IDENTIFYING CULTURES IN CONSTRUCTION PROJECT ALLIANCES

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The purpose of this paper is to explore the cultures that exist in construction alliance projects. Alliancing is a procurement route that solves many of the challenges caused by adversarial contracts, and as such becomes a useful approach for projects that have high levels of complexity and risk or urgency. The paper begins with a short history of the development of construction alliances, which leads to a discussion about the cultures and behaviours that are a precondition to their success. The research uses a case study approach to investigate two complex infrastructure programs. Both programs were politically sensitive and had high levels of risk. The results show that while scope and cost control were a challenge, the key contributor to their success was the development of a supportive culture within the alliance. The research provides evidence that when there are high levels of risk, innovation and integration of the construction team are essential. This suggests that alliance contract procurement is not a business-as-usual approach. Construction teams need to be acutely aware that a Best-for-Project attitude is necessary for successful alliances.

Keywords: Construction alliance, complexity, project management, procurement.

INTRODUCTION

Jiang et al. (2010) defined a project alliance as an agreement between companies to share resources on a project in order to achieve a specific organizational goal. A project alliance is simultaneously a contractual mechanism and a project delivery method. Often, the terms of this agreement include managing cooperatively on an open-book, non-adversarial, best-for-project basis, and sharing the monetary risks and rewards of participating in the projects. A program alliance is a long-term relationship created to undertake a group of similar projects.

The project alliance concept was first introduced in the early 1990s, in the North Sea offshore oil and gas industry. Previously, partnering was the preferred procurement approach for enhancing collaboration, improving communication, and encouraging innovation between project team members such as owners, construction contractors, and design consultants without relying on a contractual mechanism (Ernzen et al., 2000). However, as key elements of project partnering were legally non-binding, partnering did not offer the protections of a legally enforceable contract (Chen et al., 2012).

According to (Love et al., 2010) most of the earlier use of alliances in Australia (particularly Western Australia) in the oil and gas sector used a pure alliance (Walker and Hampson 2003), where the non-owner participants (NOPs) were selected on the basis of experience, capability, and attitude but without regard to price. Two notably successful Western Australia projects that used this form of procurement approach were the East Spar and the Wandoo B developments (Davis and Cowan 2008).

Alliance contracts are typically used with the intent of achieving innovation, utilising a prequalified pool of contractors. In a program alliance, partners benefit from improved team culture, shared knowledge, and learning that increases and improves over time (Faems et al., 2008). The projects, in turn, benefit from shared vision, efficiencies in procurement, and early contractor involvement. Alliance contracting is an attractive option for "pursuing efficiency in terms of time cost, quality and other objectives" (van den Berg and Kamminga, 2006).

LITERATURE REVIEW

A literature review was conducted to understand the culture and governance of alliance contracts. The balance between trust (culture) and control (governance) varies from alliance to alliance. According de Man and Roijakkers (2009), when alliance partners are completely committed to building and maintaining a successful alliance, there will be less need for formal controls. The relational elements of alliance contracts, therefore, may have greater control influence on alliance partners than contracts and other formal governance mechanisms (Lee and Cavusgil, 2006). Governance is a framework for securing successful projects. Governance structure and processes are used to mitigate the risk of moral hazard and incentivize partners while achieving the objectives of the temporary project organization.

There are two types of control in alliances: "controlling the partner, and controlling the alliance" (Das and Teng, 2001). Governance mechanisms may be formal / objective, such as the contract and formal rules, processes, metrics, and policies and procedures that control, monitor, and reward desirable performance (Das and Teng, 2001). The formal contract itself defines what is allowed and not allowed, codifies decision-making mechanisms, includes clauses to prevent claims and disputes, and establishes the risk-sharing calculations (Faems et al., 2008). Governance mechanisms may also be informal; these are known as clan control (also: trust, informal, and normative control). Such soft controls are typically achieved through the "establishment of organizational norms, values, culture, and the internalization of goals to encourage desirable behaviour and outcome" (Das and Teng, 2001). Other writers refer to these as Psychological Contracts (Jefferies et al., 2014).

Culture of alliance projects

Informal governance mechanisms feature prominently in the culture of alliance projects. Supportive culture and consistent leadership within a project organisation can contribute to improved organisational performance (Gajendran et al., 2012). For the purposes of this paper, we define culture as underlying assumptions, beliefs, and values shared by members of the project organisation.

In an alliance, some principles of conduct and soft governance may be established as part of the contract or alliance charter, such as best-for-project decision-making, and shared

governance / joint decision-making. However, a key tenet of social control is that desired behaviour might not be codified at the beginning of the project (Das and Teng, 2001). Through the process of building relationships, socializing, repeated interaction, co-location, and success in resolving issues, "members [of the alliance] become more committed to the organization, and shared views serve to influence strongly the behaviour of the members" (Das and Teng, 2001), thus creating trust and relational governance.

Examples of project culture include open discussion, mutual support, respect, trust, effective communication, a no-blame approach, knowledge sharing, goal alignment, and cooperation (Love et al., 2010; Zuo and Ma, 2005). Ways to achieve this include co-locating team members in the same office (Jefferies et al., 2006), conducting workshops and team-building exercises, and hiring a facilitator (Jeffries et al., 2014) or an alliance coach / psychologist to conduct periodic health checks of the alliance relationship (Cheung and Rowlingson, 2005). This may even extend so far as to include remove all visual attachments to individual companies (such as company logos and titles), by adopting a single alliance name, logo, and uniform (Jefferies et al., 2014). Over time, trust will increase and the team will become more cohesive, facilitating organisational elements that need to be rebuilt if there is staff turnover that potentially causes disruption (Davis and Love, 2011).

According to (Love et al., 2010), price competitive alliances facilitate stronger relationships as they enable parties to work closer together and understand each organization's cultural background, so that the trust building process can be facilitated more effectively.

DATA AND RESEARCH METHOD

The case study methodology provides a tool to study complex phenomena within certain specific contexts. Case studies are a valuable research approach to build theory, evaluate outcomes, and develop interventions. The aim of the case studies was to assist in addressing the key elements of governance that impact on the alliance programs. The three case studies were similar in that they were all program alliances comprising many small individual projects. While all alliance programs were different each were politically sensitive and contained an immediate community impact. This sensitivity meant that the general public had a desire to see that the projects were completed in timely manner, while also solving important community infrastructure problems. The three alliances were:

- Grade Level Rail Crossing Projects, Victoria, Australia
- Gas Utilities Projects, California, United Sates of America
- Case Study 3: Water treatment projects, Victoria, Australia

Case studies

Case Study 1 (C1): Melbourne grade-level rail crossing projects

There are 245 grade-level rail crossings in metropolitan Melbourne, each of which is a conflict point between trains, road traffic (such as cars, trams, and buses), pedestrians, and cyclists. The Roads Corporation of Victoria (VicRoads) has committed to removing 50 of these grade-level crossings at an average cost of AUS$3 million prioritized based on safety needs and traffic congestion.For this research, the authors had permission to access to the project team and secondary data for the 50 projects.

For the VicRoads capital program, respondents were questioned about the attributes of the Alliance, and how those impacted their behaviour. In particular, participants were asked to discuss project management, the governance structure, and decision-making levels applied to the projects and program. A series of on-site observations were performed at different construction sites, and secondary data were also used, in the form of published reports about the capital program.

Case Study 2 (C2): Gas pipeline upgrades

As part of a regulatory mandate to improve safety to nearly 7,000 miles of aging gas transmission pipeline infrastructure, a major public utility in the United States has undertaken to test and improve gas pipelines, and add other safety and monitoring mechanisms, at an estimated cost of over US$2.5 billion. The first phase of this capital program involved replacing 200 miles of gas pipeline, strength testing 800 miles, and installing 250 automated valves. Project durations ranged from two to eight months, with an average per-project capital cost of US$2.5 million. For this research, the authors had access to the project team and project data for 82 of the Phase 1 projects.

The researchers reviewed the terms of the Alliance contract and Alliance charter, analysed project data and internal reports, attended project meetings, and also used direct questioning to elicit information about project team behaviour, governance mechanisms, and organizational structure.

Case Study 3 (C3): Water treatment projects

An Australian alliance was used to deliver a water treatment program, with AUD$370 million funded by residents through a levy that applies to local users. The alliance contract was for the construction of 121 water infrastructure projects over a five-year period, serving an 8,000 square kilometre area in Geelong, Australia. The infrastructure program was set up as an alliance between a water authority, an international network of professional consultants, and one of Australia's largest construction firms. For this research, the authors had access to the project team for interviews.

Semi-structured interviews were used to explore participants' opinions about the importance of behaviours, skills, and cultures in construction alliance. The target participants for the study were stakeholders utilising alliances; the authors interviewed three key stakeholders from the Alliance, who had extensive experience and knowledge about the construction alliances. Key points were abstracted from the transcripts verbatim so as not to lose the strength of conviction and depth of insight provided. The authors added commentary and some variation to the grammar to afford clarity.

RESULTS

A qualitative approach was used for the case studies, as the research was aimed at developing a detailed understanding of governance, views, attitudes, and experiences of participants.

Melbourne grade-level rail crossing projects (C1)

On the grade-level rail crossing projects, it was noted that, for the Alliance contract to succeed, parties must be genuinely committed to the relationship, collaboration and openness

was paramount, and success of the projects was heavily reliant on relationships between key individuals (Director of Network Programs, Policy & Programs, 2014). This was echoed by the project manager, senior engineer, and Alliance manager for the program, who stated, "A good relationship with the participants is recognized as an important strategy to achieve project success. This is an iterative process with engagement with stakeholders, internal engagement and engagement with other participants. As well as sitting down in … as part of review and talking about how we could make this happen, and we suppose it's an education process, an iterative process, a technical process, a program management process." This was also true on the gas pipeline projects (C2 following).

Part of such strengthened commitment to the relationship included being involved, from the very beginning, in creating the Alliance and selecting the project team. Whilst discussing the management structure of the rail crossing projects, an Alliance program manager stated, "It is critical to ensure that the make-up of these groups consist of people that have been intimate with the Alliance selection and establishment, and that the behaviours and attributes of the specific individuals are, or can be, aligned to the charter of the Alliance project."

Gas pipeline upgrades (C2)

The benefit to both the Owner and the Contractors of the Alliance relationship for the gas pipeline upgrade was in less tangible and soft benefits such as: the capture of historical cost data, lessons learned regarding known unknowns, open communication, streamlining of procedures, constancy of construction management and field leadership by utilizing the same Contractor firms, improved safety and quality of work by using the same population of contractor field staff, and a collegial team environment. The collegial environment was enhanced by co-location of all three Contractor management teams at the Owner's headquarters. Whereas the Alliance Contract established the formal terms and conditions of the risk-sharing relationship, the Alliance Charter established cultural elements such as: best for project decision-making, collaboration, shared Vision, fairness, commitment to manage the long-term relationship, cooperative decision-making, and a culture of accepting responsibility and holding each other accountable.

In practice, at the project management level, relational elements of governance were seen to be more important than the contract; Owner project managers were more likely to turn to collaborative means than contract terms when resolving management conflicts, "… managing the project for reasonability in the spirit of the Alliance Charter" and relying on the contracts department to enforce contract terms. However, executive management also implemented contract monitoring and an audit at the closeout of each project to enforce contract terms regarding allowable and unallowable costs, foster discussion about the treatment and allocation of program-wide expenditures, and minimize opportunism. The contract monitoring and audit processes were effective in normalizing Contractor behaviour regarding expenditures, and were also used to improve future contract language; the continuous monitoring effort also yielded US$3 million in savings in the first year it was implemented. In this particular Alliance, project management could be seen to rely on trust and community to govern the relationship, while executive management was more likely to rely on formal controls.

Water treatment projects (C3)

On the water treatment projects, the strong Alliance culture was rooted in shared goals and perspective. According to respondent P, "it was very clear we're all pulling in the same direction. It's a lot easier getting information and all working together so I've got to say that's been an extremely positive experience. I think what actually happens with a program alliance is after a while you work out the sweet spot in terms of what is really going to meet everyone's expectations and you all work toward that and that has been very positive."

Part of the culture was rooted in the language used in the Alliance contract and charter, and co-location of the teams. Respondent S proposed, "the key differentiator is to take that best for project viewpoint on decisions. That's probably the key differentiator and you can see the difference between people that work very well and those that don't. So being able to, I suppose, leave your home organisation behind and take a look at what's best for the project and best for the alliance – they're the ones that really make the alliance work I would say." Respondent P also noted the dynamics of the integrated team, "So again in the best for client type, best for project type thing. Again with our program alliance that's worked extremely well. You could go into our alliance office, so at the peak we had in our alliance office about 90 people and I could tell you, you couldn't pick who was from the parent companies. It was very much an integrated model so we spent a lot of effort in terms of building the team and that's worked extremely effectively." The integrated team did not necessarily happen instantly or all by itself; it was carefully crafted, with effort put into selecting appropriate people and offering some relationship coaching. "We did a tiny bit of alliance coaching at the start, … and it's really worked really well. We regularly get satisfaction levels, high 80s to 90 per cent so people are very happy. Often see comments in the surveys it's the best place they've ever worked. It's been an extremely positive experience for them working in that. And because it's a program alliance and it's going for a period of time you've really got the opportunity to build that team." A third respondent, G, indicated that embracing communication helped to further strengthen the Alliance culture. For example, whilst early and efficient dissemination of information (such as roles, responsibilities resolution process, and workshops matters) was a sound basis for communication within the team, a raised awareness of the significance of effective listening and understanding of the potential for misunderstanding enabled the partners to focus on being positive, self-confident, and mutually supportive in their communication.

Respondents also identified organisational and individual learning and growth as a benefit for all participants in the Alliance. One respondent stated, "whilst the focus has been about developing our people, developing our skills and knowledge and bringing it back into [the Owner organisation], I think it has also been a very positive experience for both [the Contractor] and the design consultants." Respondent S commented that "our systems are designed to be shared. So, you know, all our project management, environmental safety, our quality systems are available on a portal that any contractor that works with us can download, put their branding on and use. So quite a few of the contractors use the alliance as an opportunity to build their business to the next level and obtain certification, expand the type and range of clients that they can work with."

Each of the case studies were analysed independently, but towards the end the authors reflected on the significant issues that were common to all cases. The most important informal governance mechanism was culture, for all three case studies. The next section of the paper brings together the essential leanings that are typically part of the culture of alliances.

DISCUSSION AND CONCLUSIONS

All three case studies provide a unique insight into the behaviours and culture of program alliance participants. Despite their diversity of project type and different degrees of complexity, relationship contracting similarities can be seen in the insights provided by the respondents. These insights accord with the extant research uncovered in the literature review. Whilst a distinction may be made on Alliance contracts between aspects of structured governance and crafted culture, it is clear that as constructs for managing projects they are intertwined and largely inseparable. There is a tendency to formalise team roles and responsibilities through governance, and then further develop them through experiential learning and norming behaviour, sometimes driven by managerial games and coaching in the early stages of the engagement (Davis and Love, 2011).

Recent research into a 'personal deal' or Psychological Contract as the phenomenon is more widely known, and may provide some explanation (Jefferies et al., 2014). Research on Alliance Contracting has revealed that communication and trust between the Alliance team members has a major impact on the effectiveness of the Alliance (Mills et al. 2012). The pre-condition for Alliancing to be successful is to develop a trust framework that allows the team to deliver superior project performance. The objective of Alliances is to align team member expectations so that they work together for the benefit of the project. For example in the Water Treatment case (C3) the project director commented, "it was very clear we're all pulling in the same direction."

On a program Alliance, partners can be seen to benefit from shared values, reduced risk of opportunistic behavior, early contractor involvement, culture, knowledge, and learning that increase and improve over time (Faems et al., 2008). This is true for all three case studies, wherein both the Owner and Contractors benefited from the ability to bundle projects to make them attractive to sophisticated Contractors, fairness, open communication, the use of selection criteria during the tender process to improve the quality of bidders, more accurate costs due to competitive bidding, and accelerated schedule.

The gas utilities Owner benefited from early Contractor involvement in addressing project challenges (such as traffic disruption, community impact, and unknowns due to inaccurate City as-built drawings). Past research on the gas utilities projects also concluded the Owner and Contractors benefited from "…streamlining of procedures, constancy of construction management and field leadership by utilizing the same Contractor, improved safety and quality of work by using the same population of contractor field staff, and a collegial team environment" (Nalewaik et al., 2015).

The results of the study suggest that Alliance participants believed the learning from each project can be used to improve the outcome of subsequent projects. The language used in the Alliance contract and charter, and co-location of the teams,, enhanced by the consistency and continuity of teams and behaviors across all projects in the program. The results also revealed the importance of engaging all partners throughout the project life cycle in collaborating, innovating, and developing project value.

All case studies showed that trust reduced conflict in the alliance. Trust between Alliance partners was considered important because it created an opportunity and willingness for further alignment, and reduced the need for partners to continually monitor one another's behavior. It also reduced the need for formal controls, and eliminated the tensions created by

short-term inequities. The interviewees were all agreed that the Alliances only worked when there were strong trusting relationships within the team.

In all the case studies, the Alliances planned a combination of formal and informal governance mechanisms, including organizational structure, to control the projects and Alliance partners. In practice, on each case study, it was found that the relationship and team culture (informal governance) were more palatable approaches and were perceived to be effective in controlling the Alliance outcomes. Formal governance measures (such as the organizational structure, contract, and audit) were only used on an as-needed basis when informal controls did not suffice, which suggests that alliances are an effective procurement approach for politically sensitive risky projects.

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