A R T I C L E

Managing Strategic Alliances: What Do We Know Now, and Where Do We Go From Here?

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Executive Overview

Alliances present a paradox for firms. On the one hand, firms engage in a large number of alliances to secure and extend their competitive advantage and growth; on the other hand, their alliances exhibit surprisingly low success rates. In this paper, we discuss how firms can address these failures by identifying some of the primary drivers of alliance success. First, we discuss how firms can achieve success with any individual alliance by considering critical factors at each phase of the alliance life cycle. Second, we show how firms can increase their overall alliance success by developing and institutionalizing firm-level capabilities to manage alliances. Third, we highlight emerging issues in the alliance context, including the need to recognize a new class of alliances between firms and not-for-profit organizations or individuals, the benefits of taking a "portfolio approach" to alliance strategy and management, and the opportunity to transfer one's alliance capabilities to the effective management of other interfirm relationships, including acquisitions.

The Alliance Paradox

In the last two decades, alliances have become a central part of most companies' competitive and growth strategies. Alliances help firms strengthen their competitive position by enhancing market power (Kogut, 1991), increasing efficiencies (Ahuja, 2000), accessing new or critical resources or capabilities (Rothaermel & Boeker, 2008), and entering new markets (Garcia-Canal, Duarte, Criado, & Llaneza, 2002). By the turn of this century many of the world's largest companies had over 20% of their assets, and over 30% of their annual research expenditures, tied up in such relationships (Ernst, 2004). A study by Partner Alliances reported that over 80% of Fortune 1000 CEOs believed that alliances would account for almost 26% of their companies' revenues in 2007–08 (Kale, Singh, & Bell, 2009). Nevertheless, alliances also tend to exhibit high failure rates (Dyer, Kale, & Singh, 2001). Studies have shown that between 30% and 70% of alliances fail; in other words, they neither meet the goals of their parent companies nor deliver on the operational or strategic benefits they purport to provide (Bamford, Gomes-Casseres, & Robinson, 2004). Alliance termination rates are reportedly over 50% (Lunnan & Haugland, 2008), and in many cases forming such relationships has resulted in shareholder value destruction for the companies that engage in them (Kale, Dyer, & Singh, 2002).

This creates a paradox for firms. On the one hand, companies face significant obstacles in ensuring sufficient success with alliances. On the other hand, they need to form a greater number of alliances than before, and must increasingly rely on them as a means of enhancing their competitiveness and growth. If this is indeed the case, managers need a better understanding of what

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really underlies alliance success, and how firms can manage them better. This paper takes a step in addressing these questions by drawing on insights gained from prior and current research on this subject. We examine these issues at two different levels of analysis.

First, we focus at the level of a single alliance between two or more firms, investigating the major factors that explain the success of a given alliance; this has been the primary focus of most alliance research until recently. Second, we focus on a firm as a whole that is engaged in not just one but multiple alliances over time, and we explain how it can get better at managing them. In other words, how can it develop a firm-level "alliance capability" so as to enjoy greater and repeatable success across all its alliances? Scholars have begun studying the latter issue only recently, but it is particularly important as, in a world where firms rely more than ever on alliances, having a superior capability to manage them is in itself a source of competitive advantage.[1]

We conclude the paper by discussing both emerging opportunities and challenges at both levels of analysis. First, at the alliance level firms need to recognize the growing importance of a new class of alliances in addition to the traditional firm-to-firm alliance: alliances between firms and not-for-profit entities, including nongovernmental organizations (NGOs), and alliances between firms and individuals (such as Procter & Gamble's Connect + Develop relationships established to foster and accelerate innovations). Second, at the firm level, companies need to develop another kind of capability in the alliance context apart from the capability to enable greater and repeatable success across their set of alliances—firms also need to learn how to manage their alliance portfolio as a whole. We term this "alliance portfolio capability," and later in this paper we describe some of its constituents. Third, we suggest that if

firms have a capability to manage alliances successfully they have an opportunity to leverage this proficiency to effectively manage acquisitions, which are traditionally considered to be a different mode of inorganic growth from alliances. In doing so, we highlight some opportunities for fruitful synthesis between alliances research and acquisitions research, which otherwise have been pursued as distinct and separate streams of research.

What Determines the Success of a Single Alliance?

A strategic alliance is a purposive relationship between two or more independent firms that involves the exchange, sharing, or codevelopment of resources or capabilities to achieve mutually relevant benefits (Gulati, 1995). A strategic alliance can span one or more parts of the value chain and have a variety of organizational configurations typically based on the absence or presence of equity in the relationship (for example, joint ventures represent one type of an equity-based alliance). Figure 1 provides an overview of the range of interfirm relationships that can be categorized as strategic alliances. The success of any single alliance depends on some key factors that are relevant at each stage of alliance evolution (Gulati, 1998). These include (a) the formation phase, wherein a firm deciding to initiate an alliance selects an appropriate partner, (b) the design phase, wherein a firm (and its partner) set up appropriate governance to oversee the alliance, and (c) the postformation phase, wherein a firm manages the alliance on an ongoing basis to realize value (Schreiner, Kale, & Corsten, 2009). Given the hundreds of articles that have studied these issues over two decades, it is not feasible to examine every aspect in detail. Therefore, we briefly review only those factors that prior research considers most important. Figure 2 provides an overview of the main phases of the alliance life cycle and factors in each phase that are critical to alliance success. In the process, we also extend prior work by highlighting conditions under which some of these factors have a stronger im-

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[1] A vast literature examines a firm's network of interorganizational relationships, including alliances. We acknowledge the importance of the network perspective in providing useful insights regarding alliances. However, given its broad scope a detailed incorporation of the network perspective is beyond the scope of this paper.

Figure 1
Scope of Interfirm Relationships

Adapted from
Yoshino and Rangan, 1995.
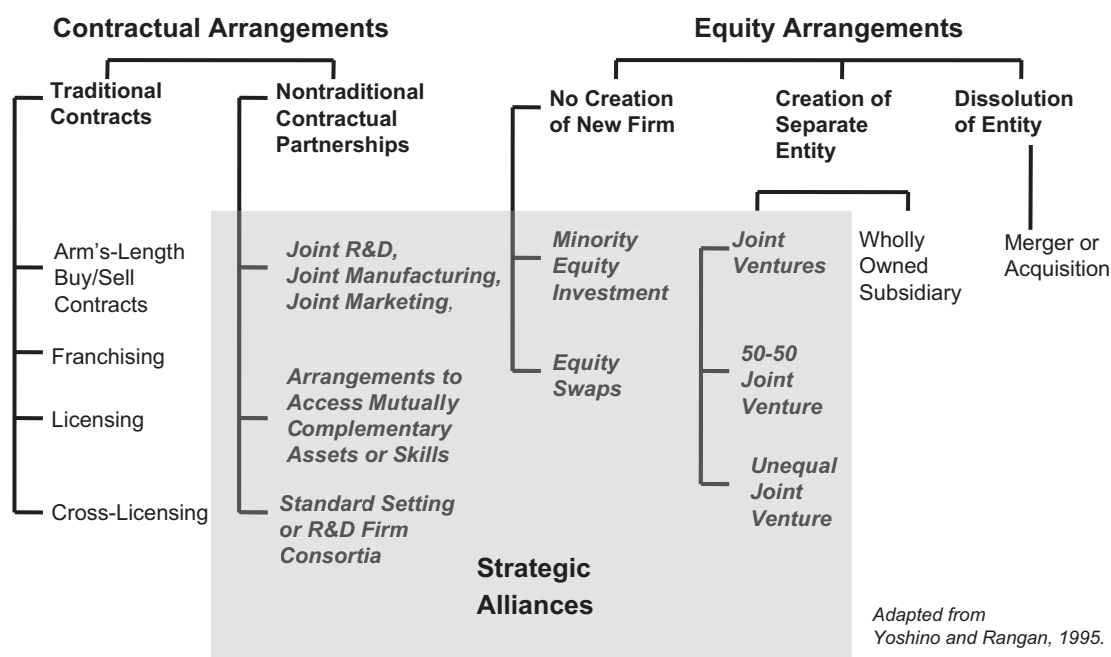
pact on alliance success, and/or the relationships between them.[2]

Alliance Formation Phase: Partner Selection and Fit

Previous research has focused extensively on partner selection during alliance formation and its implications for alliance success. A review of more than 40 studies (Shah & Swaminathan, 2008) showed that the following partner traits have a positive influence on alliance performance: partner complementarity, partner commitment, and partner compatibility or fit. Partner complementarity is the extent to which a partner contributes nonoverlapping resources to the relationship, such that one partner brings those value-chain resources or capabilities the other lacks and vice versa (Dyer & Singh, 1998; Harrigan, 1988; Mowery, Oxley, & Silverman, 1996). Resource-based theories suggest that the greater the complementarity between partners the

greater the likelihood of alliance success, and many studies have found support for this.

However, partner complementarity alone is insufficient for alliance formation and success. A partner firm must be compatible with the focal firm (Beamish, 1987) and committed to the relationship. Partner compatibility refers to the fit between partners' working styles and cultures, whereas commitment includes not only the willingness of a partner to make resource contributions required by the alliance, but also to make short-term sacrifices to realize the desired longer-term benefits (Gundlach, Achrol, & Mentzer, 1995).

While all three partner attributes—complementarity, commitment, and compatibility—are vital to the success of an individual alliance, emerging research shows that managers need to appreciate under which conditions some of these attributes are more critical to alliance success than others. To illustrate, partner complementarity seems to have greater impact on alliance success when one partner is relatively younger than the other (Rothaermel & Boeker, 2008), or when the alliance is such that it is difficult for partners to fully specify the exact outcomes expected from that alliance. In the latter case partner comple-

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[2] Joint ventures are also a form of alliance. Hence, many of the alliance success factors we discuss are relevant to success in joint ventures as well. However, because joint ventures also entail the creation of a separate entity by the partners concerned, which is not the case in other types of alliances, they have certain unique issues and challenges worth addressing. For a more complete review of the issues that are unique to joint venture management, please refer to a recent article by Beamish and Lupton (2009).

Figure 2
A Single Alliance: Key Success Factors
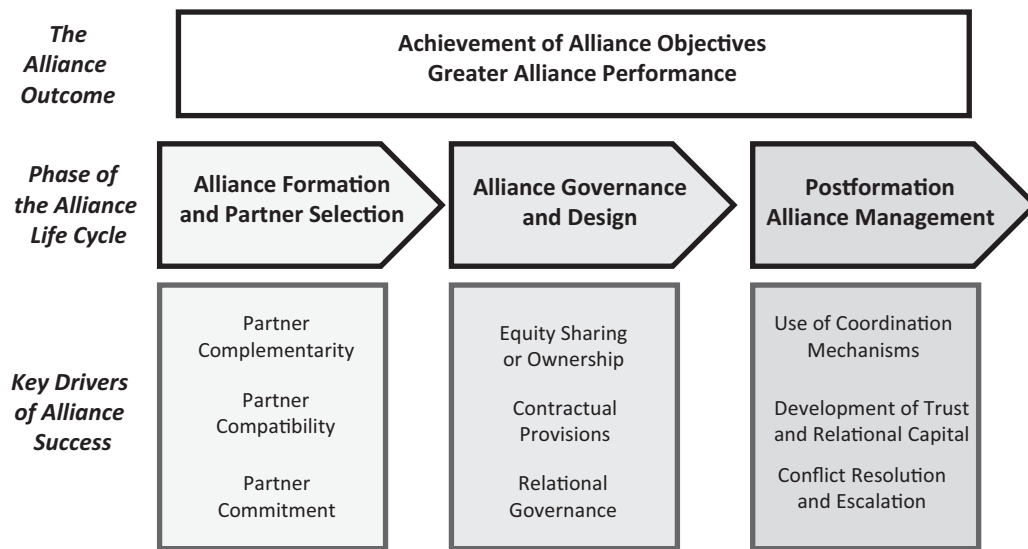
mentarity is important, as it provides assurance that due to extant complementarity of resources or products outcome benefits are likely to be positive even if it is difficult to fully assess them (Shah & Swaminathan, 2008). Often, complementarity implies greater interdependence between alliance partners. In that case, complementarity positively affects alliance success only when partners establish the processes necessary to manage those interdependences (Dyer & Singh, 1998).

On the other hand, commitment seems particularly critical in alliances where partners have identified the specific benefits they expect to gain by coming together, but remain relatively unclear about the exact processes necessary to achieve them. In these alliance relationships, partner commitment is more important than usual, as partners must be willing to dedicate costly resources to the relationship and pledge to work with each other even when they realize that some adaptation might be required in the future in light of the uncertainty that exists. Overall, managers need to pay attention to such contingencies while selecting partners that are generally complementary, compatible, and committed.

Alliance Design Phase: Choice and Implementation of Alliance Governance

An alliance exposes a firm to several transaction or coordination hazards that can adversely affect

the firm itself or its partner. Thus, how a firm constructs alliance governance during the design phase of the alliance life cycle is crucial to alliance success. Literature has highlighted three primary mechanisms to address governance issues in an alliance.

First, transaction costs theory has proposed that equity ownership is an effective mechanism to govern alliances (Williamson, 1985). In an alliance, a firm can expose itself to opportunistic behavior by its alliance partner if it has invested in relationship-specific assets in order to derive expected benefits, or if there is uncertainty regarding market conditions facing the relationship. In such situations, creating an equity-based alliance (wherein one partner takes an equity stake in the other, or both partners create a new, independent venture wherein both take a stake) is critical to success, as equity has three governance properties to address the hazards involved. First is the property of "mutual hostages" in which shared equity aligns the mutual interests of the partners (Hennart, 1988); by owning equity, partners are not only required to make ex ante commitments toward the alliance, but also their concern for their investment reduces the possibility of future opportunistic behavior. Second, equity facilitates hierarchical supervision to monitor day-to-day functioning of the alliance and address contingencies

as they arise (Kogut, 1988). And third, equity ownership creates a basis for each partner to receive a share of the returns from the alliance in proportion to its level of ownership. This in turn creates an incentive for partners to cooperate with one another. Numerous studies have provided evidence for the effectiveness of equity in governing alliances (David & Han, 2004).

Contractual provisions in the alliance agreement represent the second mechanism of effective governance (Mayer & Argyres, 2004; Poppo & Zenger, 2002; Reuer & Arino, 2007), but this aspect has received attention in research only recently. Contracts help manage exchange hazards in a variety of ways. A contract clearly sets forth mutual rights and obligations of partners by specifying each firm's inputs to the alliance, processes by which exchanges will occur and disputes will be resolved, and expected outputs from the relationship. Contracts also limit information disclosures by partners during the operation of the alliance, specify how each partner will interact with third parties, and outline ways in which the alliance will end. Two more aspects that increase contractual effectiveness in governing alliances are enforcement provisions that relate to IP protection and the specification of breaches that might necessitate termination or adjudication, and informational provisions that facilitate required coordination between alliance partners (Reuer & Arino, 2007).

Self-enforcing governance, relying on goodwill, trust, and reputation (Granovetter, 1985; Gulati, 1995; Uzzi, 1997), is the third mechanism of effective alliance governance. At times, it is referred to as "relational governance." Relational governance enhances the likelihood of alliance success by reducing transaction costs in several ways: (a) Contracting costs are minimized because firms trust their partners to behave fairly, (b) monitoring costs are lower because external, third-party monitoring is not required, and (c) costs of complex adaptation are lowered because partners are willing to be flexible in response to unforeseen circumstances. In addition, relational governance enables partners to work together in implementing value-creation initiatives that need sharing of tacit knowledge between partners, exchanging re-

sources that are difficult to price, and offering responses that are not explicitly called for in the contract (Zajac & Olsen, 1993). Finally, if relational governance is based on some resource dependence between partners, it acts as an effective means to monitor and control partner behavior (Filatotchev, Stephan, & Jindra, 2008).

However, in making choices about alliance governance, it is important to understand some of the subtle relationships between the various governance mechanisms. First, as recent work (Reuer & Arino, 2007) has shown, contractual complexity does not vary across equity and nonequity alliances. This finding implies that equity alone is insufficient to guarantee successful alliance governance and that these mechanisms might actually complement each other in driving alliance success. Second, there are different views of the relationships between formal governance (based on equity ownership or contracts) and informal governance (based on trust). One school of thought suggests that one type of mechanism substitutes or crowds out the other such that informal relational governance reduces the need for formal governance (Bradach & Eccles, 1989; Gulati, 1995), or that inclusion of formal governance mechanisms actually hinders the development of relational governance in alliances (Ghoshal & Moran, 1996). A second school of thought sees these mechanisms as being complementary in enhancing alliance success such that relational governance amplifies the positive effects of formal governance further (Poppo & Zenger, 2002) and enables partners to more easily accept formal contractual governance despite the incomplete and ambiguous nature of contractual clauses (Gulati & Nickerson, 2008). Recent work by Puranam and Vanneste (2009) takes a further step in outlining conditions affecting the nature of the relationships (negative or positive) among these different mechanisms. They show how the nature of these relationships actually varies based on whether a manager makes governance choices in alliances by selecting a particular level of governance complexity to *match* the need for safeguards based on expected hazards, or whether she tries to maximize alliance performance given the attributes of the transactions involved.

Postformation Alliance Management: The Roles of Coordination and Trust

Appropriate decisions linked to partner selection and alliance governance positively affect the likelihood of success of every alliance. However, to realize the expected benefits, firms must also proactively manage an evolving entity such as an alliance *after* it is up and running. Two factors are especially important during the postformation phase of the alliance life cycle: managing coordination between partners and developing trust between them.

Alliance partners must coordinate their actions to manage their interdependence and realize the benefits of their relationship. But severe coordination problems can result from the lack of sufficient knowledge about how one's actions are interdependent with the other's, what decision rules a partner is likely to use, how to allocate resources, or how information should be handled (Gulati, Lawrence, & Puranam, 2005; Gulati & Singh, 1998; Schreiner et al., 2009). Coordination problems refer to the difficulties of aligning actions between partners. These problems can arise even when partners' interests are fully aligned with each other. To manage coordination successfully, alliance partners can use any or all of three classic mechanisms: programming, hierarchy, and feedback (Galbraith, 1977).

Programming is the least complex of the three mechanisms. It involves developing clear guidelines on what specific tasks need to be carried out by each partner, who exactly is accountable for each task, and a timetable for implementing them. This mechanism facilitates coordination by improving the clarity and predictability of partner actions, reducing frustration, and increasing decision-making speed. Use of interfirm knowledge-sharing routines (Dyer & Singh, 1998) to share critical task-related information is another dimension of this aspect.

The use of hierarchy, the second coordination mechanism, includes the creation of a formal role or structure with authority and decision-making ability to oversee ongoing interactions between partners and to facilitate information and resource sharing. As an example, a firm can appoint a separate dedicated alliance manager to manage this, or both partners can create an alliance review committee to play this role. Finally, in cases where partners need to regularly inform each other of their respective actions or decisions, or they must periodically evaluate the evolving nature of their interdependence and adapt to it, feedback mechanisms such as joint teams and collocation are helpful in order to quickly process pertinent information and mobilize resources accordingly. Of course, the exact nature of various coordination mechanisms and the extent to which they are required depends on the nature of interdependence between partners. Alliances with reciprocal interdependence generally need the greater and more complex coordination mechanisms of the ones listed above as compared with those with either sequential or pooled interdependence (Gulati et al., 2005; Gulati & Singh, 1998).

Many studies find that trust between partners is critical to alliance success, not only because it facilitates alliance governance as described earlier, but also because it helps partners work more cooperatively. Trust comprises two parts: a structural component, which refers to a type of expectation that one's partner will not act opportunistically due to a mutual hostage situation (Bradach & Eccles, 1989), and a behavioral component, which refers to the degree of confidence a firm has in its partner's reliability and integrity (Madhok, 1995). The former type of trust is akin to deterrence-based trust, which arises from the use of governance mechanisms such as shared equity or contractual agreements (Gulati, 1995), and the latter to knowledge-based trust, which gradually emerges as two partners interact and develop norms of reciprocity (Zaheer, McEvily, & Perrone, 1998) and fairness. The behavioral component of trust is particularly critical to effective functioning of the alliance during the postformation phase.

However, if it is so important, *how can firms create trust in their relationships, and how exactly does it help?* Trust develops through a cyclical process of bargaining, interaction, commitment, and execution between the concerned firms (Ring & Van de Ven, 1994). Based on this idea, scholars have identified several trust-building mechanisms. A firm can build trust by demonstrating that it trusts

its partner firm by making large, unilateral commitments. By voluntarily placing itself in a position of vulnerability, a firm invites the alliance partner to reciprocate in kind, and interfirm trust gradually develops between the two (Mayer, Davis, & Schoorman, 1995). A second way is to demonstrate one's own trustworthiness (instead of being just trusting) by scrupulously honoring all commitments, and making sure to commit to only those actions that are within a firm's power and ability to execute. By making commitments and living up to the expectations, a firm can earn its partner's trust (Zaheer & Harris, 2006). A third driver of interfirm trust is interpersonal trust, sometimes referred to as "relational capital" (Kale, Singh, & Perlmutter, 2000). Such interpersonal trust most often develops between the individuals from the two firms that interact with each other at the alliance interface. It is linked to the social bonds that develop between these individuals as they work regularly with each other, understand each other's working style, and are stable in their respective roles (Schreiner et al., 2009). Finally, interfirm trust also depends on institutional factors including the location or national culture of the concerned firms (Dyer & Chu, 2003), or the existence of industry-level arrangements to facilitate interactions between them (McEvily, Perrone, & Zaheer, 2003).

Developing trust during the postformation phase of an alliance is critical to its success in many ways. It facilitates greater information sharing between partners (Dyer & Chu, 2003), lowers perceptions of relational risk, and promotes the willingness of partners to adapt the alliance to evolving contingencies (Doz, 1996). Trust between partners also enables them to simultaneously achieve two objectives generally considered mutually exclusive: Trust not only enables them to share valuable know-how with their alliance partner, but also protects against the opportunistic acquisition of proprietary knowledge by the partner (Kale et al., 2000). Apart from these positive outcomes, studies show that trust also leads to increased partner satisfaction with the alliance and the achievement of joint action and goal fulfillment (Schreiner et al., 2009). Conse-

quently, the scope and longevity of the alliance increases (Jap & Anderson, 2003).

How to Build a Firm-Level Capability for Alliance Success?

Turning our attention to the level of the firm gives rise to another important question in light of the alliance paradox highlighted earlier: If most firms engage in multiple alliances over time, and their overall alliance success rates are generally low, how does a firm develop its capability to manage alliances to achieve greater, repeatable alliance success than others? In an environment where alliances are an important part of a firm's strategy, having a firm-level alliance capability to manage alliances would indeed be a source of competitive advantage (Gulati, 1998). Only recently has this subject received attention. We review this research and highlight three main building blocks underlying the development of alliance capability in firms: prior alliance experience, creation of a dedicated alliance function, and implementation of firm-level processes to accumulate and leverage alliance management know-how and skills. Figure 3 provides an overview of these factors and their relationship to one another.

Building Alliance Capability Through Experience

Quite simply, a firm can develop its alliance capability by having greater experience in doing alliances. Implicit feedback from alliance experience helps build alliance management skills through tacit "learning by doing." Researchers have recently found empirical support for the role of experience in explaining a firm's alliance capability and success. Anand and Khanna (2000) conducted one of the first studies in this domain and found that firms with greater alliance experience received a more positive response from stock markets when they formed or announced a new alliance. According to them, favorable market reaction suggests that firms with greater alliance experience presumably have greater alliance capability and hence are more likely to succeed with the new alliance they have formed. Others have found that prior experience not only leads to greater alliance success, in terms of creating share-

Figure 3
Drivers of Firm-Level Alliance Capability

holder value, but also in the focal firm's ability to achieve its stated objectives in future alliances (Kale et al., 2002).

Creating an Alliance Function to Build Alliance Capability

Although experience is a useful mechanism for building a firm's alliance capability, Anand and Khanna (2000) found that this does not fully explain why some firms enjoy greater success with alliances than others do. Emerging research addresses this gap by highlighting the role of a second mechanism in building firm-level alliance capability. The adoption of higher-order organizing principles, such as creating a separate structure or entity that is responsible for coordinating and managing a firm's overall alliance activity, is critical in this regard (Kale et al., 2002). A separate organizational unit to manage alliances, commonly referred to as a "dedicated alliance function," is vital in building an organization's alliance capability. Companies such as Hewlett-Packard (Alliance Analyst, 1996), Eli Lilly (Dyer at al., 2001; Gueth, 2005), and Philips Electronics (Kale et al., 2009) have demonstrated the successful use of this mechanism.

The dedicated alliance function provides several benefits to firms (Dyer et al., 2001; Kale et al., 2002). First, it is a focal point for capturing and storing alliance management lessons and best practices from the firm's own prior and current alliance experiences as well as leveraging that knowledge throughout the organization as time and occasion warrant. The managers in this function become repositories of alliance management know-how by virtue of their repeated involvement in the various alliances of the firm. Second, the dedicated alliance function enhances the visibility and awareness of a firm's alliances among external stakeholders (investors, customers, government), thus enlisting their buy-in and support. Third, a dedicated alliance function provides legitimacy and support for a firm's alliances and helps garner internal resources necessary for alliance success. Fourth, it acts as a mechanism to monitor the performance of the firm's alliances in order to identify potential trouble spots before they become an issue. The dedicated alliance function can then take necessary action in a timely manner to escalate or resolve those conflicts. Empirical studies (Hoang & Rothaermel, 2005; Kale et al., 2002) have shown a positive link between the existence of a dedicated alliance management function and a firm's alliance capability and overall alliance success. Firms that have a dedicated alliance function to coordinate their alliance activities enjoy a much greater alliance success rate (around 70%) than firms without one (around 40%). Moreover, these studies have found that the alliance function is relatively more important than prior experience in building a firm's alliance capability. Firms can establish this function in many different ways—they can organize it around key partners,

businesses, functions, geography, or some combination of the same based on which of these dimensions is most important.

Establishing Learning Processes to Build Alliance Capability

New research provides insight into a third mechanism used to develop alliance capability in firms (Kale & Singh, 2007). Building on the knowledge-based view of the firm (Grant, 1996), which suggests that organizations improve their skills to manage a given task by accumulating and applying knowledge relevant to that task, this work emphasizes the role of certain learning processes in building alliance capability. Firms can implement four deliberate processes to learn, accumulate, and leverage alliance management knowledge either from their own alliance experience or from that of others. Usually, individual managers in a firm are the primary repository of useful alliance management experience and knowledge gained from prior or current alliance experience. As such, a firm can undertake efforts to help individual alliance managers articulate their personally held know-how of alliance management. By doing so, the firm can capture and externalize that knowledge so other managers in the firm can learn from those experiences.
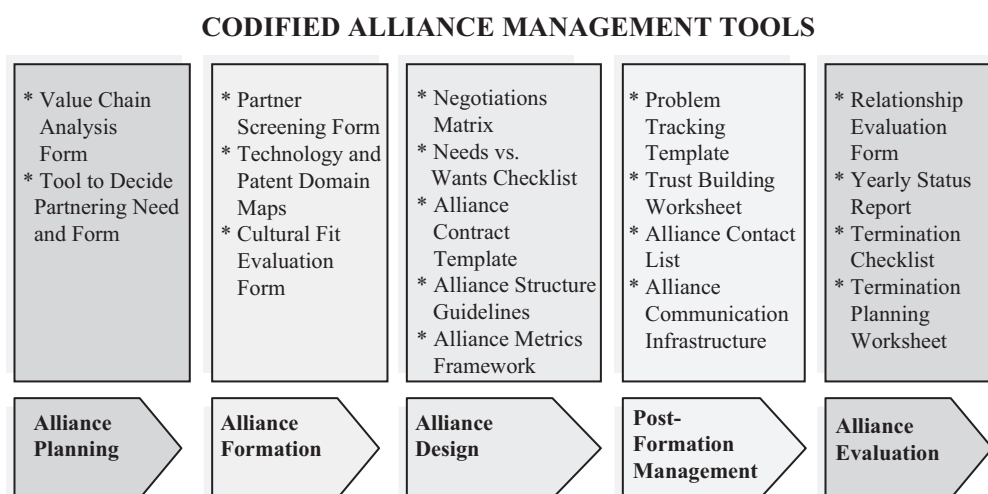
A firm can go a step further and codify its accumulated alliance management know-how in the form of usable knowledge objects, such as alliance management guidelines, checklists, and manuals, that incorporate best practices to manage the different phases and decisions in the alliance life cycle. Hewlett-Packard and Eli Lilly were some of the early adopters of this practice—they developed such codified tools and templates to help managers assess the fit of potential alliance partners, draw up alliance agreements, assess alliance performance, and so on. The codification process facilitates the replication and transfer of alliance best practices within a firm, creating what is essentially a toolkit for managers. Figure 4 provides examples of various codified resources that some alliance-capable firms have developed for personal use.

It is important to note, however, that it is not possible to articulate or codify *all* know-how, especially knowledge that is tacit or personal in nature (Winter, 1987). However, a firm can leverage such alliance know-how by having knowledge-sharing processes to exchange tacit and individually held alliance management know-how across the organization. Creating communities of personal interaction (Seely Brown & Duguid, 1991), such as cross-company alliance committees, task forces, or other forums, to exchange alliance experience and best practices among alliance managers is one of the means companies have used to achieve this goal (Draulans, deMan, & Volberda, 2003; Kale & Singh, 2007).

Finally, some companies use a fourth process to

Figure 4
Examples of Codified Tools to Manage Alliances

CODIFIED ALLIANCE MANAGEMENT TOOLS

* Value Chain Analysis Form * Tool to Decide Partnering Need and Form	* Partner Screening Form * Technology and Patent Domain Maps * Cultural Fit Evaluation Form	* Negotiations Matrix * Needs vs. Wants Checklist * Alliance Contract Template * Alliance Structure Guidelines * Alliance Metrics Framework	* Problem Tracking Template * Trust Building Worksheet * Alliance Contact List * Alliance Communication Infrastructure	* Relationship Evaluation Form * Yearly Status Report * Termination Checklist * Termination Planning Worksheet
Alliance Planning	**Alliance Formation**	**Alliance Design**	**Post-Formation Management**	**Alliance Evaluation**

help individual managers internalize and absorb relevant alliance management know-how that exists in different parts of the firm, through formal and informal means. This internalization process stresses "learning how," wherein the recipient focuses on acquiring a recipe of how to undertake a specific alliance-related task or decision rather than just conceptually understanding why it works. In practical terms, when some firms have adopted this process they have created an "alliance apprenticeship" in which newer managers work with experienced alliance managers and soak up useful knowledge from them. Other firms send their managers to formal alliance training programs that are conducted either internally by the firm or by outsiders.

Collectively, the four learning processes we have described are directed toward building and institutionalizing a firm's alliance capability through articulating, codifying, sharing, and internalizing alliance management know-how and skills to help the firm manage its future alliances more effectively. Kale and Singh (2007) equated these learning processes to a higher-order dynamic capability (Eisenhardt & Martin, 2000; Zollo & Winter, 2002) that helps firms extend, modify, and improve their organizational capability to manage alliances. The empirical evidence shows that these processes have a strong influence on a firm's alliance capability and overall alliance success.

When Do These Mechanisms Really Matter and How Do They Relate to One Another?

Alliance experience, a dedicated alliance function, and organizational processes to learn and leverage alliance management know-how are three important mechanisms to develop and institutionalize an organizationwide capability in alliance management. However, it would be useful for managers to know the specific conditions under which some of these mechanisms are more effective in developing alliance capability, and the relationships among them. Emerging research has begun to shed light on some of these issues, but others remain unresolved.

Concerning alliance experience, it seems that prior experience is more useful in developing ca-

pabilities to manage certain kinds of alliances than others. In their work, Anand and Khanna (2000) found that prior experience with joint ventures is useful in developing skills to manage future joint ventures, but this does not hold true for contractual nonequity alliances. This may be because, as an alliance form, joint ventures show greater similarity in terms of structure, design, and governance issues across different situations (which makes it possible to transfer learning) as compared to contractual nonequity alliances. Sampson (2005) observed that prior experience helps develop alliance skills when that experience is more recent, as the benefits derived from experience depreciate over time. The usefulness of experience also varies by the degree of its specificity; experience in alliances with a particular partner help a firm build its capability to manage future alliances successfully with that same partner, whereas general alliance experience is less useful in this regard. This research seems to suggest that, even though experience is a critical mechanism for building alliance capability, its relevance varies by its type, specificity, and timing.

The relevance of the dedicated alliance function also seems to vary across different business or firm conditions. We find that a dedicated alliance function helps develop alliance skills more effectively in larger firms than in smaller ones (Rothaermel & Boeker, 2008). This is plausible as the use of organizing principles to collect and disseminate relevant knowledge is perhaps more necessary in larger firms, where the knowledge has to be collated from and shared with diverse sources/individuals. This may not be the case in smaller firms where key individuals interact directly and frequently with each other. The use of this function also depends on the extent of functional relatedness across different alliances of a firm and the know-how required for managing them (Kale et al., 2002). But many other questions related to the creation and usefulness of the alliance function remain unanswered: If a firm were to create such a function, where exactly should it be located in the organizational setup, who should head it, who should it report to, what should be the composition of the individuals who comprise it, and how does its role evolve and change over time?

Given the cost and effort involved in setting up a dedicated alliance function, future research must study these questions in detail. Similar questions arise about the alliance learning processes described earlier. While the literature has observed the efficacy of these processes, the following issues are worth examining: Will continual use of these processes turn them into "rituals" that are routinely followed, without the deliberate effort necessary to learn from them? Will implementation of these processes create a bureaucracy whose costs outweigh the resultant benefits?

The investigation of relationships among the three primary mechanisms used to develop alliance capability (alliance experience, a dedicated alliance function, and alliance learning processes) is necessary as well. Some scholars have suggested that the use of explicit mechanisms, such the dedicated alliance function or specific processes to articulate or codify alliance know-how, enhances the direct effect of implicit mechanisms such as alliance experience (Zollo & Winter, 2002) in building a firm's alliance capability. In other words, these mechanisms interact with and moderate each other in explaining a firm's alliance capability and success. However, more recent research has shown (Kale & Singh, 2007) that these mechanisms are actually mediating in nature—that is, the dedicated alliance function mediates the impact of alliance experience on a firm's alliance capability and overall alliance success. In turn, alliance-learning processes of articulation and codification further mediate the effect of the dedicated alliance function in building a firm's alliance capability.

Creating Capabilities: Time Frames and Challenges

In recent applied work we explored the actual time required to implement alliance capability development in an organization. In a multiyear collaboration with Dr. John Bell (he was the previous vice president of corporate alliances for Philips, and is a management scholar who studies alliances), we tracked the development of alliance capability within Philips, a large multinational with operations in more than 150 countries and a range of businesses in electronics (music systems, televisions, etc.), lifestyle products (shavers, coffee makers, lighting fixtures), and health care (large-scale medical imaging products, patient monitoring systems). Observing that Philips had myriad interfirm relationships without organized coordination, Bell conceived of and implemented an alliance capability development process that started in 2001. He set up the Corporate Alliance Office at Philips and over the next seven years his team, armed with a strong mandate from the CEO and board, implemented a set of decisions and management processes to improve Philips' alliance capability. Bell implemented many of the practices and processes discussed in the previous section of this paper. Several key observations worth discussion emerged from that experience.

First, the process of building alliance capability in a large corporation is a slow and multiyear process. It took Bell more than seven years to gradually and informally introduce some of the alliance management processes we have described. It was only in the latter portion of the seven years that he created a well-defined process and codified the firm's accumulated alliance know-how into usable tools and templates. Second, as in most organizations, creating capabilities that rest on knowledge-based processes requires consistent sponsorship and support from senior management. This is a factor worth noting particularly because it is one that often remains unmeasured in large sample studies, as the nature of top management commitment does not lend itself to easy empirical representation. Third, the impact of the alliance function is easier to observe with rich, multifaceted data in a single firm than in a more reduced form or larger sample study. By studying a single organization like Philips over an extended period, we were able to observe how the organization was able to derive increased revenues or greater new product introductions through its alliances. We were also able to see how line managers increasingly embraced alliance relationships as a vehicle to pursue growth opportunities after they became more proficient in managing alliances. As such, it was possible to identify the effectiveness of the dedicated alliance function. Through it all, it became clear that alliance capability building is time-consuming and draws on intangible assets

such as knowledge and decision/management processes. On the positive side, and in justification of the time, effort, and resources required, building alliance capability provides enduring benefits to a firm.

Emerging Issues in Alliances: Where Do We Go From Here?

Extant literature provides valuable insights into successful alliance management. But scholars also need to address new issues that emerge on the alliance frontier. In the next section, we outline some of these issues and offer preliminary suggestions on how to think about them.

From Firm-to-Firm Alliances to a New Class of Alliances

Extant alliance literature has focused mainly on alliances between two or more commercial or for-profit firms. Today, many firms are engaging in two new types of alliances: those with not-for-profit entities and/or nongovernmental organizations, and formal collaborations with individuals. Partnerships with the former type of entity are becoming important in several situations. In today's evolving business environment, society views firms as entities that are responsible for serving not only the interests of their shareholders, but also the interests of other stakeholders within the community. Often, commercial firms are unable to meet this obligation on their own and hence they collaborate with not-for-profit entities or NGOs that might be better positioned to understand the needs of these other stakeholders. Further, to accelerate their growth many firms are expanding in emerging economies by serving poor consumers at the so-called bottom of the pyramid. These efforts require unconventional means and business models to address this new class of customer (Prahalad, 2006), and NGOs and grassroots organizations that interact directly with these customers might understand them better than commercial firms do. Thus, commercial firms often partner with such organizations to address this large untapped market. Finally, in their quest to tap new and innovative ideas from outside their own organizations, firms are not only collaborating with other organizations (of any

kind) but also directly with single persons or individuals. Initiatives including P&G's Connect + Develop (Houston & Sakkab, 2006) and "open innovation" (Chesbrough, 2005) are prominent examples of this kind.[3]

Both types of collaboration, those with nonprofits or NGOs and those with individuals, represent a new class of alliances quite different from the traditional interfirm alliances studied in academic literature. We consider them alliances because in both cases, the entities involved in the relationship bring distinct but valuable resources to meet mutually beneficial objectives, and they are often required to make investments that are specific to the concerned relationship. Nevertheless, these alliances are different, not only because the objective function of a firm's alliance partner is different (as compared to a traditional for-profit organization), but also because the concerned partner has a different set of skills and organizational culture. Thus, the challenges of managing such alliances and the factors and best practices that lead to success may also be different from what we know from our study of traditional interfirm alliances. Current academic research has very little to say about how to successfully manage this emerging class of alliances. Hence, future research must investigate this issue in greater depth.

From Individual Alliances to Alliance Portfolios

It is beneficial to know the best practices of managing a single alliance between two or more firms. However, firms could also benefit significantly by assuming a portfolio approach to alliances in the future. As discussed earlier, most firms today engage in more than one alliance. For example, a pharmaceutical firm might have one alliance with partner A to source a new technology, a second alliance with partner B to facilitate its entry into a new geographical market, a third alliance with

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[3] Most companies have traditionally relied on internal innovation, where new products and services are developed by the companies' in-house R&D teams. But in these two approaches to innovation, which are a radical alternative to the internal innovation model, companies connect with external sources for new ideas: university and government labs, Web-based talent markets, suppliers, and even individual inventors. Companies then develop these new ideas, sourced from external partners, into new and refined profitable products—swiftly and cheaply—by using their firm's own R&D and other resources.

partner C to jointly manufacture a core compound, and so on. Even when it comes to sourcing a new technology, a firm may have alliances with more than one partner to achieve the same objective. Each individual alliance is important, and a firm certainly needs to have a sound strategic logic for its alliance and adopt appropriate best practices in each stage of its life cycle. Nevertheless, a firm can gain additional advantages by considering its entire set of individual alliances as one portfolio, and managing it as such.

In shifting the level of analysis to the entire alliance portfolio and away from each individual alliance within that portfolio, though, new issues arise. A firm needs to know how to configure its alliance portfolio (Hoffmann, 2007) along several dimensions. It must first assess the extent to which its portfolio is complete such that collectively all its alliances meet its strategic needs. Second, in building the alliance portfolio, firms must guard against competition that might arise between individual alliances in that portfolio. If a firm undertakes more than one alliance for the same purpose, greater overlap in the benefits offered by each individual alliance may increase to the extent that one alliance rivals another alliance in the portfolio. This in turn can lead to significant adversities that might ultimately outweigh the benefits. Third, some alliances in a firm's portfolio may actually complement, rather than compete with, each other such that the benefits they offer are extra-additive in nature. For example, a pharmaceutical firm may have one alliance with a firm to in-source a new molecule for a drug that targets a particular disease, and at the same time have a second alliance with another firm to get a specific technology to test the efficacy of that molecule in a speedy and cost-effective way. In this scenario, the benefits derived from the first alliance are accentuated because of the second alliance in the firm's portfolio, and vice versa. The greater the existence of such complementarity between individual alliances in a firm's portfolio, the greater will be the firm's opportunity to generate extra-additive benefits from those alliances.

For the reasons outlined above, conceptually it is useful to take a portfolio approach to alliances.

Thus far, however, very few academics (Hoffmann, 2007; Lavie, 2006) have paid attention to it. In practice too, the portfolio approach to alliance strategy and management is still in its infancy. In a survey of 76 companies, we found that only 30% of them consider or manage their alliances as a portfolio in building their alliance strategy; even among those firms that do, most look only at the degree of competition that exists between different alliances in the portfolio. Only a small proportion of firms consider completeness of the alliance portfolio, and an even smaller number assess the extent of complementarity across individual alliances in the portfolio. This implies that most firms still focus mainly on each individual alliance, and they do not fully exploit synergy benefits that might exist across their individual alliances by considering them as part of one portfolio.

The capabilities necessary to manage alliances as a portfolio are different from the alliance capability discussed earlier. So far, in conceptualizing alliance capability scholarly literature has focused primarily on the constituent skills required to successfully manage a single alliance through the different stages of its life cycle (e.g., partner selection skills, alliance governance skills, skills to create trust between partners in a given alliance, etc.), and recent literature has now also shown how a firm can develop an organizationwide alliance capability for repeatable and greater alliance success. Nevertheless, looking ahead we think it is important to distinguish between a firm's alliance capability, which refers to the firm's ability to manage each single alliance successfully, and a firm's alliance *portfolio* capability, which refers to its ability to manage its set of alliances as a portfolio. In our view, alliance portfolio capability comprises multiple dimensions, including the skills to configure an alliance portfolio (to create a set of complete, noncompetitive, and complementary alliances), to foster and maintain trust across different alliance partners in the portfolio, to resolve conflicts between alliances in the portfolio, to coordinate strategies and operations across alliances in the portfolio, to create routines to share operational know-how across individual alliances in the portfolio, to monitor the extra-

additive benefits (and costs) that arise due to interaction between different individual alliances in the portfolio, and so on. So far, little academic research has been done on this subject (Sarkar et al., forthcoming), and more work in this direction would be beneficial.

A Relational Organization: From Managing Alliances to Managing Acquisitions

In a strategic alliance two or more firms come together to access or exchange resources and capabilities to enhance their competitive advantage or growth while retaining their respective independence and identity (Gulati, 1995). However, instead of doing an alliance, a firm can also use a very different mode to access resources of another firm: It can acquire that firm. In an acquisition, the focal company (i.e., the acquirer firm) purchases control rights over the assets and operations of another firm (i.e., the acquired firm), and in the process the two companies usually become one organization to realize the desired benefits of coming together. Quite rightly, most scholars generally consider alliances to be a very different organizational mode than acquisitions, given differences in terms of the control, ownership, and independence of the firms involved in each case. Consequently, two separate research streams have evolved to study issues associated with these two very distinct organizational modes. But looking ahead we believe there is an opportunity to share insights from the world of alliances, in terms of both research and practice, with respect to managing certain kinds of acquisitions. Here's why. The success of an acquisition relies on how an acquirer manages the acquired firm after completing the transaction (Haspeslagh & Jemison, 1991). During the postacquisition management phase, the acquirer has to make decisions on two critical aspects: the extent to which it integrates the acquired firm with itself, and the extent to which it replaces managerial resources of the acquired firm (Zollo & Singh, 2004). Research shows that in most cases, an acquirer fully integrates the acquired organization within itself, combining the boundaries of the two firms. Consequently, the acquired company loses its separate identity and independence in the market; this

approach to integration is referred to as absorption or structural integration. The acquirer typically also replaces most of the acquired firms' senior executives with its own, and even in cases where it chooses to retain them it limits their decision-making freedom.

However, recent studies show that some acquirers take a very different approach to managing their acquisitions in certain settings: when large companies acquire small entrepreneurial firms for their technological or knowledge-based skills (Puranam & Srikanth, 2007), or when firms from emerging economies acquire larger firms in developed economies to enhance their global presence or competitiveness (Kale & Singh, 2008). In both of these cases, most acquirers leave the acquired firm structurally separate so that the latter maintains its identity in the market. The acquirer also retains most senior employees in the acquired firm and gives them operating freedom in running the acquired company. There are several reasons for taking this approach to acquisitions. By not integrating the acquired company into itself, an acquirer minimizes the complexities that arise during the postacquisition period and avoids the disruption of resources and routines that results when two companies attempt to combine their operations. Maintaining a separate organization is also beneficial if the acquired firm has a unique identity in the minds of its key stakeholders (customers, regulators, shareholders) and maintenance of that identity generates business value for the firm. Retaining senior executives of the acquired firm and giving them independence and autonomy creates a positive climate within the acquired firm and sends a positive, symbolic signal to its stakeholders. It also allows the acquirer firm to retain the industry- or context-specific expertise of the acquired firm's management/employees and leverage their human and social capital for mutual gains. This is relevant when an acquirer buys a target for its intellectual capital and expertise. At the same time, the two companies still need to coordinate some of their activities and operations to realize potential synergies that exist between them.

The aforementioned description suggests that, although the concerned transactions are an acqui-

sition from an ownership standpoint, the manner in which an acquirer manages them makes them more like an alliance between two firms. The Renault-Nissan relationship, Cisco's acquisitions of some small technology companies, and the Tata Group's acquisition of Corus Steel in the United Kingdom are examples of such transactions. This is because, unlike in a traditional acquisition, in this approach both the acquirer and acquired firms remain independent and relatively autonomous— and yet, how do they then interact with each other to achieve some of the desired benefits of coming together? To manage such acquisitions the acquirer needs to recognize the issues and best practices discussed earlier as important in the postformation phase of an alliance. First, the acquirer needs to choose appropriate coordination mechanisms to leverage the interdependence between the two separate firms. Second, it needs to build trust between the two firms such that employees in each firm work in the interests of both firms and are willing to share relevant know-how with each other for mutual benefit. Third, it needs to establish appropriate mechanisms to resolve or escalate any conflicts that might arise.

We term this approach a "partnering approach to acquisitions." What it implies is that if a firm is skilled in managing alliances and has a collaborative capability or mindset, that firm could be equally effective in managing acquisitions that call for such an approach to handling postacquisition integration. Therefore, firms can extend their alliance capability into a broader relational capability that can sometimes be leveraged to manage certain other interfirm relationships, such as acquisitions, too. Thus far, very few academics or practitioners have recognized this opportunity, let alone studied or addressed it, but we hope that will change in the future. From a practical standpoint, taking this approach may call for some changes in how firms are organized internally. As we mentioned before, in our fieldwork we have studied many companies that have created a dedicated alliance team or function to oversee their overall alliance activity. Some of the firms we have observed have an additional team to oversee and coordinate their acquisition activity. In the majority of cases, these two teams are structurally

separate and operate in their own silos. However, if alliance management capabilities are useful in managing some kinds of acquisitions, there exists a need for learning or capability transfer between these teams, and it would be helpful if they worked in close concert with one another and had relevant mechanisms to enable that. Cisco is one of the few companies that seem to have taken this step.

Conclusion

Alliances are widespread in today's business landscape. In the face of growing competition, the high rate of technological change, and discontinuities within most industries, firms pursue a large number of alliances to access new resources, enter new markets or arenas, or minimize their risk. Yet there is a paradox: They frequently fail to reap the anticipated benefits of most of their alliances. In this paper we have discussed how firms can address this paradox to improve their likelihood of alliance success by focusing on two different levels of analysis: (a) the level of an individual alliance a firm engages in, and (b) the level of the firm as a whole that is engaged in more than one alliance over time. At the level of a single alliance of a firm, we highlighted how certain factors at each stage of the alliance life cycle are critical to alliance success. If a firm selects a complementary, compatible, and committed partner at the time of alliance formation, and makes relevant choices with respect to alliance design in terms of equity or contractual or relational governance, the alliance is more likely to succeed. During the postformation stage, alliance success depends on the effective use of relevant coordination mechanisms to manage the interdependence between the two firms, and the successful development of trust between partners as the alliance evolves. We also highlight specific conditions when the above-mentioned aspects are more pivotal to alliance success.

In settings where alliances are a central element of strategy and firms engage in more than one alliance over time, they stand to benefit by building their alliance capability. The idea, supported by empirical evidence, is that firms improve their overall alliance success if they take

systematic action to develop processes and talent in support of alliance management. Alliance capability requires attention to both a dedicated alliance function within a firm and a set of institutionalized processes to accumulate and leverage alliance management know-how across the firm. These soft factors underlying a firm's overall alliance success perform better when championed by a firm's leaders; frequent restructuring and inconsistent support are recipes for the loss of accumulated learning. Yet the path to development of alliance capabilities remains both uncertain and time-consuming. As we saw in the example of a large corporation, despite strong championing by the CEO and a sustained effort to incorporate alliance management processes within the firm, building effective alliance capability can take between 5 and 10 years. This may well be a window into the development of capabilities in general.

Looking into the future, managers face new challenges and issues with respect to alliances. Firms need to learn how to manage certain new types of alliances, generate incremental value by taking a portfolio approach to managing their alliances, and realize gains by extending their alliance capabilities to become relational organizations that are adept at successfully managing other interfirm relationships too, including acquisitions.

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