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REDUCING CAUSAL AMBIGUITY IN ACQUISITION INTEGRATION: INTERMEDIATE GOALS AS MEDIATORS OF INTEGRATION DECISIONS AND ACQUISITION PERFORMANCE

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Integration is a difficult process, but one that is vital to acquisition performance. One reason acquirers encounter difficulties is that the integration process exhibits high levels of intrafirm linkage ambiguity—a lack of clarity in the causal link between integration decisions and their performance outcomes. We introduce the construct of intermediate goals as a mechanism that reduces intrafirm linkage ambiguity. Our structural model results, based on a sample of 129 horizontal acquisitions, indicate that the achievement of two intermediate goals (internal reorganization and market expansion) fully mediates the relationships between four integration decisions and acquisition performance.

The assumption of most research is that the goal of an acquisition is higher financial performance (e.g., Barney, 1988; Datta, 1991; Lubatkin, 1987; Zollo & Singh, 2004), but meta-analyses have shown that on average acquisitions fail to create value for acquiring firm shareholders (Datta, Pinches, & Narayanan, 1992; King, Dalton, Daily, & Covin, 2004). Some researchers have explored how characteristics of the target selection and negotiation processes can lead to overpayment for a target by an acquirer, dooming the transaction from the very start (e.g., Hayward & Hambrick, 1997; Morck, Shleifer, & Vishny, 1990; Sirower, 1997). Other researchers, especially those in the strategy field, have focused on how issues that arise during the integration of acquisitions contribute to poor acquisition performance. *Integration* refers to the managerial actions taken to combine two previously sep-

arate firms (Haspeslagh & Jemison, 1991; Pablo, 1994) and has been found to be a key determinant of acquisition performance (Larsson & Lubatkin, 2001). The integration literature has been criticized for inadequate theoretical frameworks linking explanatory variables to acquisition performance (Datta & Grant, 1990; Hitt, Harrison, Ireland, & Best, 1998; Hoskisson, Hitt, Johnson, & Moesel, 1993), raising concerns that extant models of acquisition performance might be underspecified. King et al.'s (2004) meta-analysis of acquisition performance studies supported this view with their finding that unidentified mediators were driving variance in acquisition performance. In this article, we build on insights from the resource-based view (Barney, 1986, 1991; Peteraf, 1993; Wernerfelt, 1984) to focus on a previously unexplored area: the causal ambiguity between integration decisions and performance outcomes in acquisitions, and mechanisms that may reduce this causal ambiguity. Causal ambiguity refers to a lack of understanding about the link between resources or decisions and performance outcomes (Lippman & Rumelt, 1982); such a lack of understanding, we argue, makes integration difficult.

Much of the empirical literature on the resource-based view explores the relationships among a firm's stock of resources, the characteristics of those resources, and resulting firm performance

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(e.g., Farjoun, 1998; Hitt, Bierman, Shimizu, & Kochhar, 2001; Huselid, Jackson, & Schuler, 1997; Zollo & Singh, 2004). The authors of these studies have generally assumed that the possession of resources with certain characteristics is sufficient for the creation of sustainable competitive advantage (Sirmon, Hitt, & Ireland, 2007). However, for generating competitive advantage, a firm's exploitation of existing resources during strategy implementation is arguably as important as changing the stock of resources it owns (Barney & Arian, 2001; Sirmon et al., 2007). Although an acquisition represents one case in which a firm significantly alters its stock of resources, the challenge of integration is to implement the strategy behind the acquisition by reconfiguring, realigning, and rationalizing not only the target's resources, but also the interactions between the acquirer's and target's resources (Capron, 1999; Karim, 2006; Karim & Mitchell, 2000).

The construct of intrafirm causal ambiguity from the resource-based view emerges as a key issue in strategy implementation. Intrafirm linkage ambiguity, one type of casual ambiguity, is a lack of understanding of the causal link or path between an action and its performance outcome within a focal firm (King & Zeithaml, 2001). It can hinder successful strategy implementation because intrafirm linkage ambiguity limits managers' ability to accurately predict the outcome of specific implementation decisions, leading to suboptimal decisions and ultimately harming performance (King & Zeithaml, 2001).

Despite the construct's importance, research on reducing intrafirm linkage ambiguity is limited, possibly because it is, by definition, difficult to observe. Coff (1997) recommended that researchers identify organizational settings in which causal ambiguity is more likely to occur. We suggest that acquisition integration is one such setting and that the identification of intermediate goals is one mechanism that can reduce intrafirm linkage ambiguity. Intermediate goals are organizational milestones that must be attained on the path to higher acquisition performance. Integration decisions affect the achievement of intermediate goals more directly and immediately than they affect acquisition performance, so integration decisions are sequentially closer to intermediate goals than some measure of acquisition performance. Identifying intermediate goals helps reduce intrafirm linkage ambiguity because the complex causal chain is broken down into manageable segments. Managing with a view to the achievement of intermediate goals rather than (or in addition to) ultimate acquisition performance is likely to contribute to a more refined understanding of the relationship be-

tween decisions and outcomes. We develop and test a structural model in which intermediate goal achievement serves as a mediating variable linking integration decisions and acquisition performance.

Our study differs from other studies on causal ambiguity in two respects. First, most prior empirical studies have focused on characteristic ambiguity—that is, on ambiguity that is inherent to resources themselves and depends on resource attributes such as tacitness, complexity, and specificity (Reed & DeFillipi, 1990); instead, our study focuses on linkage ambiguity, or ambiguity about the causal link between an action and its outcomes (King & Zeithaml, 2001). Second, in the existing literature estimation of the effects of causal ambiguity on performance or other outcomes is prevalent; instead, our intent was to find a mechanism that reduces intrafirm linkage ambiguity. Rather than quantifying the extent of intrafirm linkage ambiguity present during integration, we examined whether intermediate goals reduced intrafirm linkage ambiguity. If intermediate goal achievement mediated the effects of integration decisions on acquisition performance, we could conclude that intrafirm linkage ambiguity was reduced, because this mediation would indicate the generative mechanism through which integration decisions impact acquisition performance. Understanding of cause and effect would thereby be enhanced.

Our model is limited to horizontal acquisitions, or transactions in which target and acquirer operate in the same industry. Horizontal acquisitions are efforts to seek economies of scale from greater efficiency, economies of scope from leveraging shared resources, and/or revenue increases from market expansion (Bower, 2001). We focused on horizontal acquisitions because they often have two related intermediate goals: internal reorganization and market expansion.

Our study makes several contributions to the resource-based view and acquisition literatures. First, we extend recent conceptual resource-based work on how causal ambiguity is related to firm performance by identifying a mechanism that reduces intrafirm linkage ambiguity. Second, we apply the resource-based view to issues that arise during strategy implementation, an area that has received scant attention in the empirical literature representing this theory. Third, we provide an important clarification of the generative mechanisms through which integration decisions impact acquisition performance by exploring the mediating role of intermediate goal achievement in acquisition integration.

THEORY DEVELOPMENT

The concept of causal ambiguity was first articulated by Lippman and Rumelt as “ambiguity as to what factors are responsible for superior (or inferior) performance” (1982: 420) or “ambiguity surrounding the linkage between action and performance” (1982: 421). Thus, causal ambiguity describes uncertainty among employees, managers, and competitors regarding the factors that contribute to firm performance (Barney, 1991; Coff, 1997; Peteraf, 1993). Although early work on this concept focused on interfirm causal ambiguity as a barrier to imitation by competitors that helps to protect a firm’s source of competitive advantage (Barney, 1991; Dierickx & Cool, 1989; Lippman & Rumelt, 1982; Peteraf, 1993; Reed & DeFillippi, 1990), the concept of causal ambiguity has recently been extended to the intrafirm transfer or leveraging of “best practices” (King & Zeithaml, 2001). Intrafirm causal ambiguity exists when managers do not understand how their resources or decisions affect their own firm’s performance (King, 2007; King & Zeithaml, 2001). Interfirm and intrafirm causal ambiguity can be further segmented into characteristic and linkage ambiguity (King & Zeithaml, 2001).

High levels of intrafirm ambiguity create several problems. Intrafirm ambiguity makes it difficult for managers to assess the implications of their decisions and make adjustments (McEvily, Das, & McCabe, 2000; Reed & DeFillippi, 1990; Winter & Szulanski, 2001); impedes the creation of knowledge (McEvily et al., 2000) and the transfer of best practices within a firm (Szulanski, 1996); prevents the firm from learning (Huber, 1991; March & Olsen, 1975); limits the firm’s effective response to environmental change (Collis, 1994; King, 2007); and creates opportunities for “moral hazard” by individual managers, who are able to claim responsibility for successes and avoid responsibility for failures (Coff, 1997). Overall, high levels of intrafirm ambiguity contribute to poor decision quality, especially in dynamic environments (King, 2007).

Empirical work on intrafirm ambiguity has primarily addressed the question of how it affects organizational outcomes such as knowledge transfer or performance. Several studies have examined the effects of intrafirm characteristic ambiguity on the internal transfer of knowledge. They have shown that knowledge transfer is facilitated by the ease of codifying and communicating a capability (Zander & Kogut, 1995), the absence of knowledge tacitness (Simonin, 1999; Szulanski, 1996), and the absence of knowledge complexity (Simonin, 1999). To the best of our knowledge, the only study that

has explicitly examined the effect of intrafirm linkage ambiguity on firm performance is a work by King and Zeithaml (2001). They found that high levels of intrafirm linkage ambiguity have negative effects on firm performance and that high levels of intrafirm characteristic ambiguity generally have positive effects on firm performance. They concluded that although high intrafirm characteristic ambiguity is desirable to prevent duplication by competitors, high levels of intrafirm linkage ambiguity hinder managers’ ability to recognize, appropriate, and transfer resources to improve firm performance.

The Presence of Intrafirm Linkage Ambiguity during Integration

Integration is an organizational transformation (Anand & Singh, 1997) characterized by high levels of intrafirm linkage ambiguity.¹ This ambiguity stems from the complexity and interdependence of integration decisions and from the time delay between these decisions and their visible effects on performance. First, numerous organizational units are in a state of flux during integration, each attempting to resolve uncertainty and create a sense of order. At the same time, each unit is also interacting with other subunits experiencing similar change and uncertainty. The resulting confusion and lack of clarity hinder a newly combined firm’s ability to isolate the performance effects of specific integration decisions. Indeed, Zollo and Singh argued that the large number of interdependent and simultaneous decisions required make it “hard for acquirers to assess the performance outcomes of the integration process” (2004: 1240). This view is consistent with that held by researchers in strategic decision making and strategy implementation, who have long recognized that a strategic decision (e.g., to make an acquisition) creates “waves” of interrelated subdecisions (Mintzberg, Raisinghani, & Théorêt, 1976) (e.g., about how deeply to integrate target into acquirer), all of which must be performed effectively for the strategic decision to be successful (Dean & Sharfman, 1996).

Second, there is high temporal distance (King,

¹ Acquisitions represent one setting in which interfirm and intrafirm causal ambiguity coexist (King, 2007). Interfirm causal ambiguity is present during the due diligence and negotiation phase of acquisition, during which time the acquirer seeks to reduce ambiguity by gaining access to detailed information so that the target may be valued appropriately (Pablo, 1994). This *interfirm* causal ambiguity shifts to *intrafirm* causal ambiguity once the acquisition is completed and integration begins.

2007) between integration decisions and performance outcomes. Several researchers have suggested three years as a sufficient amount of time for changes to be observed in acquisition performance (Ingham, Kran, & Lovestam, 1992; Lubatkin, Schulze, Mainkar, & Cotterill, 2001). Shorter time frames, even two years, may not provide enough time to capture how acquisitions contribute to an acquiring firm's performance (Saxton & Dollinger, 2004). Since managers' understanding of causal relationships deteriorates over time (Walsh & Ungson, 1991), this temporal distance makes it difficult to assess the performance implications of their decisions (King, 2007).

Thus, acquisition integration represents one setting in which intrafirm linkage ambiguity is high. This intrafirm linkage ambiguity creates problems during the integration process (Jemison & Sitkin, 1986). Because integration plays a key role in an acquirer's ability to capture value from an acquisition (Capron & Pistre, 2002; Larsson & Lubatkin, 2001), it is fruitful to consider ways in which firms may reduce this ambiguity.

Reducing Intrafirm Linkage Ambiguity during Integration: The Role of Intermediate Goals

Some authors have argued that causal ambiguity is inherently irreducible and that even a firm possessing an advantage must be uncertain about its source to prevent diffusion to competitors (Lippman & Rumelt, 1982). However, this point of view is contrary to the observation that organizations differ in the extent to which they reduce causal ambiguity by codifying information (Kogut & Zander, 1992; Winter, 1987). Zollo and Winter (2002) suggested that firms can reduce causal ambiguity through explicit articulation and codification mechanisms. Mosakowski (1997) argued that reducibility of causal ambiguity is a function, in part, of a firm's ability to know the causal structure of action and outcome.

We suggest that attention to the chain of events through which integration decisions affect acquisition performance can help reduce intrafirm linkage ambiguity associated with the complexity and temporal distance of the integration process. A better understanding of the sequence of events that links each integration decision to changes in acquisition performance reduces intrafirm linkage ambiguity because managers are better able to associate an action with its related outcome (King, 2007). The identification of mediating variables, such as achieved intermediate goals, that are outcomes of decisions and antecedents to ultimate performance outcomes should thus re-

duce intrafirm linkage ambiguity. Because integration decisions are sequentially closer to mediating variables than they are to the performance outcomes, the complexity and temporal distance associated with integration decisions and acquisition performance are reduced.

Therefore, acquirers can reduce the negative effects associated with high intrafirm linkage ambiguity by taking an incremental (Quinn, 1980) or "baby step" (Mosakowski, 1997) approach to strategy implementation. Parceling the complex causal chain into more manageable chunks refines firms' causal understanding, improves the quality of decision making, and enhances performance (Brown & Eisenhardt, 1997; Eisenhardt, 1989; Skivington & Daft, 1991). An incremental approach that employs intermediate goals is consistent with Grant's (2003) idea of "planned emergence" that includes both hierarchical structure (to impose order and structure) and operational flexibility (permitting managers to respond to changing circumstances). By holding managers accountable for achieving intermediate goals, top management focuses business unit managers' attention on these key issues (Langley, 1989), thus aligning the operating decisions of these managers with their firm's strategic objectives. In addition, the use of intermediate goals as incremental steps enables the firm to evaluate these managers without the noise of other initiatives and actions that impact financial performance but are outside the control of a business unit (Levinthal & March, 1993). Grant (2003) found that intermediate goals are effective in guiding organizations in the desired strategic direction. Moreover, Dean and Sharfman (1996) argued that orienting strategic decisions toward organizational goals facilitates effective implementation of those decisions.

An understanding of the causal chain that links integration decisions, intermediate goals, and acquisition performance reduces intrafirm linkage ambiguity. Gaining such understanding alone, however, is not sufficient to achieve higher acquisition performance. If reduction in intrafirm linkage ambiguity is to result in improved acquisition performance, firms must not only understand the role of intermediate goals but must also achieve them. The achievement of the intermediate goals makes the reduction in intrafirm linkage ambiguity valuable by facilitating higher acquisition performance. Thus, both an understanding of the causal structure and achievement of the intermediate goals are necessary for a valuable reduction in intrafirm linkage ambiguity to occur.

Overview of the Model

Figure 1 presents an overview of our model. Our model suggests that different integration decisions contribute to the achievement of different intermediate goals, which in turn contribute to acquisition performance. By identifying variables that serve as intermediate goals in the acquisition integration process and by empirically examining how achievement of these intermediate goals links integration decisions to acquisition performance, our model contributes to an understanding of the complex causal chain leading to acquisition performance and thus to a reduction in intrafirm linkage ambiguity in the acquisition integration process. With Hypotheses 1 through 4, we posit relationships between integration decisions and intermediate goal achievement, and with Hypotheses 5 and 6, we posit a causal path between intermediate goal achievement and acquisition performance.

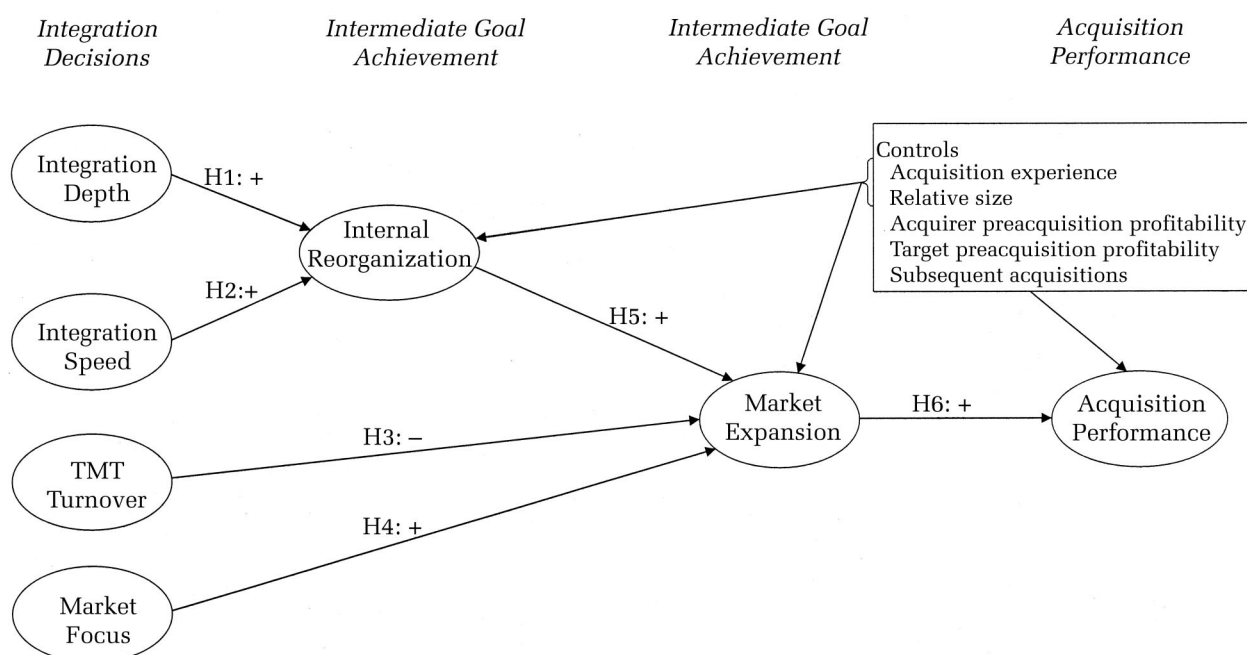
Our study includes two intermediate goals that are commonly employed in horizontal acquisitions. First, the goal of internally reorganizing combined firms' operations is realized by consolidating operations (e.g., asset rationalization and elimination of redundancies) and encouraging coordinated exchange of knowledge and information (Haspeslagh & Jemison, 1991). Second, the goal of market expansion is realized by leveraging coordinated market activities to increase the acquirer's market share, products offered, geographic markets

served, customer markets served and/or effective selling of one firm's products to the other's customers (Puranam, Singh, & Zollo, 2006; Vermeulen & Barkema, 2001). Achievement of these intermediate goals should lead to the economies of scale and scope and increased revenues that are necessary for higher acquisition performance.

Our two intermediate goals can be illustrated by Procter & Gamble's (P&G's) 2005 acquisition of Gillette Company. P&G expected cost savings from combining operations in purchasing, manufacturing, logistics, marketing, and administrative overlap and looked for enhanced revenues from distributing Gillette brands into channels and markets where P&G had a presence but Gillette did not, as well as from leveraging Gillette's channels where P&G brands were not fully developed (Procter & Gamble, 2005). To realize these expected cost savings and revenue increases and in turn generate higher acquisition performance, P&G needed to achieve the intermediate goals of internal reorganization and market expansion.

Not all horizontal acquisitions have identical intermediate goals. Other goals (such as the acquisition of specific knowledge or technologies, diversification of financial risk, or acquiring a target before a competitor does) may be sought, but research has suggested that internal reorganization and market expansion are the most commonly pursued goals in horizontal acquisitions (Bower,

FIGURE 1
Theoretical Model of Integration Decisions, Weighted Intermediate Goal Achievement, and Acquisition Performance



2001). Acquirers may also differ with respect to the relative importance of these two intermediate goals. Some horizontal acquisitions may be pursued primarily for consolidation purposes; the economic logic of others is more heavily dependent on market expansion. Clearly, the achievement of an unimportant goal should not have the same effects on acquisition performance as the achievement of an important goal. Therefore, in our model we consider the importance of each intermediate goal to an acquirer by weighting intermediate goal achievement by goal importance.

The selection of integration decisions included in our model is consistent with a resource-based view of integration as a process of transferring, deleting, and retaining resources (Capron, Mitchell, & Swaminathan, 2001; Karim & Mitchell, 2000). Each of the four decisions in our model affects different aspects of a firm's resources. Our first integration decision, *integration depth*, is related to internal resource reconfiguration. Integration depth is a basic strategic choice regarding the degree of structural and resource reconfiguration of an acquiring and acquired firm (Datta & Grant, 1990; Haspeslagh & Jemison, 1991; Puranam et al., 2006). Our second integration decision, *integration speed*, concerns the length of time the resources of the two organizations are disrupted during integration (Schweiger, Ivancevich, & Power, 1987). Our third integration decision, *top management team (TMT) turnover*, is an oft-cited acquisition integration issue (e.g., Walsh, 1988) because managers represent potentially valuable resources in the combined firm that may be lost during integration (Bergh, 2001; Cannella & Hambrick, 1993). Our fourth integration decision, *market focus*, addresses the fact that the focus on internal resource reconfiguration during the acquisition integration process may compromise the amount of attention and resources the acquirer devotes to its external environment. These four integration decisions have been examined in existing studies of acquisition performance but have been related directly to acquisition performance rather than to intermediate goal achievement. Although we base our hypothesis development on this acquisition literature, we suggest in Hypotheses 1 through 4 that the integration decisions are sequentially closer to intermediate goal achievement than to acquisition performance.

HYPOTHESIS DEVELOPMENT

Having discussed the theoretical arguments for the mediating role of intermediate goal achievement, we turn to developing hypotheses about the associations between integration decisions

and intermediate goal achievement, and between intermediate goal achievement and acquisition performance.

Integration Decisions Related to Internal Reorganization Goal Achievement

The following discussion develops hypotheses relating two integration decisions—integration depth and integration speed—to internal reorganization goal achievement.

Integration depth. Depth of integration reflects the degree of change in structural relationships between a target and an acquirer (Datta & Grant, 1990; Karim, 2006). Integration depth ranges from minimal to complete (Pablo, 1994), and its primary objective is to improve the efficiency and effectiveness of the combined resources of the target and acquirer (Datta, 1991). Minimal integration depth might involve combining such functions as accounting systems while leaving the target largely intact (Haspeslagh & Jemison, 1991). A higher level of integration depth is achieved when certain functional areas, such as production and/or marketing departments, are combined to extract economies of scale or scope from the acquisition. The greatest depth of integration occurs when all structural and cultural boundaries between target and acquirer are dissolved (Haspeslagh & Jemison, 1991).

Although recent research has shown a direct relationship between integration depth and acquisition performance (Larsson & Finkelstein, 1999; Zollo & Singh, 2004), the arguments supporting such findings apply more closely to internal reorganization goal achievement. For instance, Zollo and Singh (2004) noted that deeply integrating a target requires a large number of interdependent actions that make it difficult to determine a direct link between a decision concerning integration depth and performance outcomes. Researchers have argued that depth of integration unlocks the advantages of combining operations through the realization of economies of scale, coordination, and knowledge transfer (Datta & Grant, 1990; Puranam et al., 2006), suggesting that integrating firm structures and processes is more closely linked to the achievement of internal reorganization goals. Thus, integration depth can be expected to be sequentially closer to the achievement of the intermediate goal of internal reorganization than to acquisition performance. Therefore:

Hypothesis 1. The greater the integration depth, the greater the internal reorganization goal achievement.

Integration speed. Speed has often been identified as an important consideration in acquisition research (e.g., Haspeslagh & Jemison, 1991). Some researchers have argued that a fast integration is advantageous because it minimizes disruption to employees (e.g., Cannella & Hambrick, 1993), reduces the time during which competitors may profit from an acquirer being distracted by integration issues (Homburg & Bucerius, 2005), and improves acquisition performance by accelerating value creation (Larsson, Brousseau, Driver, & Sweet, 2004; Sirower, 1997).² Homburg and Bucerius (2005, 2006) found a positive and significant relationship between speed of integration and performance in the first of their two empirical studies of this relationship and found a contingent relationship in the second study. When an acquirer and a target share similar internal characteristics (as is often the case in horizontal acquisitions), a stronger, positive relationship between speed and performance was found than when these internal qualities were more dissimilar (Homburg & Bucerius, 2006).

We argue that integration speed affects acquisition performance because it facilitates internal reorganization goal achievement. Achieving the goal of internal reorganization requires (among other things) that an acquirer create a new organization that encourages the coordinated exchange of knowledge and information. Uncertainty among employees about the ways activities will be changed and the extent of required adaptation and adjustment (Karim, 2006) leads to well-documented employee resistance (Buono & Bowditch, 1989; Larsson & Finkelstein, 1999). Employee resistance involves behaviors such as distrust, hostility, and self-preservation, and an “us versus them” antagonism, which all inhibit the acquirer’s ability to gain the cooperation and knowledge exchange required for internal reorganization goal achievement. The impact of these behaviors on the achievement of internal reorganization goals can be minimized by shortening the length of the change process (Buono & Bowditch, 1989; Kim & Mauborgne, 1998). Thus, integration speed can be expected to be sequentially closer to internal reorganization goal achievement than to acquisition performance. Therefore:

Hypothesis 2. The faster the integration, the greater the internal reorganization goal achievement.

Integration Decisions Related to Market Expansion Goal Achievement

The following discussion develops hypotheses that relate TMT turnover and market focus to achieving market expansion goals.

TMT turnover. Top management team turnover is common following an acquisition (Walsh, 1988). Although research on corporate control has focused on replacing ineffective target firm management (Walsh & Ellwood, 1991), recent research predominately frames TMT turnover as harming acquisition performance (e.g., Bower, 2001; Krishnan, Miller, & Judge, 1997; Zollo & Singh, 2004). TMT turnover has detrimental effects because valuable human and social resources are lost (Zollo & Singh, 2004), and lower acquisition performance has been observed with high turnover of either target or acquiring firm managers (Cannella & Hambrick, 1993; Krishnan et al., 1997; Zollo & Singh, 2004). This is particularly true for turnover that occurs after an initial postacquisition TMT is in place, since ineffective managers will most likely have been replaced prior to a combined firm’s establishing its initial postacquisition management team.

Market expansion goals extend an acquirer’s market reach into related markets and product lines. Because knowledge is market- and product-specific (Patel & Pavitt, 1997), with executives developing expertise for particular product-markets (Harris & Helfat, 1997), successfully moving into new geographic or product segments depends on a combined firm’s retention of executives from the target and acquiring firms to understand how to integrate and leverage the combined firm’s resources into new market opportunities. Thus, achieving market expansion goals likely requires retaining TMT tacit knowledge. TMT turnover can be expected to be sequentially closer to market expansion goal achievement than to acquisition performance. Therefore:

Hypothesis 3. The lower the turnover in an initial postacquisition TMT, the greater the market expansion goal achievement.

Market focus. Customers are particularly salient stakeholders for a firm’s performance (Schuler & Cording, 2006) and represent valuable resources for the firm. Nonetheless, many acquirers are internally focused during integration and neglect market-related issues (Hitt, Hoskisson, & Ireland, 1990). There is some evidence in the marketing

² According to an alternate perspective, integrating a target firm too fast may destroy valuable tacit and embedded resources and capabilities that were sought from an acquisition (Graebner, 2004; Ranft & Lord, 2002).

literature that neglecting the external market negatively impacts acquisition performance. For example, Morrall (1996) found that retaining customers is more important to acquisition performance than reducing costs. Urban and Pratt (2000) observed that customer service quality often declines during integration. Homburg and Bucerius (2005) concluded that a strong emphasis on creating value for customers during integration facilitates the building of trust between them and a newly combined firm, reducing customer uncertainty, dissatisfaction, and defection.

We define market focus as the extent to which management remains attentive to customer needs during integration (Homburg & Bucerius, 2005). It seems intuitive that acquirers that remain committed to serving their customers, seek to improve customer value, and monitor market-related issues during integration should be more successful in growing their market shares and expanding into new customer or geographic market segments. Moreover, the benefits reaped from this market focus are visible more quickly and directly in market expansion intermediate goal metrics (such as the level of cross-selling by a combined firm's sales force, expansion into new market segments, and increases in market share) than in more distant measures of firm performance. Thus, market focus can be expected to be sequentially closer to the achievement of the intermediate goal of market expansion than to acquisition performance. Therefore:

Hypothesis 4. The greater the market focus during integration, the greater the market expansion goal achievement.

Relating Internal Reorganization Goal Achievement to Market Expansion Goal Achievement

Market expansion goal achievement requires a newly combined firm to coordinate the resources of both prior firms to leverage the interdependent resources and marketing activities necessary to meet customer needs. We argue that internal reorganization goal achievement facilitates the acquirer's ability to achieve its market expansion goals because internal reorganization goal achievement lays the structural foundation needed for exploiting market expansion opportunities (Barney, 1997; Gulati & Singh, 1998; Thompson, 1967).

Exploitation of market expansion opportunities requires astute management of the interdependencies between target and acquirer. This is a difficult managerial task that has long been studied by or-

ganizational scholars (Galbraith, 1977; Lawrence & Lorsch, 1967; Thompson, 1967). The management challenge increases as the complexity of the interdependencies increases (Gulati & Singh, 1998). Thompson (1967) articulated three categories of interdependencies, the most challenging of which is reciprocal interdependencies.³ These exist when two or more organizational units share resources and the action of one unit impacts the ability of another to achieve its goals (Thompson, 1967). Reciprocal interdependencies frequently underlie an acquisition's market expansion economic logic because market expansion requires the acquirer to capture the value embedded in the value chains of the two firms by managing the successful sharing of resources (Haspeslagh & Jemison, 1991). Returning to our example of P&G's acquisition of Gillette, successful market expansion involved the management of a significant number of interdependencies as P&G attempted to distribute Gillette brands into channels and markets in which P&G had a presence but Gillette did not, as well as leveraging Gillette's channels where P&G brands were not fully developed.

To capture the gains from reciprocal interdependencies, a firm incurs coordination costs to mitigate the uncertainty of complex and interdependent tasks (Gulati & Singh, 1998; Thompson, 1967). Structural controls such as authority systems, incentive systems, standard operating policies, and management information systems are the primary mechanisms used to encourage superior task coordination and reduce uncertainty (Barnard, 1938; Gulati & Singh, 1998; Thompson, 1967)—the very issues acquirers are focused on during internal reorganization. Puranam et al. (2006) claimed that because internal reorganization is a formal design choice, reorganization must occur before other integration objectives can be achieved. Researchers taking the resource-based view have also recognized the relationship between a firm's structural organization and its ability to extract value from its resources. Indeed, in his "VRIO framework," Barney (1997) explicitly considered the role of organ-

³ The other two types of interdependencies are pooled and sequential. Pooled interdependencies are the simplest and arise when each organizational unit makes a discrete and independent contribution to its organization (Thompson, 1967). A conglomerate comprised of unrelated businesses will likely only have pooled interdependencies among its business units. A more complex form of interdependencies is termed sequential because these exist when the output of one organizational unit serves as the input to another (Thompson, 1967). Vertical integration is a classic example of sequential interdependencies.

ization in building sustainable competitive advantage. He argued that possession of valuable, rare, and inimitable resources is insufficient for competitive advantage; a firm must also be organized in a manner that permits exploiting their full potential (Barney, 1997). Winter's work on organizational routines (Nelson & Winter, 1982; Winter, 1995) also states that an effective organizational infrastructure (comprised of routines) is the central mechanism through which resources are coordinated and/or deployed to create value. Therefore, we expected the achievement of a firm's market expansion goals to benefit from the firm's first achieving its internal reorganization goals. Therefore:

Hypothesis 5. The greater the internal reorganization goal achievement, the greater the market expansion goal achievement.

Relating Intermediate Goal Achievement to Acquisition Performance

We next turn to the relationship between intermediate goal achievement and acquisition performance. We conceptualize acquisition performance as long-term abnormal stock returns to an acquirer because we are interested in the effects of integration decisions on performance outcomes. Long-term abnormal stock returns provide an indication of investors' revised expectations of future cash flows. The revision in expectations occurs as information is revealed about the progress of integration (Lubatkin, 1987).

Abnormal returns represent the deviation of actual stock performance from the performance expectations investors would have had in the absence of an acquisition, net of the premium paid by an acquirer. They are thus intended to isolate the performance effects of acquisitions. Abnormal returns equal 0 if an acquirer paid a premium that equals the expected gains in cash flow generated by the acquisition (in net present value terms). In this case, the premium benefits the shareholders of the target firm, and the acquiring firm's shareholders earn normal returns. Abnormal returns are positive when cash flows in excess of the acquisition premium (again, in net present value terms) are generated, and the opposite is true for negative abnormal returns (e.g., Sirower, 1997).

Under what conditions can acquirers expect to earn abnormal returns? Barney (1988) provided the theoretical logic for addressing this question. He argued that an acquirer will earn positive abnormal returns *only* when at least one of these three conditions is met: the acquirer and target have valuable synergistic cash flows that are (1) privately known

and unique to the target and acquirer, (2) inimitable, and/or (3) unexpected. We focus on the first two of these conditions. If the source of value from combining firms is publicly known and available to multiple potential acquirers, the acquisition premium will rise as multiple bidders compete to acquire the target. This premium will rise to an amount equal to or greater than the net present value of those cash flows, leaving the successful acquirer with normal, or even negative, abnormal returns (Barney, 1988).⁴

Using an acquisition solely as a way to generate cost savings from economies of scale or scope is likely in industries that are suffering from overcapacity (Anand & Singh, 1997) and in industries in which the economic logic is to derive cost efficiencies from larger scale (Zollo & Singh, 2004). When overcapacity exists or economies of scale are large, similar firms will logically implement horizontal acquisition strategies with the goal of gaining cost efficiencies through internal reorganization. In this situation, because the cash flows from the combined firms are publicly known and not unique to one acquirer, it is likely that acquisition premiums will be bid up to equal the expected gains from such acquisitions (Barney, 1988), leaving the acquirer with normal returns.

However, an acquirer can expect to earn positive abnormal returns when the value of a target is known only to the acquirer. In addition, even if other bidders are aware of the possible cash flows, the acquirer may still earn abnormal returns if those bidders cannot duplicate the cash flows because of dissimilar resource profiles. Barney (1988) argued that these conditions typically hold when inimitable resources of the acquirer are leveraged in the transaction (e.g., product or brand reputation, marketing capabilities, and organizational culture). This high standard for uniquely valuable and inimitable resource combinations is more likely to be present from market expansion opportunities than from internal reorganization benefits (Capron & Pistre, 2002). Consider once again P&G's acquisition of Gillette. P&G's unique market development capabilities enabled it to expand Gillette's brands on a global basis and to increase the brand equity for the combined firm. The ability to leverage P&G's market presence for Gillette products, and Gillette's market presence for P&G's products, also presented a fairly unique opportunity. More generally, resources that help a firm expand its market are more likely to be unique and inimitable,

⁴ Other authors have referred to this tendency as the "winner's curse" (Varaiya & Ferris, 1987).

and therefore less likely to be bid away, than resources employed to generate economies of scale.

As we argued above, internal reorganization is often required to support the exploitation of these unique opportunities. Although internal reorganization must be deftly managed to secure the benefits from an acquisition, because these benefits do not meet the tests of inimitability and/or private information, internal reorganization goal achievement can at best result in normal returns and at worse in negative abnormal returns (i.e., if the integration process is poorly executed). Internal reorganization goal achievement can then be viewed as a necessary but not sufficient condition for positive abnormal returns from an acquisition. Positive abnormal returns are expected only under conditions of inimitability and/or private information (Barney, 1988), conditions that are more likely to exist with market expansion goal achievement. Therefore:

Hypothesis 6. The greater the market expansion goal achievement, the greater the acquisition performance.

METHODS

Sample and Data Collection

Sample. We restricted our study population to horizontal acquisitions, defined as those in which target and acquirer have at least one four-digit Standard Industrial Classification code in common (Capron, 1999). To avoid cross-cultural issues, we also required that both the acquirer and the target be United States-based. We selected acquisitions that occurred between 1997 and 2001 because the construction of our performance measure required three years of postacquisition financial data, and our survey methodology required that acquisitions occurred in the recent past to ensure accurate responses. We used Securities Data Corporation's (SDC's) Platinum database to identify these acquisitions. An acquiring firm also had to have stock price data available for the 38 months before and the 36 months after the focal acquisition. Four hundred twenty-eight transactions met these criteria. Telephone conversations indicated that 51 acquirers had policies prohibiting survey responses, resulting in a final mailing sample of 377 transactions. Target assets ranged from \$100 million to \$387 billion, with a mean of \$5 billion. Acquirer assets ranged from \$106 million to \$690 billion, with a mean of \$14 billion.

Survey design and administration. We developed the survey instrument by drawing on existing literature and pretested the questionnaire with 22 experienced business executives. Survey administration followed Dillman's tailored design method

(2000). The first survey mailing, in May 2003, was followed by two further mailings. We undertook considerable effort to identify the most appropriate executive involved in each focal acquisition's integration by contacting each acquirer. Although this methodology restricted us to using only one respondent per acquisition, we identified the most knowledgeable and appropriate person to complete the questionnaire, the principal methodological solution to problems posed by using single respondents (Campbell, 1955; John & Reeves, 1982). We sent multiple surveys to a subset of the sample to provide a check on response bias. Two responses were received from 33 transactions; the interrater reliability tests are discussed in the preliminary analysis section below.

Survey response and representativeness. Responses corresponding to 137 acquisitions were returned, constituting a respectable 36 percent response rate (Hambrick, Geletkanycz, & Fredrickson, 1993). Eight responses were eliminated because data were missing; our final sample therefore contained 129 acquisitions. Table 1 presents survey respondent characteristics. To ensure that respondents were representative of the population of 428 acquisitions, we compared them to the population on two known acquisition characteristics: the value of the transaction and the acquisition year. We also compared the means of long-term stock performance, relative size, and preacquisition return on equity (ROE). We did not find any significant differences.

Measures

Measures were derived from a variety of sources: primary data came from the survey questionnaire, and secondary data were from the Center for Research on Securities Prices (CRSP), Compustat, SDC, and the Securities and Exchange Commission's EDGAR database. We used multiple indicators wherever possible to permit tests of the reliability and validity of the measures. Appendix A presents details of all measures.

Integration depth. We sought to understand the extent of change in the structural relationships between target and acquirer with this construct. We therefore measured integration depth with 11 survey items about the extent to which different areas or activities had been combined. We summarized these 11 items into four indicators. Three items were averaged to measure employee integration depth ($\alpha = .79$); two items were averaged to measure production integration depth ($\alpha = .67$); three items were averaged to measure marketing integration depth ($\alpha = .84$); and three items were averaged to measure systems integration depth ($\alpha = .86$).

Integration speed. We measured integration speed with the response to a survey question regarding the length of the integration process.

TMT turnover. We measured TMT turnover using two indicators. Our interest was in measuring TMT turnover *after* an initial postacquisition TMT was in place. Unlike the authors of prior studies (e.g., Krishnan et al., 1997; Walsh, 1988), we did not consider changes made immediately after an acquisition, permitting us to isolate the effects of TMT turnover *during* the integration. Our first indicator was a survey response, and our second indicator was derived from EDGAR. Following existing literature, we measured changes in the top five executives (Cannella & Hambrick, 1993; Krishnan et al., 1997).

Market focus. We used survey data to measure this construct and developed three questions to assess the attention paid to customer needs during acquisition integration. Our survey items were highly similar to those used by Homburg and Bucerius (2005).

Intermediate goal achievement. We used survey data to measure internal reorganization and market expansion goal achievement. Indicators for each construct were weighted measures based on each goal's perceived importance at the time of an acquisition and its level of achievement. Goal importance was measured by a survey question adapted from Capron and Pistre (2002): "At the time of the acquisition, how important were the following objectives for the transaction?" Then, four pages later in the questionnaire, respondents addressed a question regarding the level of goal achievement: "To what extent has your company achieved the following objectives for the acquisition?" The same objectives followed both survey questions. A seven-point Likert scale was used in both cases. Following prior research (e.g., Covin, Slevin, & Schultz, 1997; Parkhe, 1991), we rescaled the goal achievement measure to a -3 to +3 scale. We then calculated importance-weighted goal achievement indicators by multiplying the goal importance measure by the goal achievement measure for each objective.

Internal reorganization goal achievement comprised two indicators: consolidation of similar units, and knowledge transfer from acquirer to target. We used three indicators for market expansion goal achievement: expansion into new customer and/or geographic market segments, cross-selling, and market share growth.⁵

⁵ We found that most firms in our sample viewed both intermediate goals as important. The mean importance score for our indicators of internal reorganization ranged

TABLE 1
Sample Characteristics

<i>Industry</i>	
Aerospace and aircraft	4
Air transportation and shipping	2
Amusement and recreation services	2
Business services	10
Chemicals and allied products	3
Commercial banks, bank holding companies	34
Communications equipment	1
Computer and office equipment	2
Drugs	3
Electric, gas, and water distribution	14
Electronic and electrical equipment	3
Food and kindred products	1
Holding companies, except banks	1
Hotels and casinos	2
Insurance	5
Investment and commodity firms, dealers	8
Machinery	1
Measuring, medical, photo equipment	1
Mining	2
Miscellaneous retail trade	1
Oil and gas; petroleum refining	7
Paper and allied products	1
Prepackaged software	3
Radio and TV broadcasting stations	1
Retail trade: food stores	1
Rubber and miscellaneous plastics products	1
Sanitary services	1
Savings and loans, mutual savings banks	6
Telecommunications	2
Transportation equipment	2
Transportation and shipping (except air)	2
Wholesale trade—durable goods	1
Wholesale trade—nondurable goods	1
Total sample	129
<i>Relative size (target vs. acquirer)</i>	
<25%	62
25–49%	33
50–74%	15
75–99%	8
>100%	11
Total sample	129
<i>Year of acquisition</i>	
1997	16
1998	10
1999	25
2000	35
2001	43
Total sample	129
<i>Respondents</i>	
Chair and vice chair	8
Chief executive officer	9
President	11
Chief financial officer	15
Chief operating officer	3
Chief administrative officer	3
Chief information officer	1
Executive vice president	5
Head of corporate development/M&A	27
Treasurer/controller	7
Senior vice president and vice president	26
Other	14
Total sample	129

Acquisition performance. Because our interest was the effect of integration on acquisition performance, we measured the performance of the sample acquisitions using the acquirers' three-year postacquisition abnormal stock returns. We did not choose measures based on announcement event studies, which are appropriate for studying independent variables that are publicly known at the time of an acquisition announcement but less useful for variables revealed during integration (Cording, Christmann, & Weigelt, 2006; Montgomery & Wilson, 1986; Zollo & Singh, 2004). We chose stock performance rather than accounting-based measures because of the numerous problems associated with those measures, such as the possible manipulation of accounting returns (Chakravarthy, 1986) and possible differences in the accounting policies employed by firms. In addition, postacquisition stock performance provides an indication of market expectations of future value, but accounting returns only reflect past realized performance (Montgomery & Wilson, 1986). One drawback of stock market measures (as well as accounting measures) is that firm-level factors unrelated to an acquisition may influence the performance measure (Lubatkin, 1987). Nonetheless, researchers have commonly used postacquisition stock performance to operationalize acquisition performance (e.g., Anand & Singh, 1997; Farjoun, 1998; Hayward & Hambrick, 1997; Lubatkin, 1987).

We selected a three-year time horizon for two reasons. First, use of this length of time was consistent with existing guidance (Lubatkin, 1983) and common practice in research on acquisition (e.g., Farjoun, 1998; Krishnan et al., 1997). Second, three years is a sufficient length of time in which to observe changes in firm postacquisition performance from a fully integrated acquisition (Lubatkin et al., 2001).

We used two indicators of the acquirers' three-year postacquisition abnormal stock returns: monthly cumulative abnormal returns (CARs) for the period beginning 1 month prior to an acquisition's announcement date and ending 36 months later, and Jensen's alpha (Jensen, 1968), also calculated for the period beginning 1 month prior to the acquisition announcement date and ending 36 months later. Appendix B presents details on the calculation of each indicator. All data came from CRSP, and we used the CRSP equally weighted index as the benchmark portfolio.

Control variables. We included five control variables frequently used in acquisition research. The first two variables (relative size and acquisition experience) were viewed as potentially affecting all three dependent variables (internal reorganization goal achievement, market expansion goal achievement, and acquisition performance), and the remaining three variables (preacquisition return on equity for acquirer and target, and subsequent acquisitions made by an acquirer) were only expected to affect acquisition performance. First, the size of a target relative to its acquirer (relative size) can affect the acquirer's long-term stock performance as well as intermediate goal achievement because integration is a more difficult task for larger acquisitions. We used two indicators to control for relative size. Second, acquisition experience may improve an acquirer's integration skill (Hayward, 2002). We used two indicators to control for acquisition experience. Next, we controlled for the preacquisition profitability of both acquirer and target. Finally, because we were using postacquisition abnormal stock returns as our dependent variable, we controlled for possible confounding effects when an acquirer engaged in subsequent acquisition activity (Lubatkin, 1983).

Preliminary Data Analyses

Interrater reliability. We conducted analyses of interrater reliability and agreement on the survey data. We received a second survey response from executives for 33 acquisitions and examined the generalizability coefficient to determine how well the average judgments from this subsample correlated with the average judgments from the universe of potential judgments (Nunnally & Bernstein, 1994). The coefficient was .90, indicating a high level of generalizability. We also calculated the coefficients r_{wg} and $r_{wg(j)}$ to check within-group agreement, or the extent to which responses from different individuals were interchangeable (Bliese, 2000; James, Demaree, & Wolf, 1984, 1993). Average values for r_{wg} and $r_{wg(j)}$ ranged from .76 to .82, suggesting high agreement (James et al., 1993). The analyses reported below thus used one randomly selected survey response.

Common method bias considerations. Although using key informants as a data source is common in organizational research, it exposes the data to the potential for common method bias. To reduce this potential problem, we followed all recommendations made by Podsakoff, MacKenzie, Lee, and Podsakoff (2003) for questionnaire design (e.g., psychological separation of predictor and criterion variables and response anonymity). We also con-

from 4.95 to 5.20, and from 4.50 to 5.35 for the indicators of market expansion.

ducted a statistical post hoc test of the influence of common method bias, adding an unmeasured latent method factor to our model that permitted “control for any systematic method variance among the items that is independent of the covariance due to the constructs of interest” (Podsakoff et al., 2003: 894). Items derived from the survey were loaded on both their theoretical construct and the methods factor. We found that all the significant relationships reported below held after controlling for the methods factor, providing strong evidence that common method bias was not driving our findings.

Analytical Technique

To fully estimate the paths in our model, we conducted a partial least squares (PLS) analysis using PLS-Graph, version 3.0 (Chin, 1998, 2001). PLS is a powerful multivariate analysis technique (see Fornell and Bookstein [1982] for a complete description) and belongs to the family of techniques that also includes LISREL (Lohmoller, 1988). The primary goal of PLS, as opposed to covariance-based structural equation modeling, is to maximize the variance explained in latent and endogenous variables. It is often referred to as variance-based structural equation modeling. When compared to a two-stage multivariate estimation technique, PLS permits multiple measures of both dependent and independent variables, enabling the assessment of indicator and construct reliability as well as correction for measurement error (Bagozzi, 1994).

We believed that PLS was the appropriate analytic technique for our study for three reasons. First, many of our variables had multiple indicators, and PLS weights indicator loadings on constructs in the context of the theoretical model rather than in isolation (Hulland, 1999). Second, covariance-based structural equation models require very large samples to achieve good estimates of model parameters. Marsh, Hau, Balla and Grayson (1998) suggested a minimum sample size of 200. PLS is most appropriate for studies that have relatively small samples or a large number of indicators per latent variable because power in the analysis is maximized (Birkinshaw, Morrison, & Hulland, 1995). Given our sample size ($n = 129$), use of an analytical technique that maximized power while permitting simultaneous estimation of path coefficients (Hulland, 1999) seemed prudent. Finally, PLS does not require assumptions about multivariate normality (Fornell & Bookstein, 1982).

We conducted two analyses to determine whether our intermediate goal achievement constructs (internal reorganization and market expansion) served as

mediators in our model. If our intermediate goal achievement variables fully mediated the relationships between integration decisions and acquisition performance, we could conclude that intrafirm linkage ambiguity was reduced because the relationship between decision and performance outcome was clarified. In the first test, we followed the procedure recommended by Baron and Kenny (1986) to test the linkages in the mediating model. To establish mediation, three conditions must hold. First, the independent variable must affect the dependent variable; second, the independent variable must affect the intervening variable; and third, the intervening variable must affect the dependent variable. Full mediation occurs if the independent variable has no significant effect on the dependent variable when the intervening variable is controlled (Baron & Kenny, 1986). Our second analysis was Sobel's (1982, 1988) test. This test permitted us to determine whether the intervening variables carried the effects of the independent variables on to the dependent variable. Significant t -values would indicate that the intermediate goal achievement variables were important mediators.

RESULTS

Reliability and Validity of Measures

We analyzed individual item reliability, internal consistency, and discriminant validity to examine the acceptability of our measurement model. Factor loadings of measures onto their corresponding constructs were all greater than .70, indicating a high degree of individual item reliability (Nunnally & Bernstein, 1994). Using the measure suggested by Fornell and Larcker (1981), the typical statistic used in PLS studies (Hulland, 1999), we found that all composite reliability values exceeded the minimum threshold of .70 (Nunnally & Bernstein, 1994). Appendix A reports the individual item reliabilities and composite reliabilities. We conducted two statistical tests to ensure that our constructs were acting independently. The first discriminant validity test required that the construct share more variance with its items than it shared with other constructs (Hulland, 1999). Table 2 presents the correlation matrix of all constructs and single-item measures used in this study. The diagonal elements show the square root of the average variance extracted for the corresponding construct. Discriminant validity is established if this statistic is greater than the correlations in the corresponding columns and rows (Fornell & Larcker, 1981), a test that our data met. We also employed Anderson and Gerbing's (1988) discriminant validity test on all

TABLE 2
Correlation Matrix^a

Construct	Number of Items	1	2	3	4	5	6	7	8	9	10	11
1. Acquisition performance	2	.94										
2. Market expansion intermediate goal achievement	3	.40	.81									
3. Internal reorganization intermediate goal achievement	2	.11	.40	.82								
4. Integration depth	4	.01	.30	.31	.83							
5. Integration speed	1	.20	.26	.21	.03							
6. TMT turnover	1	-.14	-.22	-.03	-.06	-.20						
7. Market focus	3	.16	.45	.35	.41	.13	-.11	.83				
<i>Control variables</i>												
8. Acquisition experience	2	-.12	-.06	.01	.11	.02	-.01	.14	.91			
9. Relative size	2	-.15	-.16	-.07	-.05	-.25	.06	-.16	-.29	.94		
10. Acquirer ROE	1	-.05	.16	.07	.15	-.02	-.03	.22	.14	-.28		
11. Target ROE	1	-.27	-.10	.04	-.06	.05	-.05	-.22	.19	-.05	.01	
12. Subsequent acquisitions	1	-.16	-.18	-.15	-.03	-.24	-.14	-.08	.08	.20	-.07	.14

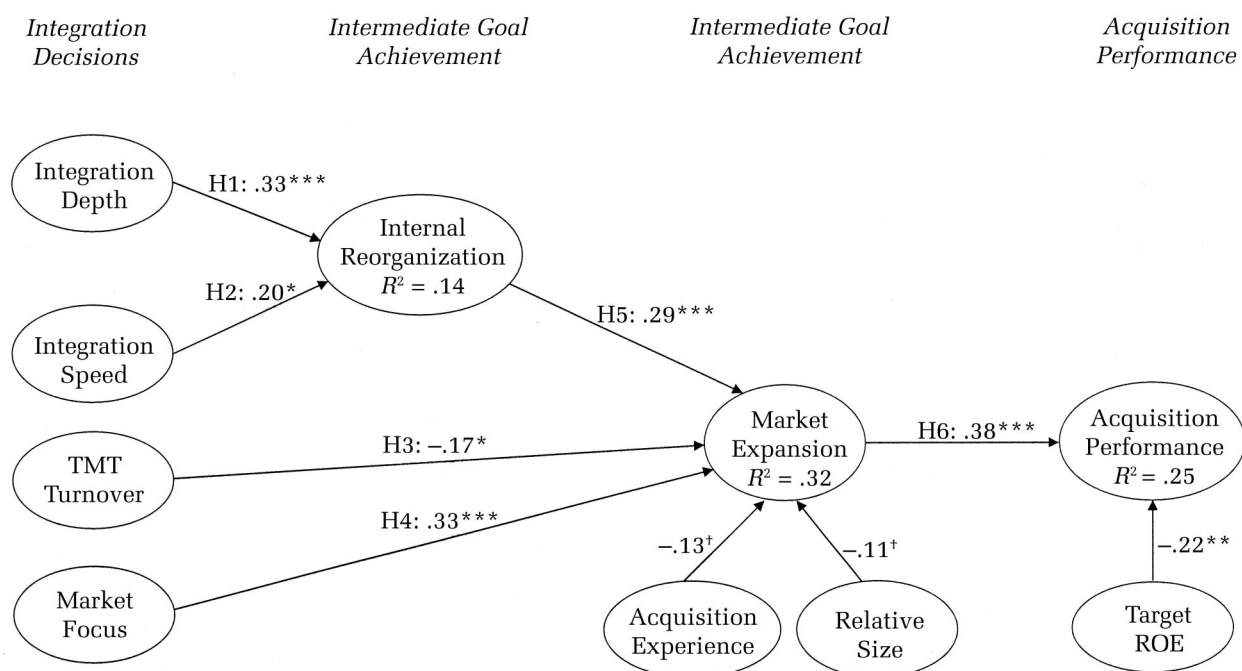
^a For multiple-item constructs, figures on the diagonal represent the square root of the average variance extracted. $n = 129$.

pairs of constructs whose correlation was greater than .30. We found that each pair of constructs was not perfectly correlated, providing further evidence that discriminant validity was achieved (Bagozzi & Phillips, 1982).

Tests of Hypotheses

Figure 2 presents the path coefficients for the PLS model. These statistics are standardized regression coefficients and are interpreted in a man-

FIGURE 2
Structural Model Results^a



^a Standardized parameter estimates are shown; control variables not shown are insignificant. $n = 129$.

⁺ $p < .10$

* $p < .05$

** $p < .01$

*** $p < .001$

ner similar to regression analysis coefficients. Also reported are squared multiple correlation coefficients (R^2 statistics) for all endogenous constructs. In contrast to other covariance structure analysis modeling approaches, a PLS analysis has the primary objective of minimizing error. Therefore, there are no overall goodness-of-fit statistics for a PLS model. The model is evaluated on the basis of strong indicator loadings, R^2 values, and significance of the structural paths (Chin, 1998).

Our first set of hypotheses links certain integration variables with internal reorganization goal achievement. Hypothesis 1, arguing that the greater the integration depth, the greater the internal reorganization goal achievement, is strongly supported ($\beta = .33, p < .001$). Hypothesis 2 is also supported: the faster the integration, the greater the internal reorganization goal achievement ($\beta = .20, p < .05$). These variables explain 14 percent of the variance in the internal reorganization goal achievement construct.

Our next set of hypotheses explores antecedents to market expansion goal achievement. Hypothesis 3 is supported: TMT turnover is negatively and significantly related to market expansion goal achievement ($\beta = -.17, p < .05$). We also found that market focus during integration is positively and significantly related to market expansion goal achievement, supporting Hypothesis 4 ($\beta = .33, p < .001$). As predicted by Hypothesis 5, internal reorganization goal achievement is positively and significantly related to market expansion goal achievement ($\beta = .29, p < .001$). Also marginally influencing market expansion goal achievement are the control variables acquisition experience ($\beta = -.13, p < .10$) and relative size ($\beta = -.11, p < .10$). These variables explain 32 percent of the variance in market expansion goal achievement.

We find strong support for our last hypothesis (Hypothesis 6). Market expansion goal achievement is strongly related to acquisition performance ($\beta = .38, p < .001$). Also influencing acquisition performance is the control variable target premerger ROE ($\beta = -.22, p < .01$), a result consistent with prior research (e.g., Capron & Pistre, 2002). All other control variables are nonsignificant. Our model explains fully 25 percent of the variance in acquisition performance.

Tests of Mediation

Given our hypothesis-testing results, we explored mediation along five paths in our model: (1) integration depth to market expansion goal achievement, (2) integration speed to market expansion goal achievement, (3) TMT turnover to ac-

quisition performance, (4) market focus to acquisition performance, and (5) internal reorganization goal achievement to acquisition performance. Table 3 presents a summary of the results. Baron and Kenny's (1986) first condition for mediation requires that the independent and dependent variables in an analysis be significantly related. As can be seen in the "Direct Effect Model" column of Table 3, all of our paths except one meet this test.⁶ The hypothesis-testing results reported above provide support for Baron and Kenny's (1986) second and third conditions. The strength of mediation is determined by the significance of a path added to a mediated model from the independent variable to the dependent variable. Here all paths were insignificant, suggesting that the intervening variables fully mediate the relationships (see the column labeled "Full Mediation" in Table 3). We also conducted Sobel's (1982, 1988) test to examine whether the intervening variable carried the effects of the independent variables on to the dependent variable. A significant t -value indicates that the intervening variable is an important mediator, a test our data met, as reported in the last column of Table 3. Hence, we concluded that the two intermediate goal achievement variables fully mediate the relationships between our four integration variables and acquisition performance.

The role of intermediate goals in reducing intrafirm linkage ambiguity can be demonstrated by considering our mediation results for the path from market focus to acquisition performance. The "Direct Effects" column in Table 3 reports that the direct path between market focus and acquisition performance is significant ($p < .05$). The significance of this path, however, disappears when the mediating variable of market expansion goal achievement is included in the model (see the "Full Mediation" column in Table 3). These mediation test results support our theoretical argument that an understanding of the role played by intermediate goals reduces intrafirm linkage ambiguity.

DISCUSSION

We argued that the process of integrating acquisitions is characterized by high levels of intrafirm

⁶ As we expected, we do not find a statistically significant direct effect of internal reorganization goal achievement on acquisition performance ($\beta = .09; t = 1.33$). This is consistent with Barney's (1988) argument suggesting that cost savings will likely be bid away in the negotiation process, leaving the acquirer with at best normal returns.

TABLE 3
Results of Tests of Mediation^a

Path (a → b → c)	Direct Effect Model (a → c)	Full Mediation	Sobel t-Test
Depth → internal reorganization → market expansion	$p < .001$	Yes	$p < .01$
Speed → internal reorganization → market expansion	$p < .01$	Yes	$p < .10$
TMT turnover → market expansion → acquisition performance	$p < .10$	Yes	$p < .05$
Market focus → market expansion → acquisition performance	$p < .05$	Yes	$p < .001$
Internal reorganization → market expansion → acquisition performance	$p > .10$	n.a.	n.a.

^a $n = 129$.

linkage ambiguity and that this ambiguity contributes to difficulties encountered during integration and lowers acquisition performance. We suggested that the identification of intermediate goals that are sequential steps between integration decisions and acquisition performance can reduce intrafirm linkage ambiguity. We developed and tested a structural model in which the achievement of intermediate goals serves an important mediating function. Our results strongly support the mediating role of intermediate goal achievement; the significance of all direct relationships between integration decisions and acquisition performance disappears when intermediate goal achievement is included in the model. These results indicate that the intermediate goals identified in our study reduce intrafirm linkage ambiguity because they break down the complex causal chain between integration decisions and acquisition performance into more manageable segments.

Our study contributes to both the resource-based-view and acquisition literatures. With respect to the resource-based view, we make two primary contributions. First, we identify and test a mechanism to reduce intrafirm linkage ambiguity. Although the detrimental effect of intrafirm linkage ambiguity on firm performance has been documented (e.g., King & Zeithaml, 2001), research on reducing causal ambiguity has so far been limited to conceptual development dealing with characteristic ambiguity (Zollo & Winter, 2002). Our study focuses on how intermediate goals improve understanding of the links between integration decisions and acquisition performance, thereby reducing intrafirm linkage ambiguity in the integration process. Moreover, our empirical results suggest that this reduction in intrafirm linkage ambiguity is related to improved acquisition performance when those intermediate goals are achieved.

Our finding that intermediate goal achievement fully mediates the relationships between integra-

tion decisions and acquisition performance has important implications for empirical research. In studies of the effects of complex organizational processes, researchers should use constructs that are sequentially closer to their explanatory variables rather than a more distant performance measure as the dependent variable. This use of mediating variables is consistent with Ray, Barney, and Muhanna's (2004) suggestion that overall firm performance is not an appropriate variable for tests of the resource-based view, but that the effectiveness of business processes may be a more appropriate dependent variable.

Second, we applied the resource-based view to strategy implementation, an area that has received little attention in the empirical resource-based literature. Only a few studies in this research stream have examined how possession of resources affects implementation of strategies. For example, Christmann (2000) found that the possession of complementary resources facilitates the implementation of certain management practices. Although most research has focused on the characteristics of resources necessary for a sustainable competitive advantage, Sirmon et al. (2007) called for an increased focus on how to manage those resources to extract the maximum value possible. Our study is an initial attempt to answer this call. By explicating the chain of events through which integration decisions influence performance outcomes, we have made a step toward a better understanding of how acquirers may exploit existing resources. Our finding that intermediate goals can reduce intrafirm linkage ambiguity can likely be applied to strategy implementation in other complex organizational events or processes that are characterized by simultaneous interdependent decisions, such as strategic alliances or new-product development processes.

A contribution of our model to acquisition research is differentiating the effects of individual

integration decisions on different intermediate acquisition goals. In our importance-weighted intermediate goal achievement measure, we took into account the fact that acquisitions differ in their value-creating mechanisms. Indeed, different integration decisions lead to the achievement of different intermediate goals, suggesting that the relationship between a given integration decision and acquisition performance should be considered in light of the acquisition's intermediate goals. We also showed that integration decisions are related to acquisition performance by operating through intervening variables, providing a meaningful clarification of the theoretical framework linking integration decisions and acquisition performance.

A final contribution comes from our structural model incorporating the notion that acquirers pursue multiple intermediate goals and that these intermediate goals are related. Over 68 percent of the respondents viewed both internal reorganization and market expansion as important goals for the transaction, a finding that is consistent with Walter and Barney's (1990) conclusion that several different managerial goals are simultaneously pursued in horizontal acquisitions. Although acquirers generally pursue increased financial returns, one can picture financial performance as resting on a hierarchy of intermediate goals. For instance, we show that an acquirer should both internally reorganize and expand its market reach to achieve positive acquisition performance. We have argued theoretically that internal reorganization should precede market expansion, but the nature of our data does not permit us to make this empirical conclusion. We believe that our arguments are logically consistent, but additional research is required.

An interesting result of our study is the lack of a significant relationship between internal reorganization goal achievement and acquisition performance. The correlation between these two constructs is only .11 (see Table 2), suggesting a relatively weak relationship. Our findings are consistent with Barney's (1988) theoretical argument that cost savings are likely available to multiple bidders and that the gains will therefore be appropriated by shareholders of the target rather than the acquirer. This is an important conclusion because extant acquisition research typically does not differentiate between different sources of gains. As a result, the conventional wisdom that acquisitions do not produce positive abnormal returns may be questionable. Perhaps a more accurate statement would be that acquisitions based on cost reductions are less likely to produce positive abnormal returns than those whose strategic logic involves market expansion.

Our study also has implications for managers. We highlight the importance of managing to the achievement of intermediate goals along the path to higher acquisition performance. This emphasis contrasts with prescriptions made in the existing literature. For example, managers are often criticized for not having a "blueprint for implementation" when acquisitions are consummated (Feldman & Spratt, 1987: 411). However, a sequential approach using intermediate goals to guide management decisions and reduce intrafirm linkage ambiguity suggests that these blueprints should be flexible. Using intermediate goals to guide their integration decisions allows managers to advance their causal understanding, improve their decision making, and ultimately enhance acquisition performance.

Our study is not without limitations. Some arise from the availability of data, and others relate to restrictions in the scope of our research. First, the nature of our data restricts any definitive conclusions about the direction of causality. Although our theory suggests that acquirers will first internally reorganize and then look to expand their market presence, and we found a significant and positive relationship between these two constructs, we cannot conclude causation. Future researchers may wish to conduct longitudinal studies to investigate precisely what actions lead to what outcomes. Second, there may be variation in our finding of an insignificant relationship between internal reorganization goal achievement and acquisition performance by industry or strategic orientation, and those conducting future research may wish to explore this in more depth. Finally, we cannot be sure that all acquisitions had equal potential for value creation (Larsson et al., 2004). Therefore, our findings may reflect variance in value creation potential in addition to variance in the effectiveness of integration.

Researchers may wish to explore other integration decisions that may be related to intermediate goal achievement. Integration depth and speed explained only 14 percent of the variance in our internal reorganization goal achievement construct. Additional variables capturing such internal integration issues as changes in employee productivity may provide improved explanatory power. We also do not suggest that intermediate goal achievement is the only intervening variable of any import or that internal reorganization and market expansion are the only important intermediate goals; future research should consider others. Additional research should also examine other types of acquisitions. For example, our finding that integration speed is positively associated with internal reorganization goal achievement may not extend to acquisitions focused specifically on knowledge trans-

fer (Ranft & Lord, 2002) or to unrelated acquisitions (Homburg & Bucerius, 2006).

In closing, our findings shed light on a complex-chain of events. We find strong support for mediation of the relationship between integration decisions and

acquisition performance by internal reorganization and market expansion goal achievement. We thereby provide an important theoretical clarification of the relationship between integration decisions and acquisition performance.

APPENDIX A
Construct Measurement
TABLE A1
Constructs, Indicators, and Reliabilities

Construct	Indicator	Individual Item Reliability	Composite Reliability
<i>Integration depth</i>			
Source: Survey	Please indicate the degree to which the following items or areas were integrated or combined as a result of the acquisition (1, "not at all"; 7, "completely")		.90
	Employee integration: The average of (a) organizational structure, (b) organizational culture, and (c) personnel (HR) management practices.	.78	
	Production integration: The average of (a) production and (b) supply sources.	.86	
	Marketing integration: The average of (a) distribution channels, (b) sales/after-sales service, and (c) marketing programs.	.83	
	Systems integration: The average of (a) strategic planning systems, (b) financial and budget systems, and (c) management information systems.	.84	
<i>Integration speed</i>			
Source: Survey	Approximately how long did the integration process take? (1 = more than 24 months; 2 = 19–24 months; 3 = 13–18 months; 4 = 7–12 months; 5 = 6 months or less)		
<i>TMT turnover</i>			
Source: Survey	Of the initial postacquisition executive team, how many of the top five executives have since left the firm? (0–5)		.91
		.89	
Source: SEC's EDGAR database	Count of the number of top five executives listed in acquirer's annual proxy statement as of the fiscal year immediately following the effective date of the acquisition who were not listed three years later.	.93	
<i>Market focus</i>			
	Did the company's commitment to serving customers increase or decrease after the acquisition <u>relative</u> to before the acquisition? (1, "decreased greatly"; 7, "increased greatly")	.73	.87
	Please indicate below the extent to which the following <u>principles or objectives</u> guided decisions during the integration phase of the acquisition (1, "not at all"; 7, "to a very large extent")		
	Decisions were made based on what was best for the customer.	.85	
	Integration decisions sought to improve the value delivered to customers.	.91	
<i>Intermediate goal achievement</i>			
Source: Survey	Both intermediate goal achievement constructs are comprised of multiple indicators, each calculated by multiplying the goal achievement score by the goal importance score.		

APPENDIX A
TABLE A1
Continued

Construct	Indicator	Individual Item Reliability	Composite Reliability
	Goal achievement score: To what extent has your company achieved the following objectives for the acquisition? (−3, “not at all”; +3, “above target”)		
	Goal importance score: At the time of the acquisition, how important were the following objectives for this transaction? (1, “not important”; 7, “extremely important”)		.81
	<i>Internal reorganization goals</i>		
	Consolidation of similar units	.86	
	Transfer of knowledge from the acquirer to the target	.79	
	<i>Market expansion goals</i>		.85
	Expansion into new customer and/or geographic market segments	.86	
	Market share growth	.81	
	Cross-selling (i.e., sale of acquirer products to the target’s customers and vice versa)	.76	
<i>Acquisition performance</i> Source: CRSP	Two indicators:		.95
	36-month cumulative abnormal returns	.94	
	36-month Jensen’s alpha	.95	
<i>Relative size</i> Source: Compustat	Two indicators (measured in fiscal year prior to acquisition):		.94
	Ratio of target assets to acquirer assets	.96	
	Ratio of target sales to acquirer sales	.91	
<i>Acquisition experience</i> Source: Survey	Over the five years preceding this acquisition, approximately how many acquisitions did the acquirer complete? (1 = none; 2 = 1–2; 3 = 3–4; 4 = 5–6; 5 = 7 or more)	.93	.91
Source: SDC	Count of acquisitions completed during the five years preceding the focal acquisition	.90	
<i>Acquirer pre-M&A profitability</i> Source: Compustat	Industry-adjusted average ROE for 3 years prior to acquisition (Industry adjustment is the median return earned by all firms sharing the same 3-digit primary SIC code.)		
<i>Target pre-M&A profitability</i> Source: Compustat	Industry-adjusted average ROE for 3 years prior to acquisition (Industry adjustment is same as in previous measure.)		
<i>Subsequent acquisitions</i> Source: SDC	Count of acquisitions made by the acquirer during the three years after the focal acquisition		

APPENDIX B

Description of Long-Term Stock Performance Measures

Cumulative Abnormal Returns

Calculation is based on the market model for the period beginning one month prior to the announcement date of an acquisition and ending 36 months after the acquisition announcement date. The estimation period is the 36 months ending two months prior to the announcement date; the CRSP equally weighted market index was used for a benchmark portfolio. The market model first estimates α_j and β_j from returns earned during the estimation period:

$$R_{jt} = \alpha_j + \beta_j R_{mt} + \epsilon_{jt},$$

where R_{jt} is the rate of return on the common stock of the j [th] firm in month t , R_{mt} is the rate of return of a market index in month t , and ϵ_{jt} is the random error term. β_j is a parameter that measures the sensitivity of R_{jt} to the market index. The abnormal return for firm j for month t is defined as:

$$AR_{jt} = R_{jt} - (\alpha_j + \beta_j R_{mt}),$$

where t now corresponds to the event window. The variable used in our models—cumulative abnormal returns—is the sum of the abnormal returns for the 37-month event window.

Jensen's Alpha

Calculation is based on regression of stock price for a 37-month period beginning the month before an acquisition announcement date and using the CRSP equally weighted market index. The excess return in this calculation is the intercept, and both α and β are estimated during the event window. Jensen's alpha is defined as:

$$R_{jt} = \alpha_j + \beta_j R_{mt} + \epsilon_{jt},$$

where R_{jt} is the rate of return on the common stock of the j [th] firm for month t , R_{mt} is the rate of return of a market index for month t , α_j is Jensen's alpha, β_j is firm j 's stock price variance relative to the variance of the market benchmark, and ϵ_{jt} is the random error term.

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