

Proposition 6a: M&As will be more likely than alliances in industries with moderate levels of concentration.

Proposition 6b: Alliances will be more likely than M&As in industries with high levels of concentration.

Regulatory environment and coercive pressures. Firms are not only constrained by industry concentration but also by the institutional forces of their industry. Institutional pressures tend to reduce the variation in firm behaviors and to encourage conformity (DiMaggio & Powell, 1983). We expect the degree to which firms pursue M&As or alliances to generally conform to the overall patterns and norms of their institutional environments (DiMaggio & Powell, 1983; Fligstein, 1990; Haunschild, 1993).

One type of institutional force is the coercive pressure stemming from political influences and the problem of legitimacy in the larger environment (DiMaggio & Powell, 1983). Coercive pressures include force, persuasion, and imposition of organizational models on dependent

firms. These pressures are often linked with behavior norms. One area where firms face these challenges is regulatory change, or government mandate, which affects many aspects of an organization's decisions and behaviors (DiMaggio & Powell, 1983). In this case, firms' decisions regarding M&As versus alliances should also conform to the prescriptions of the common legal environment. Where there is significant antitrust scrutiny, for instance, M&As will be more difficult and costly to complete, so alliances will be more prevalent among firms in the industry.

Firms are also subject to coercive pressures outside the governmental arena, including the imposition of organizational models on dependent firms (DiMaggio & Powell, 1983). When firms in a given industry are highly dependent on other organizations for funding or other resources, we expect that their choices regarding M&As versus alliances will conform to the requirements of funding sources and other resource providers. For example, in start-up high-technology industries, it is common for influential venture capitalists (VCs) to support new firms on the condition that the recipient firms will eventually be acquired. This helps the VCs recoup their investments, even though M&As may not be the optimal choice for new ventures to pursue. As Robinson (in press) suggests, joint ventures, rather than M&As, may be the best choice for small, risky ventures. These considerations lead to the following two propositions.

Proposition 7a: Alliances will be more likely in industries where there has been recent regulatory activity, especially antitrust activity. M&As will be more likely in industries where recent regulatory activity, especially antitrust activity, has been low.

Proposition 7b: Where funding and other resource requirements dictate the choice of M&As versus alliance, firm behaviors will conform to those dictates.

Other institutional factors. Institutional forces are not just regulatory or coercive. Firms' choices will be influenced by other institutional forces, such as industry history and the general demands to imitate high-status firms. Previous studies on the antecedents of M&As support these institutional ideas. Palmer and Barber

(2001), for instance, found that a rising number of acquisitions completed in the previous three years by other firms in a corporation's primary industry increased the likelihood of an acquisition by a focal firm. Haunschild (1993) found that firms tend to imitate the acquisition activity of firms with which they share board interlocks. Joint ventures and alliances can similarly be explained in terms of imitation processes, since firms model themselves on their peers when facing high environmental uncertainty (Kogut, 1988). In making their decisions about M&As versus alliances, firms will be particularly influenced by the high-status firms in the industry. Status or reputation signals the quality of the firms, which inclines industry followers to pay attention to their strategic moves (Larson, 1992; Podolny, 1994).

These considerations suggest that firms choose M&As or alliances based on the choices of other firms in the same industry, with a deference toward elite and high-status firms.

Proposition 8a: Alliances will be more likely in industries where alliances have been the dominant mode of collaboration. M&As will be more likely in industries where M&As have been the dominant mode of collaboration.

Proposition 8b: Alliances will be more likely in industries where high-status firms predominantly choose alliances. M&As will be more likely in industries where high-status firms predominantly choose M&As.

CONCLUSION

While the choice of M&A versus alliance is a decision for a firm's managers, practice suggests that the choice is complex and that the context in which firms find themselves looms large as an influence. The aggregate behavior of firms making M&A versus alliance decisions suggests the importance of industry-level forces. In this paper we have attempted to bring industry back into consideration as a theoretical focus by examining how firms' decisions regarding M&A versus alliance may differ across industries. We have presented a conceptual framework based on commitment, flexibility, and structural/institutional constraints that provides the basis for research propositions.

We have examined how industry-level factors influence firms' choice of M&A versus alliance, but we also recognize that the dichotomy between M&A and alliance is perhaps simplistic. There are different types of alliances, ranging from technical agreements to R&D alliances to long-term contractual agreements, including supply agreements and joint ventures. The purpose and intentions of different alliances vary. What's more, the variety and complexity of alliances might differ according to specific industry contexts.

For example, joint ventures would be more likely than alliances in industries with high commitment requirements (Casciaro, 2003). Cell 6 of the conceptual framework, as in Figure 1, represents an industry setting characterized by high requirements for commitment, low requirements for flexibility, and high structural and institutional constraints. Examples for this cell include mature manufacturing industries, such as steel and automobile. In such circumstances, it is possible that long-term supply agreements and joint ventures might be more prevalent than other types of alliances, and they can be quite large scale.

Cell 3 of the conceptual framework, however, represents a context characterized by high requirements for flexibility, low requirements for commitment, and low structural and institutional constraints. Examples for this cell include research-intensive, knowledge-based industries, such as biotechnology. In such situations, short-term technical agreements and R&D collaborations might be better for maintaining flexibility.

But studying different types of alliances is not our focus. Future research should examine how different types of alliances vary according to industry-level factors. There is an enormous variety of possible alliance and joint venture structures apparent from practice. Previous research has shown that contractual heterogeneity varies greatly from one alliance to another, and these differences are not well captured by the equity/nonequity dichotomy used in prior research on hybrid organizational forms (Reuer & Arino, 2007). Reuer and Arino's study calls for more research "in moving beyond current taxonomies of alliances to capture the richness of firms' alliance design choices that are reflected in the heterogeneity that exists within and across discrete governance structures" (2007: 328). There is

also little consensus among researchers regarding alliance types, which is apparent in the wide array of typologies proposed in research on alliances and joint ventures (e.g., Borys & Jemison, 1989; Das & Teng, 1998, 2000; Gulati & Singh, 1998).

In this paper we emphasize the fundamental difference between M&As and alliances, in that M&As have ownership control that alliances lack. With creative contracting, it is no doubt possible to craft a contract that allows an alliance or joint venture to mimic an acquisition in the degree of control provided. However, the very industries where such joint ventures would be observed, such as the automobile industry, are also the ones where further acquisition possibilities would be limited because of industry concentration and antitrust scrutiny. Although this appears to be an exception to our logic, it is actually a reaffirmation of it, and, absent industry constraints, an acquisition well may have occurred rather than a joint venture.

REFERENCES

- Albert, S., & Whetten, D. A. 1985. Organizational identity. *Research in Organizational Behavior*, 7: 263-295.
- Aldrich, H. 1979. *Organizations and environments*. Englewood Cliffs, NJ: Prentice-Hall.
- Armour, H. O., & Teece, D. J. 1978. Organization structure and economic performance: A test of the multidivisional hypothesis. *Bell Journal of Economics*, 9: 106-122.
- Bain, J. S. 1951. Relation of profit rate to industry concentration: American manufacturing, 1936-1940. *Quarterly Journal of Economics*, 65: 293-324.
- Bain J. S. 1968. *Industrial organization* (2nd ed.). New York: Wiley.
- Baumol, W. J., Panzar, J. C., & Willig, R. D. 1982. *Contestable markets and the theory of industry structure*. New York: Harcourt Brace Jovanovich.
- Besanko, D., Dranove, D., Shanley, M., & Schaefer, S. 2003. *Economics of strategy* (3rd ed.). New York: Wiley.
- Borys, B., & Jemison, D. 1989. Hybrid arrangements as strategic alliances: Theoretical issues in organizational combinations. *Academy of Management Review*, 14: 234-249.
- Bourgeois, L., & Eisenhardt, K. 1988. Strategic decision processes in high velocity environments: Four cases in the microcomputer industry. *Management Science*, 34: 816-835.
- Burt, R. 1980. Autonomy in a social topology. *American Journal of Sociology*, 85: 892-925.
- Carroll, G. R. 1985. Concentration and specialization: Dynamics of niche width in populations of organizations. *American Journal of Sociology*, 90: 1262-1283.

- Carroll, G. R., & Swaminathan, A. 2000. Why the microbrewery movement? Organizational dynamics of resource partitioning in the American brewery industry after Prohibition. *American Journal of Sociology*, 106: 715–762.
- Casciaro, T. 2003. Determinants of governance structure in alliances: The role of strategic, task and partner uncertainties. *Industrial and Corporate Change*, 12: 1223–1251.
- Chandler, A. 1977. *The visible hand*. Cambridge, MA: Belknap Press of Harvard University Press.
- Chandler, A. 1990. *Scale and scope*. Cambridge, MA: Belknap Press of Harvard University Press.
- Christensen, H., & Montgomery, C. 1981. Corporate economic performance: Diversification strategy vs. market structure. *Strategic Management Journal*, 2: 327–343.
- Daft, R. L., & Lewin, A. Y. 1993. Where are the theories for the “new” organizational forms? An editorial essay. *Organization Science*, 4: i–vi.
- Das, T., & Teng, B. 1998. Between trust and control: Developing confidence in partner cooperation in alliances. *Academy of Management Review*, 23: 491–512.
- Das, T., & Teng, B. 2000. A resource-based theory of strategic alliances. *Journal of Management*, 26: 31–61.
- Davis, G., & Powell, W. 1992. Organization-environment relations. In M. D. Dunnette & L. M. Hough (Eds.), *Handbook of industrial and organizational psychology*, vol. 3 (2nd ed.): 315–375. Palo Alto, CA: Consulting Psychologists Press.
- Dess, G., & Beard, D. 1984. Dimensions of organizational task environments. *Administrative Science Quarterly*, 29: 52–73.
- Devlin, G., & Bleackley, M. 1988. Strategic alliances—Guidelines for success. *Long Range Planning*, 21(5): 18–23.
- Dickson, P., & Weaver, K. 1997. Environmental determinants and individual-level moderators of alliance use. *Academy of Management Review*, 40: 404–425.
- DiMaggio, P., & Powell, W. 1983. The iron cage revisited: Institutional isomorphism and collective rationality in organizational fields. *American Sociological Review*, 48: 147–160.
- Dranove, D., Peteraf, M., & Shanley, M. 1998. Do strategic groups exist? An economic framework for analysis. *Strategic Management Journal*, 19: 1029–1044.
- Duhaime, I., & Schwenk, C. 1985. Conjectures on cognitive simplification in acquisition and divestment decision-making. *Academy of Management Review*, 10: 287–295.
- Dutton, J. E., & Dukerich, J. 1991. Keeping an eye on the mirror: Image and identity in organizational adaptation. *Academy of Management Journal*, 34: 517–554.
- Dyer, J., Kale, P., & Singh, H. 2004. When to ally and when to acquire? *Harvard Business Review*, 82(7/8): 108–115.
- Eisenhardt, K., & Schoonhoven, C. 1996. Resource-based view of strategic formation: Strategic and social effects in entrepreneurial firms. *Organization Science*, 7: 136–150.
- Emery, F., & Trist, E. 1965. The causal texture of organizational environments. *Human Relations*, 18: 21–32.
- Finkelstein, S. 1997. Inter-industry merger patterns and resource dependence: A replication and extension of Pfeffer (1972). *Strategic Management Journal*, 18: 787–810.
- Fligstein, N. 1990. *The transformation of corporate control*. Cambridge, MA: Harvard University Press.
- Fligstein, N., & Brantley, P. 1992. Bank control, owner control, or organizational dynamics: Who controls the large modern corporation? *American Journal of Sociology*, 98: 280–307.
- Fombrun, C., & Astley, W. G. 1982. The telecommunications community: An institutional overview. *Journal of Communication*, 32(4): 56–67.
- Fombrun, C., & Shanley, M. 1990. What’s in a name? Reputation building and corporate strategy. *Academy of Management Journal*, 33: 233–258.
- Galbraith, C., & Stiles, C. 1984. Merger strategies as a response to bilateral market power. *Academy of Management Journal*, 27: 511–524.
- Ghemawat, P. 1991. *Commitment: The dynamic of strategy*. New York: Free Press.
- Gulati, R. 1998. Alliances and networks. *Strategic Management Journal*, 19: 293–317.
- Gulati, R., & Singh, H. 1998. The architecture of cooperation: Managing coordination costs and appropriation concerns in strategic alliances. *Administrative Science Quarterly*, 43: 781–814.
- Hagedoorn, J. 1993. Understanding the rationale of strategic technology partnering: Interorganizational modes of cooperation and sectoral differences. *Strategic Management Journal*, 14: 371–385.
- Hagedoorn, J., & Duysters, G. 2002. External sources of innovative capabilities: The preference for strategic alliances or mergers and acquisitions. *Journal of Management Studies*, 39: 167–188.
- Hambrick, D. 1982. Environmental scanning and organizational strategy. *Strategic Management Journal*, 3: 159–174.
- Haspeslagh, G., & Jemison, D. 1991. *Managing acquisitions*. New York: Free Press.
- Haunschild, P. 1993. Interorganizational imitation: The impact of interlocks on corporate acquisition activity. *Administrative Science Quarterly*, 38: 564–592.
- Haunschild, P., & Beckman, C. 1998. When do interlocks matter? Alternate sources of information and interlock influence. *Administrative Science Quarterly*, 43: 815–844.
- Hennart, J. 1988. A transaction cost theory of equity joint ventures. *Strategic Management Journal*, 9: 361–374.
- Hennart, J., & Park, Y. 1993. Greenfield vs. acquisition: The strategy of Japanese investors in the United States. *Management Science*, 39: 1054–1070.
- Hirsch, P. 1985. The study of industries. *Research in the Sociology of Organizations*, 4: 271–309.
- Hirsch, P. 1986. From ambushes to golden parachutes: Corporate takeovers as an instance of cultural framing and

- institutional integration. *American Journal of Sociology*, 91: 800–837.
- Huff, A. S. 1982. Industry influences on strategy reformulation. *Strategic Management Journal*, 3: 119–131.
- Joskow, P., & Schmalensee, R. 1988. *Markets for power*. Cambridge, MA: MIT Press.
- Kogut, B. 1988. Joint ventures: Theoretical and empirical perspectives. *Strategic Management Journal*, 9: 319–332.
- Larson, A. 1992. Network dyads in entrepreneurial settings: A study of the governance of exchange relationships. *Administrative Science Quarterly*, 37: 76–104.
- Lawrence, P., & Lorsch, J. 1967. *Organization and environment*. Cambridge, MA: Harvard University Press.
- Li, H., & Atuahene-Gima, K. 2002. The adoption of agency business activity, product innovation, and performance in Chinese technology ventures. *Strategic Management Journal*, 23: 469–490.
- McGahan, A. M., & Porter, M. E. 1997. How much does industry matter, really? *Strategic Management Journal*, 18: 15–30.
- Nooteboom, B. 1999. *Inter-firm alliances: Analysis and design*. London: Routledge.
- North, D. 2005. *Understanding the process of economic change*. Princeton, NJ: Princeton University Press.
- Oliver, C. 1991. Strategic responses to institutional processes. *Academy of Management Review*, 16: 145–179.
- Palmer, D., Barber, B., Zhou, X., & Soysal, Y. 1995. The friendly and predatory acquisition of large U.S. corporations in the 1960s: The other contested terrain. *American Sociological Review*, 60: 469–499.
- Palmer, D., & Barber, B. 2001. Challengers, elites, and owning families: A social class theory of corporate acquisitions in the 1960s. *Administrative Science Quarterly*, 46: 87–120.
- Park, C. 2003. Prior performance characteristics of related and unrelated acquirers. *Strategic Management Journal*, 24: 471–480.
- Pautler, P. 2003. *The effects of mergers and post-merger integration: A review of the business consulting literature*. Working paper, Bureau of Economics, U.S. Federal Trade Commission, Washington, DC.
- Peteraf, M. 1995. Sunk costs, contestability and airline monopoly power. *Review of Industrial Organization*, 10: 289–306.
- Peteraf, M., & Reed, R. 1994. Pricing and performance in monopoly airline markets. *Journal of Law and Economics*, 37: 193–213.
- Peteraf, M., & Shanley, M. 1997. Social learning and the “fundamental paradox” of transaction cost economics. *Advances in Strategic Management*, 12: 193–222.
- Pfeffer, J. 1972. Merger as a response to organizational interdependence. *Administrative Science Quarterly*, 17: 382–392.
- Pfeffer, J., & Nowak, P. 1976. Joint ventures and interorganizational interdependence. *Administrative Science Quarterly*, 21: 398–418.
- Pfeffer, J., & Salancik, G. 1978. *The external control of organizations*. New York: Harper & Row.
- Phillips, A. 1960. A theory of interfirm organization. *Quarterly Journal of Economics*, 74: 602–613.
- Podolny, J. 1994. Market uncertainty and the social character of economic change. *Administrative Science Quarterly*, 39: 458–483.
- Reuer, J., & Arino, A. 2007. Strategic alliance contracts: Dimensions and determinants of contractual complexity. *Strategic Management Journal*, 28: 313–330.
- Robinson, D. T. In press. Strategic alliances and the boundaries of the firm. *Review of Financial Studies*.
- Rumelt, R. P. 1984. Towards a strategic theory of the firm. In R. B. Lamb (Ed.), *Competitive strategic management*: 556–570. Englewood Cliffs, NJ: Prentice-Hall.
- Salter, M., & Weinhold, W. 1978. Diversification via acquisition: Creating value. *Harvard Business Review*, 56(4): 166–176.
- Sawler, J. 2005. Horizontal alliances and the merger paradox. *Managerial and Decision Economics*, 26: 243–248.
- Scherer, F. M. 1980. *Industrial market structure and economic performance* (2nd ed.). Chicago: Rand McNally.
- Schmalensee, R. 1989. Interindustry studies of structure and performance. In R. Schmalensee & R. Willig (Eds.), *The handbook of industrial organization*, vol. 2: 952–1009. Amsterdam: North-Holland.
- Scott, W. 1994. Institutions and organizations: Toward a theoretical synthesis. In W. Scott & J. Meyer (Eds.), *Institutional environments and organizations: Structural complexity and individualism*: 55–80. Thousand Oaks, CA: Sage.
- Scott, W. 2001. *Institutions and organizations* (2nd ed.). Thousand Oaks, CA: Sage.
- Shamsie, J. 2003. The context of dominance: An industry-driven framework for exploiting reputation. *Strategic Management Journal*, 24: 199–216.
- Shan, W. 1990. An empirical analysis of organizational strategies by entrepreneurial high-technology firms. *Strategic Management Journal*, 11: 129–139.
- Shearman, C., & Burrell, G. 1987. The structures of industrial development. *Journal of Management Studies*, 24: 325–345.
- Shepherd, W. G. 1979. *The economics of industrial organization*. Englewood Cliffs, NJ: Prentice-Hall.
- Spender, J. C. 1987. *Industry recipes: An inquiry in the nature and sources of managerial judgment*. Oxford: Blackwell.
- Sutton, J. 1991. *Sunk costs and market structure: Price competition, advertising, and the evolution of concentration*. Cambridge, MA: MIT Press.
- Swaminathan, A. 2001. Resource-partitioning and the evolution of specialist organizations: The role of location and identity in the U.S. wine industry. *Academy of Management Journal*, 44: 1169–1185.

- Teece, D. J. 1980. Economies of scope and the scope of the enterprise. *Journal of Economic Behavior and Organization*, 1: 223–247.
- Teece, D. J. 1982. Towards an economic theory of the multi-product firm. *Journal of Economic Behavior and Organization*, 3: 39–63.
- Teece, D. J. 2000. *Managing intellectual capital*. Oxford: Oxford University Press.
- Teece, D. J., Pisano, G., & Shuen, A. 1997. Dynamic capabilities and strategic management. *Strategic Management Journal*, 18: 509–533.
- Villalonga, B., & McGahan, A. M. 2005. The choice among acquisitions, alliances, and divestitures. *Strategic Management Journal*, 26: 1183–1208.
- Wang, L., & Zajac, E. J. 2007. Alliance or acquisition? A dyadic perspective on interfirm resource combinations. *Strategic Management Journal*, 28: 1291–1317.
- Weiss, L. 1989. *Concentration and price*. Cambridge, MA: MIT Press.
- Williamson, O. E. 1975. *Markets and hierarchies*. New York: Free Press.
- Williamson, O. E. 1985. *Economic institutions of capitalism*. New York: Free Press.
- Yip, G. S. 1982. Diversification entry: Internal development versus acquisition. *Strategic Management Journal*, 3: 331–345.
- Zollo, M., & Reuer, J. 2003. *Experience spillovers across corporate development activities*. Paper presented at the Ohio State Strategic Alliance Conference, Columbus.

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**Special Topic Forum
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