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DIVERSIFICATION AND TOP MANAGEMENT TEAM COMPLEMENTARITY: IS PERFORMANCE IMPROVED BY MERGING SIMILAR OR DISSIMILAR TEAMS?

HEMA A. KRISHNAN
College of Business Administration, Xavier University, Cincinnati, Ohio, U.S.A.

ALEX MILLER and WILLIAM Q. JUDGE
College of Business Administration, University of Tennessee, Knoxville, Tennessee, U.S.A.

This study examines the impact of complementary top management teams (defined as differences in functional backgrounds between the acquiring and acquired firm managers) on postacquisition performance. Based on a sample of 147 acquisitions completed during 1986–88, we find that complementary backgrounds have a positive impact on postacquisition performance in both related and unrelated acquisitions. Another major finding is that complementarity is negatively related to top management team turnover among acquired managers, suggesting that differences in functional backgrounds are more easily integrated into the new organization. Finally, top management team turnover among acquired managers is negatively related to postacquisition performance. These findings highlight the importance of examining complementarity in terms of differences, and reinforce the notion that differences have the potential to create unique value for the organization. © 1997 by John Wiley & Sons, Ltd.

In providing advice about corporate acquisitions, both researchers and managers have regularly argued for the importance of having complementary top management teams in the acquired and the acquiring firm (Jemison and Sitkin, 1986; Porter, 1987; Ravenscraft and Scherer, 1987; Datta, 1991; Haspeslagh and Jemison, 1991). This complementarity is widely viewed as an important type of fit, and therefore should have a significant impact on postacquisition performance (Ravenscraft and Scherer, 1987; Barney, 1988). While complementarity can be assessed along several dimensions, research suggests that it is particularly important to look at how complementary the functional skills of the two joining top management teams are because functional backgrounds have been found to be linked to key postacquisition managerial processes like resource allocation (Hambrick and Mason, 1984; Gupta and Govindarajan, 1984; Hitt and Ireland, 1986; Porter, 1987; Harrison *et al.* 1991).

However, in looking into this topic, one finds that our literature contains two very different interpretations of what it means to have complementary top management teams. One interpretation suggests that complementary teams are those having similar functional backgrounds and skills. This interpretation is based on the idea that the homogeneity provided by similar backgrounds and skills results in better cultural fit and manifests itself in better communication, cooperation, and shared understanding, and therefore results in improved performance (Michel and Hambrick, 1992; Wiersema and Bantel, 1992).

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On the other hand, complementarity is also regularly interpreted as meaning *different* or *dissimilar* skill sets and backgrounds. According to Barney (1986), complementary competencies imply different functional backgrounds and skills that can offset one another. Such offsetting differences create value and improve postacquisition performance because functional weaknesses in one organization's management team can be offset by corresponding strengths in the other organization's team (Porter, 1987; Ravenscraft and Scherer, 1987; Haspeslagh and Jemison, 1991). There is also reason to believe that managerial turnover is likely to be lower in acquisitions which combine management teams with very different sets. Since their skills differ, they do not make one another redundant, and there is logically greater interest in retaining managers with non-redundant skills (Porter, 1987; Ravenscraft and Scherer, 1987; Haspeslagh and Jemison, 1991). Since turnover in the top management team appears to be linked to firm performance (Walsh, 1989; Cannella and Hambrick, 1993), we would expect differences in managerial teams' skills to improve postacquisition performance.

The purpose of this research is to examine the impact differences or similarities in the functional backgrounds of the acquired and acquiring firms have on postacquisition performance. This is a topic that has received considerable speculation. While there appears to be consensus on the importance of having complementary teams, there is little agreement about what this actually means, and to date there has been little empirical evidence to help decide the issue.

Based on a review of the available literature, we develop a conceptual argument suggesting that differences in skills are likely to be more beneficial than similarities, although we expect the impact to be stronger in cases of related diversification than unrelated diversification. This is because unrelated firms are more likely to be organized as decentralized conglomerates with less contact between top management teams (TMTs) after the acquisition and therefore less impact of TMT makeup (Gupta and Govindarajan, 1986). We then empirically assess the impact of differences in the functional backgrounds of the joining top management teams on profitability in the postacquisition period. Tests are also conducted to compare the nature of this impact on samples of related and unrelated acquisitions. The results generally support the hypotheses and suggest that differences in the joining management teams' skill sets are positively related to postacquisition performance. Implications for research and management are drawn.

CONCEPTUAL DEVELOPMENT

Findings on the diversification–performance relationship have been inconclusive. One of the main reasons is that there appear to be many contingency factors affecting this relationship (Ramanujam and Varadarajan, 1989). Many researchers argue that organizational fit is the critical element in effective postacquisition integration (Jemison and Sitkin, 1986; Haspeslagh and Jemison, 1991). Organizational fit has been defined as the match between the managerial, personnel and cultural characteristics of the parent and acquired firm (Jemison and Sitkin, 1986). Organizational fit is particularly important at the top levels of the organization because, if the acquisition is to result in synergistic benefits, it is important for the top management team members in the acquiring and acquired firm to be compatible (Datta, 1991; Chattterjee *et al.*, 1992).

One of the key dimensions of organizational dimensions of organizational fit affecting the acquisition–performance relationship is how well the functional background of the top management teams in the two firms complement one another (Haspeslagh and Jemison, 1991; Wiersema and Bantel, 1992). There are two very different interpretations of complementarity in functional backgrounds in the top management teams in strategic management literature. One definition of complementarity stresses similarities in functional backgrounds (Ravenscraft and Scherer, 1987). According to Ansoff (1965), complementarity implies similarities between the acquiring and target firm in business-level operations which could result in synergy. Ravenscraft and Scherer (1987) define complementarity in terms of the similarities in the functional areas between the acquiring and acquired firm which can yield synergy.

There is a problem, however, in interpreting complementarity in terms of similarities in functional backgrounds. When the functional skills of the TMTs are similar in the two firms, managerial clashes may result due to duplication of activities and limited potential for entrepreneurial activities (Haspeslagh and Jemison, 1991). Anecdotal evidence collected by Ravenscraft and Scherer (1987) reveals that Philip Morris's acquisition of the American Safety Razor Company was motivated by marketing similarities between the two firms. But the company was subsequently divested due to problems faced in integrating the top management. Salter and Weinhold (1979) observe that Xerox's acquisition of Switch Data Systems was prompted by the fact that both had strengths in technology, marketing and manufacturing. However, the acquisition led to a great drain on earnings because the organizational integration required to achieve synergistic benefits did not take place. Similar functional strengths may result in consolidation into one unit as a set of shared activities (Porter, 1985). Buono and Bowditch (1989) observe that this approach involves the greatest changes especially for the acquired firm, because it may lose its corporate identity, suffer great reductions in its workforce and thus result in high turnover among the TMT.

Alternatively, one can argue that building complementary TMTs entails combining organizations with considerable differences in functional backgrounds. In this paper complementarity has been interpreted in terms of differences in functional backgrounds. There are two very strong arguments to be made in support of this statement: one argument is based on offsetting skill sets while the other emphasizes lower managerial turnover.

Offsetting skill sets

One of the major motives of acquisitions is to create unique value (Salter and Weinhold, 1979). Differences between the TMTs on important dimensions such as backgrounds of managers has more potential to create unique value because it makes the combined organization stronger by offsetting weaknesses in both the firms, thereby creating or maintaining a competitive advantage. Having different sets of functional backgrounds that supplement one another can create synergy because deficiencies in one firm can be offset by strengths in the other firm (Porter, 1987).

Salter and Weinhold (1979) suggest that acquisitions can raise the productivity of capital when the particular skills and one firm's knowledge of the industry are applied to the competitive problems and opportunities facing the other firm. Barney (1986) suggests that greater value can be created by differences in resources rather than similarities because the synergistic relationship between the two firms is not imitable by other potential bidding firms. These differences in resources which are linked to the functional skills of the top managers can create unique, inimitable or private synergy. Futhermore, Barney (1986) argues that in both related and unrelated acquisitions, complementary (i.e., dissimilar) competencies can create synergy.

Harrison *et al.* (1991) found empirical support for the positive relationship between differences in resource allocation patterns and postacquisition performance. They found that unique synergy may be generated by merging the different resource patterns of the two firms. They suggested that synergy can be generated by merging different capabilities such as production or marketing because this increases the organization's capacity to generate strategically important alternatives.

Several case studies performed by Haspeslagh and Jemison (1991) illustrate the benefits of differences in functional backgrounds. Electrolux acquired Zanussi, an Italian company, because the two firms had dissimilar strengths which could be transferred from one firm to another. For example, Zanussi was strong in areas such as international marketing, where Electrolux was weak. Electrolux had major strengths in R&D and production—areas where Zanussi was weak. When the two firms were integrated, competitiveness was restored through skill transfer and restructuring. Electrolux transferred its skills to Zanussi by improving production technology, spurring innovative product development, and enhancing product quality. Electrolux in turn benefited from Zanussi's superior marketing skills. Similarly, Kitching's (1967) study revealed that transfer of managerial skills from one firm to another can result in synergy.

Finally, Haspeslagh and Jemison (1991) observe that the role of top management is to ensure that the complementarity between the two firms is harnessed for long-term competitive advantage. This task involves the ability to capitalize on the differences between the two firms. Porter (1987) observes that transferring skills from one firm to a firm weak in those areas creates synergy because proprietary or specialized knowledge is disseminated across units.

An acquisition represents a difficult and uncertain situation to the members of both firms. Having diverse functional skills among the top management during these situations enhances the search for information, makes the organization more innovative and provides the momentum for change (Dutton and Duncan, 1987; Rediker and Middleton, 1992; Wiersema and Bantel, 1992).

There has been considerable research in strategic management as to what constitutes critical functional activities at the top level. For firms employing an acquisitive growth strategy, marketing, production/operations, finance and general management are considered essential (Kitching, 1967; Hitt, Ireland and Palia, 1982; Gupta and Govindarajan, 1986). As functional activities are directly related to the resource base of the firm (Hitt and Ireland, 1986), the functions considered to be critical at the top level are marketing, production/operations, finance, and general management. This is consistent with the classification adopted by other researchers (Kitching, 1967; Hitt *et al.*, 1982). Also, these functions are considered critical because they are directly related to the major synergy which are generated in acquisitions (Chatterjee, 1986).

In sum, differences in the functional backgrounds may have a positive impact on postacquisition performance. That is, when the two management teams have complementary backgrounds, which is reflected in their different skill sets, the acquisition may result in synergistic benefits.

Hypothesis 1: Complementarity between the functional backgrounds of TMT in the acquiring firm and those in the acquired firm will be positively related to postacquisition corporate performance.

Decreased turnover

A second reason that differences in functional backgrounds could lead to better performance is that they are less likely to result in top management turnover in the acquired firm. One of the ways firms seek to realize synergy is through economies of scale. An important scale economy often consists of having the TMT of the acquiring firm assume the former responsibilities of the acquired firm's TMT (Porter, 1987). This is more likely when the functional backgrounds are similar since an obvious way to economize is by reducing redundant managerial positions (Porter, 1987; Ravenscraft and Scherer, 1987; Buono and Bowditch, 1989). Porter (1987) argues that acquisitions result in consolidation of both human and physical assets. When the top management teams in the two firms have similar functional backgrounds, the acquirer may want to reduce duplication of activities and increase economies of scale. This may lead to large-scale turnover among the acquired firms' management.

Walsh (1989) predicts that when the parent company's management team is familiar with the acquired company's business, there would be higher turnover in the acquired company because the parent can afford to lose many of the acquired company's managers. Manne (1965) suggests that the parent company managers may even encourage their departure because they are less dependent upon them for specialized competencies.

However, if there are considerable differences in the functional backgrounds, the acquiring firm may be interested in retaining them because they cannot afford to lose the experience and specialized skills and talents of the acquired company's management (Pitts, 1976, Walsh, 1988). Haspeslagh and Jemison (1991) observe that a diverse top management team will bring unique perspectives to problem solving. In diverse teams, because there is more potential for resource transfer, there will be reduced turnover among the acquired firm management. In sum, this theory and research point to a negative relationship between TMT complementarity and turnover.

Hypothesis 2: The greater the complementarity in functional background between the TMT of the acquiring and acquired firm, the lower the TMT turnover in the acquired firm.

Turnover among the acquired firm's top management may also have an impact on postacquisition performance. The period after an acquisition is marked by considerable upheaval and uncertainty especially in the acquired firm (Buono, Bowditch and Lewis, 1985; Stewart, 1992). This uncertainty tests the capabilities of the top managers who are responsible for integrating the two firms. High turnover in the acquired firms' management will adversely affect the postacquisition performance of the organization because the synergy which the parent firm expected of the acquisition will not be realized

(Cannella and Hambrick, 1993). Management turnover in the acquired firm will also affect the performance of the parent firm because the parent management will have to devote more of its time and resources to achieve integration. This may be difficult to achieve because the parent management will have to handle the operations of a firm whose business is relatively unfamiliar. In addition, they have to deal with the middle management of the acquired firm, who may find it difficult to work for a new top management. The atmosphere may be very hostile with little cooperation from the managers of the acquired firm.

Ravenscraft and Scherer (1987) observe that when an outsider is installed as chief executive to represent the interests of the parent, major problems can occur. First, there is resentment on the part of the incumbents in the acquired unit. Morale suffers, and turnover of experienced top management may accelerate, resulting in the organization's objectives being unmet. Another problem is that when outsiders replace the top management, it is difficult for them to be able to take charge of a new and complex business and handle its operations. Their reactions to latent or new problems may be delayed or flawed. Rumelt (1974) observes that replacement of top management by the parent company to avoid duplication of activities may be counterproductive. This is because any possible beneficial gains due to scale or synergy may be nullified by organizational problems arising from the acquisition. As Cannella and Hambrick's (1993) study reveals, turnover among the acquired firm's managers can have a negative impact on postacquisition performance.

On the other hand, if the top management remain in place after the acquisition, they contribute to integration of the two firms and are also in a position to keep the middle and lower management in the acquired firm motivated (Buono and Bowditch, 1989; Haspeslagh and Jemison, 1991). In their case studies, Ravenscraft and Scherer (1987) observe that in successful acquisitions the top management in the acquired firm was changed little except in response to newly emerging needs. In 10 of their case studies, they found that parent companies declared explicitly that the incumbent management team would be offered attractive employment contracts to stay on. The above arguments suggest that TMT turnover and postacquisition performance have an inverse relationship.

Hypothesis 3: The lower the turnover among the acquired firm top management team, the better the postacquisition performance.

Complementary functional backgrounds can have a positive impact on postacquisition performance. However, this impact will be stronger when there is reduced TMT turnover. Reduced TMT turnover in the acquired firm contributes to organizational continuity and reduced uncertainties. In addition, it facilitates organizational integration (Porter 1987; Haspeslagh and Jemison, 1991).

Therefore in addition to the direct impact of complementarity on postacquisition performance, the relationship between complementarity and postacquisition performance is also mediated by TMT turnover in the acquired firm. When there are considerable differences between the two firms' TMTs, it is likely to result in reduced TMT turnover, because the parent firm may be interested in retaining acquired firm top managers whose functional skills are different from those possessed by the parent firm managers. Walsh (1988) and Pitts (1976) observe that when the acquired firm managers have some unique skills, the parent firm cannot afford to lose their talents. When these managers are retained, it is likely to result in superior postacquisition performance. Therefore, TMT turnover affects the relationship between complementarity and postacquisition performance.

On the other hand, when complementarity is low, as indicated by similarities in functional backgrounds, it can have a negative impact on post acquisition performance via high TMT turnover. When the functional backgrounds are similar, the parent firm may want to reduce redundancies which result in TMT turnover (Porter, 1987; Haspeslagh and Jemison, 1991). If there is TMT turnover in the acquired firm, because of low complementarity, it is likely to result in poorer performance because the top managers of the acquired firm are not available to facilitate organizational integration.

Hypothesis 4: The relationship between complementarity and postacquisition performance is mediated by TMT turnover such that this *relationship will be stronger when TMT turnover is lower.*

Although differences in functional backgrounds between the TMT of the acquiring and acquired firm are expected to result in better performance in both related and unrelated acquisitions, the impact of these differences may differ across the type of acquisition. Related acquisitions entail acquiring businesses that build on, draw strength from, and enlarge some central strength or competence (Rumelt, 1974). Also, both financial and operational synergy can be realized in related acquisitions, whereas the likelihood of realizing operational synergy is limited in unrelated acquisitions (Kitching, 1967; Porter, 1985; Chatterjee, 1989). Because related acquisitions operate in common product–markets, the TMTs may be familiar with the product, market, and technical characteristics of the two firms (Bettis and Hall, 1982). Therefore, transfer of skills from one firm to another is likely to result in synergy (Singh and Montgomery, 1987).

In contrast, there may be little opportunity for operational synergy in unrelated acquisitions because the two firms operate in different industries. Buono and Bowditch (1989) observe that as the goal in unrelated acquisitions is financial synergy, the firm may be organized as a decentralized conglomerate. The differences in the TMT makeup between the two firms will not have a big impact because there may be little interaction between the TMTs.

Therefore, although complementary (i.e., different) functional backgrounds in the TMTs of the two firms may create synergy in both acquisitions, the positive impact of these differences will be greater in related acquisitions. It will be easier to transfer skills in related acquisitions because a common core of unity may be present (Lubatkin, 1987; Singh and Montgomery, 1987). It will be possible to realize greater synergy in related acquisitions because when the operations of individual units complement one another, there may be benefits in offering consumers a broader line of products (Rumelt, 1974; Amit and Livnat, 1988). Also, it is possible for the merged firm to increase its bargaining power over buyers and suppliers.

Hypothesis 5: The strength of the impact of complementary functional backgrounds on postacquisition performance will be greater for firms pursuing a related acquisition strategy than for firms pursuing an unrelated acquisition strategy.

METHODOLOGY

Sample and sources of data

The sample of acquired firms and their acquirers was obtained through *Mergers Statistical Review*. The sample included all acquisitions made during 1986, 1987, and 1988. The reason for choosing this time period was to allow enough subsequent time for integration of the two firms and to facilitate measurement of performance for 3 years after the event. All acquirers who were themselves acquired subsequently, all privately held firms, and all foreign companies were excluded from the sample. This criterion resulted in a sample of 300 firms.

Data on TMT members who were affiliated with the acquiring and acquired firm at the time of the acquisition were obtained from the *Dun & Bradstreet Reference Book of Corporate Management* and *Standard and Poor's Register of Corporations*. A company's top management team included all officers above the level of vice president: this selection criterion included the chief executive officer, the president, the chief operating officer, the chief financial officer and senior vice presidents. This definition of TMT is consistent with the approach adopted by Michel and Hambrick (1992).

The TMT was defined for the parts of the firm that were brought together. This is because the issue of complementarity needs to be considered in the parts of the firm that are to be brought together. In most cases, the acquired firms were treated as subsidiaries of the acquiring firm. In a few cases, the acquired firm reported to a subsidiary of the acquiring firm. For these firms, TMT was measured at the level of the acquired firm and at the level of the subsidiary firm to which the acquired firm reported. Firms for which the data on TMT were not available were dropped from the sample. This left a reduced sample of 147 firms, all publicly held.

Of the 153 firms which were not included in the study, a random sample of 107 firms was drawn. *t*-Tests were conducted to determine nonresponse bias in the population. No significant differences in the means for size (measured as revenues) and postacquisition performance (measured as return on assets (ROA)) were detected between the two groups in the population.

Independent variables

Complementarity

Hitt and Tyler (1991) suggest that although top executives often have experience in multiple functions, they typically have a dominant experience in one major function. The functional background of the TMT members for both the acquiring firm and the acquired firm was assessed by categorizing the manager as belonging to one of the four major functional areas if he or she had a long tenure in that function. If they had spent more than half of their career in a particular function, they were categorized into that function. The information required for this categorization was available in the *Dun & Bradstreet Reference Book of Corporate Management* using data for the year of the acquisition.

The percentage of managers in the TMT belonging to each of the functional areas (marketing, operations, finance, and general management) in the acquiring firm was first calculated. Similarly, the percentage of managers in the TMT belonging to each functional area (marketing, operations, finance, and general management) in the acquired firm was calculated. A difference score was calculated by subtracting the percentages for each function (i.e., marketing, operations, finance, and general management) in the acquiring firm and acquired firm. This is similar to the approach adopted by Chaganti and Sambharya (1987). The absolute value of the differences in the four functional areas was summed to derive the independent variable, complementarity.

Type of acquisition

There are many ways of measuring firm diversity. These include categorical measures (Rumelt, 1974), continuous measures using SIC classification (Montgomery, 1982), and entropy measures (Jacquemin and Berry, 1979). Ramanujam and Varadarajan (1989) observe that the choice of measure must be guided by the research question. In this study we are concerned with the nature of the relationship of the acquiring firm with the acquired firm. In other words, the focus of interest is the relation or lack of relation of the acquired firm with the acquiring firm. Although not all acquisitions are alike and methods of value creation differ across acquisition types, both conceptual and empirical work in this area reveal that the related–unrelated typology is quite robust (Rumelt, 1974; Porter, 1987; Barney, 1988). Based on Rumelt's (1974) two major categories of related and unrelated, Harrison *et al.* (1991) classified two merging firms as being related to each other if they belonged to the same dominant 2-digit SIC category, prior to the acquisition. They classified firms as unrelated if they belonged to different dominant 2-digit SIC industry groups. A similar procedure was adopted in this research by classifying firms based on their 2-digit SIC categories. That is, if the two firms belonged to the same dominant 2-digit SIC groups at the time of the acquisition, they were classified as related and unrelated otherwise. Data required to make the distinction between related and unrelated acquisitions were collected from the quarterly reports of *Mergers and Acquisitions* and from *Mergers Statistical Review*.

TMT turnover

The mediating variable is the TMT turnover in the acquired firm. The names of the TMT in the acquired firm were obtained for two time periods: the TMT during the time of the acquisition, and the TMT 3 years after the acquisition. The TMT turnover was measured as the proportion of change in the TMT between the two time periods. This is similar to the approach adopted by Walsh (1988). This information was collected from the *Dun & Bradstreet Reference Book of Corporate Management*.

Dependent variable

Postacquisition performance

The postacquisition performance of the consolidated organization was chosen as the dependent variable. The analyses were conducted using accounting measures of performance. Accounting measure was obtained for the consolidated organization and the information was collected from

Moody's Industrial Manual. It was measured as the ROA averaged for a period of 3 years immediately following the acquisition. This gives enough time to realize most of the effects associated with synergy while at the same time reducing the probability of extraneous influences such as other strategic actions by the firm. Prior research supports the use of accounting measures of performance such as the ROA because managers use this measure very frequently to decide on strategic actions (Bromiley, 1986; Harrison *et al.*, 1991).

Control variables

Prior organizational performance

A number of researchers have observed that prior organizational performance has an effect on the subsequent performance of the organization by influencing the strategic actions of its managers (Hambrick and Schechter, 1983; Tushman and Romanelli, 1985; Wiersema and Bantel, 1992). Prior performance affects the firm's future acquisition decision. Firms that experience poor performance due to low growth industy conditions may acquire firms in profitable industries to improve their performance. Prior organizational performance and postacquisition performance are therefore related and it is necessary to control for the effects of the former in modeling the latter. Data on the acquiring firms' prior performance, measured as the ROA averaged for a period of 3 years before the acquisition, were collected from *Moody's Industrial Manual*.

Relative organizational size

Integration also involves compatibility in the relative organizational sizes of the two firms. Many researchers (Harrison *et al.*, 1991; Kitching, 1967; Kusewitt, 1985) have argued that relative size is particularly crucial because both excessively small and excessively large relative sizes of acquiree to acquirer are associated with poorer performance. Data on relative organizational size (measured as the ratio of the revenue of the acquiring firm to the revenue of the acquired firm) were collected from *Moody's Industrial Manual*. The data on relative size were calculated for the year of the acquisition.

Industry profitability

Firms operating in profitable industries are likely to be more successful than those operating in less profitable ones. Christensen and Montgomery (1981) observe that one of the reasons for the success of some acquisitions is the fact that they operate in industries characterized by high growth conditions. The data on industry profitability at the 2-digit SIC level were measured as the average ROA for a period of 3 years after the acquisition and this information was obtained from *Standard and Poor's Industry Surveys* (1989–1992) and *Fortune*.

DATA ANALYSIS AND RESULTS

The hypotheses were tested using multiple and moderated regression analysis. Table 1 provides descriptive statistics and Pearson correlations for all the variables. The data were tested for multicollinearity using the approach advocated by Belsey, Kuh, and Welsch (1980). Condition indexes were calculated to determine whether a high condition index contributed substantially to the variance of two or more variables. No significant multicollinearity was detected among the variables.

Because the control variables (especially prior performance) explained a large portion of the variance in postacquisition performance (R^2=0.28), it was necessary to partial out the effects of these variables and use only the residuals for further analyses. The dependent variable was measured as the residuals from a regression of the control variables on accounting measures of postacquisition performance. Prior research supports the use of this technique of utilizing residuals as a dependent variable to partial out the effects of other variables which may have an impact on the dependent variable (MacMillan, Hambrick, and Day, 1982). Analysis of residuals revealed that the regression results were not influenced by outliers. Also, the residuals produced were normally distributed.

Table 2 presents results from the regression analysis conducted on the full sample (i.e., N=147). Complementarity was positively related to postacquisition performance (R^2=0.16, t=5.34, $p<0.0001$), supporting Hypothesis 1. Thus, our data support the argument about the importance

Table 1. Descriptive statistics (N=147)

	Variable	Mean	S.D.	2	3	4	5	6	7
1.	Postacquisition performance	3.61	4.59	0.53***	–0.03	0.10	0.10	0.39***	–0.22*
	Prior performance								
2.	Relative size	5.13	4.66		–0.05	0.09	0.06	0.10	–0.05
3.	Industry profit	94.78	501.75			–0.06	–0.12	–0.06	0.00
4.	Acquisition type	4.95	2.58				0.06	–0.08	–0.03
5.	(2-digit SIC)	0.61	0.49					–0.02	–0.15
6.	Complementarity	0.63	0.37						–0.23**
7.	TMT turnover	0.47	0.30						

*$p<0.01$; **$p<0.005$; ***$p<0.0001$

of complementary functional backgrounds as a determinant of postacquisition performance.

Hypothesis 2 tests for the effects of complementarity in functional backgrounds on TMT turnover. The results in Table 2 reveal that complementarity is negatively and significantly related (t=–2.89, $p<0.0045$) to TMT turnover. Therefore, Hypothesis 2 is also supported by our data.

To test Hypothesis 3, which predicts that lower turnover in the TMT will result in superior postacquisition performance, regression analysis was carried out treating TMT turnover as the predictor variable and postacquisition performance residuals as the dependent variable. Results in Table 3 show strong support for this hypothesis ($t=-2.83$, $p<0.005$).

To test Hypothesis 4, which predicts that TMT turnover mediates the relationship between complementarity and postacquisition performance, hierarchical regression analysis was performed. Hill and Snell (1988) support the use of this technique to determine the impact of mediation effects on the dependent variable. The equations are reported in Table 3. The first is a regression between complementarity and performance (H1), i.e., Model 1; the second is a regression between TMT turnover and performance, i.e., Model 2; the third is a hierarchical regression in which

Table 2. Multiple regression analyses on complementarity (N=147)

			Postacquisition performance[a,b]	
Variable	Postacquisition performance[a]	TMT turnover	Related acquisitions	Unrelated acquisitions
Intercept	–4.63	12.28	–4.03	–2.29
Complementarity	5.34***	–2.89**	4.65***	2.65*
F-value	28.47***	8.34**	21.63***	7.03*
R^2	0.16	0.05	0.20	0.11
Adjusted R^2	0.16	0.05	0.19	0.10

*$p<0.01$; **$p<0.005$; ***$p<0.0001$

[a]Residual values for postacquisition performance were used after having regressed it against the control variables: industry profitability, prior performance, and relative size.

[b]T-Test results reveal that at the 2-digit SIC level the mean performance residuals for related acquisitions are significantly higher ($p<0.05$) than for unrelated acquisitions. However, the means for complementarity were not different significantly across the two acquisition types.

T-Tests were also carried out at the 4-digit SIC level and results reveal no significant differences in the means for performance residuals or for complementarity across the two acquisition types.

At the 4-digit SIC level, complementarity had a positive impact on performance for related acquisitions ($p<0.001$) and for unrelated acquisitions ($p<0.001$).

Table 3. Mediated regression analysis examining impact of TMT turnover on complementarity and post-acquisition performance[a] relationship

Variable	Model 1	Model 2	Model 3
Intercept	–4.63	2.39	–1.96
Complementarity	5.34***		4.80***
TMT turnover		–2.83**	–1.84
F-Value	28.47***	8.01**	16.15***
R^2	0.16	0.05	0.18
Adjusted R^2	0.16	0.05	0.17

**$p<0.005$; ***$p<0.0001$. [a]Residual values for postacquisition performance were used after having regressed it against the control variables: industry profitability, prior performance, and relative size.

TMT turnover is entered first, followed by complementarity, i.e., Model 3. If TMT turnover mediates the relationship between complementarity and performance, then any significant relationship that is observed between complementarity and performance in the first equation would drop to insignificance in the third equation. Results do not reveal the mediation effects of TMT turnover on the dependent variable. Therefore Hypothesis 4 was not supported by our data.

To test Hypothesis 5, *t*-tests were done to compare performance differences across acquisition types. There were 90 related firms and 57 unrelated firms in the sample. The results show that related acquisitions are associated with higher postacquisition performance compared to unrelated acquisitions ($p<0.05$). However, the means were not significant for complementarity term. Therefore, the fifth hypothesis was not supported.

Analyses were also conducted by categorizing acquisition type at the 4-digit SIC level. It is possible that there could be considerable differences in the business of a 4-digit and 2-digit SIC. Acquisition type was categorized at the 4-digit SIC level for the parts of the acquiring firm into which the new subsidiary is merged. Data required for this categorization were obtained from the *Directory of Corporate Affiliations* and Trinet Inc., Database. There were 56 related acquisitions and 91 unrelated acquisitions in this sample. Our results revealed that at the 4-digit SIC level there were no significant differences in means across related and unrelated acquisitions.

CONCLUSIONS

The purpose of this study was to examine the impact of differences in the functional backgrounds of the top management team members for the acquired and acquiring firms on various organizational outcomes. Based on a sample of 147 acquisitions consummated during the 1986–88 period, this study reinforces some previous studies and provides some new insights into the postacquisition integration process. First, we found that differences in functional backgrounds (what we call ‘complementary’ backgrounds) appear to have a positive impact on the postacquisition performance. This finding provides empirical support to Barney’s (1988) argument that complementarity between the top management team members has the potential to create unique value. It appears that in the aftermath of an acquisition a new synergy is created by combining top management team members that come from different functional backgrounds and experiences. This new synergy, what some call ‘organizational fit’ (Jemison and Sitkin, 1986), translates into financial benefits throughout the organization within a relatively short time frame.

Second, we found that complementarity was negatively related to TMT turnover. This suggests that differences in functional backgrounds are more easily integrated into the new organization while similarities in functional backgrounds led to redundancy and conflict. These findings support conceptual arguments advanced by Porter (1987) and Ravenscraft and Scherer (1987).

Although there are notable methodological differences between this study and Hambrick and Cannella’s (1993) study, each study arrived at the same conclusion, namely that TMT turnover is negatively related to postacquisition performance. This third finding suggests that stability in the strategic apex of the organization is very useful to the postacquisition integration process. It is possible that this stability is not only helpful within the executive wing, but also reassuring to subordinates within the acquired organization that their concerns will be represented (Trautwein, 1990; Hambrick and Cannella, 1993).

Fourth, despite the negative relationships between TMT complementarity and TMT turnover as well as between turnover and postacquisition performance, TMT turnover did not mediate the relationship between complementarity and postacquisition performance as some researchers have suggested (Pitts, 1976; Walsh, 1988; Haspeslagh and Jemison, 1991). This implies that complementarity has a direct impact on postacquisition performance and that turnover has a separate and unrelated impact on performance. Consequently, the impact of complementarity is more complex than previous research has suggested.

Finally, we found a positive relationship between complementarity and postacquisition performance in both related and unrelated acquisitions. This suggests that the impact of complementarity is profound and pervasive, regardless of the type of acquisition (Barney, 1986; Haspeslagh and Jemison, 1991).

Taken together, these findings begin to paint a picture. One possible interpretation of this picture is that the acquisition process is most successful when organizational learning occurs (Huber, 1991; Pennings, Barkema and Douma, 1994). Furthermore, it appears that a crucial aspect of organizational learning is the blending of top management teams, rather than emasculation of one or both teams. In this fashion, the skill set of the top management team may be expanded, decisions can be based more on an established manager's experience than a newcomers' speculation, and the newly formed organization may trust the leadership more readily.

However, this 'grafted' learning (Huber, 1991) can be offset by turnover in the top management team. Thus, the 'pruning' that occurs within the top management team, if it is excessive, seems to detract from any performance gains that may be obtained by combining the two organizations (Pennings *et al.*, 1994). In sum, it appears that organizational learning, and hence synergy, appears to be most enhanced by acquiring firms that are run by complementary top management teams and then by limiting the turnover within the two teams after the acquisition.

One of the major contributions of this research was to explore the notion of complementarity in acquisitions. While some of the earlier researchers have viewed complementarity in terms of similarities in managerial backgrounds (Chatterjee *et al.*, 1992; Datta, 1991), it has been argued here that complementarity must be more productively viewed in terms of differences. Differences appear to have the potential to create unique value and give the organization a competitive advantage. This unique value, or synergy, is the elusive essence of corporate strategy (Haspeslagh and Jemison, 1991). It appears that the postacquisition integration process is a crucial determinant of acquisition success, as Jemison and Sitkin (1986) suggest.

A second theoretical contribution is the interesting but somewhat surprising finding that top management team turnover in the acquired firm is negatively related to postacquisition success, but it does not mediate the complementarity–performance relationship. This suggests that complementarity exists, or fails to exist, on more than functional backgrounds. For example, differences in attitudes towards risk or tolerance for ambiguity may exist between the two top management teams that are separate and distinct from differences in functional backgrounds. Future research is needed that explores these psychological differences to more comprehensively understand the complementarity construct.

A third major theoretical contribution of this paper is the finding that functional complementarity matters, regardless of the type of acquisition or how the acquisition is categorized. While previous researchers have argued that complementarity is only important for related acquisitions (Rumelt, 1974; Singh and Montgomery, 1987; Chatterjee, 1989), our data show that it is a critical determinant of performance in unrelated acquisitions as well. Therefore, the power and pervasiveness of this variable need to be considered for all types of acquisitions by practitioners and researchers alike.

As Markides and Williamson (1994) argue, the traditional way of measuring relatedness does not incorporate the similarity and strategic importance of the underlying assets. Acquisition has to be a learning process and can result in long-run competitive advantage if the firm can expand its stock of strategic assets and create new ones. Markides and Williamson (1994) further argue that Canon's success in two different businesses, namely cameras and photocopiers, led to successes in other business segments, such as laser printers, which in the traditional sense can be classified as unrelated. It is relatedness in the process that can open up opportunities for diversification into other areas. When the acquisition is categorized at the 4-digit SIC level, or even at the 2-digit level, it is merely a categorization of the product–market. It may not incorporate the relatedness of the assets or processes. The results of our study therefore underscore the fact that complementarity can lead to a positive outcome even in acquisitions that involve entry into new product–markets. This is because, they may still be related from a strategic or process point of view.

The above arguments suggest that the issue is not about acquisition type (related or unrelated), but could be in the nature of the integration required between the acquiring and acquired firms. Different acquisitions require different integration approaches and thus may differ in terms of value creation. It is the implementation approach that ultimately contributes to value. Haspeslagh and Jemison (1991) constructed a typology that distinguishes the different types of integration approaches. The four integration approaches in their typology are preservation, absorption, symbiotic and holding acquisitions. These approaches differ on two dimensions: the need for strategic interdependence and the need for organizational autonomy after the acquisition. Investigating how complementarity and turnover will be affected by these four approaches will shed more light on the acquisition process. It is possible that when the purpose of the acquisition is to share and consolidate resources, the absorption and symbiotic approach may be adopted. Here, more turnover may occur to avoid redundancies. On the other hand, when the purpose of the acquisition is to learn from the other firm, the preservation approach may be adopted. Here, there may not be much turnover because the two teams may have been complementary in the first place. Exploring these issues will be the next logical step in learning more about this topic.

The second issue that needs to be investigated in future research concerns the notion of turnover in the acquiring firm TMT. We did not study turnover among the acquiring firm managers because prior research has suggested that we focus on turnover in the acquired firm. Researchers have argued that one of the ways the acquiring firm seeks synergy is through economies of scale. This involves the acquiring firm managers assuming the responsibilities of the acquired firm TMT (Porter, 1987; Buono and Bowditch, 1989). Nevertheless, it is possible that in an effort to reduce duplication of activities and maximize capabilities in functional areas, some turnover may also occur among the acquiring firm managers. The next study should explore this issue to enhance our understanding of the acquisition phenomenon.

Finally, we recognize that psychological attributes such as cognitive style, personal style, and political sensitivity can affect top management behavior and effectiveness. These variables, however, were beyond the scope of this study. Nevertheless, there is definitely a need to investigate the role of these variables in future studies.

This paper refines and expands our understanding of the postacquisition integration process. In this regard, this is a good first step. Future research is needed to test our results with other acquisition situations and also to expand our thinking and knowledge of the notion of complementarity. We have offered the organizational learning perspective as a potential theoretical framework for describing and explaining the post-acquisition integration process. Armed with this theoretical framework and possibly other frameworks, we expect that our understanding of the upper echelon of the organization and the acquisition and integration process in particular will continue to expand.

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