Strategic Management Journal
Strat. Mgmt. J., **29**: 471–494 (2008)
Published online in Wiley InterScience (www.interscience.wiley.com) DOI: 10.1002/smj.656
Received 12 October 2004; *Final revision received 27 August 2007*

FACTORS INFLUENCING PARTNER SELECTION IN STRATEGIC ALLIANCES: THE MODERATING ROLE OF ALLIANCE CONTEXT

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The growth of alliances has generated considerable interest in this topic among both academics and practitioners. While multiple factors may affect alliance success, partner selection emerges as one of the most influential. Previous studies on alliances present general models that assume the factors (e.g., trust, commitment, complementarity, financial payoff) that drive partner attractiveness and, in turn, the likelihood of selection, are consistent across varying alliance projects and situations. In contrast, the present study proposes a contingency approach grounded in management control theory that suggests the criteria managers use in choosing alliance partners will vary by alliance project type. Specifically, it introduces a framework that addresses when and why managers select partners with certain, specific characteristics. The results of the present study strongly support hypotheses that the critical criteria for assessing alliance partner attractiveness and selection vary depending on the differential levels of process manageability and outcome interpretability inherent in a strategic alliance. Implications for theory and practice are discussed. Copyright © 2008 John Wiley & Sons, Ltd.

INTRODUCTION

Alliances between organizations are becoming increasingly popular as a way to extract greater value from the marketplace. As companies rush to leverage the potential value of alliances, they often overlook the potentially detrimental effects of poor alliance partner selection (Hamel, 1991; Lambe and Spekman, 1997). Recent academic and practitioner concern revolves around the fairly high 'failure' rate of and/or the instability of strategic alliances (Dyer, Kale, and Singh, 2001; Hamel, Doz, and Prahalad, 1989; Inkpen and Beamish, 1997; Lambe and Spekman, 1997). As highlighted by Lambe and Spekman (1997), alliance success is determined largely by smart partner selection. Partner selection goes beyond being able to astutely survey the list of potential partners to choose the one with the best skills and/or resources. One must also know what to look for in a partner in terms of the characteristics that are best suited for the particular alliance project under consideration. Therefore, understanding *when* and *why* certain partners are more attractive is an important research issue for achieving a better understanding of successful alliances.

Previous research on strategic alliances has focused on partner selection issues (Beckman, Haunschild, and Phillips, 2004; Dollinger, Golden, and Saxton, 1997; Geringer, 1988; Hitt *et al.*, 2000; Lambe, Spekman, and Hunt, 2002; Saxton, 1997; Stan and Rowley, 2002; Wuyts and Geyskens, 2005). This previous stream of research has focused on the role of specific characteristics

Keywords: strategic alliances; partner selection; trust; commitment; complementarity
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that may be critical in the selection of a partner (e.g., trust). Despite these valuable contributions, scant research specifically examines the *relative* role of various partner characteristics, e.g., trust, commitment, complementarity, and financial payoff, within a unified conceptual framework. Further, there is limited research focusing on the impact of alliance project type on partner selection. The primary thesis of this research is that alliance project type is an important consideration in examining the relative importance of various partner characteristics. In support of this idea, Hitt *et al*. (2000: 464) suggest, 'Future research should examine whether and how partner selection criteria might vary with different types of strategic alliances.' Consistent with this, our research tests a management control theory-based contingency framework, which suggests that the criteria that determine partner attractiveness and, in turn, partner selection will vary by alliance project context. Specifically, drawing from management-control theory, a key contribution of this research involves highlighting the impact of outcome interpretability and process manageability dimensions of alliances in influencing partner selection.

As a starting point for identifying the key factors influencing partner attractiveness and selection, we undertook an extensive review of the literature on strategic alliances in strategic management and related fields. The review of more than 40 studies uncovered four key factors that have been shown to influence partner selection and subsequent strategic alliance performance: (1) trust; (2) commitment; (3) complementarity; and (4) value, or financial payoff. While past research has also suggested other factors critical to alliance success, we selected the four factors that have been consistently identified as being important to partner attractiveness and selection. Further, these four factors are meaningful to the conceptual framework proposed in this research as they potentially can have varying effects on partner selection.

Various scholars have identified trust between partners as a key factor that may help minimize uncertainties and reduce the threat of opportunism in strategic alliances (Anand and Khanna, 2000; Arino, de la Torre, and Ring, 2001; Das and Teng, 1998; Das and Rahman, 2001; Doz and Hamel, 1998; Gulati, 1995; Koza and Lewin, 1998; Ring and Van de Ven, 1992; Sitkin and Roth, 1993; Smith and Barclay, 1997; Wuyts and Geyskens, 2005; Zaheer, McEvily, and Perrone, 1998). Commitment, defined as tangible inputs or contributions in strategic alliances, can also prevent partners from behaving in a manner that is harmful to the outcomes of the alliance, thereby increasing the likelihood of alliance success (Das and Rahman, 2001; Morgan and Hunt, 1994; Mohr and Spekman, 1994).

Researchers have also considered the impact of partner complementarity (e.g., similarity and fit between partners) on the effectiveness of relationships. Specifically, research using a variety of theoretical perspectives, including transaction cost economics and the resource-based perspective, has acknowledged the importance of resource and image fit between partners (Bucklin and Sengupta, 1993; Dwyer, Schurr, and Oh, 1987; Hitt *et al*., 2004; Luo, 2002; Madhavan, Shah, and Grover, 1994). Finally, the degree to which the partner can enhance the financial value of the alliance and provide resulting strategic advantages also enhances the attractiveness of the partner in the selection process (Achrol, Scheer, and Stern, 1990; Dyer, 2000; Hitt *et al*., 2004; Jap, 1999).

Despite the extensive scholarly research on strategic alliances, previous research has not considered *alliance project type* as a moderator of the impact of various factors influencing partner selection. We contend that the criteria managers use in choosing alliance partners will vary by alliance project type. In other words, a manager contemplating an alliance will value different partner characteristics for different alliance project types. What are the key dimensions that may differentiate across the vast range of alliances that managers initiate? Based on agency theory, behavior observability and outcome uncertainty may be viewed as two dimensions that define the specific alliance project types (Eisenhardt, 1989; Kirsch, 1996). In this tradition (see also Ouchi, 1980), we empirically examine the moderating role of *process manageability* and *outcome interpretability* dimensions of strategic alliances on the relative impact of trust, commitment, complementarity, and financial payoff in determining partner attractiveness. Pursuing the above question not only offers a better descriptive understanding of partner selection decisions, but also elucidates prescriptive implications for alliance research and management practice.

In the next section, we introduce our contingency theory and present formal hypotheses. This is followed by a description of the results. We

DOI: 10.1002/smj

use experimental scenarios and an experimental approach to test our hypotheses across two studies. To enhance external validity, Study 1 uses experimental scenarios with information on alliance types (e.g., marketing alliance, product development alliance). In order to enhance internal validity, we also collected data for a second study. Study 2 replicates the results from Study 1 using modified (and less vivid and realistic) scenarios that clearly manipulate only process manageability and outcome interpretability aspects of the alliances. Taken together, the two studies provide support for a contingency-based framework of characteristics influencing partner selection and partner attractiveness. The paper concludes with a discussion of the findings, limitations, and directions for future research.

THEORY AND HYPOTHESES

The main premise of this research is that alliance project types vary in terms of the complexity of processes required to accomplish them (process manageability) and the degree to which their outcomes are readily interpretable (outcome interpretability). Given these differences, the criteria an organization would use to determine what makes an attractive partner will also vary. An overview of the conceptual framework is provided in Figure 1.

Partner attractiveness and selection

Although two or more partners may be in mutual negotiation about entering into partnership, the decision to partner is typically initiated by one firm. Thus, this research examines perceived partner attractiveness and the selection process from the perspective of an alliance-initiating firm. Seen this way, initiating firms make their partner selection decisions based on their predictions of *projected* satisfaction with their choice of alliance partner. The importance of future satisfaction is underscored by researchers who advocate that partner satisfaction leads to higher task efficiency, higher morale, cooperation, and strategic advantages (Jap, 1999; Kumar and Nti, 1998; Lambe and Spekman, 1997; Stern and Reve, 1980).

Given our ultimate focus is partner selection, we consider the criticality of various factors in influencing partner selection. However, the selection of a partner usually follows an assessment of the relative attractiveness of various partners. Partner attractiveness is defined as the degree to which the initiating firm in a particular alliance project sees a partner as desirable, favorable, appealing, and valuable. As the attractiveness of a given partner increases, its likelihood of selection also increases. We therefore consider both partner attractiveness and partner selection in this study.

Alliance project type

The management control literature suggests selection of the mode of *organizational* control depends upon the *task* characteristics and *information* characteristics of the particular context (in this case, the alliance project type) (Ouchi, 1980; Govindrajan and Fisher, 1990). Specifically, the choice of control mechanism depends upon: (1) the degree of transparency of the process by which the alliance is implemented and sustained, in other words, the degree of alliance *process manageability*; and (2) the degree of transparency of the outputs of the alliance, in other words, the degree of alliance *outcome interpretability* (Ouchi, 1979).

Conceptually, *process manageability* is defined as the degree of interaction, including communication and coordination, perceived to be required by the initiating partner in the process of implementing and sustaining the alliance tasks of the particular alliance project. Process manageability considers the costs inherent to alliance maintenance and governance borne by the partners. The higher the attendant costs, the lower the manageability.

Operationally, process manageability can be measured through five underlying components (Ouchi, 1979; 1980). First, process manageability takes into consideration the amount of *management time invested* by partners during the alliance initiation and implementation phases. Second, it includes the *specific personnel involved* in terms of the number of people who are directly associated with the alliance. Third, the amount of *individual energy* (i.e., degree of mental or psychological cost) expended in initiating and implementing the alliance forms part of process manageability. Fourth, process manageability takes into consideration the degree of *emotional stress* experienced by managers and other personnel involved in the alliance. Individual energy and emotional stress capture the opportunity costs of alliance personnel in terms of the time and energy that can be devoted

DOI: 10.1002/smj

	Process manageability: Low (difficult)	Process manageability: High (easy)
Outcome interpretability: Low (difficult to interpret)	Most critical: *Trust*	Most critical: *Complementarity*
Outcome interpretability: High (easy to interpret)	Most critical: *Commitment*	Most critical: *Financial payoff*

Figure 1. A contingency model of partner selection and attractiveness

to other organizational endeavors. Finally, process manageability considers the *amount of communication* required by partners for the effective coordination and control of alliance activities. As an aggregate of these five components, process manageability has been identified in the management control literature as a key distinguishing characteristic of organizational tasks (Ouchi, 1979, 1980).

Outcome interpretability refers to the degree of difficulty associated with being able to interpret or understand with certainty the exact outcomes of a particular project—in this case, an alliance project (Ouchi, 1979). Consistent with management control theory, outcome interpretability can be operationally defined based on three underlying components (Ouchi, 1979; 1980). First, alliance outcomes may be difficult to interpret because they are primarily *subjective* in nature and their contributions dependent upon *multiple perspectives* and opinions. Second, outcomes may be difficult to interpret because of the inherent *difficulty in attributing the benefits* to the alliance. For instance, in some cases, the outcomes are indirect and impact some intermediary performance variable such as learning, legitimization, or organizational control over industry and market evolution. These indirect outcomes are often very difficult to isolate and attribute to the alliance itself, separate from the other activities of the organization. Third, outcome interpretability is captured by the degree of difficulty in translating outcomes or alliance benefits to a dollar value. In the next section, we develop specific hypotheses as to how various levels of process manageability and outcome interpretability will affect the criteria used for partner attractiveness.

Trust

Trust has been widely acknowledged as a key social norm in governing and coordinating alliances (Anand and Khanna, 2000; Heide and John, 1992; Gulati, 1995). Consistent with Ganesan (1994), we operationally define trust as consisting of two dimensions: (1) benevolence; and (2) competence (see also Moorman, Zaltman, and Deshpande, 1992). *Benevolence-based trust* focuses on the motives and intentions of the alliance partners. It exists to the extent that partners in an alliance will act in a manner that shows their reliance on the partner's goodwill and avoidance of opportunism. *Competence-based trust* exists to the extent that partners consistently exhibit traits such as credibility and expertise. As such, competence-based trust reflects the degree to which partners are willing to rely on each other's expertise, capabilities, and judgments.

We argue that trust is more important when more tangible measures of outcomes are absent. In addition, trust is likely to be exceptionally important when process manageability is low. Perceptions of trust may also enhance perceptions that the partner will be willing and able to fulfill role obligations and try to maximize joint gains in the relationship (Ganesan, 1994). As such, the initiating partner is

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also likely to rely on trust when outcome interpretability is low. Thus, when alliance processes are difficult to manage and when the outcomes of the alliance are difficult to interpret, trust between partners will be the primary basis for partner attractiveness assessment and partner selection.

Consistent with this notion, Williamson (1975) highlights how, when internal processes are ambiguous (i.e., process manageability is low), the potential for opportunism is higher. Parkhe (1993) suggests that the presence of a prior history of cooperation between two firms increases trust and limits the perception of expected opportunistic behavior. Gulati (1995: 93) suggests that 'Trust counteracts fear of opportunistic behavior ....' Rowley, Behrens, and Krackhardt (2000) argue for the role of various 'trust-based' governance mechanisms (e.g., strong relational ties and dense networks). Given that trust can help overcome potential opportunism, its importance in partner attractiveness should be greater when the uncertainty in the alliance is high and the consequent risk of opportunism greater (e.g., low outcome interpretability or low process manageability).

Further, in support of this idea, extant theory has examined the relationship between trust and uncertainty/risk (e.g., Beckman *et al*., 2004; Nooteboom, Berger, and Nooriderhaven, 1997; Ring and Van de Ven, 1994). For instance, Nooteboom *et al*. (1997) discuss two different dimensions of trust (e.g., institutionalization and habitualization) and their impact on two types of risk (magnitude of loss and probability of loss). Their findings suggest that trust induced by institutionalization and habitualization (particularly habitualization) has a negative effect of risk in terms of the perceived probability of loss. Related, Beckman *et al*. (2004) argue that when uncertainty is high, firms will choose to form relationships with previous partners. Reinforcing existing relationships is a response to external threats faced under conditions of high uncertainty and helps firms manage the external uncertainty. These findings are consistent with the notion that trust is likely to assume greater importance in specific alliance contexts that are associated with high risk, e.g., when process manageability is low and outcome interpretability is low. Therefore:

Hypothesis 1a: In strategic alliances where process manageability and outcome interpretability are perceived to be low, trust between partners will be more important than complementarity.

Hypothesis 1b: than commitment, and

Hypothesis 1c: than financial payoff for influencing partner attractiveness and partner selection.

Complementarity

Complementarity is a critical element in partner selection and attractiveness assessment as it affects the extent to which the image orientations, abilities, and activities of organizations can be integrated successfully (Ohmae, 1989; Spekman and Sawhney, 1990). When partners have complementary skills and resources, coordination between partners is facilitated (Achrol and Stern, 1988; Harrison *et al*., 2001; Larsson and Finkelstein, 1999; Moorman and Slotegraaf, 1999; Murray and Siehl, 1989). It can be argued that complementary skills and resources are required under all alliance project contexts and therefore are a minimum requirement for partnering.

Our definition of complementarity focuses specifically on the fit between partners as viewed by one important stakeholder group, e.g., customers. When the alliance process is relatively simple and easier to manage (high process manageability), reliance on trust and commitment becomes less critical because of the reduced fear of opportunism (Williamson, 1975).

However, under conditions of low outcome interpretability, having a partner with high complementarity may itself provide some assurance that, due to the very nature of the complementarity of products, the shared image, and target customers, outcome benefits would be more likely to become positive, even if they are difficult to assess. Consequently, we propose the following:

Hypothesis 2a: In alliances where process manageability is high and outcome interpretability is low, complementarity between partners will be more important than trust,

Hypothesis 2b: than commitment, and

Hypothesis 2c: than financial payoff for influencing partner attractiveness and partner selection.

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Commitment

Commitment is described as a pledge by alliance members to undertake specific actions that will facilitate the attainment of the alliance's goals and objectives and is an essential part of successful long-term relationships. Commitment has also generally been defined as a willingness to make short-term sacrifices to realize longer-term benefits (Dwyer *et al*., 1987; Gundlach, Achrol, and Mentzer, 1995). If a partner is to make continuous commitment to an alliance relationship, then at the onset of a project it should be willing to show these commitments in the form of pledged resources (see Anderson and Weitz, 1992). Failure to make commitments often leads to alliance failure (Morgan and Hunt, 1994).

Commitment is conceptualized as tangible contributions made by partners to an alliance project. That is, commitment is an affirmative action taken by one party that creates a self-interest stake in the relationship and demonstrates something more than a mere promise (see Anderson and Weitz, 1992). Resource commitment often involves dedicating specific assets to an alliance project and making pledges throughout the process that signal continued support of the alliance.

In alliances where processes are difficult to manage, control theory would lead us to believe that both commitment and trust are important coordinating mechanisms. Within the transaction costs economics literature, commitment of idiosyncratic assets to the alliance is considered one way to minimize the costs associated with future exchanges (Williamson, 1981). Analogous to idiosyncratic assets and exit barriers that are voluntarily erected, these inputs make it costly to exit the relationship (Gundlach *et al*., 1995). Thus, commitments, like trust reduce the perceived risk of opportunism.

However, when outcomes are easily interpretable, the resources required for producing those outputs also are likely to be more easily identified. As such, in the partner selection process managers could seek credible resource commitments (see Anderson and Weitz, 1992) that they understand are required for the success of the alliance, thereby reducing the risks associated with low process manageability. Moreover, by obtaining these commitments, the likelihood of generating easily understood and desired outcomes is enhanced. Thus, in those contexts where commitments are not supplied in the negotiation, managers are less likely to choose the partner when process manageability is low but outcome interpretability is high. Therefore:

Hypothesis 3a: In alliances where process manageability is low and outcome interpretability is high, commitment between partners will be more important than trust,

Hypothesis 3b: than complementarity, and

Hypothesis 3c: than financial payoff for influencing partner attractiveness and partner selection.

Financial payoff

To the extent that the inherent financial payoffs associated with allying with some partners is greater than that of others, the attractiveness of these partners and their likelihood of selection should also be greater. Higher financial payoffs could result from higher perceived market opportunities that translate into higher revenues (Bucklin and Sengupta, 1993). Financial payoffs may also result from cost reductions stemming from better economies of scale that, in turn, derive from combining production or research and development (R&D) operations in a strategic alliance (Dussauge, Garrette, and Mitchell, 2004). Frazier (1983) developed a framework of exchange in which expected rewards and required investment in a relationship determined implementation and future outcomes.

The political economy framework is useful as a way of understanding alliance partner behavior that seeks to maximize value by increasing financial outcomes (Stern and Reve, 1980). The alliance financial and social system is viewed as the resulting interaction of internal and external political economies. It is thought to affect the behavior and performance (process and outcomes) of firms in the system and refers to the worth of the alliance based on the projected monetary output associated with it. When alliance processes are perceived to be easy to manage, less focus will be placed on criteria that make the processes more certain (i.e., trust and commitment). Further, outcomes are generally the measures whereby ultimate managerial performance is judged. Since these outcomes are normally expressed in financial payoffs, they are a more salient criterion than complementarity

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in influencing partner attractiveness. Thus, when financial outcomes seem to be easy to interpret, they become uppermost in a manager's mind in terms of determining partner attractiveness. Therefore:

Hypothesis 4a: In alliances where process manageability is high and outcome interpretability is high, financial payoff to partners will be more important than trust,

Hypothesis 4b: than complementarity, and

Hypothesis 4: than commitment for influencing partner attractiveness and partner selection.

In summary, as illustrated in Figure 1, the conceptual framework outlined above suggests that the partner characteristics of trust, complementarity, commitment, and financial payoff have different effects under varying levels of process manageability and outcome interpretability. We now describe our methodological approach designed to test these hypotheses.

METHOD

Much of the research on strategic alliances has relied upon survey methodology or secondary data. However, the use of these methods poses some constraints for testing the hypotheses outlined in this study. First, the impact of various factors influencing partner attractiveness cannot be gauged for alliances that are already in existence due to the possibility of retrospective bias. In other words, surveying managers regarding the choices already made is likely to result in retrospective and consistency biases common to the survey methodology (Johnson and Gerstein, 1998). One alternative method commonly used in research on strategic alliances is secondary data. However, it is not possible to measure some of the constructs proposed in this study, e.g., trust and commitment, effectively using this methodology.

Therefore, we use an experimental method to examine the impact of various types of strategic alliances on partner attractiveness and subsequent partner selection. The use of experimental methods to assess important strategy issues is increasingly common (Dollinger *et al*., 1997; Haunschild, Davis-Blake, and Fichman, 1994). For instance, Tyler and Steensma (1995) use policy capturing to examine managerial and economic information that top executives consider when evaluating scenarios representative of cooperative technology development opportunities. Their research examines the attractiveness of a technological collaborative opportunity based upon executives responses to various scenarios.

There are various advantages of the experimental approach for this research (Cook and Campbell, 1979; Schwenk, 1982). The focus of this research is on testing the effects of partner selection criteria under varying process manageability and outcome interpretability dimensions of alliance project context. A laboratory experiment where alliance scenarios can be manipulated and can vary based on process manageability and outcome interpretability dimensions is an ideal methodology for testing this theory. Although concerns regarding external validity and generalizability have been voiced in the context of using experiments for strategic management (see Schwenk, 1982), we attempt to minimize these concerns in two ways. First, our alliance scenarios used in the experiments were developed after carefully screening and identifying projects based on real-world descriptions of alliances. Therefore, the scenarios used were realistic representations of project scenarios found in industry. Second, we also collected data from managers who are experienced in evaluating and selecting partners. Thus, the responses from managers who participated in this research can be seen as typical responses to specific project scenarios that they may encounter in the real world. In this way, our research has both high internal and external validity.

As mentioned above, the theory and hypotheses for this research were tested by developing scenarios designed to reflect different strategic alliance project types in terms of process management and outcome interpretability, and by measuring the differential impact of four criteria on selection. We used two separate tasks to measure the impact of the partner characteristics (trust, commitment, complementarity, and financial payoff) on partner attractiveness and partner selection. First, after reading the scenarios, respondents were asked to indicate how critical each of the four partner characteristics (trust, commitment, complementarity, and financial payoff.) were for *selecting* a partner given the alliance scenario they had just read. Second, after respondents provided their ratings,

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a real company name was divulged (e.g., Boeing for Scenario 1) and respondents were asked to indicate their perceptions of trust, commitment, complementarity, and financial payoff and indicate the overall attractiveness of the partner. The first task focuses on partner selection and identifies the important criteria and the second task focuses on partner attractiveness. The use of multiple dependent measures provides additional validation for the results.

In order to select the appropriate industry to conduct the study, we identified the top industries that had a great deal of alliance activity. Further, we also identified industries that had a broad range of different types of alliances (e.g., marketing and R&D) that could also represent a wide range of alliance project types. Due to the increasing use of strategic alliances, we focus on the airlines context in testing the hypotheses. For instance, the 1998 survey edition of *Airline Business* (1998) reported that in 1994 there were 280 international alliances involving 136 airlines. By 1998, there were 502 marketing alliances involving 196 airlines, an increase of 79 percent. Hundreds of airlines have entered into alliances ranging from product development and marketing agreements, to code-shares, franchises, and equity transfers. Further, airlines operating within the top three airline alliance groupings accounted for nearly 60 percent of all passenger traffic in 2007 (Airline Alliance, 2007).

Scenario development

Hypothetical scenarios were developed from real ongoing alliances between a major U.S. airline and its partners. Originally 85 ongoing projects were considered. The final selection of alliance projects was made from a list of 36 projects based on their degree of correspondence with different levels of process manageability and outcome interpretability. Based upon pretests, ultimately four scenarios were chosen—one for each of the four experimental conditions (see Appendix A for a sample scenario).

Pretests

The measures contained in the final questionnaire evolved through two pretests and a pilot test. The complete measurement instrument was pretested on a sample of 120 MBA students (30 subjects for each of four cells in the alliance typology). In this pretest the focus was on ensuring that the scenarios were understood and that each scenario reflected the appropriate levels of process manageability and outcome interpretability.

In the second pretest, the initial version of the entire questionnaire was administered to three classes of MBA schools from three universities. Questions at the end of the instrument asked respondents to comment on the questionnaire, providing feedback in the form of suggestions for improvement or any concerns they may have had in the areas of logic, clarity, wording, and overall interpretation of the study. Following these two pretests, the questionnaire was refined and the final questionnaire was pilot tested on a convenience sample of 14 managers who had direct experience working on strategic alliances. The managers indicated no problems with interpreting any part of the measurement instrument.

The hypotheses were tested across two separate studies. Study 1 tested the effects of the scenarios on partner selection and attractiveness. The scenarios contained information regarding alliance project type in order to enhance vividness and realism. In Study 2, the scenarios were modified such that only information regarding the primary contextual variables (process manageability and outcome interpretability) was available. We now turn to a description of Study 1.

STUDY 1

Respondents

The questionnaire was initially administered to a sample of 309 executive MBA students from four major U.S. universities in the east and southeast. Comparisons across experimental groups, through analysis of variance, revealed no significant differences in industry type and company size, or demographic characteristics of the subjects.

Setting

The study was introduced in each classroom toward the end of a typical class session and students were asked to take approximately 20 minutes to complete the questionnaire. Respondents were offered either a small box of chocolates or coffee gift certificates for participating in the study. Of the

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248 returned questionnaires, nine of the surveys were incomplete and five were from respondents with less than 5 years of work experience. These responses were deleted from the analysis. This left us with a total sample of 234. Respondents in the final sample were on average 37 years of age and had, on average, 15 years of full-time work experience. Seventy-five percent of sample respondents had managerial experience, with the average respondent having 10 years of managerial experience. Respondents in the sample represented a variety of different industries including manufacturing (37%), utilities (16%), healthcare (12%), and other (35%). The respondents in the final sample also reported their degree of alliance experience on a seven-point scale. On average, respondents had moderate levels of alliance experience ($M = 3.14$, 1 = no experience and 7 = significant experience).

Measures

Following exposure to the alliance scenario, respondents reported their degree of agreement to statements on seven-point Likert scales. Multiple item measures of the constructs under study were developed based on ideas presented in various literature related to alliances and through interviews with practitioners and academics. Wherever possible, existing measures of the constructs were adapted and used. Anchors for these scales were 1 = strongly agree to 7 = strongly disagree. These scales are described below and the actual measures are summarized in Appendix B.

Partner attractiveness and partner selection

Please note that the hypotheses examine the role of specific partner characteristics for partner attractiveness and selection. Partner attractiveness attempts to assess how attractive and valuable the choice of a particular partner will be for the alliance-initiating firm for a given alliance project type. In this study, partner attractiveness is operationalized with a three-item scale. The coefficient alpha for this three-item scale is 0.92. Partner selection was measured by asking respondents to determine the criticality of each of the partner characteristics (trust, commitment, complementarity, and payoff) for partner selection under varying alliance project scenarios. The criticality ratings were assessed on multi-item seven-point Likert scales (see Appendix B).

Process manageability

Process manageability refers to the degree of ease or difficulty associated with managing the implementation process of a particular alliance project. To assess the success of the manipulation, five items tapping into the amount of management time, energy, and emotional stress required for alliance initiation and implementation; the number of organizational departments and people involved, and the intensity of interaction and communication required. Due to high reliability ($\alpha = 0.97$), the items were averaged. Low scores on process manageability were indicative of a more difficult process to manage.

Outcome interpretability

Outcome interpretability was operationalized by varying the scenario in terms of the degree of ease or difficulty associated with assessing or interpreting the outcomes of a particular alliance project. Five outcome interpretability items, e.g., measurability, quantifiability, ambiguity, and equivocality of various alliance outcomes, were averaged ($\alpha = 0.92$) to assess the success of the outcome interpretability manipulation.

Trust

Consistent with the conceptualization described previously, the scales for trust focus on: (1) benevolence, or the amount of goodwill and honesty between partners; and (2) competence, or confidence that partners will carry out their roles in a competent and dependable manner (Doney and Cannon, 1997; Ganesan, 1994; Moorman *et al*., 1992; Smith and Barclay, 1997). Using these dimensions of trust, a scale was developed to directly ask respondents to indicate how critical trust was for partner selection under each of the alliance scenarios. Additionally, a second scale was used to measure perceptions of trust after a real company name was divulged (see Appendix B for scale items). Coefficient alphas for the trust scales are 0.80 (trust criticality) and 0.73 (trust perception).

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Complementarity

The scale for complementarity was developed primarily through an evaluation of the existing literature regarding complementarity between organizations. Based on previous work, complementarity refers to the degree to which one partner's marketing operations complement the other's operations (Bucklin and Sengupta, 1993; Smith and Park, 1992). As before, separate scales were developed to directly measure perceptions of complementarity criticality for each of the alliance scenarios and a complementarity perceptions scale after a real company name was divulged (see Appendix B for scale items). Coefficient alphas for the three-item image complementarity scales are 0.83 (complementarity criticality) and 0.88 (complementarity perception).

Commitment

Commitment is operationalized as the willingness of partners to supply tangible resources such as money, people, skills, and time to an alliance relationship (Anderson and Weitz, 1992; Dwyer *et al*., 1987; Gundlach *et al*., 1995). The scales for resource commitment have reliability coefficients of 0.86 (commitment criticality) and 0.89 (commitment perceptions).

Financial payoff

Financial payoff is operationalized in this study as the worth of the alliance based on the monetary output associated with it. A review of the literature reveals that although measures exist for concepts such as alliance termination costs and partner benefits, no comprehensive measure for relative partner financial payoff exists. Therefore, drawing from a variety of sources (Bucklin and Sengupta, 1993; Frazier, 1983; Gassenheimer, Houston, and Davis, 1998), a three-item scale for financial payoff was developed. The scale captures the perceived financial payoffs associated with entering into partnership with a specific partner. The reliabilities of this three-item scale as measured by coefficient alpha are 0.91 for both financial payoff criticality and financial payoff perceptions.

The scale items for trust, complementarity, commitment, financial payoff, and partner attractiveness were further subjected to a confirmatory factor analysis. We find the model chi-square to be nonsignificant at the 1 percent level, indicating that the measurement model provides a good fit. Estimation also yielded satisfactory comparative fit indices (CFI = 0.91), which exceeds the minimum satisfactory level of 0.90 (Bentler, 1990), and an acceptable root mean square error of approximation (RMSEA = 0.05). All items loaded on the appropriate factors and no significant cross-loadings were detected. Thus, the scales exhibited excellent discriminant validity.

Experimental design and procedure

Respondents were randomly assigned to one of four experimental scenarios in a 2 (process manageability: high and low) $\times$2 (outcome interpretability: high and low) between-subjects design. To increase vividness and realism, each of the four scenarios also provided information regarding the type of alliance (e.g., Scenario 1 is an R&D alliance, Scenario 2 is a bundling arrangement, Scenario 3 is a sales promotion alliance, and Scenario 4 is a marketing and distribution alliance). Respondents were asked to consider the alliance scenario that featured a hypothetical company name (i.e., ABC Company). The hypothetical company name was used to control for any perceived company-level differences. Using hypothetical alliance scenarios, respondents first indicated the criticality of important partner characteristics independent of the chosen alliance partner.

Once these assessments were made, the actual company names were divulged and respondents were asked to indicate partner attractiveness and perceptions of partner characteristics in light of this information. In an ideal setting, we would use the same partner name across alliance scenarios to control for variations based on partner name. However, this was a challenging task, since the alliance project type information provided (e.g., Scenario 1 is an R&D alliance, Scenario 2 is a bundling arrangement, Scenario 3 is a sales promotion alliance, and Scenario 4 is a marketing and distribution alliance) made it impossible to select one partner name that would be equally credible across all scenarios. Therefore, we chose real partner names that varied across scenarios. In order to ensure that they were relatively similar, we pretested the partner names for each of the four alliance scenarios and found no significant differences in credibility (e.g., Boeing for Scenario

DOI: 10.1002/smj

Table 1. Means, standard deviations, and correlations

	Mean	S.D.	1	2	3	4	5	6	7	8	9
1. Partner attractiveness	2.11	1.13	1.00								
2. Trust criticality	4.61	1.57	0.03	1.00							
3. Commitment criticality	5.57	1.38	**0.24**	−0.11	1.00						
4. Complementarity criticality	5.69	0.99	0.11	**0.23**	**0.54**	1.00					
5. Financial payoff criticality	4.51	1.74	0.09	0.07	−0.03	0.06	1.00				
6. Trust perception	2.95	1.04	0.09	**−0.56**	**−0.27**	**−0.21**	0.11	1.00			
7. Commitment perception	2.82	1.24	**0.34**	−0.06	**−0.25**	**−0.41**	−0.03	**0.36**	**1.00**		
8. Complement perception	3.43	1.55	**0.18**	−0.09	**−0.42**	**−0.69**	**0.04**	0.05	−0.33	1.00	
9. Financial payoff perception	4.13	1.68	**0.15**	−0.02	**0.20**	0.11	−0.75	0.05	0.05	0.02	1.00

Correlations in bold type indicate significance at $p < 0.05$ or stronger level.

1, Starbucks for Scenario 2, Lufthansa for Scenario 3, Marriott for Scenario 4).[1]

The means, standard deviations, and correlations for the constructs used in Study 1 are presented in Table 1.

Results

Manipulation checks

To assess the effectiveness of the manipulations, we conducted analyses of variance with process manageability and outcome measurability as the experimental factors. The overall F-value for process manageability was significant (F-value$_{(3,230)} = 106.1$; $p < 0.01$) and the overall F-value for outcome interpretability was also significant (F-value$_{(3,230)} = 67.8$; $p < 0.01$). Planned contrasts indicated that respondents given high PM had higher means than respondents in the low-PM scenarios ($X_{\text{pmlo}} = 1.71$, $X_{\text{pmhi}} = 4.81$, $t = 17.24$, $p = 0.00$). In the case of outcome interpretability (OI), *lower* agreement scores on seven-point Likert scales were indicative of high (or easier) OI levels. As expected, respondents in low OI found OI to be more difficult than respondents given high OI scenarios ($X_{\text{oilo}} = 4.71$, $X_{\text{oihi}} = 2.40$, $t = 11.98$, $p = 0.00$).

[1] Specifically, the pretest ($N = 40$) asked MBA students to rate whether the partner name was a credible ally for the particular type of alliance (e.g., Boeing for R&D alliance in Scenario 1, Starbucks for bundling in Scenario 2, Lufthansa for cross-selling in Scenario 3, and Marriott for cross-marketing and distribution in Scenario 4). The respondents indicated their agreement to the statement 'The _____ company is a credible ally of United Airlines for the _____ alliance type.' The responses were on a five-point scale, where 1 = strongly agree and 5 = strongly disagree. The pretest indicated that all the partners were viewed as highly credible allies (Ms > 2) for the particular alliance scenario, indicating a high degree of credibility.

Recall that the hypotheses revolve around: (1) asking respondents to rate the criticality of each of the four characteristics after reading the scenario, which only uses a fictitious company name (ABC Company); (2) assessing the perceptions of the four partner characteristics after giving them a real partner name (e.g., Boeing in Scenario 1) and then asking for their evaluations of partner attractiveness. We use two different analysis approaches to examine criticality ratings data and the partner attractiveness measures. In the first case, the objective is to examine whether criticality of the four partner characteristics (trust, commitment, complementarity, and financial payoff) for partner selection varied across the four experimental scenarios. Therefore, the analysis approach involved conducting a series of t-tests on the criticality ratings.

In a subsequent task, respondents indicated their perceptions of the four partner characteristics after being given a real partner name and then indicated the attractiveness of the partners. Therefore, the analysis approach for these data was a series of regressions that were used to estimate the relationship between the partner characteristics and the partner attractiveness ratings. The hypotheses were tested by examining whether the parameter estimates for the four partner characteristics were significantly different from each other for partner selection under each of the experimental conditions.

Criticality of partner characteristics for partner selection

We performed a series of t-tests contrasting the criticality ratings for each of the four experimental conditions. t-tests demonstrated that

DOI: 10.1002/smj

participants who were in the low process manageability and low outcome interpretability condition reported significantly higher criticality rating associated with trust, relative to the other three partner factors for partner selection ($M_{\text{trust}} = 6.20$ vs. $M = 4.13_{\text{complementarity}}$, $M = 5.80_{\text{commitment}}$, $M_{\text{financial payoff}} = 4.35$, t-values $(62) = 9.60$, 2.00, 7.60, respectively, all $p'\text{s} < 0.05$). Therefore, Hypotheses 1a–c were strongly supported. t-tests also revealed that, consistent with Hypotheses 2a–c, participants in the high process manageability and low outcome interpretability condition reported significantly higher criticality rating associated with complementarity relative to the other three partner characteristics for partner selection ($M_{\text{complementarity}} = 5.76$ vs. $M_{\text{commitment}} = 4.85$, $M_{\text{trust}} = 5.37$, $M_{\text{financial payoff}} = 3.59$, t-values $(56) = 3.35$, 2.00, 4.49, respectively, all $p'\text{s} < 0.05$). A series of t-tests revealed that participants in the low process manageability and high outcome interpretability condition reported higher criticality ratings associated with commitment relative to the other three partner characteristics for partner selection ($M_{\text{commitment}} = 6.38$ vs. $M_{\text{trust}} = 5.53$, $M_{\text{complementarity}} = 3.94$, $M = 4.15_{\text{financial payoff}}$, t-values $(51) = 4.9$, 10.5, 8.05, respectively, all $p'\text{s} < 0.01$). Therefore, Hypotheses 3a–c were strongly supported. Finally, participants in the high process manageability and high outcome interpretability condition reported significantly higher criticality ratings associated with financial payoff than the other partner characteristics for partner selection, thereby supporting Hypotheses 4a–c ($M_{\text{financial payoff}} = 5.77$ vs. $M_{\text{trust}} = 5.35$, $M_{\text{complementarity}} = 4.61$, $M_{\text{commitment}} = 5.12$, t-values $(64) = 1.95$, 4.61, 2.65, all $p'\text{s} < 0.05$). These results are summarized in Table 2.

The results of the partner criticality task provide initial evidence that the criticality of partner characteristics (trust, commitment, complementarity, and financial payoff) for partner selection varies based on the alliance project type. Consistent with the conceptual framework, relative to other partner characteristics, trust appears to be more important in the low process manageability and low outcome interpretability condition, complementarity is more important in the high process manageability and low outcome interpretability condition, commitment is more critical in the low process manageability and high outcome interpretability condition, and financial payoff is more important in the high process manageability and high outcome interpretability condition. The criticality ratings are provided based on a hypothetical partner name (ABC Company) and therefore provide evidence for the hypothesized effects with criticality of partner characteristics for partner selection. However, recall that the hypotheses also suggest that partner attractiveness will vary based on different criteria employed in each of the alliance scenarios. Therefore, another test of the hypotheses proposed earlier will require examining the relative importance weight of each of the four partner characteristics in *partner attractiveness*. We next describe the regression analysis, which uses partner attractiveness as the dependent measure.

Perceptions of partner characteristics and partner attractiveness

For each of the four experimental conditions, a separate regression was used to assess the relationship between perceptions of trust, commitment, complementarity, and financial payoff for the partner, and assessments of partner attractiveness. We estimated various regressions including partner name familiarity, partner attitude, and respondent characteristics (e.g., respondent age, alliance experience) as covariates. The coefficients for these covariates were not significant. In addition, the inclusion of these covariates did not alter any of the results pertaining to the hypotheses. Therefore, we present the most parsimonious model specification, which only includes the variables relevant to our

Table 2. Criticality ratings of partner characteristics for partner selection

Criteria	Scenario 1 Low PM Low OI	Scenario 2 High PM Low OI	Scenario 3 Low PM High OI	Scenario 4 High PM High OI
Trust	**6.20**	5.37	5.53	5.35
Complementarity	4.13	**5.76**	3.94	4.61
Commitment	5.80	4.85	**6.38**	5.12
Financial payoff	4.35	3.59	4.15	**5.77**

DOI: 10.1002/smj

Table 3. Partner attractiveness results[a] (four separate main effects models)

Criteria	Scenario 1 Low PM Low OI	Scenario 2 High PM Low OI	Scenario 3 Low PM High OI	Scenario 4 High PM High OI
Trust	**0.520**	0.350	−0.130	**0.450**
	(t= 3.332)	(t = 0.120)	(t = 0.900)	**(t= 3.387)**
Complementarity	0.110	**0.710**	0.101	−0.380
	(t = 0.792)	**(t= 5.175)**	(t = 0.575)	(t = −2.022)
Commitment	0.150	−.0.230	**0.680**	**0.310**
	(t = 1.054)	(t = −0.865)	**(t= 4.815)**	**(t= 2.760)**
Financial payoff	0.140	0.050	0.110	**0.370**
	(t = 0.989)	(t = 0.463)	(t = 0.467)	**(t= 2.496)**
R^2	0.354	0.485	0.367	0.432
Adj. R^2	0.310	0.445	0.312	0.394
F	**7.956**	**12.022**	**6.668**	**11.402**
Change in F	**$15.709_{(1,58)}$**	**$7.067_{(1,70)}$**	**$10.628_{(1,46)}$**	**$11.289_{(1,60)}$**

[a] Standardized regression coefficients.
Bold type indicates statistic is significant at $p < 0.05$ or stronger level.

conceptual framework devoid of any covariates. The parameter estimates and model fit statistics for each of the models are presented in Table 3 and discussed below. It should be noted that the variance inflation factors were within acceptable levels (<10), which indicated that multicollinearity was not an issue.

In alliance Scenario 1, the process of implementing the alliance is relatively difficult for partners to manage, and the outcomes of the alliance are relatively difficult to interpret *a priori*. Results show that perceptions of trustworthiness have a significant positive effect on partner attractiveness. Moreover, of the four partner characteristics, trust is the only factor to show significant contribution to the model ($\beta = 0.52,\ t = 3.332,\ p < 0.001$). Further, examination of the confidence intervals for the parameters for trust and the other potential drivers of attractiveness reveal a significant difference between the parameters ($p < 0.01$). The change-in-F following the inclusion of the trust variable to the model is also significant (change-in-F $(1, 58) = 15.709$; $p < 0.01$). Thus, Hypotheses 1a–c are supported.

In alliance Scenario 2, the process of implementing the alliance is relatively easy for partners to manage, but the outcomes of the alliance are relatively difficult to interpret *a priori*. Results indicate that complementarity has a strong positive effect on partner attractiveness ($\beta = 0.71, t = 5.175, p < 0.001$), whereas none of the other three partner characteristics indicate any significant contribution to the model. Further, examination of the confidence intervals for the parameters for complementarity and the other potential drivers of attractiveness reveal a significant difference between the parameters ($p < 0.01$). The change-in-F following the inclusion of the complementarity variable is significant (change-in-F $(1, 70) = 7.067$; $p < 0.01$). Thus, Hypotheses 2a–c are supported.

In alliance Scenario 3, the process of implementing the alliance is relatively difficult for partners to manage, but the outcomes of the alliance are relatively easy to interpret *a priori*. Results indicate that the coefficient for commitment is significant in the model ($\beta = 0.68,\ t = 4.815,\ p < 0.001$), whereas none of the coefficients of the other three partner characteristics indicate any significant contribution to the model. Further, examination of the confidence intervals for the parameters for commitment and the other potential drivers of attractiveness reveal a significant difference ($p < 0.01$) between the parameters. The change-in-F following the inclusion of the commitment variable to the regression model is highly significant (change-in-F $(1, 46) = 10.628$; $p < 0.01$). Thus, Hypotheses 3a–c are supported.

In alliance Scenario 4, the process of implementing the alliance is relatively easy for partners to manage, and the outcomes of the alliance are relatively easy to interpret *a priori*. Results show that financial payoff does have a strong positive effect on partner attractiveness ($\beta = 0.37,\ t = 2.496,\ p < 0.01$). However, two of the three other partner characteristics, trust and commitment, are also positively related to partner attractiveness and have

DOI: 10.1002/smj

significant positive effects in the model ($\beta_{trust} = 0.45$, $t = 3.387$; $p < 0.001$; $\beta_{commit} = 0.31$, $t = 2.76$; $p < 0.01$). Moreover, there was no significant difference between trust and financial payoff coefficients as well as trust and commitment coefficients. Further, the change-in-F following the inclusion of the financial payoff variable is significant (change-in-F $(1, 60) = 11.289$; $p < 0.01$). Thus, Hypotheses 4a and 4c are not supported, while Hypothesis 4b is supported.

The results of Study 1 show that process manageability and outcome interpretability dimensions of alliances result in varying emphases on trust, complementarity, commitment, and value in partner selection. Although the results of Study 1 provide strong support for the hypotheses, it is not without limitations.

For instance, there are some issues that potentially could present alternative explanations in the case of the scenarios used in Study 1. The scenarios used in Study 1 contain information regarding alliance type (e.g., Scenario 1 was a product development alliance, Scenario 2 was an advertising and product bundling alliance, Scenario 3 was a sales promotion alliance, and Scenario 4 was a marketing and distribution alliance). This was explicitly done in order to create vivid and realistic scenarios capturing differences in process manageability and outcome interpretability. However, the inclusion of alliance type information raises the possibility that the results may be attributable to varying alliance motives rather than differences in process manageability and outcome interpretability. We address this limitation by conducting a second study that is described in greater detail next.

STUDY 2

Study 2 was conducted specifically to address the limitation that the results in Study 1 may be due to information regarding type of alliance (e.g., Scenario 1 was a product development alliance, Scenario 2 was a product bundling alliance). In this second study, the scenarios were revised such that they only contained information regarding the process manageability and outcome interpretability dimensions. No information regarding alliance type was provided. Further, in Study 1, the wording of the partner attractiveness scales was such that the scales may tap into aspects of alliance attractiveness. Therefore, the partner attractiveness scales were modified such that they do not measure alliance attractiveness. Further, different from Study 1, rather than vary the partner name across all four scenarios (e.g., Boeing in Scenario 1, Starbucks for Scenario 2), we used the same partner name (Boeing, followed by Airbus as a replication) for all four scenarios. This was done in order to eliminate partner name as an alternative explanation for the results. All the other measures and analysis methods were similar to those used in Study 1. We describe the results in greater detail next.

Respondents

The questionnaire was initially administered to a sample of 168 executive MBA students from two major U.S. universities in the mid-Atlantic and southeast. Comparisons across experimental groups, through analysis of variance, revealed no significant differences in industry type and company size, or demographic characteristics of the subjects.

Setting

The study was conducted using both a classroom setting as well as an online survey. Subjects belonged to either a current executive MBA class or were recruited by contacting alumni of the executive MBA classes. In order to ensure similarity with the in-class sample (age, experience, and so on), for the online sample we contacted only those alumni who had graduated within the last five years and provided them a Web site URL that contained the survey. Respondents were randomly assigned to one of the four experimental scenarios. Respondents in the classroom setting were given a box of chocolates as an incentive, whereas online respondents were told that upon completion of the survey a donation of $1 would be made to the executive MBA alumni fund in their name. Twenty-five percent of the sample completed the online version of the survey. Of the 168 returned questionnaires six of the surveys were incomplete and six were from respondents with less than 5 years of work experience. This left us with a total sample of 156. Respondents in the final sample were, on average, 38 years of age and had, on average,

DOI: 10.1002/smj

Table 4. Means, standard deviations, and correlations (Study 2)

	Mean	S.D.	1	2	3	4	5	6	7	8	9
1. Partner attractiveness	2.54	1.30	1.00								
2. Trust criticality	5.88	0.99	0.12	1.00							
3. Commitment criticality	4.91	1.41	0.21	**0.67**	1.00						
4. Complementarity criticality	4.96	1.24	0.05	**0.30**	**0.42**	1.00					
5. Financial payoff criticality	5.69	1.11	−0.05	−0.01	−0.06	−0.18	1.00				
6. Trust perception	3.03	1.29	**0.27**	**−0.44**	**−0.48**	**−0.35**	0.21	1.00			
7. Commitment perception	3.08	1.22	**0.57**	−0.07	−0.06	0.01	−0.08	**0.52**	1.00		
8. Complement perception	3.48	1.48	**0.30**	**−0.34**	**−0.34**	**−0.35**	0.14	**0.54**	**0.43**	1.00	
9. Financial payoff perception	3.16	1.49	**0.50**	**0.38**	**0.46**	**0.38**	**−0.48**	−0.17	**0.36**	−0.10	1.00

Correlations in bold type indicate significance at $p < 0.05$ or stronger level.

16 years of full-time work experience. Seventy-eight percent of sample respondents had managerial experience, with the average respondent having 9 years of managerial experience. Respondents in the sample represented a variety of different industries including manufacturing (20%), utilities (16%), healthcare (12%), and other (52%). The respondents in the final sample also reported their degree of alliance experience on a seven-point scale. On average, respondents had moderate levels of alliance experience ($M = 3.02$, 1 = no experience and 7 = significant experience). We contrasted the respondents in the classroom setting and the online setting and found no significant differences on any of the above characteristics. The means, standard deviations, and correlations of the constructs in Study 2 are summarized in Table 4.

Results

Manipulation checks

To assess the effectiveness of the manipulations, we conducted analyses of variance with process manageability and outcome interpretability as the experimental factors. The overall F-value for process manageability was significant (F-value$_{(3,152)} = 37.0$; $p < 0.01$) and the overall F-value for outcome interpretability was also significant (F-value$_{(3,152)} = 8.4$; $p < 0.01$). Planned contrasts indicated that respondents in high PM had higher means than respondents in the low PM ($X_{\text{pmlo}} = 2.57$, $X_{\text{pmhi}} = 3.55$, $t = 4.44$, $p = 0.00$). In the case of outcome interpretability (OI), recall that *lower* agreement scores on seven-point Likert scales were indicative of high (or easier) OI levels. As expected, respondents given low OI scenarios found OI to be more difficult than respondents given high OI scenarios ($X_{\text{oilo}} = 3.56$, $X_{\text{oihi}} = 2.93$, $t = 2.22$, $p = 0.00$). These results suggest the manipulations were successful.

Criticality of partner characteristics for partner selection

We performed a series of t-tests contrasting the criticality ratings for each of the four experimental conditions. t-tests demonstrated that participants who were in alliance Scenario 1 reported significantly higher criticality ratings associated with trust, relative to the other three partner factors for partner selection ($M_{\text{trust}} = 6.19$ vs. $M_{\text{complementarity}} = 4.10$, $M_{\text{commitment}} = 4.80$, $M_{\text{financial payoff}} = 4.4$, t-values (41), 9.66, 8.05, 7.61, respectively, all p's < 0.01). t-tests also revealed that participants in Scenario 2 reported significantly higher criticality ratings associated with complementarity relative to the other three partner characteristics for partner selection ($M_{\text{complementarity}} = 5.76$ vs. $M_{\text{trust}} = 5.25$, $M_{\text{commitment}} = 4.86$, $M_{\text{financial payoff}} = 3.59$, t-values (35), 3.01, 3.35, 8.65, respectively, all p's < 0.05). A series of t-tests revealed that participants in the alliance Scenario 3 reported higher criticality ratings associated with commitment relative to the other three partner characteristics for partner selection ($M_{\text{commitment}} = 6.40$ vs. $M_{\text{trust}} = 5.65$, $M_{\text{complementarity}} = 4.00$, $M_{\text{financial payoff}} = 4.15$, t-values (35), 1.98, 10.5, 8.05, respectively, all p's < 0.05). Finally, participants in the alliance Scenario 4 reported significantly higher criticality ratings associated with financial payoff than both complementarity and commitment for partner selection, thereby supporting Hypotheses 4b–c ($M_{\text{financial payoff}} = 5.8$ vs. $M_{\text{trust}} = 5.55$, $M_{\text{complementarity}} = 4.78$, $M_{\text{commitment}} = 5.13$, t-values (41),1.42 (n.s.), 6.7 ($p < 0.01$), 2.65 ($p < 0.05$)).

DOI: 10.1002/smj

Table 5. Criticality ratings of partner characteristics for partner selection

Criteria	Scenario 1 Low PM Low OI	Scenario 2 High PM Low OI	Scenario 3 Low PM High OI	Scenario 4 High PM High OI
Trust	6.19	5.25	5.65	5.55
Complementarity	4.10	5.76	4.00	4.78
Commitment	4.80	4.86	6.40	5.13
Financial payoff	4.40	3.60	4.15	5.76

Table 6. Partner attractiveness results (Study 2) (four separate main effects models)

Criteria	Scenario 1 Low PM Low OI	Scenario 2 High PM Low OI	Scenario 3 Low PM High OI	Scenario 4 High PM High OI
Trust	0.575	0.188	−0.003	0.234
	(t= 3.240)	($t = 0.870$)	($t = -0.020$)	($t = 1.140$)
Complementarity	0.089	0.588	0.045	−0.190
	($t = 0.660$)	**(t= 2.770)**	($t = 0.270$)	($t = -0.960$)
Commitment	−0.079	−0.153	0.660	**0.526**
	($t = -0.480$)	($t = -0.660$)	**(t= 2.270)**	**(t= 3.55)**
Financial payoff	0.211	0.160	0.073	**0.384**
	($t = 1.640$)	($t = 0.970$)	($t = 0.410$)	**(t= 2.11)**
R^2	**0.410**	**0.490**	**0.540**	**0.510**
Adj. R^2	**0.340**	**0.420**	**0.470**	**0.460**
F	**$6.680_{(4,39)}$**	**$6.500_{(4,26)}$**	**$8.430_{(4,29)}$**	**$9.570_{(4,37)}$**
Change in F	**$10.509_{(1,39)}$**	**$7.649_{(1,26)}$**	**$5.169_{(1,29)}$**	**$4.456_{(1,37)}$**

With the exception of Hypothesis 4a, which received support in Study 1 but was not supported here, all the other results from Study 1 are replicated. These results are summarized in Table 5.

In order to establish correspondence with the results in Study 1, we also analyzed the second dependent measure, partner attractiveness (see Table 6). One limitation of the wording of the partner attractiveness scales in Study 1 was that the scale items could also be measuring overall alliance attractiveness. To address this limitation, the partner attractiveness scale items were modified and the new scale items were as follows: 'Boeing is an appealing partner;' 'Boeing is an attractive partner;' and 'Boeing will be a valuable partner for our airline.' Due to high reliability ($\beta = 0.90$), these items were averaged. The results of the partner attractiveness regression analysis for each of the four experimental scenarios are summarized in Table 6. We also estimated various models including covariates (e.g., attitude toward the partner) also using responses to the second partner name (Airbus). The coefficients for these covariates were not significant. In addition, similar to Study 1, the inclusion of these covariates did not alter any of the results pertaining to the hypotheses. Since the results that are discussed subsequently do not change in these alternative model specifications, they are not discussed further. We focus on the results of the most parsimonious model specification that enables us to test the hypotheses.

In alliance Scenario 1, as can be seen in Table 6, trust perception appears to be significantly more important than other factors in influencing partner attractiveness ($\beta = 0.575$; $t = 3.240$; $p < 0.01$). In alliance Scenario 2, complementarity is significantly more important than other factors in influencing partner attractiveness ($\beta = 0.588$; $t = 2.770$; $p < 0.01$). Results indicate that commitment is significantly more important than other factors in Scenario 3 ($\beta = 0.660$; $t = 2.270$; $p < 0.05$), whereas none of the coefficients of the other three partner characteristics indicate any significant contribution to the model. In alliance Scenario 4, both value ($\beta = 0.384$; $t = 2.11$; $p < 0.05$) and commitment ($\beta = 0.526$; $t = 3.550$; $p < 0.01$) were considered important. Overall, only Hypotheses 4a–b received support, and Hypothesis 4c was not supported.

With the exception of Hypothesis 4b, which was not supported in Study 1 but received support in Study 2 in the partner attractiveness results,

DOI: 10.1002/smj

all the other results for partner attractiveness are also consistent with the results of Study 1. Taken together, with the exception of Hypotheses 4a–b, all the other hypotheses find consistent support across both Studies 1 and 2. We now provide a discussion of the results and their implications and suggest avenues for future research.

DISCUSSION

Drawing on management-control theory, this research contributes to a greater understanding of the effects of alliance project type on the relative impact of partner characteristics (e.g., trust, commitment, complementarity, and financial payoff) on partner selection. Indeed, the results of this study provide the following insight: partner characteristics can have differential effects on partner attractiveness and partner selection depending on the process manageability and outcome interpretability dimensions of the alliance.

While most of the findings supported our initial expectations, there was one finding that was not supportive of our initial prediction. In both Studies 1 and 2, under conditions of high process manageability and high outcome interpretability (Scenario 4), financial payoff was not more influential in partner attractiveness perceptions than trust and commitment. This may be explained by the possibility that when an alliance is easy to manage and the outcomes of the alliance are clearly accounted for, a firm may face a number of willing partners for the alliance, thus allowing its managers a choice among many potential partners. This flexibility in choosing potential partners would increase the probability of identifying a partner who not only has a high degree of financial payoff, but also has a high degree of trust and commitment. Thus, in addition to financial payoffs from such alliances, trust and commitment appear to be equally critical criteria for the partner attractiveness under the high process manageability and outcome interpretability (Scenario 4) conditions.

The results of this research contribute to the literature in important ways. First, in previous alliance studies, partner characteristics like trust, commitment, and compatibility have been tested either as key antecedents or mediating variables to a host of alliance outcomes. However, no attempt was made in these studies to understand the relationship between these partner characteristics and the nature of how they operate in very different alliance project types. This research demonstrates the importance of process manageability and outcome interpretability dimensions of alliance project type in strengthening or attenuating the impact of several key partner characteristics. In doing so, this research extends the previous research on the role of trust, commitment, complementarity, and financial payoff (e.g., Gulati, 1995; Ring and Van de Ven, 1992; Zaheer *et al*., 1998) by suggesting that alliance project type has an important role in influencing the relative impact of these factors. As was shown, in absence of the contingency or moderating variable, alliance project type, one may conclude that specific characteristics that one might seek in a potential partner, such as trust and commitment, are always critical to alliance success. Our findings suggest that this may not be the case. Based on project context for instance, a partner may be selected on the basis of its ability to consistently deliver *financial payoff* to the alliance, even in the absence of trust.

Second, although factors such as trust and commitment have been examined individually, to our knowledge this is the first time a unified conceptual framework incorporating all these factors has been proposed and empirically tested. The advantage of a broad theoretical framework is that it allows us to paint a more complete picture of the complexities inherent in partner selection decisions. Different from previous research, the examination of multiple factors within a single setting enables us to develop a deeper understanding of the *relative* importance of these characteristics for partner selection in strategic alliances.

Third, this research also contributes to a greater understanding of the factors that influence partner selection and attractiveness. Partner selection has been the focus of much scholarly work (e.g., Dollinger *et al*., 1997; Stan and Rowley, 2002). Recently, research has shifted from examining factors that influence partner selection to a consideration of *when* and *why* some factors are more important than others. In this vein, research has examined the stage of economic development and institutional environment as moderators of the influence of various factors influencing partner selection (e.g., Hitt *et al*., 2000, 2004). We extend the research by demonstrating that alliance project type is an important consideration influencing the

DOI: 10.1002/smj

relative importance of various factors that may impact partner attractiveness and partner selection.

Fourth, this research represents an important first step toward applying a management-control based contingency framework to the study of strategic alliances. This research draws on management-control theory (e.g., Ouchi, 1979), which examines outcome interpretability and process manageability as a way to effectively design control mechanisms. Although management-control based theories have been applied in multiple contexts, this paper advances the theory on strategic alliances by combining management control theory with traditional management and interorganizational relationship theories.

Fifth, we note that the process manageability and outcome interpretability dimensions might be used in many streams of alliance research other than partner selection. For example, there is debate on the role of trust, with some authors arguing that prior ties lead to the development of interorganizational routines (Zollo, Reuer, and Singh, 2002). These routines would be useful in enhancing process manageability and, consistent with the theoretical framework outlined in this paper, one may expect that trust will have a smaller role under these conditions. Just as process manageability might increase with prior ties and such routines, one might imagine that firms that develop alliance capabilities might have higher levels of process manageability and outcome interpretability.[2] Examining additional implications of outcome interpretability and process manageability for strategic alliances is an important area for future research.

This research makes a contribution to the strategy literature and to the practitioner community, and has important implications for managers by offering guidelines for mixing the various aspects of partnering according to the type of alliance project they plan to undertake. Additionally, this research provides practitioners with a compass of sorts to help them swim through a veritable ocean of partners, each with different characteristics, objectives, competencies, resources, and skills. The high failure rate of strategic alliances implies that organizations are wary of becoming involved in disappointing alliance relationships that may leave them weakened in any way (Dyer *et al*., 2001). Our framework can help managers determine in advance if a potential relationship is one that will result in competitive advantages that are worth the time and resources required to sustain them.

Examining alliances in light of their specific contexts driven by the two factors, process manageability and outcome interpretability, allows managers to categorize alliances based on this contingency framework. Certain types of alliances (e.g., R&D alliances) may inherently have lower levels of outcome interpretability and process manageability. There is considerable research focusing on post-formation management of alliances (e.g., Ireland, Hitt, and Vaidyanath, 2002). The findings from this research provide guidelines for management of different types of alliances in the post-formation stage. For instance, in R&D alliances (where process manageability and outcome interpretability are low), firms can focus on building trust between partners in order to enhance the probability of the success of the alliance. Therefore, our contingency approach, which incorporates project context that most other frameworks in the literature are not sensitive to, adds a great deal to our understanding of partner selection as well as post-formation management of alliances.

Limitations and future research directions

The present study suffers two limitations, thus calling for future research. The first limitation is that only four alliance scenarios within one industry were used. While great care was taken to ensure that the four alliance scenarios differed only on the intended dimensions, generalizability of the findings is limited. In line with recent research (e.g., Beckman *et al*., 2004), alliances across several industries and companies should be analyzed to determine whether the highly significant results of this study are stable. Along these same lines, when real alliance managers are asked to participate in this research, managers from both of the partnering firms can be asked to access partner selection characteristics. The responses from these two groups can then be assessed for their degree of correspondence and accuracy.

A second limitation with the present study is that it examines the partner attractiveness that pertains only to the partner selection stage. This cross-sectional perspective limits the depth of

[2] We would like to thank an anonymous reviewer for suggesting this point.

understanding of what is typically a lengthy, multistage process. A process approach, one that includes longitudinal observations and depth interviews at different stages of an alliance project, might provide a great deal of insight into the temporal impact of different partner characteristics. For example, does complementarity impact trust? Do the two characteristics simultaneously affect commitment? Or, is financial payoff an antecedent to the rest of these? Consistent with other research addressing alternative governance structures (Leiblein, Reuer, and Dalsace, 2002), this research may be extended to examine how variations in process manageability and outcome interpretability may result in alternative forms of governance.

Although the results of statistical tests show strong support for the theory put forth in this study, one may argue that these results may not hold if the constructs had been measured differently. Specifically, an objection may be raised that measures of constructs like trust and commitment, for example, used in this study were not complete in the sense that more items and/or more dimensions should have been included. Future research should examine additional dimensions of the constructs proposed here.

Further, additional variables that have been found to be important in strategic alliances such as alliance structure (e.g., equity stake vs. arm's-length contracts) and alliance motives (e.g., technology transfer, learning) were not investigated here. Future research can examine how alliance structure and motives have a role to play in partner selection in addition to the factors examined here.

In summary, the partner selection is a crucial stage in the process of creating successful alliances. Previous work in this area has been limited in that it has ignored context as an important factor in understanding when and why managers select partners with certain characteristics. The current study is a first step in filling this void. We hope it will lead to additional work in this very important area.

ACKNOWLEDGEMENTS

The authors would like to thank Professors C. Whan Park and Ravi Madhavan for insightful comments on earlier drafts of the paper.

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DOI: 10.1002/smj

APPENDIX A: SAMPLE DESCRIPTION OF ALLIANCE SCENARIO (STUDY 1)

Partners in Alliance: (1) United Airlines
(2) The ABC Company

Purpose of Alliance: Multifaceted alliance to offer seamless travel to both companies' customers; joint marketing; code sharing and frequent flyer programs; access to each others' markets

Marketing Alliance project type: Cross-Marketing and Distribution; Code Sharing

Description of Alliance:

Once considered exotic, alliances between noncompeting North American and European airlines are becoming a necessary part of business. Airlines want to take advantage of the growing transatlantic market, but want to avoid making huge investments in new markets. They have found that the best way to do this is to link up with partners. In general, such airline alliances result in more passenger revenue without increasing expenses.

In a major effort to increase business both domestically as well as internationally, United Airlines and The ABC Airlines Company have recently entered into a multifaceted alliance to offer intercontinental travel to the customers of both airlines. After winning government approval for the partnership, both airlines have begun to develop plans that will enable them to coordinate, offer services and operate as though they were a single airline. Both airlines plan to cooperate along several lines. For example, they are planning to integrate their respective global transportation products, allowing passengers and shippers seamless access to their services around the world.

Although United has alliances with other types of companies, this alliance will represent one of the first combinations of airlines which, for the customer, will operate as one carrier for all aspects of travel—reservations, ticketing, actual travel, and related services. United customers will now be able to travel on ABC Airlines with the same ticket and will earn United frequent-flyer miles. The same is true for ABC's customers who travel any of United's routes. Neither airline can fully serve the end user by itself and both airlines further benefit by gaining access to the other's customer base and markets without directly competing with each other. Moreover, this alliance will result in reduced costs and revenue growth for both United and ABC Airlines though greater efficiencies and more coordination of strategic and network planning to bring competitive service to more markets around the world.

According to alliance experts who have analyzed this marketing alliance, the alliance will be fairly *difficult* to implement due to the complexity involved in coordinating international flight schedules, and in managing passenger and cargo traffic through international routes from start to finish. Both companies will need to involve multiple organizational departments and personnel who will need to devote time and energy to this alliance. However, despite the complexity, it will be fairly *easy*to assess the results of the alliance since the objectives and benefits to the partners are clear and unambiguous. Moreover, both airlines will be able to easily assess key alliance performance measures such as passenger reservations, flight utilization, and market share. For United, knowing this ahead of time is particularly important as it decides to enter into partnership with the ABC Company.

APPENDIX B: SCALE ITEMS (STUDY 1)

Construct	Measures	Cronbach's alpha
Trust criticality	*For some alliances, certain partner characteristics are more critical for selecting a partner than others. In fact, for some alliances, certain characteristics may not be critical at all. Based on the alliance scenario you just read, determine the criticality of each of the following characteristics for selecting a partner.* 1. How critical is it that ABC acts in good faith in pursuing mutual partner interests in this alliance? 2. How critical is it that ABC has the expertise to perform its alliance functions? 3. How critical is it that you have confidence in ABC's abilities? (Seven-point scale where 1 = very critical and 7 = not at all critical)	$\alpha = 0.80$
Complementarity criticality	1. How critical is that consumers perceive your products/services and ABC's products/services to be similar in terms of their overall image? 2. How critical is it that your products and services and ABC's products/services are complementary? 3. How critical is it that consumers perceive your products/services and ABC's products/services to have the same target customers?	$\alpha = 0.83$
Commitment criticality	1. How critical is it that ABC provides all the necessary time resources to support and accomplish the goals of this alliance? 2. How critical is it that ABC provides all the necessary financial resources to support and accomplish the goals of this alliance? 3. How critical is it that ABC provides you with competent, motivated personnel who will help to achieve mutually desired alliance objectives?	$\alpha = 0.86$
Financial payoff criticality	1. How critical is the financial payoff from this alliance, rather than any other type of payoff (e.g., image enhancement, learning, skill transfer, market access, and so on)? 2. Considering that you have alternative ways to spend your resources and time, how critical is it that the financial payoff of this alliance outweighs the financial payoff of any other alternative? 3. How critical is it that this alliance results in financial benefits to you (over any other type of benefit such as image enhancement, skill transfer, market access etc.)?	$\alpha = 0.91$
Trust perceptions	*In the alliance scenarios provided, the ABC Company is actually Boeing. Circle the one choice that best reflects your view. Please refer to the corresponding scenario as you respond to these questions. (1 = strongly disagree and 7 = strongly agree)* 1. Our airline has confidence in ____'s abilities. 2. ____has the expertise to perform its alliance functions. 3. ____will act opportunistically at our airline's expense. (reverse coded)	$\alpha = 0.73$
Complementarity perceptions	1. Consumers will perceive our airline's products/services and _____'s to be similar in terms of their overall image. 2. Consumers will perceive our airline's products and _____'s to be complementarity. 3. Consumers will perceive our airline's products and _____'s to have the same target customers.	$\alpha = 0.88$
Commitment perceptions	1. ____ will provide all the necessary time resources to support and accomplish the goals of this alliance. 2. ____ will provide the necessary financial resources to support and accomplish the goals of this alliance. 3. ____ will provide our airline with competent, motivated personnel who will help to achieve mutually desired alliance objectives.	$\alpha = 0.89$

DOI: 10.1002/smj

(*Continued*)

Construct	Measures	Cronbach's alpha
Financial payoff perceptions	1. Our airline will receive financial payoff from this alliance partner, rather than any other type of payoff (e.g., image enhancement, learning, skill transfer, market access, and so on.) 2. Considering that there are alternative ways for our airline to spend its resources and time, the financial payoff of this alliance partner will outweigh the financial payoff of any other alternative. 3. This alliance will result in financial benefits to our airline (over any other type of payoff such as image enhancement, learning, skill transfer, market access, etc.).	$\alpha = 0.91$
Partner attractiveness	1. It is appealing for our airline to enter into alliance with _____. 2. Becoming involved with _____ is attractive to our airline. 3. Entering into this partnership with _____ will be valuable for our airline.	$\alpha = 0.92$ $\alpha = 0.93$
Modified partner attractiveness measure (Study 2)	1. _____ is an appealing partner. 2. _____ is an attractive partner. 3. _____ will be a valuable partner for our airline.	
Process manageability (used for manipulation check)	1. Partners will need to spend a great deal of time interacting with each other to make this alliance work. 2. Many organizational departments and people from both companies will have to be involved in this alliance to make it work. 3. Partners will have to spend a great deal of time in the analyses, development, and delivery of their required tasks in this alliance. 4. This alliance will require extensive communications between partners. 5. People from both companies involved in this alliance must expend a great deal of psychological or emotional energy in order to make this alliance work.	$\alpha = 0.97$
Outcome interpretability (used for manipulation check)	1. The outcome(s) of this alliance will be obvious to both partners. 2. The outcome(s) of this alliance will be clear to both partners. 3. Due to ambiguity, neither partner will be able to determine the exact nature of the outcome(s) of this alliance. 4. The result(s) of this alliance can be clearly measured or qualified. 5. Both partners will construe the result(s) of the alliance in the same way.	$\alpha = 0.92$

DOI: 10.1002/smj