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Creating Value Through Mergers and Acquisitions: Challenges and Opportunities

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The Handbook of Mergers and Acquisitions

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Creating Value Through Mergers and Acquisitions

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Abstract and Keywords

Mergers and acquisitions have been a popular strategy, but the research suggests that acquiring firms create little or no value. Reasons for these outcomes include an inability to create synergy, paying too high a premium, selecting inappropriate targets, and ineffective integration processes, among others. However, careful selection of targets and effectively implemented acquisitions can achieve synergy and create value. For example, targets selected that have capabilities complementary to those held by the acquiring firm provide the greatest opportunity for synergy creation. Acquisitions that provide new knowledge to the acquiring firm that can be used to enhance its competitive position often create value. For example, the knowledge gained from acquisitions can enhance innovation when the target firm has complementary science and technology to that held in the acquiring firm. In addition, cross-border acquisitions present significant opportunities, but they also provide more complex challenges for achieving synergy and creating value. Finally, research shows that executives frequently have trouble admitting failure and divesting acquisitions.

Keywords: value creation, synergy, complementary capabilities, acquisition premiums, cross-border acquisitions

Introduction

Although a popular strategy, only a minority of firms have achieved significant success using mergers and acquisitions (M&A). In fact, many

acquisitions are unsuccessful, some spectacularly so. Several studies have shown that, on average, the value created by M&As varies closely around zero (Hitt et al. 2001a; King et al. 2004). There has been a significant amount of research on M&As, but more is needed to help us understand this important strategy and to provide recommendations that will help strategists enhance their success with this strategy (Hitt et al. 2009). In recent years, a few firms have had more success with M&As, evidently building needed capabilities and completing the acquisition process, including integration, effectively. Yet, the number having success is small.

Our purpose herein is to understand some of the primary reasons for failure and opportunities for achieving success with M&As. Although the goal of all M&As is to create value, many actually create negative value because they produce problems that managers are unable to resolve. Acquisitions are incredibly complex strategies that are highly challenging to complete and implement. For example, several have explained the challenges of completing an effective integration of two businesses involved in a merger (e.g. Haspeslagh and Jemison 1991a). In fact, many believe that ineffective integration is the primary reason for the inability of M&As to create (p. 72) value. Although we agree that integration problems are a major reason for unsuccessful acquisitions, the research suggests that the causes of failure are more complex. Thus, we examine several additional and important reasons why M&As do not create value (e.g. paying an unwarranted premium and executives' delay in divesting poorly performing units that were acquired earlier). We also explore research on learning from M&As and building capabilities which contribute to the success of M&As (e.g. building capabilities necessary to produce innovation). Finally, we discuss cross-border M&A research because of M&As' growing prominence in the global competitive landscape and the challenges they present for creating value. We begin our exploration by reviewing M&A research more generally to identify prominent independent variables used in the research and a concise explanation of what we have learned about them.

Extant Research on Mergers and Acquisitions

We conducted a review of the extant empirical research on M&A performance over the last 25 years (1983–2008). The intent of the review was to identify the most common independent variables used in M&A research and to summarize the key research findings and opportunities for future research. Articles for the review were identified by a combination of computer-aided, keyword searches and manual searches of leading

management journals (e.g. *Academy of Management Journal*, *Administrative Science Quarterly*, *Journal of Management*, and *Strategic Management Journal*). We also followed the “ancestry” approach of article identification (Cooper 1998). This search process resulted in a list of 89 studies predominantly in economics, finance, and management, as shown in Appendices 4.1 and 4.2. The resulting “top five” most common M&A independent variables used in the research are:

1. The extent that an acquisition increased the diversification of the acquiring firm, or the relatedness of an acquisition (58% of the studies);
2. Firm size or the relative size of the acquired to the acquiring firm (52% of the studies);
3. The acquisition experience of the acquiring firm (28% of the studies);
4. Method of payment for an acquisition (18% of the studies); and
5. Firm performance prior to an acquisition (18% of the studies).

There were some other interesting and potentially important issues identified in our review of the research. First, the review left the definition of M&As to each study. Second, the vast majority of existing M&A research uses samples of firms from the US. However, as explained later in this chapter, research on cross-border M&As is gaining increased attention. Third, research increasingly uses multiple measures of performance (e.g. (p. 73) event window, long-term stock, and/or accounting-based measures). This positive development is likely the result of recent research recommending the use of multiple measures of M&A performance (Cording et al. 2008; King et al. 2008; Schoenberg 2006; Zollo and Meier 2008). Below, we explain the research involving each of the five most common independent variables in M&A research.

Diversification or Relatedness of Acquisition

The effect of firms diversifying into related or unrelated businesses on subsequent performance has received the most attention in M&A research. While there are logical arguments and some evidence to suggest that target firms with greater relatedness to an acquiring firm should produce higher performance (Bruton et al. 1994; Finkelstein and Haleblan 2002; Shelton 1988), extant research provides mixed evidence. For example, research has found no relationship between relatedness and acquisition performance

(Fowler and Schmidt 1989; Lubatkin 1987; Singh and Montgomery 1987), both related and unrelated acquisitions leading to higher performance (Seth 1990a, 1990b), and unrelated acquisitions leading to lower performance (Hoskisson et al. 1993; Megginson et al. 2004). Research by Palich, Cardinal, and Miller (2000) suggests a curvilinear relationship between relatedness and performance. Additionally, a firm's decision to diversify may relate to its core industry being less attractive (Park 2003). The mixed results can be explained by a few studies showing nonlinear relationships or controlling for other contextual factors. Further exploration of and defining nonlinear relationships of diversifying acquisitions represents a future research opportunity.

Firm Size

The next most common research variable involves firm size, and it provides more consistent results. The impact of firm size on acquisition performance likely results from the effectiveness of the integration process. For example, “mergers of equals” involving two large firms which are consistently poor performers (Fanto 2001; Weber and Camerer 2003). While it is usually easier for a firm to integrate a smaller firm than a firm of similar size, a target firm also needs to be large enough to have an impact on an acquiring firm's performance (King et al. 2008). This suggests firm size has a complex relationship with M&A performance in that the relative size of the acquirer and target versus independent considerations of firm size may be of most relevance.

Acquisition Experience

Some research has found that prior acquisition experience predicts success in later acquisitions (Bruton et al. 1994; Fowler and Schmidt 1989; Halebian and Kim, 2006), (p. 74) while other studies have found no effect (Lahey and Conn 1990) or a decline in acquisition performance as acquisition activity increases (Kusewitt 1985; Halebian and Finkelstein 1999). The more critical issue is likely the amount learned from making an acquisition. Obviously, a firm with some experience should be able to learn from additional acquisitions, but having more experience does not ensure that greater learning occurs. Early experiences can produce more learning than later experiences, but without adequate absorptive capacity, early lessons may be generalized to subsequent acquisitions where they are not applicable. Thus, the impact of acquisition experience is likely to be curvilinear (Halebian and Finkelstein 1999), or it may become significant through the interaction

with other important factors. Additional research is needed to examine how acquisition experience influences firm performance, especially in future acquisitions and to develop better measures of learning in acquisitions.

Method of Payment

Firms can pay for an acquisition with cash, stock shares (equity), or a combination of both. Research generally suggests that managers will finance an acquisition with equity if their firm's stock is overvalued, and cash if it is not. Therefore, the use of cash may signal manager expectations that performance will be higher after the acquisition. While a meta-analysis of prior research indicated there was no effect for method of payment on acquisition performance (King et al. 2004), subsequent research supports the conclusion that better performance is achieved in acquisitions made with cash (Abhyankar et al. 2005). The influence of the method of payment on M&A performance may be contextual, or influenced by the premium paid with higher premiums for stock payment. The impact of payment method may also depend on the timing of an acquisition in a merger wave or stock market cycle, with acquisitions underperforming in later stages of a cycle, because they are paid for with overvalued stock. Again, research is needed to explore in more detail the complex relationships involving method of payment, especially potential contingency variables such as the amount of premiums paid.

Prior Performance

The general assumption is that acquiring firm performance displays inertia, or firms that performed well before an acquisition will continue to display high performance. Alternatively, the effects of prior performance on the target firms are more nuanced. While some acquirers select acquisition targets independent of their prior performance (Anand and Singh 1997), research generally suggests that firms seek to acquire more profitable targets (e.g. Mahoney and Pandian 1992; Vermeulen and Barkema 2001). Still other research suggests that acquirers are attracted to distressed firms (Bruton et al. 1994). Another consideration is that selecting an acquisition target based on its performance (p. 75) may depend on a firm's industry environment, as profitable firms are more frequently targeted in growing industries (Heeley et al. 2006). In general, M&A research is more focused on acquirers and examining the characteristics of targets represents a largely unexplored area. Thus, future research on the target firms in acquisition offers the potential to advance our understanding of M&As.

Supplementary Review

Our review of M&A research revealed the diversity of foci, so we divided our review into two time segments to identify trends. Period 1 includes 56 studies (see Appendix 4.1), published after Jensen and Ruback's (1983) review and before the meta-analysis by King and others (2004). Meanwhile, Period 2 includes 33 studies published between 2004 and 2008; they are listed in Appendix 4.2. The five most common independent variables for both time periods are shown in Table 4.1.

A comparison of columns in Table 4.1 reveals some consistency in variables considered in M&A research over time, with measures of diversification or relatedness, and firm size or relative size ranking number 1 or 2 for both Period 1 and Period 2. Other variables exhibit differences, with an increased focus on method of payment and prior performance appearing more in M&A research published since 2004. One change that can be readily explained is that contemporary studies do not control for the method of accounting for an acquisition, as purchase accounting has been used for all US acquisitions completed after July 1, 2001 (Weil 2001). While prior research and its conclusions are useful, increased utilization of a common set of independent variables in M&A research could minimize model under-specification and facilitate achieving greater consensus on the drivers of M&A performance. There are two positive trends in the

Table 4.1 Top five acquisition research variables

Rank	1983-2003 56 Studies (no./%)	2004-2008 33 Studies (no./%)
1	<i>Diversification/relatedness</i> 34 (61%)	<i>Firm size/relative size</i> 19 (58%)
2	<i>Firm size/relative size</i> 27 (48%)	<i>Diversification/relatedness</i> 18 (55%)
3	<i>Acquisition experience</i> 11 (20%)	<i>Method of payment</i> 16 (48%)
4	<i>Industry controls</i> 9 (16%)	<i>Prior performance</i> 16 (48%)
5	<i>Accounting method</i> 7 (13%)	<i>Acquisition experience</i> 14 (42%)

(p. 76) M&A research. First, the amount of M&A research conducted is growing, with roughly three articles a year published in Period 1 and approximately six articles a year in Period 2. Second, there is increased emphasis placed on the most common research variables. Still, there is much more to learn about the requirements for creating value through acquisitions. We conclude from this review that an important need in M&A research is to consider more complex relationships among the critical variables (King et al. 2004). In the following sections, we examine additional factors that affect a firm's ability to create value through acquisitions, beginning with acquisition premiums.

Paying Acquisition Premiums and Organizational Performance

The acquisition premium has important effects on M&A outcomes (Krishnan et al. 2007; Sirower 1997). Firms are often willing to pay a substantial price, well exceeding the market value, to acquire the shares of the target firm in the hope of realizing the synergies that may exist in the merged organization. An *acquisition premium* is the price paid for a target that exceeds its pre-acquisition market value. Over the past 20 years, the average premium paid has ranged between 40 and 50% (Laamanen 2007).

While creation of synergy is the stated motive for paying large premiums (Hitt et al. 2001b), there are additional reasons why acquiring firms pay substantial premiums for the target firms. These reasons include agency factors, managerial hubris, the presence of other competing bidders, board interlocks and investment advisors, consolidation trends in the industry, and desire to acquire technology firms.

In theory, firms hope to create synergy by capitalizing on the complementary assets in the acquiring and acquired firms to produce valuable and unique products or services (Ravenscraft and Scherer 1987), to generate economies of scale and scope through asset consolidation, to eliminate inefficiencies and redundancies in the value chains of the firms by combining sales forces and manufacturing facilities, sharing trademarks, brand names, or distribution channels (Capron 1999; Haspeslagh and Jemison 1991b), to redeploy assets to more profitable uses, and to achieve market power via increased bargaining leverage with key constituencies. The synergy motive is vested in the resource-based theory of the firm, where the complementary resource profiles of the two firms, such as physical resources, intangible resources, financial resources, and human resources, are integrated in ways that uniquely position the firm against its competitors (Capron 1999). In

order to capture this synergy, the payment of a premium for the shares of the target firm may be justified. However, the premium paid should not exceed the benefits to be achieved through the potential synergy if the acquisition is to produce positive returns (Sirower 1997).

A second reason that acquiring firms often pay large premiums stems from agency factors, when top executives engage in opportunistic behavior that provides them with (p. 77) personal gains (Trautwein 1990). Because acquisitions increase the size of a firm, they often have a positive effect on a top executive's compensation and enhance his/her power. Further, the top executive's employment risk is likely to be reduced if the acquisition diversifies the firm. Slusky and Caves (1991) argue that the alignment of the objectives of the managers with shareholders' interests can influence the amount of premium paid. Managers who gain from a merger can overpay for it or they can undertake mergers which have a value-creating potential that is less than the target's reservation price for yielding control. Alternately, managers who hold a large proportion of their company's shares are more likely to offer a lower price for the target firm (Morck et al. 1988).

A third reason for high premiums is executive hubris (Roll 1986). Managerial or CEOs' hubris is overconfidence by managers in their capabilities to extract synergy from the combined firm. Hubris often results in firms overpaying for their targets (Hayward and Hambrick 1997). This problem surfaces during the acquisition search or the due-diligence process, when fragmented decision making, escalating momentum, and ambiguous expectations cloud the judgment of CEOs and other top managers (Haspeslagh and Jemison 1991a; Jemison and Sitkin 1986). Hubris sometimes causes the CEO to do an inadequate job of due diligence and to ignore negative information provided by this process (Hitt et al. 2001a).

Sirower (1997), however, disputes the notion that self-interest or hubris is at the core of high premiums. Rather, he suggests three alternate reasons for overpayment: (1) unfamiliarity with the fundamentals of the acquisition strategy, (2) lack of adequate knowledge of the target and market conditions, and (3) unexpected problems that may occur during the integration process. Overpayment may also result from decision biases; for example, Baker, Pan, and Wurgler (2009) found that the majority of acquisition announcements use a target firm's 52-week trading high to determine acquisition premiums. However, while lack of capabilities or experience on the part of the executives can result in the acquisition failing

to meet expectations, the belief that they can make it work (hubris) likely plays a role in premium payments.

Another reason for premium payments is competitive factors in the environment, such as multiple bidders for the target firm (Varaiya 1988; Slusky and Caves 1991). In this case, the price is usually driven higher when multiple bids are made for the target (Varaiya 1988). When a target firm operates in product markets that are valuable to competing firms or if it operates in a product market that complements the product line of competing firms, multiple firms may place bids for the target. These cases have been termed the “winner's curse,” in that the acquiring firm with the winning bid often overestimates a target firm's value (Coff 2002).

Interorganizational relationships that have developed through board interlocks and professional firms including investment advisors and bankers can also influence the amount of premium paid by acquiring firms. Haunschild (1993) found that premiums paid are related to those paid by the interlock partners of the acquiring firm and to (p. 78) those paid by other firms using the same professional firms. In a recent study, Porrini (2006) found that investment bankers (used by 88% of acquiring firms) complete acquisition transactions for their clients that involve the payment of large premiums. Agency factors are likely at play because the fees collected by the bankers from their clients are calculated as a percentage of the final purchase price of the target firm, providing an incentive for investment firms to recommend a high price. Recently, a few researchers have examined some lesser known motives for high premium payments. These motives include the consolidation trends in the industry in which the acquiring and target firms function, and higher growth opportunities in some younger industries. The findings on the relationship between consolidation trends in the industry and premiums are not conclusive. Consolidation in the hospital industry in the 1990s resulted in acquisitions with minimal or no premium payments, whereas the reverse was the case in the pharmaceutical industry. It is likely that, in the pharmaceutical industry, the opportunity to acquire valuable R&D and to realize significantly higher profits increased the price of the target firms, whereas, in the highly regulated low-profit hospital industry, an acquisition was made for survival (Chadwick et al. 2004; Scott et al. 2000). In the high growth technology firms, Kohers and Kohers (2001) and Laamanen (2007) argue that high premiums are paid because the market cannot easily value the resources of the target. There is uncertainty regarding the future cash flows from the accumulated R&D investments in firms operating in younger industries (Chan et al. 2001). An acquirer

conducting the required due diligence may value the accumulated R&D investments higher than the stock market and therefore offers a premium.

Overall, a majority of the studies reveal a negative relationship between acquisition premiums and organizational performance. While the announcement of a high-priced acquisition usually benefits the shareholders of the target firm (Hitt et al. 2001b), the shareholders of the acquiring firm typically lose value from the acquisition (Datta et al. 1992; Hayward and Hambrick 1997; Varaiya and Ferris 1987). This loss is often sustained in the long term as evidenced from stock returns (Sirower 1997) and based on accounting performance measures such as the post-acquisition return on sales (ROS) or return on equity (ROE) (Beckman and Haunschild 2002; Krishnan et al. 2007). The negative effect of premium on performance exists even after controlling for the relative size difference between the acquiring and acquired firms, the debt of the acquiring firm, the method of payment, prior performance of both firms, multiple bidders, acquisition climate and time period, composition of the board, and the relatedness of the acquired firm (Haunschild 1994; Krishnan et al. 2007; Slusky and Caves 1991).

One main reason for this negative relationship can be directly attributed to the size of the premium which places a huge burden on the management of the acquiring firm to not only recoup the acquisition costs, but also to extract the synergies from the merged organization. The parent firm is expected to not only meet the performance that the market expects, but also to generate the cash flows imposed by the premium payment. About 70% of the firms fail to deliver the required results. Achieving synergies (p. 79) is challenged when acquiring firms incur huge debt (Jensen 1991) to finance the acquisition, imposing a serious burden on the firm to generate high cash flows. The reaction of the stock market to most acquisition announcements and deal finalization is usually negative; there is great pressure on executives to appease the shareholders. As a result, two types of actions are likely to be taken; the first involves a restructuring process where the assets are consolidated, some of the assets of the acquired firm are sold, and redundancies such as duplicate workforces are eliminated along the value chains of the two firms (Bowman and Singh 1993; Cascio et al. 1997; Ravenscraft and Scherer 1987). This action generates operational synergies from economies of scale and may have motivated the high premium payment (Capron 1999; O'Shaughnessy and Flanagan 1998; Porter 1987). However, operational synergy is rarely sufficient for the firm to recoup the high costs of the acquisition. Therefore, firms under pressure from shareholders often sell off assets of the acquired firm at lower

than true market value and resort to large-scale workforce reduction in the merged entity (Johnson et al. 1993; Nixon et al. 2004; Useem 1993; Zuckerman 2000). These drastic actions can seriously erode the human capital and the knowledge and learning that is essential to capitalize on the complementarity between the two firms (Cording et al. 2008; Vermeulen and Barkema 2001). Thus, the transfer of skills vested in the employees, and which represents the heart of synergy realization, is not materialized. Thus, paying excessive premiums increases the probability that an acquisition will be unsuccessful; even potentially creating a need for divestitures.

Summary of the Research on Acquisition Premiums

Acquisition premiums have been studied by strategy and finance researchers for their influence on various organizational outcomes, including post-acquisition performance. While there are reasons for paying a premium to acquire the shares of a target firm, synergy has been identified as the dominant motive. Synergy is created when the merged firm capitalizes on the complementary resource profiles, and from the elimination of redundant activities of the value chains of the two partners. Agency factors, executive hubris, and competitive factors in the environment, such as multiple bidders, consolidation trends in the industry, and growth opportunities for high technology firms, also result in the payment of high acquisition premiums. A majority of studies reveals a negative relationship between acquisition premium and organizational performance. This is because the size of the premium often places a huge burden on the executives of the acquiring firm to extract the synergies and to recoup the acquisition costs in the merged organization. The negative reaction of the stock market to many acquisition announcements places great pressure on the executives to resort to restructuring. Restructuring following a high-priced acquisition involves large-scale workforce reduction, which results in the loss of valuable human capital. It also leads to divestitures of assets in the merged organization. Therefore, most acquisitions in which high premiums are paid do not create positive value. (p. 80)

Divesting Acquired Businesses

Because M&As are not always successful (Hitt et al. 2001b), a large proportion of acquired businesses is later divested (Bergh 1997; Kaplan and Weisbach 1992; Porter 1987; Ravenscraft and Scherer 1991). However, research on divestitures of acquired businesses is limited (Brauer 2006; Moschieri and Mair 2008). It is understandable because “[c]ompanies tend

to announce acquisitions and other forms of new entry with a flourish but divestments and shutdowns with a whimper, if at all" (Porter 1987: 47). However, given the high percentage of failure, it is important to develop a better understanding of divestiture activities. Divested businesses are purchased by other companies, and thus divestitures are, in part, mirror images of M&As (Brauer 2006; Buchholtz et al. 1999). M&As are important and visible strategic decisions; therefore reversing the decision is influenced by various psychological, organizational, and social factors (Shimizu and Hitt 2004). Thus, understanding divestitures of acquired businesses contributes to the M&A literature and also provides broader insights into research on strategic decision making, organizational change, and escalation of commitment (e.g. Duhaime and Grant 1984; Hayward and Shimizu 2006; Shimizu 2007).

Although divestiture is generally regarded as a sign of a failed acquisition (Kaplan and Weisbach 1992), not all divestitures of acquired businesses indicate failure. For example, some funds buy distressed firms, improve their performance, and sell them at a premium. Divestiture may also be a result of appropriating valuable resources from the target and eliminating the remainder of the assets and/or redundant assets (Capron et al. 2001). Our focus is on divestiture of acquired businesses because of poor performance. Divestitures have been examined under the broad umbrella of restructuring research in relation to proliferation of unrelated diversification and resulting performance problems (Brauer 2006; Hoskisson and Hitt 1994; Johnson 1996). Due to such problems as overpayment, illusory synergy, and cultural clashes, many acquired businesses are not successful and some are eventually divested (Duhaime and Schwenk 1985; Haspeslagh and Jemison 1991b). For example, Porter (1987) found that firms divested more formerly acquired businesses than they kept. Kaplan and Weisbach (1992) also found that 44% of the acquisitions they studied were divested. Although acquisitions became more strategic in the 1990s and 2000s, we still observe several failures.

A major determinant of divestiture is poor unit performance (Johnson 1996; Ravenscraft and Scherer 1991). Other reasons for divestitures include poor performance of the parent firm (Denis and Kruse 2000; Duhaime and Grant 1984), the desire to change the parent's diversification strategy (Bergh 1997; Hoskisson et al. 1994), and change in the top management team of the parent firm (e.g. a new CEO) and/or its governance structure (Weisbach 1995). Acquisition failures typically result from poor decision making, which can be attributed to agency problems within top management as noted

earlier (Hoskisson and Hitt 1994). Therefore, most of the early research on divestitures adopts economic and agency theory perspectives, suggesting that the divestiture (p. 81) decision is to “correct” an earlier mistake based on economic performance and governance actions (Hoskisson et al. 1994). In general, the consequences of divestitures are often positive for both sellers and acquirers of the unit based on the stock market response (Jain 1985; Mulherin and Boone 2000).

However seemingly rational, such a “correction” is often influenced by various non-rational factors. Because divestiture of acquired businesses reverses an earlier strategic decision, managerial attachment and organizational inertia also influence divestiture of acquired businesses (Duhaime and Grant 1984; Shimizu and Hitt 2005). Managers may unconsciously delay response to a poorly performing unit because of the managers’ assumption regarding the success of their acquisition strategy (Buchholtz et al. 1999; Duhaime and Schwenk 1985). Delays in response to an underperforming unit can also be a result of an acquired unit becoming institutionalized within the larger organization (Shimizu and Hitt 2005). As a result, poorly performing acquired businesses are more likely to be divested when organizational inertia to maintain the acquisition is low, the business unit is small, parent firms are young and small, parent firms have divestiture experience, and unit performance declines precipitately (Duhaime and Baird 1987; Shimizu and Hitt 2005). The effects of CEO turnover and change of directors can also break cognitive and organizational inertia (e.g. Shimizu and Hitt 2005).

More recent studies extend our knowledge of the effects of non-economic factors on divestiture. For example, Hayward and Shimizu (2006) found that high organizational slack and better parent firm performance strengthen the relationship between poor acquired unit performance and divestiture, contradicting a view that divestitures are intended to obtain cash at a time of low slack or low performance by the parent firms (Hamilton and Chow 1993). Their findings are consistent with a behavioral view suggesting that managers are less committed to poor performing acquisitions when strong firm performance and higher slack absorb or mask the acquisition failure (i.e. divestiture) (cf. Boot 1992; Cyert and March 1963). Shimizu (2007) also applied prospect theory (Kahneman and Tversky 1979), behavioral theory (Cyert and March 1963), and the threat-rigidity thesis (Staw et al. 1981) to the divestiture of acquired businesses and discussed how managers deal with uncertainties in reversing their acquisition decisions. He argued and found that the three different forces implied by the unique theories result in

an inverse-U shaped relationship between unit business performance and divestiture and that the relationship is moderated by ambiguity (derived from prospect theory), failure to improve performance and resource availability (derived from prospect theory), and divestiture experience and unit size (derived from the threat-rigidity thesis). Divestitures of formerly acquired businesses provide a rich setting to explore various organizational issues, including uncertainty, commitment, and inertia (Shimizu 2007).

There are at least four potentially valuable future research foci. Although divestitures are typically equated with sell-offs (Ravenscraft and Scherer 1991), divestitures are broader. Brauer (2006) argues that divestitures were often regarded as a simple mirror image of M&As and different types of divestitures, such as spin-offs and split-ups (no external buyers) and equity carve-outs (the sale of the unit to the public via an IPO), are rarely considered. Each of these types of divestitures has different and unique (p. 82) characteristics and thus, factors influencing them can be different. By considering different types of divestitures, we can develop a much richer understanding of the divestiture behaviors. M&A researchers have described acquisition processes (e.g. Haunschild et al. 1994), but research on the divestiture process is rare (Brauer 2006). Moschieri and Mair (2008: 417) recommend that researchers examine “a more comprehensive picture of these complex operations.” Examining the divestiture processes will provide important insights. For example, divestiture of an acquired business can involve a political process (Hayward and Shimizu 2006). A rich description of the interactions among top managers and stakeholders can help to open the black box on the upper echelon of organizations. Additionally, most M&A research focuses on acquirers with little attention to sellers. Buchholtz et al. (1999: 633) point out that “we know a lot more about the art of ‘buying’ than we do about the art of ‘selling.’” Recently, Graebner (2009) provided an insightful study on trust in the process of acquisition by showing the asymmetries between buyers and sellers. More research is needed to clarify divestiture and selling processes. Given the inherent difficulties involved in M&As, learning from the failures and utilizing the learning for future deals are important. However, research on these topics is surprisingly limited. Moreover, there is little research on the aftermath of divesting a formerly acquired business. Divestitures of units typically indicate an acquisition error. It is reported that Charles Schwab has been hesitant about acquiring weaker rivals and expanding, because Schwab was traumatized by its early unsuccessful acquisition of SpundView Technology Group (Farzad and Palmeri 2009). Because a small but increasing number of studies are examining learning from mistakes and failures, research on this topic can

contribute to our knowledge of divestitures and organizational learning. While there are studies that examine the effects of acquisition on the target unit in terms of executive retention (Cannella and Hambrick 1993), the unit of analysis of most of the research is the employee, not the target unit (e.g. Gopinath and Becker 2000). Little research exists on the target unit in the aftermath of the divestiture (Graebner and Eisenhardt 2004). The poorly performing acquired unit often receives little new investment and may be isolated from other units internally grown. As a result, the resources and capabilities may be deteriorated when it is divested. For example, it is reported that Chrysler lacks key engineering functions because they were outsourced under Daimler (Welch 2007). Thus, the price may correctly reflect the weak capabilities of the divested unit. The inherent difficulties involved in M&As increase the probability of divestiture. There is much to learn from divestitures, particularly divestitures of formerly acquired businesses. Of course, the potentially weakened state of many divested units heightens the importance of learning from and building capabilities with acquisitions.

Summary of Research on Divesting Acquired Businesses

As M&As become more popular, both domestically and internationally, the inherent difficulties involved in M&As increase the number of divestitures. Given that such divestitures are strongly influenced by the earlier acquisition decisions, understanding (p. 83) divestitures of acquired businesses contributes to the M&A literature and also provides broader insights into research on strategic decision making, organizational change, and escalation of commitment. Recent studies found that non-rational, behavioral factors had important influences on the divestiture decisions. More studies are needed and specific areas abundant in future research potential include examining different types of divestitures, careful exploration of divestiture processes, understanding the aftermath of divestitures (selling firms), and understanding the outcomes for acquired firms that were later divested.

Building Capabilities with Acquisitions

The preceding sections attest to the breadth and depth of our current understanding of the key success factors in M&A. However, despite this sizable body of theoretical insights, many firms seem unable to implement them effectively in practice. After all, evidence suggests that the fate of the average acquirer has improved little over time (see King et al. 2004). It is difficult because the required knowledge and skills are largely tacit.

Therefore, learning from prior experience may be crucial to enhance the performance of acquisitions (Barkema and Schijven 2008a).

To be sure, this learning from prior experience by the acquiring firm is different from learning from the focal deal. The next section deals with how the acquirer can learn from the resources and capabilities of its focal acquisition (target-specific learning). In the present section, we focus on how lessons learned from previous acquisitions can help the acquirer make additional acquisitions effectively.

At first sight, the remarkable success of a handful of experienced acquirers such as Cisco Systems (Paulson 2001) and General Electric (Ashkenas et al. 1998)—suggests that acquisition performance might follow a conventional learning curve (Arrow 1962). However, the phenomenon is considerably more complex; unlike the evidence of learning curves in operating settings (see Yelle 1979), research on learning in *strategic* settings has produced inconsistent results. With respect to acquisitions, some scholars have found a positive relationship between experience and performance (Barkema et al. 1996; Barkema and Schijven 2008b; Bruton et al. 1994; Fowler and Schmidt 1989; Power 1982), whereas others have found insignificant (Baum and Ginsberg 1997; Bruton et al. 1994; Hayward 2002; Kroll et al. 1997; Lubatkin 1982; Newbould et al. 1976; Wright et al. 2002; Zollo and Leshchinskii 2004; Zollo and Singh 2004) or U-shaped relationships (Haleblian and Finkelstein 1999; Porri 2004; Zollo and Reuer 2010).

These inconsistencies in the performance implications of prior acquisition experience suggest that important contingencies are at play, primarily because of the dissimilarities between acquisitions (see Finkelstein and Haleblian 2002; Haleblian and Finkelstein 1999). The acquisition process consists of numerous interdependent sub-activities—such as due diligence, valuation, negotiation, financing, and integration—each of which often (p. 84) must be customized to the specific deal (Haspeslagh and Jemison 1991b; Hitt et al. 2001b). As a result of this multidimensional heterogeneity across acquisitions (Zollo and Singh 2004), acquirers face high causal ambiguity (Lippman and Rumelt 1982), encountering difficulty disentangling “causal relationships between the decisions or actions taken and the performance outcomes obtained” (Zollo and Winter 2002: 348). This lack of insight into underlying causal patterns impedes effective learning because routines developed on the basis of prior experience are not readily generalizable across acquisitions.

Scholarly inquiry into organizational learning in the context of acquisitions can be traced back to the late 1970s (see Newbould et al. 1976). However, whereas early work was largely atheoretical, empirically driven, and almost metaphorical, based on the traditional learning curve perspective (see Arrow 1962; Yelle 1979), three distinct and valuable research streams have developed since the mid-1990s. Collectively, these three streams of work are at the forefront of a more mature theory of organizational learning in strategic settings. Below, we briefly discuss the most important developments in each of these research areas.

Negative Experience Transfer

One implicit assumption of early work on organizational learning was that experience is inherently positive. Halebian and Finkelstein (1999) made a seminal contribution by breaking with this simplistic assumption. Drawing on experience transfer theory from cognitive psychology (Cormier and Hagman 1987; Ellis 1965), they argued that transferring acquisition routines from one industry to another results in transferring old lessons to new settings where they do not apply. The authors hypothesized and found that a firm's second acquisition will, therefore, typically underperform its first. Although this negative trend persists following the second acquisition, the firm ultimately develops the expertise needed to identify underlying dissimilarities across acquisitions, thus enabling it to generalize prior experience only when it is applicable (see Finkelstein and Halebian 2002).

Recent research built on this insight, suggesting that the performance of an acquisition is affected by the heterogeneity of the firm's accumulated acquisition experience. Hayward (2002) found that, although heterogeneous experience can complicate learning, experiences that are too homogeneous limit exploration and, thus, may lead to a competency trap for the acquirer. This result suggests that the performance of the focal acquisition tends to benefit from acquisition experience that is neither too heterogeneous nor too homogeneous. Alternatively, Bingham and Eisenhardt (2007) find that learning is more about developing expertise than refining routines, suggesting that experience heterogeneity is beneficial to learning.

Another research stream focuses on experience spillovers across, rather than within, distinct corporate development activities. For example, Porrini (2004) finds a U-shaped relationship between alliance experience and acquisition performance, similar to Halebian and Finkelstein's (1999) findings on acquisition experience. Similarly, in the (p. 85) international

business literature, Nadolska and Barkema (2007) uncover a U-shaped relationship between international joint venture experience and the longevity of international acquisitions. Finally, building on experience transfer theory to offer a more nuanced view, Zollo and Reuer (2010) argue and find that alliance experience is beneficial only if the focal acquisition requires little integration because alliances teach acquirers little about integration.

Overall, this stream of research shows that acquisition experience is not a panacea, but can actually hurt the acquirer's performance as well. As such, it has substantially deepened our insight into the mechanisms underlying the organizational learning process.

Deliberate Learning Mechanisms

Another rapidly growing research stream pursues a better understanding of organizational learning by relaxing a second implicit assumption of the traditional learning curve that experience automatically implies learning. Some of the prior research shows that high levels of heterogeneity in acquisition experience may be overwhelming for boundedly rational actors due to its causal ambiguity. As such, there is an emerging body of research on deliberate learning mechanisms, to explain how firms can learn from heterogeneous experience. The rationale is that firms need to move beyond “semi-automatic” experience accumulation to deliberate learning mechanisms.

Haleblian, Kim, and Rajagopalan (2006) move beyond the traditional notion of routine-based, semi-automatic learning by showing that learning can be enhanced through active evaluation of performance feedback about recent acquisitions. Hence, strong performance reinforces the positive effect of acquisition experience and poor performance reduces it. Strong performance strengthens the firm's belief that it has effective routines, while poor performance leads to reappraisal. As such, performance represents a key mechanism through which routines are refined or discarded.

Hébert, Very, and Beamish (2005) argue that experience is insufficient for acquisition capability development, because the lessons learned may not be available to organization members who need them. They propose that expatriates play a central role in transferring the experience from the acquiring firm to the acquired unit. Examining cross-border acquisitions, they find that general acquisition experience, industry experience, host-country experience, industry acquisition experience, or local acquisition experience

do not have independent effects on acquisition longevity. Significant benefits are only found for some of these experience types with expatriates in the focal unit. Apparently, experience only results in learning if there are mechanisms in place to transfer it to appropriate places in the firm.

Zollo and Winter (2002) argue that infrequently performed tasks with high levels of heterogeneity and causal ambiguity require learning mechanisms that are “aimed at uncovering the linkages between actions and performance outcomes” (Zollo and Winter 2002: 342), such as experience articulation and codification. Zollo and Singh (2004) (p. 86) apply this argument and demonstrate an insignificant effect of acquisition experience on performance, but a significant positive effect of knowledge codification tools, such as manuals and checklists, for due diligence and integration. This positive effect increases with the level of acquisition integration, suggesting that the benefits of deliberate learning mechanisms increase with the complexity of the task and the level of causal ambiguity.

Thus, research strongly suggests that experience accumulation is a necessary, but insufficient, condition for successful acquisition capability development. Deliberate organizational learning mechanisms are crucial in dealing with the high levels of complexity and causal ambiguity that firms encounter in acquisitions.

Learning from Others

Some researchers have questioned a third assumption with the traditional learning curve, namely that firms only learn from their own experience. They posit that firms may also learn from other firms, based on sociological theory of imitation (DiMaggio and Powell 1983) and psychological theory of vicarious learning (Bandura 1977). Vicarious learning allows a firm to explore a variety of ways of performing tasks without incurring the costs and risks that such experimentation entails (Miner and Haunschild 1995). In other words, it enables a firm to engage in “exploratory learning” (March 1991), even though each of the firms from which it learns may only be “exploiting” their experiences within their own domains.

A substantial body of evidence suggests that imitation is a common practice in the context of acquisitions. Haunschild (1993) finds that firms imitate the acquisition behavior of other firms to which they are tied through board interlocks, at least for horizontal acquisitions. She and her co-authors also find (1) that firms rely on their interlock partners for information on how

much to pay for targets, especially when it is difficult to determine their value (Haunschild 1994), (2) that they rely more on interlock partners which are similar to them and less so if there are alternative information sources (Haunschild and Beckman 1998), and (3) that they decide which investment bank to hire based on how often others have used that bank (frequency-based imitation), how many large and successful firms have used it (trait-based imitation), and size of the average premium that firms using that bank have paid (outcome-based imitation) (Haunschild and Miner 1997). Interestingly, Westphal, Seidel, and Stewart (2001) observe that, apart from imitating their interlock partners' acquisition behavior, firms also imitate the imitative behavior of interlock partners, which they label "second-order imitation."

Focusing on the imitation of competitors' acquisition behavior rather than that of interlock partners, Baum, Li, and Usher (2000) show that firms tend to acquire targets near those of competitors' recent acquisitions. Furthermore, Yang and Hyland (2006) find that firms in the financial services industry are more likely to engage in unrelated, rather than related, acquisitions if their competitors undertake more unrelated acquisitions.

(p. 87) In contrast to the aforementioned studies, several researchers have focused more on actual vicarious learning rather than imitation. For instance, Beckman and Haunschild (2002) show that firms can learn to acquire more successfully by tapping into the experience of their interlock partners. Specifically, they find that this beneficial learning is strongest if the experience of the focal firm's partners is highly heterogeneous. Furthermore, Shaver, Mitchell, and Yeung (1997), focusing on foreign direct investment (including acquisitions), find that the longevity of such investments undertaken by foreign firms, with experience in the US but no target industry experience, benefits from the experiences of prior foreign entrants, suggesting that vicarious learning occurs.

Summary of Research on Building Capabilities through Acquisitions

Given the high failure rate of acquisitions, it seems crucial for acquirers to learn from their prior experience with acquisitions in order to increase the likelihood of success in future acquisitions that they make. However, early work on the performance effects of prior acquisition experience produced highly inconsistent findings. In reaction to this mixed evidence, three research streams have developed since the mid-1990s that, collectively, are at the forefront of a more mature theory of organizational learning in the

context of acquisitions and other strategic moves. These streams of work focus on negative experience transfer, deliberate learning mechanisms, and learning from others. Learning new knowledge helps the firm to build capabilities to make acquisitions and manage them in ways that create value. In sum, there is evidence that firms imitate the acquisition behavior of others and that they commonly rely on vicarious learning to enhance the performance of their own acquisitions. Although such learning can be beneficial, direct learning for acquired firms can be used to build capabilities, which is discussed next.

Technological Learning in Acquisitions

Rapid technological change and increasing knowledge intensity have made firm innovation an important source of value creation in many industries. The increasing scope of knowledge needed to remain competitive has made M&As a prominent strategy for acquiring new knowledge and capabilities (Makri et al. 2010; Uhlenbruck et al. 2006). Acquisitions of small technology firms, in particular, are an important source of innovation for established firms in high technology industries (McEvily et al. 2004). However, while acquisitions can be a source of external innovation, research has shown that acquisitions can also have a negative effect on both R&D expenditures and patent productivity (Hitt et al. 1991, 1996). Some suggest that firms making acquisitions introduce fewer new products into the marketplace (Hitt et al. 1990) and also that their (p. 88) key inventors either leave the acquired firm after the acquisition or significantly reduce their patenting performance (Ernst and Vitt 2000).

One possible explanation is that the acquisition process often absorbs significant amounts of managerial time and energy, thereby diverting managerial attention from other important activities such as innovation (Haspeslagh and Jemison 1991a; Hitt et al. 1996). Especially if the acquired firm's knowledge base is large in comparison to the acquiring firm's knowledge base, "fairly major changes would have to be made in the acquiring firm leading to a significant disruption of existing processes" to absorb and use this knowledge (Ahuja and Katila 2001: 201). The change processes involved in integrating the target firm with the acquirer may also disturb the routine functioning of the target firm, thus endangering the chances of bringing its products speedily to market. Further, firms following an active acquisition strategy often need substantial resources to complete their acquisitions and thus resort to the use of debt. Doing so creates debt costs that must be traded off against the use of these resources for other

purposes such as funding new R&D projects (Hitt et al. 1996). Acquisitions can cause a culture shock or lead to dissatisfaction by key inventors due to modifications in the work environment. Talented engineers are often attracted to smaller organizations because of their ability to offer strong incentives. Such engineers are likely to leave before their firm has been fully integrated into the acquirer, which would critically undermine the target firm's product development capacity (Zenger 1994). As a result, key R&D personnel may decide to leave the firm, causing severe and costly technological gaps (Ernst and Vitt 2000).

The question then becomes how acquiring firms can reap the intended benefits of their acquisitions and successfully complement their internal innovation efforts. The answer to this has two components, one relating to the pre-acquisition target-selection phase and the other relating to the post-acquisition integration phase. The focus of this section is the former, examining how the characteristics of the target and acquirer firms affect the types of innovation outcomes. Specifically, we explore how the acquirer's and target's degree of knowledge relatedness affect innovation outcomes post-M&A.

Knowledge Relatedness and Innovation Outcomes in M&As

For firms that rely on continuous innovations as a source of competitive advantage, knowledge synergies have become increasingly critical. Research on high technology M&As has identified the relatedness of the buyer's and the target's technological knowledge as an important predictor of post-merger innovation performance (Cloudt et al. 2006; Cassiman et al. 2005; Hagedoorn and Duysters 2002). The positive effect on innovation is, in part, based on absorptive capacity; the more similar the two firms' technological knowledge, the more quickly the acquired firm's knowledge can be assimilated and commercially exploited (Cohen and Levinthal 1990; Lane and Lubatkin 1998). However, too much similarity reduces the acquirer's opportunities for learning (Hitt et al. 1996). For example, Ahuja and Katila (2001) examined the impact of technological (p. 89) acquisitions on the subsequent innovation performance in the chemicals industry and found that the relatedness of the acquiring and target firm knowledge bases has a curvilinear effect on innovation output. Similarly, Cloudt et al. (2006), found an inverted U-shaped relationship between technological relatedness and post-merger innovation performance in a study of several high technology industries. Innovation performance (innovation quantity) was lowest for M&As when the firms were in highly similar or largely unrelated technology

areas and highest when there was a moderate degree of overlap. Further, Cassiman et al.'s (2005) in-depth study of 31 high technology M&As found that firms are more likely to reduce R&D effort, shorten the time horizon of projects, and emphasize development over research when they acquire targets in similar technology areas than when they acquire targets in complementary areas. In short, not only do M&As integrating highly similar technologies narrow the range of potential learning, they also reduce the incentives to explore the divergent research opportunities available. The M&As that most improve innovation performance are those in which the technological knowledge is similar enough to facilitate learning, but different enough to provide both new opportunities and the incentives to explore them.

Makri et al. (2010) disentangle knowledge relatedness into science and technology and consider knowledge complementarities as well as similarities. They suggest that knowledge heterogeneity in terms of type (science, technology) and in terms of combination potential (complementarity) affects the exploration and exploitation processes and consequently the innovation outcomes achieved. The authors argue that similarities and complementarities in science and technology can affect firms' innovative outcomes in two ways. First, they can influence the maximum potential novelty of innovations by affecting either core design concepts or linkages between components. Second, they can influence the ease and speed of innovation. First, we examine the role of science and technology in innovation.

The Role of Science and Technology in Innovation

Despite the tendency to treat technology and science interchangeably, "technology is not science—engineers are not scientists" (Allen 1984: p.307). Technology is theoretical and practical knowledge, skills, and artifacts that can be used to develop products and services. A firm's *technology domain* is the set of applied technological problems that the firm has experience in solving. It is about exploitation, adapting, and combining what is known to respond to pressures from markets for products and services (Clark 1987; Rip 1992; Balmer and Sharp 1993). Alternatively, science is knowledge about the general characteristics, antecedents, and relationships of natural, social, and technological phenomena that are openly shared. A firm's *science domain* is the set of scientific research topics of which it has demonstrated some understanding, typically via employee publications (Kuhn 1970; Latour 1987; Tushman and Rosenkopf 1992). These differences

between science and technology suggest that technological knowledge facilitates an incremental recombination of components (Fleming and Sorenson 2004), leading to (p. 90) incremental or architectural innovations (Henderson and Clark 1990). Scientific knowledge, on the other hand, can play an *enabling* role by stimulating a better understanding of the problem at hand, which suggests that science-based innovations could overturn core design concepts underlying existing technology and lead to radical innovations (Henderson and Clark 1990). Simply put, technology facilitates an *exploitative* recombination process most likely leading to incremental innovations, and science enables an *exploratory* process most likely leading to radical innovations.

Science and Technology Relatedness and Innovation Outcomes in M&As

When two firms have very similar science and technology domains, the most novel innovations possible are incremental because the lack of new scientific knowledge encourages incrementally moving to adjacent points on the technological landscape (Cyert and March 1963). Knowledge similarities (technology similarity in particular) facilitate the exchange and combination of existing knowledge (Nonaka et al. 1996) and encourage exploitation of what is known. Thus, knowledge similarity facilitates innovation productivity because firms need less time and effort to integrate their R&D activities. However, while knowledge similarity encourages exploitation of what is known, it is less likely to result in novel recombinations. In fact, the path dependency created by strong similarity reduces the probability of developing radical innovations because there is a limit to the number of new recombinations that can be created using the same set of knowledge elements. Additionally, science similarity suggests that the two firms' scientists have similar understandings of how technologies work and thereby search for new solutions in the "neighborhood" of old or existing solutions. Such knowledge redundancy diminishes the opportunities for creating radically new knowledge and leading to novel innovation.

Alternatively, when two firms have high complementarity in both their science and technology domains, new technologies may be discovered, leading to more radical innovations (Henderson and Clark 1990). In other words, while knowledge similarities (technology similarities in particular) facilitate a process of exploitation by refining and extending existing competencies and technologies, knowledge complementarities (science complementarities in particular) facilitate a process of exploration by

experimenting with new competencies and technologies (March 1991). Research in organizational learning suggests that the potential for new innovations increases when different knowledge bases are combined (Tushman and Rosenkopf 1992), hence the potential for new configurations increases when knowledge bases are complementary. Exploring diverse realms of knowledge can increase the probability that a radically different approach to problem solving emerges (Fiol and Lyles 1985; Levinthal and March 1993) and exposure to a new set of routines, new modes of reasoning, and challenges to existing cause-effect understandings help firms discover novel solutions to its problems. In Ahuja and Lampert's words, "... the irritant of new, imperfectly understood streams of knowledge (p. 91) can foster the pearls of insight" (2001: 527). If the acquirer has to assimilate and integrate a complementary science knowledge base in addition to a complementary technology knowledge base, such a combination can have an increasingly positive effect on invention novelty (Hall et al. 2001; DeCarolis and Deeds 1999; Deng et al. 2001; Rosenkopf and Nerkar 2001). However, integrating complementary technology and complementary science is more time consuming and difficult than integrating similar knowledge domains because combining complementary knowledge requires integrating related but dissimilar sets of technological problems and scientific patterns. Assimilating and integrating a complementary science knowledge base and a complementary technology knowledge base could have a negative effect on innovation productivity because they require significant managerial attention (Haspeslagh and Jemison 1991a).

Implications for Management Practice

A major challenge for managers and boards of directors is managing the breadth and depth of the firm's own scientific and technological knowledge to support its short- and long-term strategic needs (Norling et al. 2000). Few firms can survive long term if they focus exclusively on incremental innovation. However, in most companies, there are strong institutional and individual biases towards incremental innovations (Hoskisson et al. 2002). At the other extreme, firms that focus exclusively on seeking radical innovations face great uncertainty, and must often wait years to learn whether their efforts will pay off. Corporate R&D executives seeking to use acquisitions to strengthen their firm's innovation pipeline must be clear as to the type of innovations they desire. If the firm needs to quickly reinforce its existing product market positions, targets with relatively similar science and technology are likely to be the most useful. If the firm needs to improve or redefine its existing products and services, targets with similar technology

and complementary science can help them accomplish that over the near to medium term. If the firm is seeking to reinvent itself, reinvent its industry, or enter a new industry as a disruptive innovator, it should select targets with complementary science and technology, but must be willing to invest the time and effort needed to make such collaborations successful.

The differences in the amount of time needed to realize innovations from different combinations of similarity and complementarity in science and technology suggest that the evaluation criteria for M&As, and the incentives for R&D managers, should vary according to the similarity or complementarity of the science and technology involved. Acquisitions involving highly complementary knowledge should be evaluated based on longer time frames and more subjective criteria, because those types of interactions take longer to come to fruition. The R&D managers involved in those M&As should have long-term incentives, perhaps tied to the innovations or patents produced, or changes in the firm's market value. Shorter time frames and more objective financial criteria reinforce the short-term, incremental innovation bias and make it difficult to realize the potential benefits of complementary science and technology of other firms. (p. 92)

Summary of Research on Technological Learning from Acquisitions

Recent studies on high technology M&As suggest that the knowledge relatedness of the buyer and target firms is an important antecedent to post-merger innovation performance. The M&As that most improve innovation performance are those where scientific and technological knowledge is similar enough to facilitate learning but different enough to provide both businesses with new learning opportunities. More specifically, if the acquirer has to assimilate and integrate complementary science knowledge in addition to complementary technology knowledge, such a combination is likely to have a positive effect on invention novelty, but a negative effect on innovation productivity. When firms are able to enhance their innovation (amount and novelty) through an acquisition, it increases the probability that the acquisition will create positive value for the firm.

Gaining complementary knowledge in M&As is not limited to domestic acquisitions. Cross-border M&As have become increasingly common not only for the purpose of taking advantage of economies of scale and scope, but also for gaining access to complementary technological and science knowledge.

Making Cross-Border Mergers and Acquisitions

Cross-border M&As are an increasingly common strategy adopted by firms to create value in the fiercely competitive global market. In the most recent M&A wave, M&As occur predominantly across borders (Shimizu et al. 2004). Firms increasingly acquire targets in foreign countries to increase market power, overcome market entry barriers, enter new markets, reduce competition, change the competitive landscape, increase efficiency, access new and diversified technologies and knowledge, and create new knowledge, products, and services (Brakman et al. 2008; Hitt et al. 2001b). Cross-border M&A has received much scholarly attention in recent years (e.g. Hitt et al., 2001a, 2001b). Prior research has primarily examined cross-border M&As as a foreign market entry mode and cross-border M&A performance from several theoretical perspectives: transaction cost economics (TCE), ownership-location-internationalization (OLI) framework, resource-based view (resource management), institutional theory, learning theory, and the synergy perspective (Barney 1991; Dunning 1993; Hitt et al. 2000; North 1990; Scott 2001; Sirmon et al. 2007; Vermeulen and Barkema 2001; Williamson 1975).

Cross-Border M&A as an Entry Mode

Most prior research investigated factors influencing firms' choice of cross-border M&As to enter foreign markets rather than an international joint venture (IJV), international (p. 93) alliance, Greenfield venture, or exporting (Hitt et al. 2000, 2004, 2006; Isobe et al. 2000; Zahra et al. 2000). According to TCE, cross-border M&A allows foreign acquirers to internalize specific assets (e.g. patents, advanced technologies) and thus, helps protect acquirers' intellectual property rights (Barkema and Vermeulen 1998; Brouthers and Brouthers 2000; Hitt et al. 2004; Williamson 1975). Cross-border M&As can decrease transaction costs associated with knowledge expropriation by local firms (Williamson 1975). Cross-border M&A also affords more control to acquirers than IJVs and international alliances.

Researchers have suggested that acquirers generally lack knowledge about host-country culture, regulations, and business norms, which poses unique challenges for them when integrating targets and creating value from cross-border M&As (Eden and Miller 2004). Acquirers encounter a liability of foreignness (LOF) (Eden and Miller 2004). Using a learning theory perspective, Nadolska and Barkema (2007) found that firms experienced in cross-border M&As are more likely to engage in cross-border M&As,

suggesting that learning from previous cross-border M&As could help decrease LOF.

Prior research has found that cultural distance affects firms' entry mode choice, though findings are mixed (Brouthers and Brouthers 2000; Hennart and Reddy 1997; Tihanyi et al. 2005). Recently scholars have used institutional theory to investigate how country institutions (e.g. host-country institutions, institutional distance between home and host countries) affect firms' choice of foreign market entry mode (Brouthers 2002; Eden and Miller 2004; Habib and Zurawicki 2002; Uhlenbruck et al. 2006; Xu and Shenkar 2002). Researchers found that the level of corruption in the host country influences firms to choose cross-border M&As as their entry mode (Habib and Zurawicki 2002; Uhlenbruck et al. 2006). Institutional scholars also suggested that regulatory, normative, and cognitive institutional distance affects firms' choice of foreign market entry mode (Eden and Miller 2004; Xu and Shenkar 2002).

Building on the resource-based view and resource management, cross-border M&As facilitate firms' entry into foreign countries to obtain target firms' resources, including physical facilities, technology, human capital, and established relationships with suppliers, distributors, and government officials (Barney 1991; Shimizu et al. 2004; Sirmon et al. 2007). Cross-border M&As could further act as "an admission ticket" for acquirers to navigate in host countries, exploiting local business opportunities and discovering potential yet unknown resources and services that could add new value to acquirers (Barney 1991; Sirmon et al. 2007; Smit 2001).

Cross-Border M&A Performance

Researchers have primarily examined cross-border acquirers' short-term abnormal returns as a performance measure (Amihud et al. 2001; Berger et al. 2000; Bruner 2004; Correa 2008; Cybo-Ottone and Murgia 2000; Goergen and Renneboog 2004; Harris and Ravenscraft 1991; Moeller and Schlingemann 2005; Seth et al. 2002; Shimizu et al. 2004). Some finance researchers have recently focused on acquirers' long-term abnormal (p. 94) return (e.g. 36 months) after the date of a cross-border M&A announcement (Chakrabarti et al. 2009; Mitchell and Stafford 2000). Yet, the results provide no definitive conclusions. For example, Seth et al. (2002) found that acquirers are more likely to create value by obtaining resources from foreign targets, and yet, less likely to create value due to managers' actions to reduce their job risk (i.e. managerialism). Further, King et al.'s (2004) meta-

analysis showed that the commonly examined variables, such as acquirers' M&A experience, and resource complementarities between the acquirer and the target, have little effect on M&A value creation.

Cross-border M&As represent a strong commitment and high expectation to create value from acquiring foreign targets in the long term. Value creation is more based on firms' resources and capabilities to compete successfully in the dynamic global market. As discussed earlier, cross-border M&As expand acquirers' knowledge base, including new technology, and various ways of managing resources. Vermeulen and Barkema (2001) found a positive relationship between the number of the firm's preceding international acquisitions in related domains and the survival rate of subsidiaries, suggesting that cross-border M&As broaden a firm's knowledge base, decrease inertia, and enhance the viability of its later ventures. So, cross-border M&A could be an important strategy for firms to continuously create value and compete in the fiercely competitive global market (Hitt et al. 2001a; Vermeulen and Barkema 2001).

A few exceptions that examined cross-border M&As' long-term performance include Uhlenbruck and DeCastro (2000) and Zhu et al. (2010). Uhlenbruck and DeCastro (2000) found that acquirers are likely to create value by acquiring targets in countries with lower risks. Building on institutional theory, Zhu et al. (2010) extended the synergy perspective prevailing in M&A research to the country level, suggesting that acquirers need to identify the right host country in which an appropriate target with potential synergy hopefully exists. Zhu et al. (2010) demonstrated that host-country institutional environments, including regulatory, economic, physical, and political institutions, affect cross-border M&A performance (Holmes et al. 2010).

Other Cross-Border M&A Research

Researchers have investigated other important topics related to cross-border M&As, such as the premiums that acquirers pay for foreign targets (Krishnan et al. 2007; Weitzel and Berns 2006), and the transfer of organizational practices between acquirers and foreign targets (Berger et al. 2004). Krishnan et al. (2007) suggested that acquirers are likely to pay too high premiums for foreign targets than domestic ones because acquirers are constrained by large information asymmetries and thus, face the risk of adverse selection in identifying the right foreign target. Weitzel and Berns (2006) examined 4979 cross-border and domestic takeovers to test the

relationship between host-country corruption and premiums paid for targets. Interestingly, they found that host-country corruption is negatively related to target premiums, after controlling for other governance-related factors such as political stability, legal systems, and financial disclosure standards.

(p. 95) Building upon institutional theory, researchers have suggested that acquirers transfer their organizational practices to foreign targets to facilitate the integration between acquirers and their foreign targets (Kostova and Zaheer 1999). Berger et al. (2004) found that acquirers from highly developed economies are more likely to export financial institution management to foreign targets.

Researchers have also investigated diverse cross-border M&A strategies (e.g. Klaus and Tran 2006; Reuer 2001). For example, Klaus and Tran (2006) identified three cross-border M&A strategies, including staged, multiple, and indirect cross-border M&As. A staged cross-border M&A refers to partial acquisitions in which the foreign acquirers have the option to acquire full control later; multiple cross-border M&As suggest that each acquisition is only a small building block in foreign countries; and an indirect cross-border M&A represents a post-acquisition investment that exceeds the investment in the original one (Klaus and Tran 2006). Reuer (2001) found that firms' abnormal returns from IJV partner buyouts are positively related to the firms' R&D intensity. Additionally, Krug and Nigh (2001) suggested that executives have different perspectives on cross-border M&As from domestic ones regarding (1) organizational cultural differences between acquirer and the target; (2) system changes in the target; (3) acquisition negotiations; and (4) executives staying or leaving after the acquisition.

Future Research

While prior research has advanced our understanding of cross-border M&A as an important entry mode, more fruitful future research is needed on their performance outcomes.

Emerging economy firms from Asia, Latin America, Eastern Europe, and the Middle East have become active in acquiring foreign firms in recent years (*The World Investment Report* 2006). For example, the China Merger & Acquisition Annual Report (2007) showed that the transaction value of 63 cross-border M&As was about US\$18.67 billion—an increase of 105.4% from 2006. The number of deals in 2007 increased 117.6%. Prior cross-border M&A research has focused on acquirers from developed countries, as

they dominated cross-border M&A transactions in the last century. Future research is needed to examine cross-border M&As by acquirers from less developed countries. Major research questions include: (1) Are previous theoretical models and findings applicable to emerging economy acquirers? (2) If not, what causes these differences? What new theoretical models could provide insights about emerging economy firms' acquiring foreign targets?

Second, integration between acquirers and targets is vital to synergy creation and thus, cross-border M&A value creation (Hitt et al. 2001a, 2001b). Yet, it is a challenging process (Cording et al. 2008), involving merging of operations, technology, resources, decision making, organizational culture, national culture, and norms, often requiring a long period of time (Barkema and Schijven 2008a). Prior research has demonstrated the effects of cultural distance on the integration between acquirers and foreign targets (Chakrabarti et al. 2009; Stahl and Voigt 2008; Teerikangas and Véry 2006). More (p. 96) research is needed on how integration can be effectively achieved in cross-border M&As. Third, prior research established that firm and country-level factors influence cross-border M&A performance (King et al. 2004; Seth et al. 2002; Zhu et al. 2010). Based on institutional theory, country-level factors (institutions) affect their embedded firms' behavior (North 1990; Scott 2001). Certainly host (home) country institutions affect targets' (acquirers') behavior, which affects cross-border M&A performance. Further, home and host-country institutions influence the integration between the acquirer and the target, such as transferring resources from the acquirer/target to the target/acquirer, and the percentage of the target's top managers in the combined firms' top management team (Stahl et al. 2010). Yet, we lack understanding of the mechanisms through which country-level factors (institutions) affect firm behavior and the integration between acquirers and foreign targets. Future research should examine acquirers' due diligence, the role of investment banks, and selection of financing in cross-border M&As (Hitt et al. 2001a).

Summary of Research on Cross-Border Acquisitions

Cross-border M&As have become an increasingly important strategy employed by firms to enhance their ability to compete in globally competitive markets and to create value. In fact, acquisitions used to enter international markets have been on the increase in recent years. In so doing, the foreign firm gains an immediate foothold in the market entered and acquires the knowledge of how to operate there effectively. Yet, creating value with cross-border acquisitions is highly challenging.

The research suggests that firms often gain benefits from a cross-border acquisition, but also experience more serious problems that are difficult to resolve. Therefore, creating value in these cases is difficult. The research suggests that acquiring firms are more likely to create value when they enter countries with more favorable institutional environments and thereby, experience lower risks. Additionally, because of larger information asymmetries, firms are more likely to pay too high a premium in making cross-border acquisitions, which lowers the probability of creating value as discussed earlier, herein. More research is needed, especially in understanding the effects of institutional distance on value creation in cross-border acquisitions and on such acquisitions made by emerging market firms.

Thus, research has advanced our understanding of cross-border M&A from multiple theoretical perspectives. More research is needed to provide insights on cross-border M&As to advance our understanding, and improve their value creation, particularly in this changing global landscape.

Conclusions

M&As have become a strategy used by many companies across the globe. And, while they can be successful, many of them create little or no value. Prior research suggests that firms that use acquisitions to diversify, especially into unrelated businesses and those (p. 97) distant from their core business, are unlikely to create value. But, the mixed results of research may also suggest that the relationship is more complex (i.e. nonlinear). Research also suggests that the difference in size between the acquiring and target firms influences value creation. When the target firm is much smaller than the acquiring firm, it is unlikely to affect value creation. However, as the difference narrows, the potential influence on value creation grows, although, when the two firms are of similar size, integration often is a problem leading to value loss rather than creation. M&A experience can lead to capabilities to make effective M&As if the acquiring firm's managers learn from their acquisitions. Care must be taken, however, because they can attribute the positive and negative outcomes from prior M&As to the wrong factors, thereby increasing the likelihood of value disintegration instead of value creation.

The research suggests that when acquiring firms pay cash, they are more likely to create value from the acquisition than if they use stock. They are more likely to use stock to pay for acquisition when their own firm is

undervalued. However, the firm may have a low value because of poor management, suggesting that they may be unable to manage the merged firm to create value. High performance by the acquiring firm in prior years has been shown as a positive predictor of value creation in acquisitions. Prior high performance likely suggests good management, thus predicting that managers are more likely to make and implement (i.e. integrate the two businesses) acquisitions that create value.

The specific research examined herein suggests that firms paying high premiums have a low probability of creating value in the acquisition because they are unlikely to create enough synergy to recoup the premium paid. These problems are often exacerbated by actions taken by executives when they realize that inadequate returns are likely to be created. In these cases, they sometimes engage in excessive downsizing and thereby, lose valuable human capital. Although this action creates short-term cost savings, it also weakens the firm's capabilities, harming its potential to achieve longer-term returns. And, when these actions fail, executives often delay divesting the poorly performing business and may even escalate their commitment to it. There are several reasons for this, including escalation of commitment to the failed decision. Firms can learn from acquisitions if they select their targets carefully and use processes that enhance knowledge creation from the merged firm. In particular, they are most likely to enhance their innovation if they acquire firms with complementary science and technological knowledge.

Finally, the global competitive landscape that has developed over the last two decades has motivated and facilitated an increasing number of cross-border acquisitions. It is exceedingly complex and challenging to create the value desired from such acquisitions. Differences in culture and in formal institutional environments only enhance the difficulties. Yet, they also pose significant opportunities because of access to new markets and valuable resources. They must be very careful in selecting targets, especially because of higher information asymmetry and they have to integrate the newly acquired firm quickly and effectively in order to enjoy the potential advantages the acquired firm affords.

(p. 98) All of the research reviewed herein suggests that value creation in M&As is possible, but does not occur often. The most critical element here is highly knowledgeable managers who are intent on creating value. They must avoid the common problems (e.g. hubris and paying too high premiums) and overcome the significant challenges that M&As present.

Therefore, M&As are likely to create value only when they are made by highly capable managers who avoid psychological biases and who have developed acquisition capabilities through learning from previous M&As. They carefully select targets to ensure complementary resources and capabilities and integrate the two businesses in ways that enhance the synergy between them.

We conclude that, since M&As have become increasingly common because of their importance in the global competitive landscape, more research is needed. More M&A-based research on premiums, divestitures, learning, capability development, innovation, and cross-border strategies could inform theory, empirical work, and practice. Thus, scholars interested in M&As have significant opportunities to make important contributions to our knowledge in these areas.

Appendix 4.1: Empirical Research on M&A Performance, 1983–2003

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Appendix 4.2: Empirical Research on M&A Performance, 2004–2008

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