ESTABLISHMENT OF CRITICAL SUCCESS FACTORS FOR CONSTRUCTION PARTNERING

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ABSTRACT: Research into the use of partnering in construction has become ubiquitous; however, a framework is needed that can be used to identify critical success factors (CSFs) that contribute to the successful use of partnering in projects. Based on a review of the partnering literature within the management discipline, a partnering framework has been developed to identify the CSFs for construction parties implementing partnering arrangements. The framework highlights the influence of contextual characteristics and management skills on partnering success. The CSFs identified and discussed in the framework are effective communication, conflict resolution, adequate resources, management support, mutual trust, long-term commitment, coordination, and creativity. The degree of success of partnering can be determined by subjective measures (e.g., perceived satisfaction of partners' expectations) and objective measures (e.g., cost variation and rejection of work). A case for initiating partnering is also presented, together with some general guidelines.

INTRODUCTION

Formation of alliances between organizations has become a contemporary management strategy that can be used to improve business performance (Lei 1993; Shash 1998). According to Krippaehne et al. (1992), the effective management of an alliance can be used to obtain and sustain a competitive advantage in the marketplace. However, numerous terms in management are used to describe an alliance, for example

- Partnering (Harback et al. 1994)
- Integration (Andersin et al. 1993)
- Partnership (Mohr and Spekman 1994)
- Network (Cravens et al. 1996)
- Strategic alliance (Parkhe 1993)
- Strategic Partnership (Ellison and Miller 1995)
- Vertical integration (Krippaehne et al. 1992)
- Cooperative partnership (Willcocks and Choi 1995)

Bearing in mind the various terms for an alliance that can be found in the literature, research that focuses on the effectiveness of alliances for improving interorganizational relations has become ubiquitous. Among these terms, partnering is frequently used in the construction industry. In Australia, partnering studies have increased exponentially since the publication of the New South Wales Commission's inquiry into the productivity of the building industry (*Royal* 1992). Though it is common in the construction literature to provide prescriptions for initiating partnering, there is a lack of attention to those critical factors that need to be addressed if it is to be successfully implemented as a strategy for performance improvement. Thus, this paper reviews published literature from construction management as well as other management disciplines to identify critical success factors (CSFs) in partnering projects and describes how these factors can be evaluated to improve the productivity and performance of construction projects. This paper intends to integrate various management viewpoints to establish a new partnering framework. It should be noted that this paper does not attempt to undertake a comprehensive review of the partnering and integration literature, but instead presents a framework for partnering in construction and identifies those CSFs that need to be addressed. A case is also presented, together with some general guidelines for initiating partnering.

PARTNERING IN CONSTRUCTION

A construction project is typically organized by hierarchically linked parties (e.g., clients/owners, architects, engineers, surveyors, general contractors, subcontractors,

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suppliers, etc.) who possess differentiated skills and knowledge. As a result, complex relationships exist within project teams that, if not managed effectively, can adversely affect a project's performance (Walker, 1994). Crowley and Karim (1995, p. 36) define partnering as "a co-operative strategy [that an organization implements] by modifying and supplementing the traditional boundaries that separate organizations in a competitive climate. In this way, partnering can be used to create a cohesive atmosphere [in which] all project team members to openly interact and perform.'' In fact, those who encourage the formation of partnering invariably look for such benefits as long-term commitment, mutual trust, and cost-effectiveness. Fundamentally, there are three situations that can be used to induce the formation of partnering in construction:

- Bidding New Contracts. Prior to bidding for a project, construction organizations could use partnering to strengthen their capabilities by providing complementary skills. Partnering is often misunderstood as related only to contractual requirements and not as a strategy for precontractual (or bidding) cooperation. The use of partnering in bidding ceases when the contract is awarded to the organizations undertaking the project, based on the roles and responsibilities stated in the terms and conditions of the contract.
- Executing Contracts. It is often argued that project-specific partnering is ineffective because trust and commitment could not be developed during a short contract term (Loraine 1994; Munns 1996; Love et al. 1998). The writers suggest that partnering needs to be implemented on an ongoing basis so that trust and commitment can be developed and used to create a learning environment.
- Organizational Growth. Organizations that form partnerships do not have to enter into contractual relations or be involved in the same project together. Ideally, they should have some experience and knowledge of each other's operations and strategic direction so they can cooperate in an effective manner. The partnership can be used for exchanging such resources as knowledge, skills, experience, visions, ideas, and information. Only by equal sharing of these internal resources will organizations be able to improve their competitiveness in the marketplace.

In fact, partnering can extend beyond a single project-based relationship to long-term cooperation. Such partnering involves having the top management of individual organizations discuss compatible and conflicting goals and objectives at the strategic level. Its function to assist in achieving competitive advantage cannot be overlooked. Therefore, it is worth identifying the key characteristics of strategic partnering, which forms the main objective of this paper.

CRITICAL SUCCESS FACTORS OF PARTNERING

Partnering has also been extensively studied in business environments other than construction (Parkhe 1993; Mohr and Spekman 1994; Rai et al. 1996). Each of the aforementioned writers has used different approaches to examine the characteristics and process of partnering in their respective environments. Similarly, authors in construction have used different approaches to examine partnering. For example

- Model building (Krippaehne et al. 1992)
- Nature of relationship (Crowley and Karim 1995)
- Partnering as project management (Loraine 1994)
- Partnering as change process (Wilson et al. 1995)
- Strategic conditions for partnering (Junnonen 1998)
- Needs of partnering (Eisenhardt and Schoonhoven 1996)

Fig. 1 illustrates a framework that consists of the CSFs of partnering in construction. It is suggested that partnering can become successful by using appropriate management skills and developing a favorable context. Essentially, the partnering process involves formation of interorganizational relationships. Management skills are of critical importance for effectively managing the relationships. They form the basis for initiating and facilitating the partnering process. On the other hand, some characteristics in the partnering context may strengthen or hamper the partnering relationships. In consequence, it is important to identify the critical paths conducive to the success of partnering, or CSFs. Individual measures have to be developed for evaluating the level of the CSFs within a partnering organization. Table 1 lists some measures for these CSFs. For data collection, senior executives familiar with partnering are invited to answer a set of questions that ask them to respond to some statements (i.e., the observable items or indicators) about the extent to which CSFs are established in their organizations, based on a five-point Likert scale (from mostly disagree to mostly agree). Moreover, for assessing the rate of success of partnering, some objective and subjective measures are used. Some subjective measures are

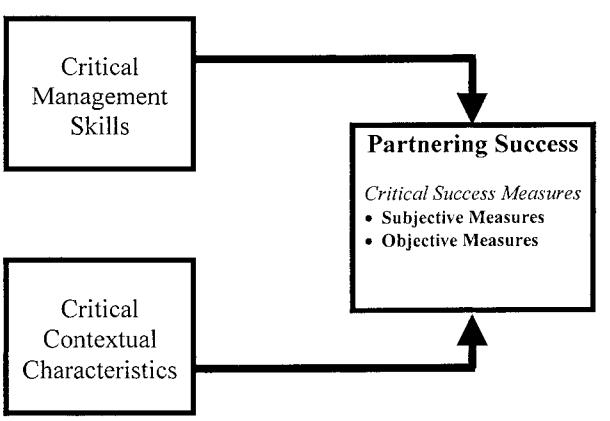

FIG. 1. Framework of Partnering in Construction

TABLE 1. Examples for Measuring Critical Success Factors (CSFs)

Variable (CSFs) (1)	Example of measure[a] (2)
Adequate resources	Investigating extent to which responding organization has received adequate resources from its partners. Questions are • Our partners have provided us with sufficient information to execute the project. • When we need relevant information for executing our work, our partners are always helpful. • Our partners always keep us informed about events or changes that may affect us.[b] • In this relationship, it is expected that any information that might help the other parties will be provided.[b]
Management support	Investigating the extent to which top management has supported formation of partnering. Questions are • Top management has shown their support for formation of partnering by providing us with sufficient resources, including money, time, manpower, and authority. • Top management has agreed that formation of partnering is strategic affair. • Top management has assigned senior executive who represents our organization in dealing with partnering matters.
Mutual trust	Investigating the extent to which trust is established between partnering organizations. Questions are • Our partners are highly trustworthy. • We want to establish a relationship of trust with our partners. • We believe that trust established between organizations is critical to the partnering relationship. • We trust that our partners' decisions will be beneficial to our business.[b] • We feel we do not get a fair deal from our partners. (reverse-scored)[b] • Partnering relationship is marked by high degree of harmony.[b]
Long-term commitment	Investigating extent to which long-term commitment is established in partnering organizations. Questions are • We believe that our partners are committed to the partnering relationship on long-term basis. • We are highly committed to what we have promised our partners. • We try to stay away from our commitment to partnering. (reverse-scored)
Coordination	Investigating extent to which partnering parties are effectively coordinated. Questions are • Our partners have established good contact with us to avoid any misunderstanding. • We would contact our partners when things are not clear. • Our activities with other partners are well coordinated.[b] • We feel we never know what we are supposed to be doing or when we are supposed to be doing it under the partnering agreement. (reverse-scored)[b]
Creativity	Investigating extent to which partnering team is creative. Questions are • Partnering team always things of novel ideas. • Partnering team always likes to use advanced techniques to initiate their creative thinking, such as the use of value engineering and benchmarking.
Effective communication	Investigating extent to which partnering organizations communicate effectively. Questions are • We never encounter communication breakdown with our partners. • Partnering team members have possessed effective communication skills. • Partnering workshops are organized to facilitate communication.
Conflict resolution	Investigating extent to which organizations can resolve conflicts. Questions are • Our organization has used conflict resolution techniques, such as joint problem solving or outside arbitration, to solve conflicts. • Our organization can resolve conficts quickly. • Our organization is always concerned about our ability to resolve conflicts.
Perceived satisfaction of partners' expectations	Investigating extent to which our partners' expectations are satisfied. Questions are • Our partners praise our successful completion of tasks. • We fulfilled our task commitments, conforming to our partners' expectations.
Compatible goals	Investigating the extent to which our organizational goals are compatible with the partnering goals. Questions are: • Our organizational goals have no conflict with partnering goals. • Our organizational goals are in line with partnering goals.

[a]Five-point Likert scale from ''mostly disagree'' to ''mostly agree.''

[b]Adapted from Mohr and Spekman (1994).

shown in Table 1, while some objective ones are shown in Table 2. Moreover, it is critical to ensure that the measures mentioned above are relevant and reliable at any time. Therefore, empirical testing of these measures has to be undertaken periodically. The CSFs for the proposed framework are described hereinafter.

CRITICAL CONTEXTUAL CHARACTERISTICS

Before entering a partnering arrangement, an organization must be clear about why it is doing so and specifically examine how partnering relates to its corporate strategy. Other pertinent questions that should be addressed include

- Does the organization want to increase its chances of acquiring competitive advantage so that it can ''win'' more contracts?
- Does the organization want to use partnering as a mechanism to define the relationships between the different parties involved in the construction pro-

cess in an attempt to reduce or eliminate claims and litigation (Abudayyeh 1994)?

In addition, an organization must identify those with whom it wants to form a partnering arrangement. Since partnering is the creation of a long-term relationship, entering such arrangements without understanding each other's aspirations and culture could have disastrous consequences. For selecting an appropriate partner, the values, capabilities, and backgrounds of potential candidates have to be carefully examined. When the ''right'' organization is identified, it will be obliged to contribute inputs (i.e., resources and support) to the partnering arrangement. Apparently, some other characteristics (e.g., mutual trust), are critical in establishing interdependence and self-willingness to work for the long-lasting cohesive relationship. These critical characteristics form the favorable context conducive to partnering success (Abudayyeh 1994).

Adequate Resources

Since resources are scarce and competitive, it is not common for an organization to share its resources with other organizations. Crowley and Karim (1995) used the term permeable boundaries to describe the flow of appropriate resources from one organization to another and the restriction of leakage of sensitive and confidential information. In fact, it is important to ascertain the maximum use of shared resources. The main resources are expertise (including knowledge, technology, information, and specific skills) and capital. Since a construction project usually requires a variety of skills and technology, the parties involved normally belong to different professional backgrounds (architects, quantity surveyors, structural engineers, etc.). Their complementary expertise can be used to strengthen the competitiveness and construction capability of a partnering relationship, if managed effectively. Nevertheless, for enhancing the sharing of resources, mutual interaction should be emphasized (Devlin and Bleackley 1988).

Management Support

Another critical input is management support. Support from top management is crucial to initiating and leading a partnering arrangement. As senior management formulate the strategy and direction of business activities, their full support and commitment are vital for partnering success. Besides, mutual agreement from senior management of involved parties is also important since the goals and objectives projected by each organization should be compatible and aligned with one another (Rai et al. 1996).

Mutual Trust

Trust can be defined as the belief that a party is reliable in fulfilling its obligations in an exchange relationship (Pruitt 1981). Mutual trust is critical to ''open'' the boundaries of the relationship as it can relieve stress and enhance adaptability (Williamson 1985), increase information exchange and joint problem solving (Zand 1972), and promise better outcomes (Mohr and Spekman 1994).

Long-Term Commitment

Commitment refers to the willingness of an individual or organization to exert effort (Porter et al. 1974). In this paper, long-term commitment is described as the willingness of the involved parties to integrate continuously to weather unanticipated problems. More committed parties are expected to balance the attainment of short-term objectives with long-term goals and achieve both individual and joint missions without raising the fear of opportunistic behavior (Parkhe 1993; Mohr and Spekman 1994).

Coordination

Coordination reflects the expectations of each party from the other parties in fulfilling a set of tasks (Mohr and Spekman 1994). Greater coordination is expected to achieve stability in an uncertain environment (Pfeffer and Salancik 1978) and mutually fulfilled expectations (Frazier et al. 1988). The worst situations associated with poor coordination are often a loss of trust and commitment, which may stimulate adversarial relations. To attain greater coordination, more contacts between parties and the exchange of information regarding their expectations from each other are crucial.

Creativity

That partnering is formed to undertake a single construction project may limit its usefulness to the partnering parties. In addition to reducing adversarial relationships and expensive litigation, partnering can help organizations improve their performance and achieve continuous growth when it can expand its utility as a strategic function. Creativity, then, becomes the common theme in partnering as it may encourage innovative work and management practices.

CRITICAL MANAGEMENT SKILLS

Formation of interorganizational relationships has always been a problem in construction. Breakdowns in communication and disruptive conflicts are a leitmotiv of construction and as a result it has become very adversarial in nature. The appropriate managements skills needed to convert critical threats to opportunities (i.e., effective communication and conflict resolution) are conducive to successful partnering.

Effective Communication

Partnering parties have their own terms of preference. Because of cultural diversity, they tend to be dominated by their own goals and objectives, which can be conflicting and as a result may cause adversarial relations (Love et al. 1998). Effective communication skills can help organizations to facilitate the exchange of ideas and visions, which can result in fewer misunderstandings and stimulate mutual trust. This involves the formation of effective communication channels, which can be used to

motivate partners to jointly participate in planning and goal setting and therefore exert their cooperative efforts to create compatible expectations (Mohr and Spekman 1994).

For example, partnering workshops are often used in construction to stimulate participation. Typically, a facilitator conducts the workshop to ensure that all discussions are constructive and that specific outcomes are achieved. In a friendly and open environment, the facilitator would aim to identify those joint goals that can be used as targets for determining how best to procure the project, making sure that cost, time, quality, and safety are not jeopardized in any way whatsoever.

Conflict Resolution

Conflicting issues are common among parties with incompatible goals and expectations. The impact of conflict resolution can be either productive or destructive and largely depends on the manner in which partners resolve conflict (Mohr and Spekman 1994). Such conflict resolution techniques as coercion, confrontation, and outside arbitration are counterproductive and fail to reach a win-win situation. In fact, conflicting parties are looking for a mutually satisfactory solution. For enhancing cooperation and greater promise of long-term success, organizations are advised to adopt more productive resolution techniques such as joint problem solving, which is described as the collective decision to create alternatives for problematic issues. Especially when the environment is more uncertain and dynamic, engaging in joint problem solving is seen to be a rescue strategy for partnering. During joint problem solving, parties gather together and share with each other their own views on the conflict issues and their resolving tactics. Such a high level of participation among parties may help them to create a commitment to the mutually agreed solution.

CRITICAL SUCCESS MEASURES OF PARTNERING

The consequences of partnering are measures of the degree of partnering success (Mohr and Spekman 1994). By determining the appropriate performance measures and relevant measurement parameters, involved parties can communicate to their staff the objectives, priorities, criteria, and values with which they should comply (Alarcon and Serpell 1997). These measures help to set useful monitoring, control, evaluation, and correction of variations and improvements. Performance measures can be subjective or objective. They are the positive outcomes accumulated during the process.

Subjective Measures

The subjective measures are based on the notion that strategic partnering has to achieve important long-term goals and are assessed individually by appropriate indicators or items (usually more than one item) with individual perceptual scales such as the Likert scale (Hair et al. 1998). Key subjective measures are perceived satisfaction of partners' expectations and compatible goals (see Table 1 for some example questions).

Perceived Satisfaction of Partners' Expectations

Partnering is said to be satisfactory when the expectations of the involved parties have been attained (Anderson and Narus 1990; Mohr and Spekman 1994). These expectations form the general performance of the other parties (Parkhe 1993) and reflect the level of attainment of the critical characteristics in the partnering context, such as mutual trust, coordination, and commitment.

Compatible Goals

Compatible goals are those strategic goals of individual organizations that can converge to form the goals of the alliance and help to glue the organizations together and establish direction, value, and related activities. As Lynch (1990) stated, failure of partnering is attributed to ambiguous goals and poorly coordinated activities. Clarity of focus is therefore vital to the success of partnering. Brouthers et al. (1995, p. 21) commented that ''to avoid the pitfall of ambiguous or different goals, participants should make sure they have synchronous goals to begin with, then review what has been accomplished in terms of their original goals at least every three to six months. The alliance is less likely to lose sight of objectives if frequent assessments are made.''

Objective Measures

Objective measures stem from the belief that success is partly determined by some short-term objectives or so-called business performance (Marosszeky and Karim 1997). The form the criteria of cost-effectiveness, quality, schedule, scope of work, profit, and construction process to be attained in a construction project (Alarcon and Serpell 1997; Puddicombe 1997). It is likely that closer ties between the partnering parties give rise to better business performance. Based on Puddicombe (1997), Alarcon and Serpell (1997), and Marosszeky and Karim (1997), a set of key objective measures can be identified and, together with these measuring units and benefits, have been listed in Table 2. The key measures are cost variation, rejection of work, client satisfaction, quality of work, schedule variation, change in scope of work, profit variation, safety measure, rework, litigation, and tender efficiency. Some readily available information about these measures is held by the involved parties and is easy to identify and calculate (not being as complicated as subjective indicators). However, prioritization (i.e., weighing) of these measures is needed, and transforming them to compatible measuring units is required if one wants to compute a sum of these effects.

The following section is a case study to illustrate the process of establishing a strategic partnering within which the above-mentioned factors are shown to be influential. For example, management support, resources, and trust are important factors to initiate the process of partnering formation while people with poor communication skills are able to hinder the course of formation.

TABLE 2. Objective Measures of Partnering Outcomes[a]

Criterion (1)	Measure (2)	Measuring unit (3)	Benefit (4)
Cost-effectiveness	Cost variation	Actual cost/budgeted cost	Improve cost savings for client
Quality	Rejection of work Client satisfaction Quality of work	% sample rejections Number of claims by client Number of claims by contractors	Improve client confidence Increase client satisfaction Increase construction durability
Schedule	Schedule variation	Actual duration/planned duration	Reduce additional expenses
Scope of work	Change in scope of work	Change orders/budgeted cost	Reduce additional expenses
Profit	Profit variation	Actual profit/projected profit	Increase income
Construction process	Safety Rework	Number of accidents · 100/Total number of workers Rework MH/total MH	Develop safety practice to manage risks Reduce wasted work
Others	Litigation Tender efficiency	Expense of litigation Success rates	Reduce cost Generate income

Note. MH = man-hour.
[a]Adapted from Alarcon and Serpell (1997); Marosszeky and Karin (1997); and Puddicombe (1997).

CASE STUDY FOR STRATEGIC PARTNERING FORMATION

In 1995, several companies, including owners, architects, contractors, and subcontractors, wanted to establish a long-term construction partnering when they predicted that future competition would become severe. A core competence focus and business pressure moved them to see the need for strategic partnering. More importantly, forming an alliance was one of the modern business strategies with which to face the turbulent environment. Although they had cooperated in the last several years in completing some construction projects, the companies had no experience with partnering. After they had shown their intention to sign a partnering agreement, they employed a facilitator to manage the formation of partnering. The facilitator was a sensor partner in a consulting firm with a strong background in dealing with partnering issues and was expected not only to provide his expertise to the involved parties, but also to take care of their interests.

The facilitator first examined the backgrounds of these companies. He knew that they had some years engaged in joint efforts and had completed several projects successfully. Their desire for partnering was not mainly for the resolution of litigation or adversarial relations, but for establishing a competitive advantage over their rivals. While they had cooperated with each other for some years, such relationships were instituted at the project level. In fact, they had no experience in exchanging knowledge and information other than what was relevant to the projects. No advancement in the use of technology was based on any benchmarking within the project group. The facilitator knew that their previous relationships were established based on pure contractual requirements. Luckily, these parties had never dealt with serious claims or litigation issues between group members, which reduced the barriers to formation of strategic partnering.

The facilitator found that these companies had no well-established communication channel for regular coordination. He recognized that a strategic partnering arrangement involved formation of a high-performance team that was in the spirit of partnering and brought in the life elements for long-term survival of the relationships. Therefore, he helped the parties select the partnering team, which consisted of senior members from the individual companies who best understood the philosophy and objectives of the company, especially in the area of development, and had the high morale for creating partnering relationships. The facilitator then organized the first workshop for the team members. Before this workshop, he distributed a note to the potential companies that introduced the concept of strategic partnering, including what could be achieved from and what contributed to such a relationship. He explained in the note that the objective of a long-term relationship was not simply to reduce costs, but also to put all involved parties on a distinct and more effective footing.

In the first workshop, the facilitator found that these senior members did not like to discuss details about the work practices and processes of their own companies. It seemed to him that they were afraid to expose important information without the consent of their top management. In addition, these senior executives obviously lacked communication skills. They did not prepare well for the workshop and simply looked for ''receiving'' rather than ''giving.'' As an experienced facilitator, he presented some concepts of communication skills to these members and concluded in the first workshop that there was a need to enhance further cooperation before a partnering agreement could be finalized.

Before the second workshop, he discussed with the top management of the individual organizations that information exchange within the partnering group was a critical factor in the success of long-term relationships. Benchmarking, reengineering, and value management were important concepts in strategic partnering. Without their commitment to the flow of information, further cooperation among members could not be attained. The facilitator talking with the top management was crucial, especially when the latter had committed to partnering

but did not know how to contribute to it. Moreover, he had given further notes on helping the companies identify their requirements for this partnering relationship. Examples were given, such as

> Our intention is to identify a partner who can assist us in the application of advanced technology, will add a lot of value in terms of continuous improvements in cost control and quality, and can be a significant partner to us in the new areas we are seeking to exploit.

He tried to help these companies identify the gap between their status quo and their future needs and to decide if this gap could be filled by partnering. These companies now could make sure what areas they wanted to address in the next workshop, areas they had not previously identified but in which they did not have the necessary in-house experience and knowledge. They could of course try to develop these areas by themselves, but the feeling was that their partners with the relevant experience and skills could provide a better solution.

In the second workshop, the team members talked more openly. With the consent of their top management, they were able to impart their expectations and desires, except for restricted, confidential information. More expectations between parties stimulated the need for closer relationships. At last, a partnering agreement was drafted. The mission of the partnering was that

> Partnering parties want to be the leaders in the construction field by delivering a high quality product in a timely, cost-effective, and safe manner through a long-term strategic relationship among partners.

In addition to the mission heading, 15 common goals were to be achieved by the partnering organizations. Some of the goals they agreed to were to share best practices, complete the project on schedule and within budget, share information on new construction technology, and share the risks of joint construction projects. They expected that the formation of an alliance could help the parties establish closer relationships, resulting not only in meeting contractual requirements but also in advancing organizational performance. The stated mission was to emphasize the importance of developing a long-term strategic relationship within which some long-term benefits (e.g., satisfaction of partners' expectation) and short-term benefits (e.g., cost reduction, completion on schedule) could be secured. The facilitator also organized a workshop for imparting problem-solving skills to the team members since these skills were useful in resolving any conflicts that might arise in the future between involved parties.

The drafted agreement was approved and signed by all parties in the third workshop. The facilitator's duty would then be almost finished. He had already initiated the formation of a partnering, and since participants in future workshops might start to exchange more confidential information, he might not appropriately be involved in them. He left it to the team to sustain the established relationships, but acted as an external consultant in any dispute or conflict encountered by the parties and would provide his professional knowledge when necessary.

Afterward, the partnering team organized workshops periodically to bring in novel ideas, new practices, and advanced technologies. Trust and commitment improved continuously. These long-lived workshops helped to shape future needs in business and technology, add functional expertise to construction projects, introduce cross-site best practices, and manage contract negotiation, while the high-performance team acted as a consulting group and catalyst for change.

FIVE USEFUL GUIDELINES TO INITIATE PARTNERING

As mentioned previously, one of the key successful criteria for a partnering arrangement is establishment of a high-performance team, for which these more detailed guidelines are proposed.

1. The partnering relationship should be formed before contracts are signed (i.e., a preproject relationship) and should involve all the major stakeholders, including the owner, designer, engineers, general contractor, and key subcontractors. Some initial meetings should be organized at which to exchange expectations and goals regarding relationships among the parties. An external expert may be recruited to guide and facilitate the process in order to reduce misunderstanding among parties. The partnering goals may be either project-specific or relevant to the growth of organizations. Some common goals may include
   - Consistent compliance with environmental regulations
   - Completing the project on schedule
   - Completing the project within budget
   - Enhancing reputations of the partnering parties
   - Pursuing cost-effectiveness
   - Committing to quickly inform each other of new technology
   - Committing to share best work practices
2. Since the parties are working as a team and toward the same goals, they should share such resources as knowledge, information, and technology. The exchange of resources relies on the involved parties to maintain absolute trust by not disclosing any confidential material to an unauthorized party and by not intending such material for internal competitive use. Parties are reminded to restrict leakage of confidential data. The appropriate resources should be those that could be used to accomplish the aforesaid goals.
3. The high-performance team should be composed of senior members of individual parties, and each involved party should assign at least two executives to the team. One should be a senior executive who has comprehensive knowledge of the corporate

business to permanently stay on the team, while the other should be the project manager in charge of the potential or current project. Other professionals are encouraged to join permanently or occasionally when detailed evaluation and constructive feedback are needed. The team members should possess strong leadership and managing and problem-solving skills and good at establishing team spirit in an informal communication network. Although they may not be the top executives in the organizations, they must gain the total support of the top management.

4. The team conducts regular meetings to raise discussions about pertinent activities or problems that need to be addressed. Such meetings should aim to add value to (i.e., improve) existing practices. For example, the partnering team should search for better operating processes and procedures by introducing new models, approaches, and methods. A benchmarking technique is highly recommended for initiating best practices. (Camp 1989).
5. Assessing the performance of partnering is crucial to its existence. This involves evaluation of the degree of success of partnering. As mentioned previously, there are some measures (subjective and objective) that can help determine its performance. Any deviation from expectations will be the performance gap to overcome. Besides, the team should look for continuous improvement in response to the turbulent environment. The team can then prescribe actions to induce changes, seize opportunities, and rectify the course.

CONCLUSION

Construction partnering can be used to improve interorganizational performance and therefore improve project performance. It raises the discussion on what management practices should be adopted. For example, if there is a need to apply new technology or specific skills, a typical change process has to be initiated. In consequence, partnering aims at stimulating construction parties to cooperate, initiating constructive discussions, formulating the most appropriate goals and objectives, and determining efficient and effective tools and techniques for the construction projects.

In conclusion, this paper sheds light on the structural issues of the construction industry and offers an improved understanding of the partnering process by introducing a framework for partnering in construction. The framework demonstrates that the use of appropriate management skills (i.e., effective communication and conflict resolution) and the development of a favorable context (e.g., mutual trust and long-term commitment) are critical to partnering success. For assessing the degree of success of partnering, some subjective measures (i.e., perceived satisfaction of partners' expectations and compatible goals) and objective measures (e.g., cost variation and rejection of work) can be used. A case and some useful guidelines for initiating partnering were also presented.

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