Joint Ventures in the A/E/C Industry—Use and Success Factors

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Abstract

Joint venturing characteristics and patterns found through survey-based research, conducted of the top 400 constructors and the top 400 architects (as defined by ENR) within the United States, are presented in this paper. The respondents provided information regarding their experience with project-based joint ventures, including their evaluation of success, operational characteristics, and other related factors.

As change occurs in construction technology, as geographic, business and communications barriers are removed, and as project sizes increase, firms may find themselves at a competitive disadvantage when trying to secure projects.

Project-based joint ventures are often used in the construction industry to assemble an organization that meets a client's project needs and matches or exceeds the capacities of competitors. The joint venture provides the means for a firm to quickly add resource, political, technical, or other required strengths that will increase project acquisition.

Limited study has been undertaken in the construction industry to evaluate this partnering phenomenon. The few industry-related studies have primarily used case study techniques and have focused on large, international joint ventures and firms. However, many joint ventures are formed on small- and medium-sized projects within the United States in addition to the international joint ventures reported. Further, due to the narrow focus of earlier studies, patterns of joint venturing across industries or across service providers are not evaluated.

The survey results provide evidence of varied success among joint venture projects, and indicate characteristics of firms that use joint ventures most. Further, patterns are developed which show partnering frequency among varying sizes and types of firms.

Importantly, the highly experienced respondents--mostly executive or senior managers--divulged issues they found most important in joint venture success. These anecdotes are categorized and coded to form a list of important success factors. The resulting list provides managers with a practical operations checklist to steer future joint venture formation and operation.

Introduction

As part of a study into Architecture/ Engineering/ Construction joint ventures, a survey of industry firms was conducted of the ENR Top 400 Construction and Top 500 Design firms. A portion of the survey focused on testing theoretical interorganizational relationships; the results are published in “Predicting Organizational Success within a Project-Based Joint Venture Alliance” (Sillars and Kangari 2002). This paper presents data resulting from the survey which describe the nature of joint venturing in the A/E/C industry and the lessons learned of those who engage in joint ventures.

Background

Joint Ventures in the Construction Industry

Architecture/ engineering/ construction (A/E/C) industry researchers indicate alliances are among the tools that firms will need to successfully meet future market demands. In a survey of 30 international construction executives, the respondents considered strategic alliances a necessity for U.S. construction firms, if they wish to compete in the global marketplace (Badger and Mulligan 1995). Further, clients of the A/E/C industry are finding themselves required to react dynamically to the changing world. The construction industry itself must react in kind—Halpin (1993) recognized the emergence of flexible A/E/C industry firms that can react to the changing needs of their clients. Further, emerging foreign markets create opportunity for U.S. firms to export their strengths overseas through venturing with local partners (Yates 1991).

Joint venture structures

Project-based joint ventures are a type of interorganizational alliance, according to Lorange and Roos (1992). These joint ventures are temporary—the creation of a separate entity for the purpose of carrying out a specific project (Aldrich 1979). The joint venture participants join through a form of agreement to contribute resources in the form of skills, experience, financing or physical resources (Badger and al. 1993). Each of the parties contributes resources only as required and the rewards are distributed back as financial return (Lorange and Roos 1992).

Survey Research

Survey responses were requested following procedures outlined by Salant and Dillman (1994); each respondent's recent experience was solicited, including facts surrounding a recent joint venture at its inception and conclusion, and evaluations on JV success in general.

Population

The research population consisted of the Top 500 Design and the Top 400 Construction firms in the United States, as published by ENR (1997a; 1997b). A database was obtained that includes size, type of firm, and other identifying information. After adjusting for duplicates, etc., the population was broken into two segments—construction (n=396) and design (n=471). The survey generated a total 35.4 percent response; 62 percent indicated some use of joint ventures.

Respondents

The respondents overwhelmingly held senior executive positions in their companies. For example, 66 percent were company presidents or CEOs, 19 percent were vice presidents or partners, and 6 percent were senior marketing individuals. The respondents reported an average tenure in the industry of 27.5 years, and an average tenure of 20.5 years with their current firm. Further, of those providing information about their joint ventures, 94 percent reported that they were involved in the creation of joint ventures.

Findings

Trends of joint venture use

For those firms that reported using joint ventures, the number of joint ventures used in the prior twelve months varied from none to 20, with an average use of 2.4 joint ventures in the prior twelve months. The breakdown of frequency of joint venture use is demonstrated in Figure 1.

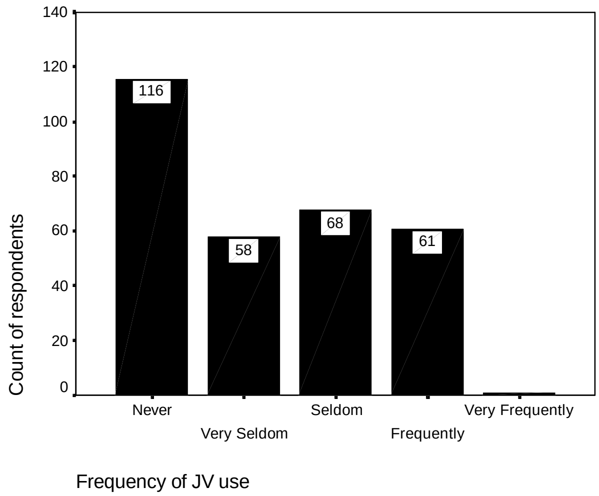

Figure 1 - Reported frequency of joint venture use

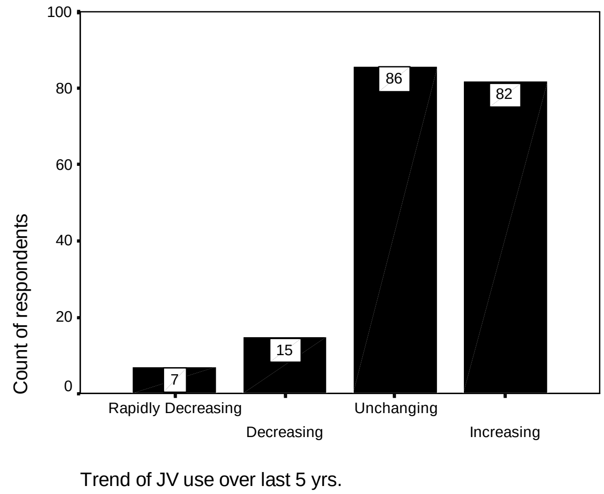

Figure 2 - Bar chart of trend of joint venture use

Further, as Figure 2 shows, 88 percent of the respondents reported no change or increasing use of joint ventures in the last five years, while only 12 percent indicated decreasing joint venture use.

Joint venture projects

Client type responses indicated that the public/private mix was 65 percent/35 percent. Table 1 represents the distribution of project type across the reported joint ventures.

Table 1 – Project types

Project type	Number	Percent
General Building	61	46%
Transportation	24	18%
Water/sewer/wastewater	21	16%
Industrial/petroleum	12	9%
Manufacturing	8	6%
Hazardous Waste	5	4%
Power	3	2%

Contract type information was also solicited; cost reimbursable contracts accounted for 33.5% of projects, guaranteed maximum price contracts 11.4%, and fixed-price bid contracts 55.1%.

In terms of size, 78 percent of the venture projects ranged in construction value from $0.5 million to $100 million with 99 percent encompassing projects ranging to $800 million; two additional projects were reported valued at $2 and $4 billion.

Joint venture teams

The reported joint ventures included 74 percent two-partner, 16 percent three-partner, and 10 percent four-partner ventures. Partner size, in terms of revenue, was well spread; this indicates it is likely that partnerships occur frequently within the population under study, rather than with firms of substantially lower revenues than those studied.

Length of partner relationship was highly skewed toward a newly-formed relationship; in general, the joint ventures occurred among partners that were new to each other within just a few years.

Cultural data indicate a broad dispersion among culturally similar and dissimilar partners.

Combinations of designers and constructors comprised 23 percent of the joint ventures; 40 percent were between designers, and 37 percent were primarily between constructors.

Profit split between partner(s) and the focal firm averaged 49 percent. There is a tendency for a larger range of profit splits to be represented in larger partnerships, as would be expected. For all joint ventures, focal firm profit splits varied in a near-normal distribution from 10 percent to 90 percent, with a mean of 49 percent and a standard deviation of 15 percent.

Joint venture success

Three Likert scale questions were asked of the outcomes of the joint ventures. Two questions dealt with short-term gains—did the joint venture as a whole receive the revenues expected from the client, and did the individual partner receive the revenue it expected from the joint venture? One question asked whether the partner experienced gain in market position.

In all three cases, financial and market gains tended to be as expected or slightly better, although the results varied widely from much lower to much higher than expected.

Finally, respondents were asked if the firm had found the joint venture as successful as planned.

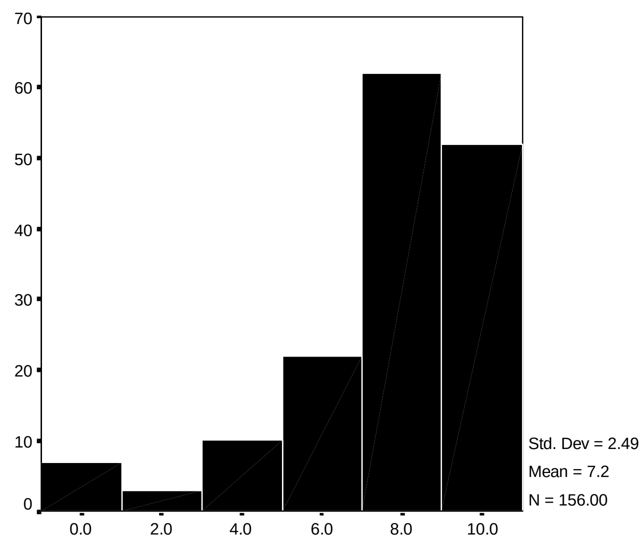

Figure 3 - Organization success histogram

For success (Figure 3), zero represents "completely unsuccessful" and ten represents "completely successful". As may be seen from the figure, the outcome "leans" toward complete success, but with a large variance of results.

JV success lessons

Content analysis

To elicit the respondents' experience, three specific open-ended questions were asked in the survey:

- "What in your experience affects whether your participation in a joint venture was successful?"
- "What aspect of potential partners—that are evident before joint venture formation—may predict a successful joint venture?"
- "What factors are important in the workings of a joint venture that affect the success of the venture?"

All three questions were reviewed to code issues, mentioned as important to any respondent, into common factors. Those factors were categorized by chronological phase and are listed alphabetically below:

Joint venture decision
- Establish business purpose (enter into JVs only when required for operational needs, not just marketing needs)

Partner selection
- Know partner
- Partner financial strength
- Partner flexibility
- Partner political strength
- Partner staffing strength
- Partner technical strength
- Partner venturability (ability of partner to function in a JV relationship)
- Trust/ culture match

Joint venture setup
- Business purpose alignment (complementary strengths)
- Dispute resolution procedure
- Equitable profit/ risk split
- Integrated or Specialized operations team
- Resource commitment
- Role clarity
- Shared or One-party leadership

Joint venture operation
- Efficient work flow
- Meet resource commitments
- Open and constant information (including financial reporting)
- Operations team alignment (coordinated skills among the operations team)
- Operations team collaboration/ mutual trust
- Strong project management
- Systems alignment

Joint venture outcome
- Client satisfaction
- Profitable outcome
- Project goals met
- Strengthened partner relationship

Each response was then coded as to the frequency of mention of these concepts; those concepts which were mentioned 5% or more frequently per question are summarized in Figure 4 through Figure 6.

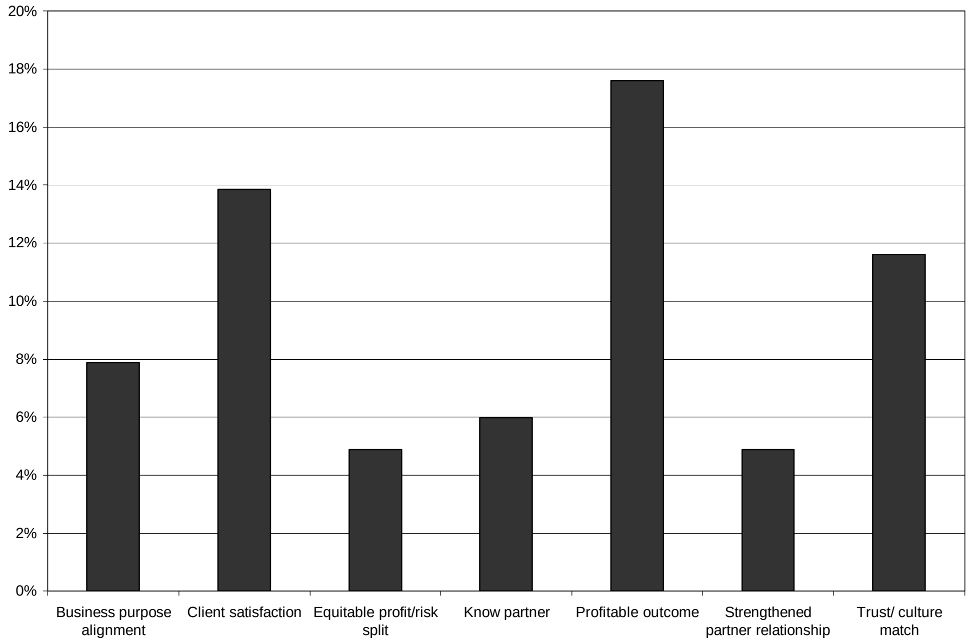

Figure 4 Frequency of concepts mentioned important to successful JV outcomes.

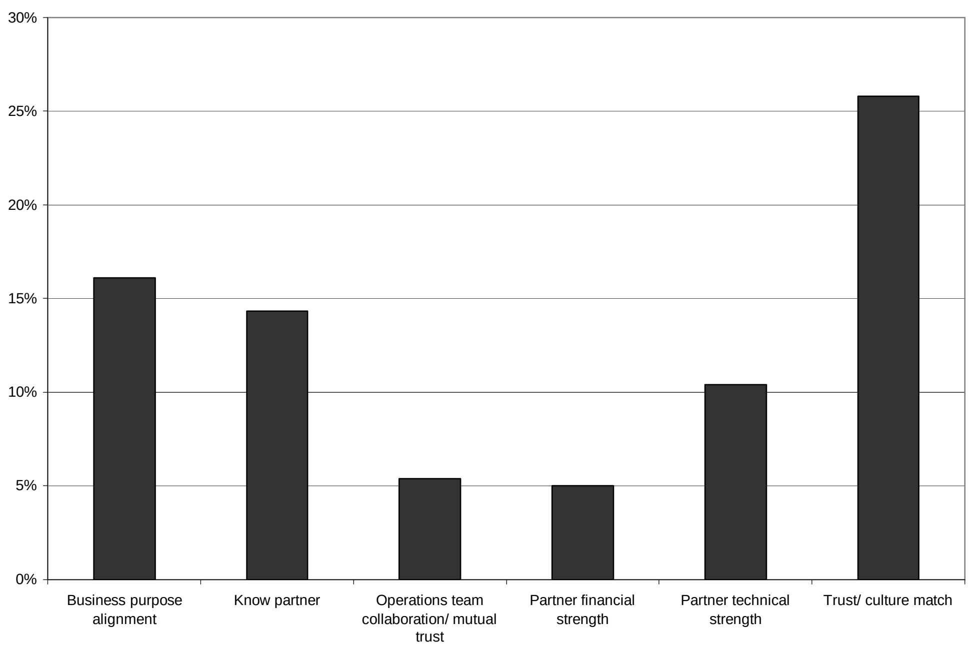

Figure 5 Frequency of concepts mentioned as important to partner selection.

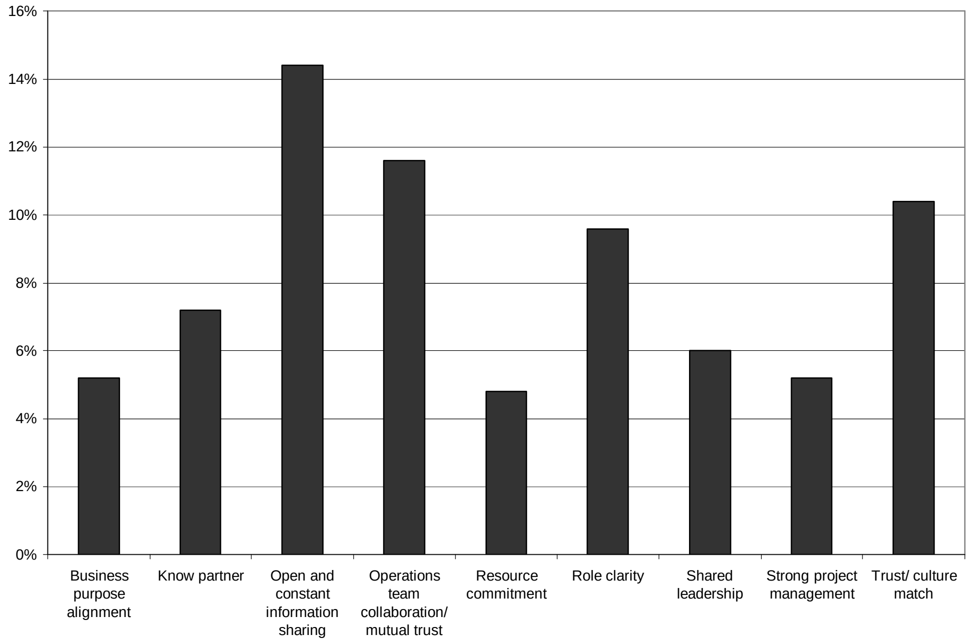

Figure 6 Frequency of concepts noted as important to successful JV operation.

Discussion

Joint venturing is useful for many firms, for a variety of reasons (per one respondent, "Joint ventures can help a company overcome the risks associated with: 1) larger projects, 2) different markets, 3) new locations."). Yet, other firms see joint ventures as a lesser-preferred alternative ("Prime/sub arrangements make for a better line of communications and clearer responsibility statements.") Reports of joint venture success vary widely; although the tendency is toward better than expected experience, both in terms of profitability and market gain.

The practitioner may significantly affect joint venture success at four distinct stages—deciding whether to enter into a joint venture, selecting a partner, developing the joint venture agreement, and during the operation of the venture. All of the concepts noted herein were important to at least one of the respondents; the whole list forms a good checklist to consider at each stage of venturing. However, those concepts most frequently cited are discussed below.

First and foremost, the decision whether to enter into a joint venture is important, given the varied success history and complexity of organizational relationships. Important in this consideration is whether there is a compelling operational reason to venture. In making this decision, four distinct factors should be considered—the acquisition of needed skills, resources (necessary to perform the work or sufficient to overcome the potential risks), political connection, or a mandated characteristic, such as local or minority status. Because of the difficulty of operating in a joint venture environment, a firm should look to its own capabilities first. If the reason for entering into the joint venture is for project acquisition (driven by political or mandated needs), then particular care should be taken to ensure that a strong basis of operations is established, and well understood among the venturers. ("Joint ventures for purely political purposes, without a realistic basis for working together, are very risky and should be avoided," according to one respondent.)

Once the decision is made to enter into a joint venture, assessing the potential partner (most often through a prior relationship or through its reputation) and developing a strong sense of trust and common culture are important in developing the joint venture team; this emphasis on culture match has been reported as important in foreign joint ventures as well (Sillars 1998; Bing and Tiong 1999). Cultural considerations are difficult to assess, and create unspoken expectations (Schriener and Angelo 1995). Key to ensuring successful partner selection is taking the time to know the partner and uncover its business culture. Development of a strong relationship among the venturers' principals provides an opportunity to discover cultural similarities and strengthens the eventual partnership (Lorange and Roos 1992). During this period of partner exploration, confirming that the partner is committed to (and is capable of) bringing the required financial and technical strengths to the project will ensure that the reasons for joint venturing are not in vain.

Development of a clearly defined joint venture agreement follows partner selection. Establishing well-described roles that correspond to the business purpose of establishing the venture was frequently cited as key to success. A fair and equitable profit/risk split was also seen as important ("lack of greed" was an oft-used term) to the partnership. Equitability should be discussed in terms of the value of assets provided, both in terms of those assets necessary to obtain the work (such as political connections or mandated characteristics) and in terms of those assets necessary to operate the project. Further, the likelihood of success through development of a shared leadership structure was cited twice as often as a one-party leadership structure. Authority should be balanced with risk—parties which have an unbalance of high risk but no authority described strong dissatisfaction with the joint venture outcomes.

Operationally, many respondents noted a breakdown of the venture at the operations team level. ("Vertical alignment of the joint venture goals is a necessity in each partner"). Operations team collaboration and mutual trust, based on the clear understanding of the parties' roles were frequently mentioned as critical success factors. It is important that the relationship building done during joint venture formation—through executive management collaboration—must be transferred to the team that will be assigned to perform the work. Open and constant information sharing then allows all partners to participate fully in the venture.

Finally, profit and client satisfaction were expectedly noted as important indicators of joint venture success. In a joint venture, the structure may create a managerial or financial reporting system that is different than the norm for a partner. Establishing a clear means, such as regular and frequent principal-level meetings, to communicate the profit and client satisfaction progress—and to develop corrective measures if off-track—will ensure that due attention to these broad goals is met during the operation of the venture. Interestingly, a strengthened relationship with the partner was also seen as an important outcome. This indicates the value of a potential partner for further alliances. The transaction cost of establishing a relationship with a partner is high. Maintenance of that investment, especially in the operational phases of a project—perhaps through partnering or less formal means—has strong value to joint venture practitioners.

The workings of a joint venture are complex, as are the projects that cause their formation. The result is the need for a flexible and culturally matched partner, and a lot of hard work to keep the partnership together. (According to one respondent, "Joint ventures are like a marriage—same success factors.") Much of the evaluation of culture match, trust and similar concepts is still performed on a "gut-feel" basis. Further research into what parameters may affect such perceptions may pave they way for increased success in making these evaluations.

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