DIVERSIFICATION POSTURE AND TOP MANAGEMENT TEAM CHARACTERISTICS

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This study's argument is that a firm's diversification posture determines the degree of integration it needs across business units, which in turn influences the ideal composition of its corporate top management team. Archival data from 134 firms revealed that the degree of social cohesion and type of knowledge base within a firm's top management team were related to the degree of interdependence the firm's diversification posture demanded. Contrary to our hypotheses, experience in core functional areas among top team members was positively related to corporate performance in low-interdependence firms and negatively related to it in high-interdependence firms.

With the vast preponderance of America's largest manufacturing firms engaging in multiple lines of business (Baysinger & Hoskisson, 1989; Ravenscraft & Scherer, 1987), corporate diversification is an issue of great practical and theoretical significance. Early theorists focused primarily on the links between diversification strategy, structure, and processes (e.g., Berg, 1973; Chandler, 1962; Fouraker & Stopford, 1968; Pitts, 1974; Wrigley, 1970). However, following a path set out by Rumelt (1974), recent researchers have focused on the performance implications of different diversification strategies (e.g., Bettis, 1981; Bettis & Hall, 1982; Montgomery, 1979).

With a few exceptions (e.g., Gupta and Govindarajan, 1986), the emphasis on studying the fit between strategy and accompanying organizational arrangements has diminished. This change is unfortunate since optimally managing a particular type of diversification is as important as selecting a portfolio in the first place. In fact, some of the most vocal criticisms of multibusiness firms often have to do with mismanagement of their constituent pieces; critics have cited mechanical, formula-based control and allocation systems (Hamermesh & White, 1984; Hayes & Abernathy, 1980), unknowledgeable or ill-timed intrusions into business-level affairs (Vancil, 1979), and inability to achieve hoped-for synergies (Porter, 1985).

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This study extends in a new direction the concept that different diversification strategies require different managerial approaches. Focusing on the management of total enterprises, our argument is that a firm’s diversification posture determines the degree of integration needed across its business units. The more tightly related a firm’s businesses, the greater the need for integration and coordination among them. This need for integration will influence the composition of a corporation’s top management team, particularly affecting the degree of cohesion among top executives and the profile of their knowledge base. Moreover, to the extent that firms requiring a great deal of integration (such as vertically integrated firms) possess the requisite cohesion and knowledge base in their top management teams, they will experience good economic performance.

In sum, we posited two types of relationships: (1) a set of descriptive links between diversification posture and top management team composition and (2) a set of prescriptive links between top team composition and firm performance, which should be strongest for firms with a highly interdependent diversification posture.

**THEORY DEVELOPMENT**

**Interdependence Requirements of Different Diversification Postures**

Corporate interdependence is the degree to which the performance of a corporation as a whole depends on resource sharing and coordination among its constituent units. In keeping with our emphasis on the management of diversified firms, we examined Rumelt’s (1974) four major types of diversified firms: unrelated, related-linked, related-constrained, and vertically integrated. We suggest that the overall degree of corporate interdependence increases as we move through the four types. At one extreme, unrelated firms face essentially no need for interdependence among business units beyond financial interdependence, whereas vertically integrated firms require intense, pervasive interdependence. Related-linked and related-constrained firms lie in between.

**Unrelated firms.** Facing the least need for interdependence are unrelated firms, which consist of generally autonomous divisions sharing virtually no resources. An example, from the period of Rumelt’s (1974) study, is the Olin Corporation, involved in aluminum, polyvinyl chloride, books, recreation areas, mobile homes, furniture, and other disparate businesses. In such firms, investment projects are typically initiated at a divisional level, and corporate headquarters generally limit their role to granting or denying approval (Lorsch & Allen, 1973). The coordination requirements imposed on top management are primarily financial and consist of allocating capital and monitoring performance through highly quantitative control systems (Dundas & Richardson, 1982). Corporate managers generally refrain from direct intervention in divisional strategy and do not seek synergistic relations between divisions, as both those activities would compromise divisional autonomy and accountability, hence subverting the efficiency of capital allo-
cation and performance monitoring (Hoskisson, 1987; Williamson, 1975). The unrelated strategy involves a "pooled" interdependence (Thompson, 1967), in which the activities of subunits have little direct bearing on each other. There is no attempt in such a firm to achieve what Porter (1985) termed "horizontal strategy," the coordination of activities of different business units.

**Related-linked firms.** Some corporations diversify widely but in such a way that every business has some tangible relationship to at least one other business in the firm. For example, Rumelt (1974) described the evolution of the Carborundum Company to such a related-linked posture. In 1950, all of Carborundum's businesses relied directly on the firm's strength in producing and applying silicon carbide and aluminum oxide. However, in the 1950s the firm developed a line of grinding and cutting machines to complement its line of abrasives. Soon it introduced other types of industrial machinery and started producing replacement parts for machinery. Other of the original businesses led to similar tangential outgrowths.

Corporate management in a related-linked firm encounters some needs for interdependence in orchestrating flows among related businesses. However, for the most part, such needs exist not in the corporate office but rather between pairs of businesses or sometimes within clusters of businesses. For instance, in the Carborundum Company, if several machinery divisions want to share a castings plant, the need for interdependence occurs between them and will be resolved largely by a senior officer responsible for, say, a machinery group. The interdependences demanded by the related-linked posture are of limited breadth and typically involve subsets of divisions and not a whole company. Corporate management thus has some integrative role across business units, but that role is neither as broad nor as intense as it is in vertically integrated or related-constrained firms, to which we now turn.

**Related-constrained firms.** Firms that are diversified around some single core resource—a technology, a production process, an expertise—are diversified in a related, highly constrained manner: "each business [is] related to each other business and all could be seen as radiating from a common core" (Rumelt, 1974: 18). In such a case, corporate management faces a situation of extensive interdependence as it attempts to orchestrate the diffusion and sharing of the firm's core resource across the full array of business units. This situation constitutes a variant of Thompson's (1967) "reciprocal" interdependence, with corporate management serving both to gather informational and substantive resources from business units and to disseminate such resources. Corning Glass Works offers a good example of a related-constrained firm: it both restricts diversification to glass technology and actively attempts to disseminate and exploit glass technology throughout the company. We can expect top management to play a substantial role in promoting and orchestrating such company-wide resource exchanges.

The core resource of a related-constrained firm can be tangible (a distribution system) or intangible (a technological or marketing ability) (Porter, 1985). Rumelt's (1974) discussion indicated that intangible, "knowledge-
Based” core competences prevailed among the related-constrained firms he examined. Where knowledge is at the heart of a company’s diversification initiatives, the need for interdependence corporate officers face is typically periodic but not particularly intense or urgent. For example, Philip Morris has at various times applied its cigarette-marketing skills to beer, soft drinks, and packaged foods. These skill transfers have occurred on an irregular, not particularly urgent, basis, and have almost certainly not required ongoing daily or weekly interunit adjustments. In this respect, the interdependence needed with a related-constrained strategy, while considerable, is still less than that needed in a vertically integrated firm.

Vertically integrated firms. These firms have long-linked chains of activities, typically ranging from extraction of raw materials through refining and fabrication or assembly to distribution. The role of corporate management in such firms is to coordinate these chains and keep them smooth (Harrigan, 1983). Corporate management typically retains responsibility for overall product-market strategy and initiates investment projects (Ackerman, 1970). Moreover, vertically integrated firms face frequent, often urgent, needs for interdependence. For example, the work flow linkage that exists at Alcoa Corporation between its bauxite mines, smelting, and aluminum fabrication units presents an intense form of interdependence: coordination is essential to the fulfillment of routine endeavors. Thus, both the breadth and intensity of interdependence needs faced by corporate management in vertically integrated firms is considerable. As Rumelt noted, “The management task in this type of firm has to do with coordinating the elements in the processing chain; the emphasis is on balance, efficient throughput, and the adjustment of production capacity to demand. . . . general management must view the firm as a whole when considering the effect of any change in operations or resource allocation” (1974: 20).

Comparative Evidence and Summary

We have drawn upon several well-known studies to aid in the characterizations of the needs for interdependence faced by each of the four types of firms. However, several studies have pointedly examined differences among the various types, with results that further reinforce our arguments about interdependence. For example, Lorsch and Allen (1973) found that, relative to the conglomerates (unrelated firms) they studied, vertically integrated firms had higher levels of interdependence among major units, devoted greater effort to corporate-divisional integration, and had corporate-level senior vice presidents with more influence and stronger coordinative roles in divisional matters. A senior vice president in a conglomerate said,

I work separately with each of the division general managers [in my group] mainly through discussion of their plans and budgets. . . . Essentially, my job entails selecting, motivating, and evaluating eight division general managers— and not on the basis of day-to-day contact. . . . I have very limited involvement in
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interdivisional matters, either within this group or between groups (Lorsch & Allen, 1973: 150–151).

In contrast, a senior vice president in a vertically integrated firm reported,

First of all, I’m concerned with the individual sales and profitability of [my] container and packaging divisions. . . . At the same time, I’m just as concerned with the issues . . . of product flow between the mills and the converting divisions. This entails three-way talks between my group, the corporate headquarters, and the mills (Lorsch & Allen, 1973: 151).

Using categories slightly different from Rumelt’s, Vancil (1979) studied decentralization in over 250 firms. He found that unrelated firms, related firms (a category including both linked and constrained), and dominant firms (a category including but not limited to vertically integrated) differed significantly on dimensions that conveyed different levels of corporate interdependence, including the size and even the existence of corporate-level staffs, the autonomy of operating divisions, the number of interunit product transfers, and the number of common or shared facilities among business units.

Similarly, Pitts (1980), in a summary of his prior research, argued that acquisitive diversifiers (generally, unrelated firms) pursue an internal design based on autonomous, financially monitored divisions but that internal diversifiers (generally, related firms) pursue a synergistic design in which there are large corporate staffs, interdivisional transfers of products, technologies, and people, and subjective performance appraisals that emphasize cross-unit collaboration.

Finally, evidence is available from Williamson (1975) and later tests of his theories. Williamson claimed that effective management of an M-form (multidivisional) organization requires corporate management to avoid involvement in divisional affairs. Unrelated firms are well known for most closely adopting M-form structures, and thus Williamson’s argument is generally consistent with ours. Moreover, Hoskisson (1987) found adoption of M-form organization improved performance for unrelated firms but not for related or vertically integrated firms. His conclusion was that M-form structure is not well suited to meet interdependence needs in related and vertically integrated firms.

Table 1 summarizes the types and overall amounts of interdependence in each of the four types of diversified firms studied. When both the intensity

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1 Researchers have not carefully examined the relationship between Rumelt’s and Pitts’s (1974) typologies. (Berg, 1973, also used the latter). However, a limited analysis suggests a high overlap between the two schemes. Berg (1973) and Pitts (1974, 1976) classified 26 firms as either internal or acquisitive diversifiers; 11 of those are also in Rumelt’s sample. He rated all 7 internal diversifiers as related and the 4 acquisitive diversifiers as unrelated.
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**TABLE 1**

Interdependence Requirements of Diversification Postures

- **Breadth**
  - **Unrelated**: No interdependence between units except financial.
  - **Related-Linked**: Interdependencies between pairs or triads of businesses; no corporate-wide interdependencies.
  - **Related-Constrained**: Corporate-wide; all units rely on a central core resource.
  - **Vertically Integrated**: Corporate-wide; every stage in a vertical chain somewhat dependent on every other stage.

- **Intensity**
  - **Unrelated**: Low; strictly pooled interdependence.
  - **Related-Linked**: Low or high, but no corporate-level resolution required.
  - **Related-Constrained**: Low or high; low-intensity, knowledge-based interdependence most prevalent.
  - **Vertically Integrated**: High; frequent and urgent coordination and adjustments.

- **Overall degree of corporate interdependence**
  - **Unrelated**: Low
  - **Related-Linked**: Medium-low
  - **Related-Constrained**: Medium-high
  - **Vertically Integrated**: High
and breadth of required coordination are considered, the four types range from low to high overall interdependence in the following order: unrelated, related-linked, related-constrained, and vertically integrated.

**Top Management Team Characteristics Needed for Integration**

A substantial literature has explored structural and process devices for coping with organizational interdependence; Galbraith and Kazanjian (1986) summarized that research. Proposed solutions for improving coordination have included instituting task forces, matrix structures, lateral information flows, co-location of related activities, and group-based rewards. Moreover, some researchers have examined solutions for coping specifically with the needs for interdependence posed by diversification; these have included planning systems (Vancil, 1979), reward systems (Pitts, 1980), coordinative structures (Porter, 1985), and assignments of strategic business unit (SBU) general managers (Gupta & Govindarajan, 1986).

Research on control systems provides an illustration of the administrative contrasts between low-interdependence and high-interdependence firms. Several investigators (Baysinger & Hoskisson, 1989; Hill & Hoskisson, 1987; Hill, Hitt, & Hoskisson, 1988; Hoskisson & Hitt, 1988; Vancil, 1979) have argued that unrelated-diversified (low-interdependence) firms emphasize financial control systems and that related-diversified (high-interdependence) firms emphasize strategic control systems. Financial control systems focus on short-term efficiency, using quantifiable criteria such as return on investment, profit, cash flows, and budgets; evaluation of division managers is based on profitability targets. Financial controls rarely address synergies or interrelationships among divisions but rather facilitate capital allocation based on relative yields (Hoskisson & Hitt, 1988). Strategic controls, on the other hand, are designed to encourage resource- and information-sharing among divisions and a focus on divisional performance. Strategic controls often include monitoring information other than financial data, such as operational and product-market information, to aid coordination among divisions and identify possible synergies; subjective evaluation of divisional managers; and open communications between the divisional and corporate levels (Baysinger & Hoskisson, 1989; Hill & Hoskisson, 1987; Hoskisson & Hitt, 1988).

However effective these and other administrative devices may be (an assessment not fully completed by prior research), an additional avenue for coping with corporate interdependence should be considered. Namely, certain managerial attributes of a corporation's top executives—their aptitudes, backgrounds, collaborative skills, and breadth of perspective—may be critical accompaniments of interdependence and its successful execution.

Formal control or planning systems, shared rewards, and direct communications and negotiations between business units cannot deal with all interdependences. To some degree, issues of interdependence—shared markets, technology spillovers, shared capacity allocations, transfer price disputes, managerial reassignments across businesses, and others—ultimately
require the involvement of the highest-level officers of a firm. Such involvement can take various forms: formulating plans for synergies across units, creating administrative systems and cultural norms to enhance resource sharing, and adjudicating territorial and resource-flow disputes between business units. When interdependences are corporate-wide and intense, as they are in related-constrained and vertically integrated firms, the need for top executives to devote their energies toward such matters is high; consequently their need to possess the managerial perspective, inclination, and aptitude needed to deal with interdependences is high. In fact, it could be argued that top executives of high-interdependence firms need such perspectives and aptitudes both in order to manage interdependences that rise to their level and to create structures and processes, such as the strategic control systems discussed above, that allow some interdependences to be dealt with at lower levels.

Our central idea thus extends the now widely held thought that a given manager or management team will not be equally adept in all settings. A long tradition of research in organizational behavior has argued for the need to match personal and task characteristics (e.g., Griffin, 1980; O'Reilly, 1977). More recently, theoretical work by Hambrick and Mason (1984) and Pfeffer (1983) and empirical work by Gupta and Govindarajan (1984) and Kotter (1982), among others, has strongly suggested that top managers have finite repertoires and should govern in situations that best suit their values, knowledge, and aptitudes.

A high level of corporate interdependence is a condition that seems to call for certain abilities and perspectives within a top management team. We suggest that a high level of interdependence tends to be accompanied by two important qualities in a top team: (1) social cohesion and (2) a corporate-wide operating knowledge base. Other managerial characteristics could also be posited, but these two have substantial theoretical foundations in previous research on managerial systems in diversified firms.

Demographic proxies for our two managerial constructs, social cohesion and knowledge base, were used. Several researchers (e.g., Hambrick & Mason, 1984; Pfeffer, 1983) have called for greater use of demographic variables in organizational research, citing the advantages of objectivity, parsimony, and possible replication. Despite their drawbacks as rough surrogates, demographies are particularly useful for gauging constructs that are otherwise unobservable, impractical to measure directly, or prone to unreliable measurement. The social cohesion and knowledge bases of top management teams are apt candidates for demographic proxies.

Our hypotheses refer to the interdependence accompanying a firm’s diversification as a scalar construct. As summarized in Table 1, the four postures can be arrayed from low to high interdependence in the following order: unrelated, related-linked, related-constrained, and vertically integrated.

**Social cohesion.** Barnard (1938) was among the first theorists to argue that interpersonal and social cohesion can affect the performance of a man-
agement team. In doing so, he spoke of the need for a tight-knit "informal executive organization":

The general method of maintaining an informal executive organization is so to operate and to select and promote executives that a general condition of compatibility of personnel is maintained. Perhaps often and certainly occasionally men cannot be promoted or selected, or even must be relieved, because they cannot function, because they "do not fit," where there is no question of formal competence. This question of "fitness" involves such matters as education, experience, age, sex, personal distinction, prestige, race, nationality ... (Barnard, 1938: 224).

Aside from its dubious ethical and legal implications today, Barnard's view that cohesion aids communication and collaboration has been strongly reinforced by later research (e.g., Roberts & O'Reilly, 1979; Rogers & Bhowmik, 1971; Wagner, Pfeffer, & O'Reilly, 1984). Although excessive cohesion may create a harmful insularity from external forces (Janis, 1972), evidence strongly indicates that cohesion facilitates the internal communication needed in situations of high interdependence.

We expected social cohesion within a top management team to be particularly prevalent in situations of high corporate interdependence. In vertically integrated and related-constrained firms, there is need for abundant interunit negotiation, compromise, and collaboration. This process is greatly aided if corporate managers have a well-developed rapport and a common outlook and language. Conversely, cohesion is not as important in situations of low interdependence. In such firms, corporate managers exist as discrete technical resources rather than as a coordinative entity.

The average tenure in a firm of a top management team's members can be expected to indicate cohesion. Long tenures reflect a self-selection process by which only those who embrace certain norms and perspectives are willing or allowed to stay in a firm (Pfeffer, 1983). Moreover, duration in a firm confers socialization, shared experiences, a common vocabulary, and the like (Katz, 1982). Managers with long tenures are more likely to have undergone common organizational experiences and hence are likely to have developed similar schemata (Norman, 1976) or dominant logics (Prahalad & Bettis, 1986). Schemata are cognitive structures used to organize knowledge of past experiences and are invoked when people make sense of new stimuli. Similarity of schemata among team members, developed via long tenures, can be expected to enhance cohesion as managers adopt common repertoires based on theories, beliefs, and attributions arising from past experiences. Since firms with a high degree of interdependence are expected to need a great deal of social cohesion within their top management teams, we can extend this argument to include the more observable expectation about tenures:

Hypothesis 1a: The more interdependent a firm's diversification posture, the greater the average tenure in the firm of the members of its top management team.
Social cohesion can also be expected to be derived from the demographic homogeneity of team members. Homogeneity on various dimensions could be considered; in this study we focused on homogeneity of the tenures and functional backgrounds of top team members.

In addition to average tenure, the sameness, or homogeneity, of tenure lengths within a top management team may contribute to cohesion. Tenure homogeneity defines a cohort, the presence of which has been shown to influence organizational outcomes. Moreover, members of a common cohort are more likely to have similar outlooks than individuals in different cohorts (Katz, 1982; McCain, O'Reilly, & Pfeffer, 1983; Wagner, Pfeffer, & O'Reilly, 1984). O'Reilly, Caldwell, and Barnett (1989) showed that tenure homogeneity was positively related to social integration at a work group level. And Zenger and Lawrence (1989) showed that age and tenure similarity influenced the frequency of communication both within and across groups. Although neither study was conducted at the upper levels of an organization, both support the idea that similarity in tenure contributes to group cohesion and communication.

Homogeneity of functional backgrounds also contributes to cohesion by endowing team members with similar frames of reference for problem solving (Dearborn & Simon, 1958; Gupta & Govindarajan, 1984). Like average team tenure, a common functional background contributes to the development of common schemata among team members and thereby increases cohesion by providing a common premise for decision making. Highly interdependent firms may select most of their top managers from a specific functional background that relates to a critical central skill of the firm. For example, the International Business Machines Corporation is well known for a predominance of marketing backgrounds in its top management team (HBS Case Services, 1979).

In sum, we expected two types of top management team demographic homogeneity to indicate social cohesion in firms with high interdependence:

*Hypothesis 1b:* The more interdependent a firm's diversification posture, the greater the tenure homogeneity of its top management team.

*Hypothesis 1c:* The more interdependent a firm's diversification posture, the greater the functional homogeneity of its top management team.

**Corporate-wide operating knowledge base.** Interdependence between subunits increases the information-processing requirements facing an organization (Galbraith, 1973; Tushman & Nadler, 1978). One way of managing the information requirements associated with interdependence is through the knowledge base of executives. For example, Lawrence and Lorsch (1967), in their study of six plastics firms, found that interdepartmental integrators held pivotal roles and that their effectiveness in large part depended on their
In-depth knowledge of multiple departments. Although this analysis pertained to functional departments, we expected a similar phenomenon to occur at a corporate level.

In situations of high corporate interdependence, firms are more likely to emphasize strategic controls designed to encourage synergy and cooperation among divisions (Baysinger & Hoskisson, 1989). However, as Porter (1985) and Hill and Hoskisson (1987) noted, cooperation does not occur without corporate involvement. Top management in these firms must possess knowledge of corporate-wide operating activities in order to exploit potential cooperation opportunities and coordinate interunit flows between business units. In low-interdependence firms, such knowledge is less relevant.

One method for obtaining such corporate-wide information is the transfer of executives across subunits. Executives who have been transferred have developed firm-specific “human capital” (Becker, 1962; Williamson, 1975), which imbues them with a firm-wide perspective, minimizes the potential for subunit parochialism, and provides them with the requisite knowledge base for negotiating, arbitrating, and coordinating interunit relations.

In keeping with this argument, Pitts (1976) found that internal diversifiers (essentially, related-diversified firms) tended to systematically move their managers across subunits. His acquisitive diversifiers (essentially, unrelated firms) had no such policies. We expected that firm-wide experiences among top executives would be more prevalent in high-interdependence firms.

Hypothesis 2a: The more interdependent a firm’s diversification posture, the greater the average number of interunit moves the members of its top management team have made within the firm.

Core function expertise. A central argument in the strategy literature is that organizations should emphasize functional activities that are critical to the effective implementation of their chosen strategy (Hitt, Ireland, & Palia, 1982; Snow & Hrebiniak, 1980). Building on this premise, we expected that firms with high degrees of corporate interdependence would possess top teams steeped not only in company-wide knowledge, but also in certain core operational areas—marketing, operations, and R&D. Top managers in highly interdependent firms are required to understand and assess the substantive, rather than strictly financial or administrative, implications of their decisions. This is particularly true in vertically integrated firms, where capacity and technology decisions have major firm-wide effects. In support of such a view, Song (1982) found that the chief executive officers (CEOs) of internal diversifiers (again, largely all related firms) tended to rise through careers in operations and marketing, but the CEOs of acquisitive diversifiers (unrelated firms) tended to rise through finance, accounting, and law. Hayes and Abernathy’s contention that the latter type of CEO is without “intimate hands-on knowledge of the company’s technologies, customers, and suppliers”
(1980: 74) may be a valid concern for firms with high corporate interdependence, but less of a concern for firms with low interdependence. Thus,

Hypothesis 2b: The more interdependent a firm's diversification posture, the greater the proportion of the members of its top management team whose primary functional careers were in operations, marketing and sales, and R&D.

Implications for performance. Our final hypothesis concerns the implications that a top management team's social cohesion and knowledge base have for performance. The previous hypotheses deal with the tendency for a descriptive correspondence to exist between diversification posture and top management team characteristics. However, the composition of some teams may deviate from the profile that might be expected on the basis of the firms' diversification postures alone. Such deviations could occur because of internal political or interpersonal factors, managerial shake-ups and departures, inertial, tradition-bound internal labor markets, and more.

Particularly to the extent that firms with high-interdependence diversification postures do not possess the requisite social cohesion and knowledge base within their top management teams, their economic performance will suffer. Such teams can be expected to manage their firms' interdependences suboptimally or to need to resort to expensive and cumbersome coordination devices. These expectations are consistent with research arguing more broadly that managers' characteristics should match the requirements of a firm's strategy (Gupta & Govindarajan, 1984; Leontiades, 1982; Szilagyi & Schweiger, 1984). Thus,

Hypothesis 3: The more interdependent a firm’s diversification posture, the greater the positive association between (1) its top team’s social cohesion and company-wide operating knowledge base and (2) corporate performance.

METHODS

Data and Sources

From Rumelt's (1978) Databank on Diversification and Corporate Structure, we drew 134 Fortune 500 firms. Rumelt (1978) classified each of these firms by diversification strategy through the year 1974. Since his scheme has been widely used in diversification research, we do not discuss it in detail here. The Appendix provides a brief description.

Our study was limited to firms Rumelt classified as being in one of our four categories in 1974. Rumelt also provided historic data on changes in strategies, enabling us to reinforce our treatment of strategy as an independent variable by further limiting the study group to firms that had maintained stable strategies between at least 1971 and 1974. We excluded 11 firms because their strategies were unstable. With average sales of $2.12
billion and an average return on equity of 12.8 percent in 1974, the companies studied did not differ significantly from the Fortune 500 as a whole and could be considered representative on at least those dimensions.

For some analyses, we assigned firms ratings on a four-point ordinal scale based on increasing interdependence (unrelated = 1, related-linked = 2, related-constrained = 3, and vertically integrated = 4). Previous work supports the assignment of an ordinal ranking to Rumelt's diversification categories (Keats & Hitt, 1988).

Data on top management teams in 1973 were obtained from the Dun and Bradstreet Reference Book of Corporate Management. A company's top team was defined as including all officers above the level of vice president (e.g., senior vice president, vice chairman, CEO) and any other officers who were on the board of directors. The mean number of top team members for the companies studied was 6.18, with a standard deviation of 2.68. Actual coding of management backgrounds was conducted by the principal author and trained research assistants following a detailed set of coding instructions. The coding of most of the variables was clear-cut and objective; the principal author checked the coding of variables that had some subjective elements (e.g., functional background) in its entirety. Coding the Dun and Bradstreet entries is relatively straightforward. For example, using the same data source and coding criteria and instructions we used, Barbosa (1985) found in a mail survey that 82 percent of a random sample of corporate officers identified their own dominant functional career track (from among eight categories) as the same one he had identified.

Financial performance data were taken from the COMPUSTAT tapes and averaged for the years 1973-76.

In summary, the chronology of the data fit the model we sought to test: a given diversification posture, stable between 1971 and 1974, will be accompanied by certain top management team characteristics observed in 1973, which in turn will have implications for current and near-term performance (1973-76).

**Measures**

**Tenure** was measured as the mean number of years the members of a top management team had spent with a firm.

**Tenure homogeneity** was based upon the coefficient of variation for top management team tenure. To convert the measure from a heterogeneity indicator to a homogeneity indicator, we subtracted each firm's coefficient of variation from 1.43, the highest value in the firms studied. The coefficient of variation is commonly used to capture demographic homogeneity and heterogeneity (O'Reilly et al., 1989; O'Reilly & Flatt, 1989). Allison (1978), in a review of inequality measures, argued that the coefficient of variation is a preferred dispersion measure for variables such as tenure.

The **functional homogeneity** of teams was measured by a variation of the Herfindal-Hirschman index (cf. Blau, 1977; Scherer 1980):
\[ H = \sum_{i=1}^{9} S_i^2, \]

where \( H \) is homogeneity and \( S_i \) is the percentage of a top management team's members with dominant functional career track \( i \). A dominant functional career track was defined as the area in which a manager had spent more time than in any other. In this study, \( i \) took on the values 1 to 9, representing the following functional tracks: production-operations, research & development, finance, accounting, general management, marketing, law, administration, and personnel and labor relations. \( H \) can take on values from 0 to 1, with high values indicating that a top team is homogeneous, with typically one or two areas dominant.

Interunit moves was coded as the mean number of times team members had moved between distinct lines of business within a company. For example, a move from the General Electric Company’s large turbine business to its locomotive business would be counted as an interunit move, whereas a move from the large turbine business to the small turbine business would not.

Core function expertise was measured as the percent of team members whose primary functional careers had been in production-operations, marketing, or R&D.

In an effort to assess the reliability of the demographic coding, we had the two variables most open to coder interpretation—interunit moves and core function expertise—recoded for a random sample of 30 executives by three new coders who received the same training and instructions as the original coders. The average correlation between their ratings and the original ratings for interunit moves was .72, and the average correlation between their ratings and the original ratings for core function expertise was .86. These high levels of interrater agreement suggest that the measures possess a substantial degree of reliability.

Profitability was measured as return on assets (ROA), defined as net income after taxes divided by total assets (and averaged for 1973–76). Highly correlated with return on equity (ROE), ROA has two advantages: it is less sensitive to firm capital structure and allows comparisons with numerous other studies on diversification that have used it as a measure (Bettis, 1981; Bettis & Hall, 1982). Of course, ROA is subject to the limitations of all accounting-based measures, such as variations in inventory valuation, depreciation schedules, and historical costs.

Since team characteristics may also arise from variables outside our theoretical model, we included as controls the two most prominent variables in the demographics literature (Pfeffer, 1983): firm size and firm age. Previous research has argued that size is related to most organizational variables (Kimberly, 1976). More specifically, Dalton and Kesner (1983) showed that small organizations are more likely to bring outsiders into their top teams than large organizations. Therefore, it is important to control for the ex-
pected influence of size on the average tenure of top managers. Additionally, firm age must be controlled since young organizations have a lower boundary on team tenure than old organizations. Firm age was the remainder of 1974 minus the year a firm was founded as reported by Moody's Industrial Manual. Firm size was measured as the logarithm of total assets averaged for 1973–76.

Weighted industry profitability was also included as an important control in the performance analyses. This variable was measured by multiplying the aggregate ROA of each two-digit industry a firm was engaged in by the percentage of the firm's sales derived from that industry, summed over all the firm's industries. This measure provides a gauge of the ROA that could be expected, on the average, given a company's portfolio of businesses. We obtained figures for industry ROA from the Internal Revenue Service's Statistics of Income—Corporate Income Tax Returns and averaged them for the years 1973–76. The percentages of firms' activities in various industries were made available to us by Rumelt, who collected data corresponding approximately to the year 1973 on the industry commitments of firms using several sources: annual reports, 10K statements, prospectuses, investment analysts' reports, Moody's, and direct inquiries (Rumelt, 1982).

RESULTS

Table 2 presents the means, standard deviations, and correlation coefficients among all variables. None of the variables measuring top management team attributes approach redundancy, with the highest correlation, that between tenure and tenure homogeneity, being .55. However, several moderate intercorrelations suggested that conducting a multivariate analysis was important.

Differences in Team Composition

Table 3 presents results of tests assessing Hypotheses 1a, 1b, 1c, 2a, and 2b, which predict differences in top team composition depending on the diversification postures of firms. Simple Spearman correlations between each team attribute and the four-point ordinal strategy scale reveal tentative support for some of the propositions. Results of analysis of variance tests (not presented), which do not assume ordinality of the strategy categories, led to the same conclusions. Means for each strategy category indicate the profiles of the four types of firms.

Among the cohesion indicators, team tenure was strongly related to strategy ($r = .42$, $p < .001$), with means increasing from 15 years for unrelated firms up to nearly 25 years for vertically integrated firms. No bivariate relationship was found between tenure homogeneity and strategy. Functional homogeneity, contrary to expectations, was negatively related to interdependence. As the means show, the unrelated firms scored particularly high. A separate analysis revealed that this pattern reflected the tendency of unrelated firms to be dominated by finance and legal executives (e.g., Song, 1982).
<table>
<thead>
<tr>
<th>Variables</th>
<th>Means</th>
<th>s.d.</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Diversification strategy</td>
<td>2.51</td>
<td>1.06</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Profitability</td>
<td>0.06</td>
<td>0.03</td>
<td>.21*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Weighted industry profitability</td>
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<td>0.04</td>
<td>.23**</td>
<td>.31***</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Firm size</td>
<td>6.85</td>
<td>1.06</td>
<td>.30***</td>
<td>.25**</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Firm age</td>
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<td>28.62</td>
<td>.33***</td>
<td>.21*</td>
<td>.09</td>
<td>.11</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Tenure</td>
<td>21.27</td>
<td>7.62</td>
<td>.42***</td>
<td>.20*</td>
<td>.21*</td>
<td>.32***</td>
<td>.22*</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Tenure homogeneity</td>
<td>0.46</td>
<td>0.25</td>
<td>.08</td>
<td>.13</td>
<td>.15†</td>
<td>.15†</td>
<td>.09</td>
<td>.55***</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Functional homogeneity</td>
<td>0.39</td>
<td>0.17</td>
<td>-.29***</td>
<td>-.08</td>
<td>-.14</td>
<td>-.18*</td>
<td>-.08</td>
<td>-.17*</td>
<td>-.16</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. Interunit moves</td>
<td>0.46</td>
<td>0.48</td>
<td>.23**</td>
<td>.19*</td>
<td>.28**</td>
<td>.54***</td>
<td>.06</td>
<td>.39***</td>
<td>.22*</td>
<td>-.03</td>
<td></td>
</tr>
<tr>
<td>10. Core function expertise</td>
<td>0.31</td>
<td>0.23</td>
<td>.39***</td>
<td>.04</td>
<td>.09</td>
<td>.21**</td>
<td>.23**</td>
<td>.37***</td>
<td>.20*</td>
<td>-.38***</td>
<td>.23**</td>
</tr>
</tbody>
</table>

*a N = 134; statistics are Spearman correlations for variables involving strategy, Pearson correlations otherwise.

† p < .10
* p < .05
** p < .01
*** p < .001
<table>
<thead>
<tr>
<th>Variables</th>
<th>Unrelated</th>
<th>Related-Linked</th>
<th>Related-Linked</th>
<th>Vertically Integrated</th>
<th>Multiple Regression with Strategy as Dependent Variable</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Means</td>
<td>s.d.</td>
<td>Means</td>
<td>s.d.</td>
<td>Spearman r b s.e.</td>
</tr>
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<td>7.48</td>
<td>21.56</td>
<td>8.09</td>
<td>.42*** .051*** .013</td>
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<tr>
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<td>0.96</td>
<td>0.26</td>
<td>0.08 -.804* .372</td>
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<td>Functional homogeneity</td>
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<td>0.23</td>
<td>0.39</td>
<td>0.12</td>
<td>-.29*** -.571 .494</td>
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<tr>
<td>Interunit moves</td>
<td>0.34</td>
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<td>0.46</td>
<td>0.52</td>
<td>.23** -.200 .202</td>
</tr>
<tr>
<td>Core function expertise</td>
<td>0.18</td>
<td>0.22</td>
<td>0.27</td>
<td>0.12</td>
<td>.39*** .881* .390</td>
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<tr>
<td>Controls</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Firm size</td>
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<td></td>
<td></td>
<td></td>
<td>.089</td>
</tr>
<tr>
<td>Firm age</td>
<td>.007**</td>
<td></td>
<td></td>
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<td>.003</td>
</tr>
<tr>
<td>Intercept</td>
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<td></td>
<td></td>
<td>.725</td>
</tr>
<tr>
<td>N</td>
<td>29</td>
<td>37</td>
<td>39</td>
<td>29</td>
<td></td>
</tr>
<tr>
<td>R²</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.34***</td>
</tr>
<tr>
<td>F</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.34***</td>
</tr>
</tbody>
</table>

† p < .10  
* p < .05  
** p < .01  
*** p < .001
The two variables assessing the knowledge base of top teams were also highly correlated with strategy. Specifically, as we move from the strategy requiring the least interdependence, unrelated diversification, to that requiring the most—vertical integration—we observe significant positive associations with both interunit moves (p < .01) and core function expertise (p < .001).

To test the independent and combined relationships between team attributes and strategy, we conducted a multiple regression analysis treating strategy as a four-point ordinal scale (1 = unrelated, 4 = vertically integrated). The use of the ordinal ranking in this analysis and in the prescriptive analysis presented below deviates from the regression assumption of interval data. However, the work of Keats and Hitt (1988) and several Monte Carlo studies (e.g., Labovitz, 1970) have suggested that the use of an ordinal scale is not a serious problem.

Although they were not as widely significant as those of the simple correlations, the results of the overall regression analysis were highly significant (p < .001) and revealed a considerable link between strategy and team characteristics. Even after we accounted for the fact that the high-interdependence firms studied were older (p < .01) and larger (p < .10) than the others, the tenures of their top teams were longer (p < .001). The high-interdependence firms also had more core function expertise within their teams than did the firms with low interdependence (p < .05). Whereas the bivariate analysis revealed no relationship between tenure homogeneity and strategy, multivariate analysis revealed a significant, negative relationship (p < .05). This result was contrary to that hypothesized, with high-interdependence firms having less tenure homogeneity than low-interdependence firms.

We also conducted multiple discriminant and “LOGIT” analyses, both more technically appropriate to the categoric strategy variable. Their results were very similar to those arrived at with the regression analysis but allowed far less parsimony in presentation, requiring either several “pair-wise” comparisons or the collapsing of strategic categories. The concordance among the several approaches strongly indicated that the regression approach was satisfactory.

This negative coefficient for tenure homogeneity begs for some clarification in light of the slightly positive (although insignificant) bivariate association between tenure homogeneity and strategic interdependence. Recall that the tenure homogeneity measure is essentially an inverted coefficient of variation. Thus, the homogeneity measure varies positively with mean tenure and negatively with the standard deviation of tenure. Inasmuch as mean tenure is highly positively related to strategic interdependence (r = .42), there is bound to be a strong upward influence on the association between tenure homogeneity and strategy. That the correlation is an insignificant .08 strongly indicates that the standard deviation is exerting a substantial offsetting influence. Once the increasing means are controlled for, as in the multiple regression, the increasing nonhomogeneity of teams, as a function of strategic interdependence, becomes evident in the significant negative coefficient.

We tested the stability of our results by using two alternative homogeneity measures. When either the standard deviation of tenure (converted to a homogeneity measure) or Zenger and Lawrence’s (1989) homogeneity measure is substituted for our measure, the results are as follows: tenure homogeneity declines monotonically over the four strategies, the Spearman correlation between tenure homogeneity and the four-point strategy scale is strongly negative, and (continued)
The overall results and conclusions to be drawn from the various analyses conducted are as follows: (1) the high-interdependence firms are larger and older, (2) even after we controlled for the size and age of those firms, the members of their top management teams still have longer tenures, less tenure homogeneity, and more core function expertise than the top managers of low-interdependence firms, and (3) their long tenures and greater size seem to fully account for their high ratings on interunit moves. Not surprisingly, the longer managers are in a firm and the larger the firm, the more inherent opportunity they have to move around.

In sum, substantial differences in top team profiles were linked to the diversification postures of the firms studied. The tendencies for high-interdependence firms to have teams composed of long-tenured members, high variation in tenure among members, and members with primary expertise in core functions were particularly strong.

Performance Patterns

Hypothesis 3 predicts that team cohesion and a corporate-wide operating knowledge base will have a more positive association with performance in firms with high-interdependence strategies than it will in those with low-interdependence strategies. To test this prediction, we used a moderated regression analysis with return on assets (ROA) as the dependent variable. To establish the main effects, we first included only team characteristics and the control variables, including weighted industry profitability. As the second step, we included the same variables but added interactions between strategy, measured on a four-point scale, and team characteristics. In this analysis, support for Hypothesis 3 could be revealed in two ways: (1) significant positive coefficients for the strategy-by-team interaction terms and (2) a significant increase in the $R^2$ when the interaction terms were added to the equation.4

Table 4 presents results of this analysis. Model 1 is the regression equation without interaction terms. The results of the overall equation are significant ($R^2 = .16, p < .01$), confirming the importance of industry profitability as a determinant of firm performance among diversified firms (Christensen & Montgomery, 1981; Montgomery, 1985; Rumelt, 1982). None of the team variables are significantly related to ROA.

The overall results of the full regression equation, including the interaction terms (model 2, Table 4), are highly significant ($p < .001$). Moreover, the value of the $R^2$ (.24) is significantly greater ($p < .05$) than that for the equation without interaction terms (Cohen, 1968). Thus, overall support

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4 We also examined regression equations in which we added each interaction term in turn while holding out the other interaction terms, since multicollinearity could be a problem. The results were essentially like those we present for all five interactions entered together.
emerges for the premise that companies with different diversification strategies require different top management team characteristics to perform well. Although the full set of five interaction terms significantly increases the explained variance in performance measured as ROA, only one of the five—core function expertise—fully accounts for this effect. Contrary to expectations, the interaction between core function expertise and strategy is negatively associated with ROA. The less interdependent firms benefited more from having top teams well steeped in knowledge about core functions. Since interaction terms are often difficult to interpret, this finding can be clarified by examining the simple correlations between core function expertise and performance for each of the four diversification categories, which are as follows (Table 5): unrelated = .31, related-linked = .22, related-constrained = .06, and vertically integrated = −.50. This general counter-to-hypothesis pattern further reveals that core function expertise is positively related with profitability for the less interdependent firms, whereas a strong negative relationship between the two variables exists for highly interdependent (vertically integrated) firms.

The results show a significant interaction between top team attributes and strategy affecting performance. The addition of the interaction terms increased the variance explained by over 50 percent, from .16 to .24. How-

### TABLE 4

**Relationships of Team Attributes and Strategy to Profitability**

<table>
<thead>
<tr>
<th>Variables</th>
<th>Model 1</th>
<th></th>
<th>Model 2</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>b</td>
<td>s.e.</td>
<td>b</td>
</tr>
<tr>
<td>Intercept</td>
<td>−.005</td>
<td>.024</td>
<td>−.074</td>
<td>.045</td>
</tr>
<tr>
<td>Strategy</td>
<td>.000</td>
<td>.003</td>
<td>.022</td>
<td>.014</td>
</tr>
<tr>
<td>Weighted industry profitability</td>
<td>.200</td>
<td>.079*</td>
<td>.203</td>
<td>.082*</td>
</tr>
<tr>
<td>Firm size</td>
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<td>.003</td>
<td>.006</td>
<td>.003*</td>
</tr>
<tr>
<td>Firm age</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
</tr>
<tr>
<td>Tenure</td>
<td>.000</td>
<td>.000</td>
<td>.001</td>
<td>.001</td>
</tr>
<tr>
<td>Tenure homogeneity</td>
<td>.002</td>
<td>.013</td>
<td>.037</td>
<td>.029</td>
</tr>
<tr>
<td>Functional homogeneity</td>
<td>−.000</td>
<td>.017</td>
<td>.002</td>
<td>.037</td>
</tr>
<tr>
<td>Interunit moves</td>
<td>.002</td>
<td>.007</td>
<td>−.007</td>
<td>.015</td>
</tr>
<tr>
<td>Core function expertise</td>
<td>−.010</td>
<td>.013</td>
<td>.081</td>
<td>.035*</td>
</tr>
<tr>
<td>Tenure × strategy</td>
<td>−.000</td>
<td></td>
<td>.000</td>
<td></td>
</tr>
<tr>
<td>Tenure homogeneity × strategy</td>
<td>−.014</td>
<td></td>
<td>.013</td>
<td></td>
</tr>
<tr>
<td>Functional homogeneity × strategy</td>
<td>.005</td>
<td></td>
<td>.014</td>
<td></td>
</tr>
<tr>
<td>Interunit moves × strategy</td>
<td>.002</td>
<td></td>
<td>.006</td>
<td></td>
</tr>
<tr>
<td>Core function expertise × strategy</td>
<td>−.033</td>
<td></td>
<td>.012**</td>
<td></td>
</tr>
</tbody>
</table>

| R²                                | .16**   |       | .24***  |       |
| ΔR²                               | .08* (by F test) |       |       |       |

* p < .05
** p < .01
*** p < .001
TABLE 5
Correlations Between Team Attributes and Profitability by Diversification Posture

<table>
<thead>
<tr>
<th>Team Attributes</th>
<th>Unrelated</th>
<th>Related-Linked</th>
<th>Related-Constrained</th>
<th>Vertically Integrated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tenure</td>
<td>.04</td>
<td>.37**</td>
<td>.12</td>
<td>-.06</td>
</tr>
<tr>
<td>Tenure homogeneity</td>
<td>.24</td>
<td>.18</td>
<td>.17</td>
<td>-.13</td>
</tr>
<tr>
<td>Functional homogeneity</td>
<td>-.15</td>
<td>-.03</td>
<td>-.03</td>
<td>.20</td>
</tr>
<tr>
<td>Interunit moves</td>
<td>.18</td>
<td>.16</td>
<td>.19</td>
<td>.25</td>
</tr>
<tr>
<td>Core function expertise</td>
<td>.31†</td>
<td>.22</td>
<td>.06</td>
<td>-.50**</td>
</tr>
</tbody>
</table>

† *p < .10
* *p < .05
** *p < .01

ever, the influence of the interactions is far from pervasive—only one of the team attributes was significant, and its direction was counter to hypothesis. Nonetheless, the descriptive findings, in conjunction with the performance findings, help outline a new picture of variation in top teams by firm diversification strategy type and the implications of that variation for performance.

DISCUSSION

Whether it is an implicit norm or an explicit policy, the tendency of vertically integrated and related-constrained firms is to appoint long-tenured people to their highest posts. Thus, their top management teams consist of individuals who are not only likely to know each other well, but who are also likely to know many parts of the company through first-hand experience. These long tenures have a cascading effect, directly conferring cohesion and indirectly conferring company-wide knowledge by allowing interunit moves. We theorized that both cohesion and company-wide knowledge would be important team qualities in high-interdependence settings. The apparent result of the appointment of long-tenured individuals would seem to be strongly shared meanings and values within a corporate management team.

The long tenures found in the vertically integrated and related-constrained firms we studied suggest that we may be observing “clan” organizations (Ouchi, 1980). Long tenures have been found to be an integral feature in clans (Kerr & Slocum, 1987; Ouchi, 1980). Other prominent features include fraternal relationships among members, an emphasis on collective rather than individual initiative, and well-developed socialization systems. “Market” organizations (Ouchi, 1980), on the other hand, tend to have features resulting in short tenures: membership is seen as a contractual relationship subject to abrupt termination, individual initiative and performance are emphasized, and there is little socialization. This study did not examine enough organizational attributes or extract rich enough information
to allow any conclusions about the overlaps between Rumelt’s strategy typology and Ouchi’s culture typology, but the tentative inference that interdependence is associated with clan-like features seems highly plausible. Moreover, it is possible that the origins of corporate cultures, which have so far gone unexplained, lie in part in the amounts and types of interdependencies firms’ strategic endeavors demand.

Our second very stable finding was that high-interdependence firms had more top team members with primary expertise in core functions (operations, marketing and sales, and R&D) than did low-interdependence firms. As hypothesized, the backgrounds of top managers in high-interdependence settings were consistent with their roles in monitoring, negotiating, and decision making in substantive realms—products, markets, technologies, and facilities. Similarly, the backgrounds of the low-interdependence teams, which were predominantly in finance, law, accounting, and general management, mirrored their key tasks: allocating capital via formal planning and budgeting systems, monitoring and sanctioning quantitative measures of performance, and acquiring and divesting businesses (Dundas & Richardson, 1982).

Our final descriptive finding concerns tenure homogeneity. Contrary to expectations, we found that high-interdependence firms displayed lower levels of tenure homogeneity than less interdependent firms. One possible interpretation of this result can be found by returning to the idea of clan organizations. If the high-interdependence firms studied have adopted clan-like features, their higher tenure heterogeneity may be reflecting dispersed tenures around a high mean tenure. These organizations may have a policy of staggering team membership to provide for smooth successions and high team continuity over time. Staggered teams increase tenure heterogeneity but enhance stability and provide opportunities for the mentoring and grooming of heirs. The team recreates itself slowly, gradually engendering commitment to a core business, shared perspectives, and perpetuation of a given strategy.

In contrast, low-interdependence firms may be appointing their teams as teams—groups of people with relatively similar organizational tenures who will work together for some period of time and eventually be replaced by another cohort. Approximating Ouchi’s market culture, such firms retain executives as long as they perform adequately and replace them, sometimes en masse, when performance falls. At a given point, the members’ high level of tenure homogeneity may enhance team cohesion, especially in light of their low average tenure. However, the appointment of a team as a unit offers little opportunity for the gradual grooming of successors and suggests a low level of team continuity over time. Indeed, the opportunity for any persistent commitment to a core business is greatly reduced in this “revolutionary,” as opposed to “evolutionary,” team succession model (Tushman & Romanelli, 1985). Low team continuity over time may benefit low-interdependence firms by restricting their commitment (Staw, 1981) to given lines of business.
Each team starts fresh and can acquire and divest businesses strictly on the basis of formalized capital allocation models.

Two examples help to illustrate archetypal teams in these extreme diversification categories. The top managers of the Goodyear Tire and Rubber Company, a vertically integrated firm, had tenures of 13, 18, 22, 30, 32, 36, and 40 years. In contrast, the top managers of Colt Industries, an unrelated firm, had tenures of 11, 11, 11, 12, and 13 years. At Goodyear, the high average tenure and wide staggering of tenures provided opportunity for commitment to the core business as well as for an orderly succession process, complete with mentoring, successor grooming, and so on. At Colt, the relatively low average tenure may have limited the team’s commitment to any business; the tight clustering of tenures suggests the appointment of the entire team within a narrow time frame, and consequently we could expect the departure of the entire team within a relatively narrow time frame.

These interpretations based on Ouchi’s research are speculative and await further study. However, such views are quite consistent with our combined descriptive and prescriptive findings.

Our only significant prescriptive finding, concerning core function expertise, was contrary to expectation. The more interdependent a firm’s diversification strategy, the less positive was the association between core function expertise and profitability. In fact, for the most interdependent firms, the vertically integrated ones, we saw a strong negative association.

The descriptive tendency was for strong, even monotonic, increases in core function expertise across the four strategy types. However, the performance results suggest the possibility that these archetypal differences were excessive: at the extremes, the average unrelated firm may have had managers with less core function expertise than was optimal, and the average vertically integrated firm may have had managers with more expertise than was appropriate. In the unrelated firms studied, teams may have had critical voids in operating knowledge, impairing their ability to evaluate division requests, performance patterns, and acquisition candidates beyond the most superficial financial and administrative levels. Although the executives of the average unrelated firm may not need as much core function expertise as those of a firm with a more interdependent diversification posture, they may need more such expertise than was typically possessed.

Litton Industries provides a graphic example of an unrelated firm whose top managers may have had too little understanding of the substantive products, markets, technologies, and competitors with which they were dealing. Only 10 percent of its top management team had core function experience, compared to an overall study average of 31 percent and an average of 18 percent for the unrelated firms. However, Litton’s businesses were competitively and technologically very complex, including calculators, copiers, navigation systems, machine tools, and medical equipment. It can only be expected that such a top team would be unable to move beyond relatively detached financial controls for making major business judgments and that
the health of the firm would suffer. Litton’s accompanying low return on assets of 1.1 percent suggests that such problems may have in fact existed.

The case of the vertically integrated firms is even more intriguing. As expected, these firms generally had a very high percentage of their top executives drawn from core functions. However, such extreme team profiles appear to have been counterproductive in terms of performance, as evidenced by the significant negative interaction term shown in Table 4 and the very large negative correlation \( r = -0.50 \) between core function expertise and performance for this group (Table 5). The implication is that these firms may have benefited from more objective, staff-analytic executives who were not overly committed to a specific business or way of operating. In this vein, Rumelt concluded that a major problem of vertically integrated firms is the tendency of top management to develop “values and attitudes that assign existential worth to the products or processes themselves” (1974: 137).

Also pertinent is Hayes and Abernathy’s (1980) contention that top executives with experience in the tangible areas in which their firms compete—marketing and sales, operations, and R&D—will produce superior returns. Our results suggest that Hayes and Abernathy were not correct in any blanket sense and that the value of top executives experienced in tangible operating areas is contingent on a firm’s strategy. The increasing preponderance of top executives drawn from staff areas such as law and finance is not a universally negative development and appears, in some instances, to contribute a much needed countervailing influence.

**SUMMARY AND LIMITATIONS**

This study suggests that the profiles of top management teams are associated with their firms’ diversification postures. The greater the need for interdependence posed by a firm’s diversification strategy, the greater its top team’s firm-wide operating knowledge base. Significant differences were also found for top team indicators of social cohesion. As expected, top executives of high-interdependence firms had significantly longer tenures, but contrary to expectation, they had lower tenure homogeneity than the executives of low-interdependence firms. The findings for average tenure and core function expertise support our underlying premise that high-interdependence firms face a managerial task of coordination, cross-unit cooperation, negotiation, and compromise, all of which are aided by a top team’s cohesion and its substantive understanding of a firm’s businesses. The finding for tenure homogeneity argues against our underlying premise, although the possibility that high-interdependence firms adopt staggered teams to provide continuity and cohesion over time is plausible and worthy of future research.

There were not only descriptive differences in team composition across diversification categories, but also different associations with profitability. The functional expertise represented in teams had significant and sometimes unexpected effects, depending on firm strategy. Considered jointly,
the descriptive and prescriptive findings for core function expertise suggest that top teams are sometimes not configured as they should be. Some of the high-interdependence firms studied had high levels of core expertise but may have benefited from lower levels. Some low-interdependence firms had low levels of core expertise but may have benefited from higher levels. Thus, although top team characteristics display different performance associations across diversification postures, they do so in a more complex fashion than we originally hypothesized.

Several limitations in the project need to be highlighted. The study was cross-sectional, not longitudinal, so causality cannot be established from the data. It is plausible both that executives embark on diversification initiatives in line with their competences (Hambrick & Mason, 1984) and that certain types of firms tend to promote executives who fit the critical task at hand. Actually, over time a reinforcing spiral probably occurs (Miles & Snow, 1978) in which managers pick strategies to suit their competences, successors are picked to suit the strategies, and so on. If so, establishing causality will be difficult. Second, the demographic data provide very detached surrogates of actual team characteristics. Such data have the advantage of objectivity and ease of access, but replications with clinical and psychometric data are needed. Finally, our data are dated. It is difficult to assess how underlying patterns may have changed since the early 1970s, but they may have done so.

These limitations point to the need for refinements and extensions of the present study. Above all, there is a great need to examine the people at the top reaches of organizations, and great promise in doing so.

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APPENDIX

Diversification Categories

1. Unrelated: A firm’s main business (those accounting for the most revenues) contributes less than 70 percent of its annual revenues, and other businesses are not related to the main business or to each other.

2. Related-linked: A main business contributes less than 70 percent of annual revenues, but at least 70 percent of annual revenues come from businesses related to each other but not directly related to the main businesses.

3. Related-constrained: A main business contributes less than 70 percent of annual revenues, but at least 70 percent of annual revenues come from businesses that are directly related to the main business.

4. Dominant-vertical: A firm derives between 70 and 95 percent of its annual revenue from a vertically integrated chain of activities.

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