

PROCUREMENT AND RISK SHARING

Full paper

USE OF ALLIANCE CONTRACTING FOR DELIVERING LOCAL GOVERNMENT ENGINEERING PROJECTS

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ABSTRACT

Alliance contracts are designed to align the principal's and contractor's objectives to maximise performance, positively manage risk, reduce cost and achieve positive results.

They are best suited to contracts that require innovation, are complex, have tight constraints, or in which resources of both parties can be successfully combined. Successful alliance contracting requires commitment by both parties to achieving common goals.

The research described in this paper assesses the use of alliance contracting in local government and develops a management tool for local government organisations to use in assessing the appropriateness of alliance contracting in given circumstances.

A questionnaire was used to obtain information about alliance contracting experiences from five local government organisations in Australia that had used alliance contracting to deliver civil engineering projects. The questionnaire was also given to their alliance partners.

Criteria addressed in the questionnaire included project costs, relationships formed, quality, innovation, safety, administrative effort and the alliance experience itself.

A decision matrix based on risk management principles was developed to assist local governments assess the suitability of alliance contracting in a particular case. Assessment is based on operational, technical, financial, legal and social criteria.

Keywords: alliance, contract, local government, management, procurement, risk

1. INTRODUCTION

Alliance contracts are recognised for their ability to align the principal's and contractor's objectives to maximise performance, proactively manage risk, reduce cost and achieve outstanding results in principal key objectives (Alchimie Pty Ltd & Phillips Fox Lawyers 2003, p. 8).

There is increasing use of alliances in the construction industry (for example, Manley & Hampson, 2000, who examined relationship contracting in the Queensland Department of Main Roads). However, the use of this process is still developing, and alliances are still in their early stages of use in local government.

In this paper, the authors discuss research into the use of alliance contracting in local government civil engineering projects and propose a methodology, based on risk management principles, which local governments may use to assess if alliance contracting is appropriate for particular circumstances.

2. ALLIANCE DEVELOPMENT

Project alliances are “an integrated high performance team selected on a best person for the job basis; sharing all project risks with incentives to achieve game-breaking performance in pre-aligned project objectives; within a framework of no fault, no blame and no dispute; characterized by uncompromising commitments to trust, collaboration, innovation and mutual support; all in order to achieve outstanding results” (Alchimie Pty Ltd and Phillips Fox Lawyers, 2003, p.8).

One source of alliance contracting is the business alliance, which developed from the high risk, high capital option of business acquisitions or takeovers. In the past if a company wanted to break into new markets, or increase or secure market share they would conduct detailed research, raise capital funds and then purchase the company or companies that offered the investor the best leverage in the new market (Doz & Hamel, 1998, p.3). In alliancing, the concepts of interdependence, no contract, no term relationships and payment on performance, not unit price are just some of the paradigm shifts that need to be embraced (Lendrum, 2000, p. x).

Joint ventures were the next strategy to evolve from the acquisition process. They differ from alliances as described by Doz & Hamel (1998, pp.19-24) in that they involve the creation of fixed objectives and the commitment of creating a new joint venture company from the parent companies. The joint venture is a stand alone self contained business. Alliances take this principle further, through partner collaboration and the exploitation of unforeseen value creation opportunities.

Alliances take many forms and operate with various levels of complexity. Lendrum (2000, p.7) describes alliances as the cooperative development of successful, long term, strategic relationships, based on mutual trust and sustainable competitive advantage for all the partners.

3. PROJECT ALLIANCES

Project alliances are a special form of alliance with defined commencement and completion dates. They form part of the wider range relationship contracting family of project delivery arrangements.

One form of relationship contracting is partnering, described by authors such as Rigsbee (2000, p.23), who observes that the basic stakeholders in a partnering arrangement (owner, the designer, the main contractor and subcontractors) attend a workshop before the project starts to air their grievances and resolve their differences. This enables the stakeholders to write a partnering charter, signed by all parties, that commits each party to work together to complete the project on time, within budget and without litigation.

Rigsbee provides details of an Arizona Department of Transport project worth US \$52 million that realised time savings of almost 20 per cent and total project savings for all the partners in excess of US \$2million per annum.

Another author discussing the benefit of partnering is Lendrum (2000, pp. 53-54), who described the advantages experienced by the United States Army Corps of Engineers.

Lendrum indicated that according to the Construction Industry Institute partnering assisted clients to reduce costs by 8 per cent, and project schedules by 7 per cent. Contractors also reported an on average profit improvement of 10 per cent. Design costs were reduced by 10 per cent and administration costs were 6 per cent less.

The unique feature of a project alliance is the synergy created between the selection of the commercial participants, the core alliance principles, the clarity and alignment of project objectives and the commercial framework, which all drive the pursuit and delivery of outstanding results. Price is not typically a part of the selection process, participants being selected on capability, approaches and systems and more subjective assessments.

A suitable leadership structure that places the project first is fundamental to a successful alliance. Figure 1 shows such a leadership structure.

4. PROJECTS SUITABLE FOR ALLIANCING

Contracting is one method of risk transfer (shifting the responsibility or burden for loss to another party) (Standards Australia, 1999, p. 5).

However, the transfer of a risk may not diminish the overall level of risk to society. In addition, where risks are transferred in whole or in part, the organisation transferring the risk has acquired a new risk, in that the organisation to which the risk has been transferred may not manage the risk effectively (Standards Australia, 1999, p. 18).

Therefore, in selecting a project for delivery by an alliance, risk management is an important issue. Is it better to transfer the risk with a contract? Are there risks that cannot be effectively transferred to a contractor? Can the overall risk be minimised if an alliance, involving principal, contractor and other key participants, is formed? Is it possible to use the synergy of an alliance to maximise opportunity?

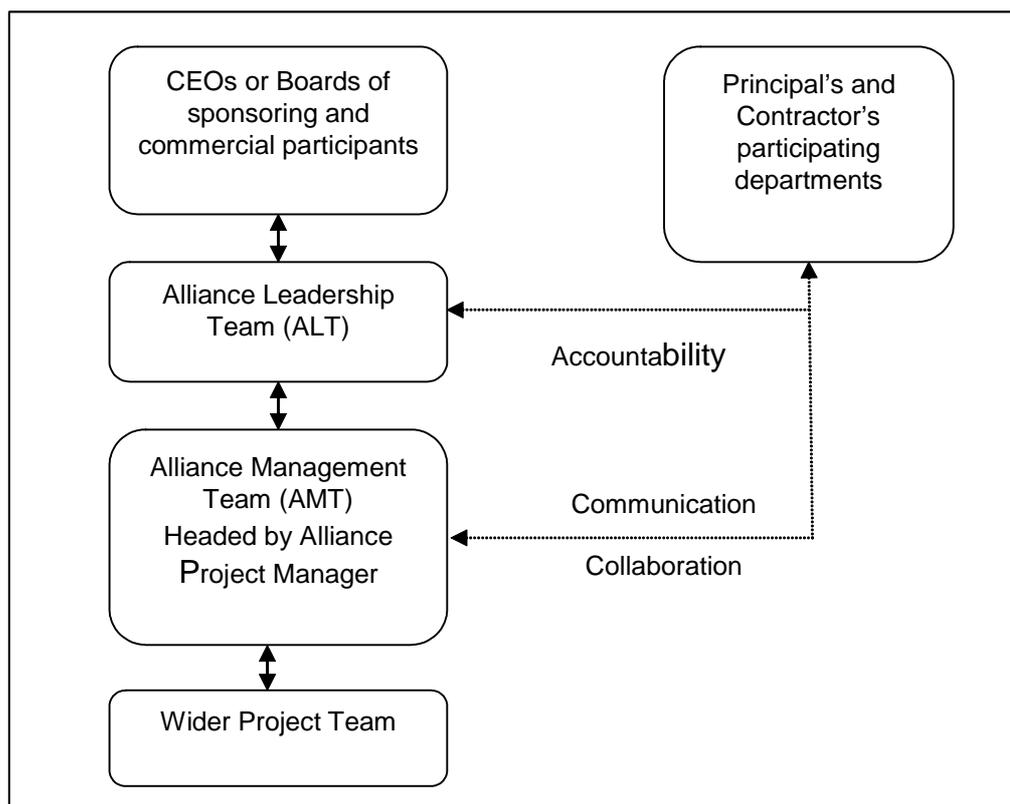


Figure 1: Project Alliance Team and Leadership Structure

Adapted from Figure 7-2, Alchimie Pty Ltd and Phillips Fox Lawyers (2003).

Alchimie & Phillips Fox Lawyers (2003, pp. 9-10) consider that the choice of any given procurement approach to deliver a project should only be made after a detailed and carefully considered risk analysis which considers all of the objectives, opportunities and risks involved in successfully delivering the project.

They note that not all projects are suited to an alliance approach. Project alliancing is best suited to those projects where the traditional risk transfer strategy is not appropriate, such as those involving elements of the unknown, having a high degree of complexity, having tight delivery constraints, or requiring the expertise of both parties to deliver the project

5. SUCCESS OF THE ALLIANCE

In order for alliances to be successful, all parties must agree on the objectives and share the principles processes and general information to gain your partner's initial and on going support and commitment Lendrum (2000, p. 183). The contractor must be involved to ensure a win/win long term relationship.

Both parties bring to the relationship a strategic and organisational context in the initial stages of an alliance. These contexts need to be discussed and recognised in an open and honest manner to eliminate any expectation gaps that may arise later in the relationship.

Walker, Hampson and Peters (2000, p. 26), observe that the essential features of partnering or alliancing are:

- Mutual objectives that firmly establish for everyone that their interests are best served on concentrating on the overall success of the project.
- Problem resolution using an escalation strategy to solve them at the lowest operational level possible.
- Continuous improvement, through measurement or analysis of performance and a commitment to learn from experience and to apply this knowledge to improve performance.

The context in which the alliance is framed can be critical to its success. Key factors in such a context include the strategic scope the partners see in the alliance, the reason why the parties want to commit themselves to it, the way in which it is framed, a consistent rule understood by both parties, the ambitions each partner hopes to fulfil, mutual assistance in achieving goals, and agreed objectives which become the basis of key performance indicators (Doz & Hamel 1998, pp. 142-151).

Trust in others and a belief in the alliance from the top of both organisations is crucial to the success of an alliance.

It is important not to fall into the traps that can cause failure of an alliance. Rigsbee (2000, pp.60 – 67) has identified many of these. They include conflict between core values of the partners, inflexibility, misalignment of goals, disloyalty, complacency, underestimation of the effort involved, overestimation of the ability of each partner to deliver agreed outcomes and high expectations of management.

6. RESEARCH METHODOLOGY

Local governments are responsible for large and complex public works. Their closeness to their communities and the largely urban nature of most major local government works exposes them to considerable political and environmental risk. Because few local governments have a large revenue base and all are accountable to higher government, they also have exposure to financial risk.

The research evaluated the use of alliance contracting in selected local government organisations. A decision matrix based on risk management principles was also developed to assist local governments assess the suitability of alliance contracting in a particular case.

A questionnaire was used to obtain and analyse information about alliance contracting experiences from five local government organisations in Australia that had used alliance contracting to deliver civil engineering projects. The questionnaire was also given to their alliance partners (contractors).

The research was conducted in the following steps, which are further discussed in the next sections:

1. Gather data on alliance experiences in local government.
2. Analyse the data collected
3. Develop the decision tool for assessing viability of an alliance

6.1 GATHER DATA ON ALLIANCE EXPERIENCES IN LOCAL GOVERNMENT

Data on alliance experiences in local government was gathered through a questionnaire to local governments that were either engaged in a project alliance at the time of the questionnaire or had previously been involved in such an alliance. The questionnaire was also sent to the alliance partners of the respective local governments to gain a complete picture of the alliance experience.

Information was requested on the following seven criteria, each of which addresses an aspect of the alliance:

1. Costs, selected because alliances should return cost savings to the principal and improved profit for the contractor.
2. Relationships, as it is through a strong and sustainable relationship that the true benefits of alliancing can be realised
3. Quality, as it represents an improvement in the value of the service provided.
4. Continuous Improvement, as to achieve results on time and to full specification requirements, innovation will always be required to improve the current process
5. Safety, as not only a commitment to safety must be evident in all services delivered by the alliance partners for legislative reasons, but also if an alliance manages their safety system well it shows commitment and alignment that is likely to be evident in other systems and processes the alliance teams adopt.
6. Administrative Effort, because of the resource intensive nature of selecting alliance partners and on-going information collection and dissemination requirements.
7. Lessons Learnt, which evaluates whether organisations have found the change to relationship contracting worthwhile, what respondents would do differently now they can look back on their process, and what they had achieved.

The expectation was that the questionnaire would highlight differences that would be addressed by the decision matrix.

Two basic types of questions were used. The first required a specific answer, ranked as follows:

- a. strongly disagree
- b. disagree
- c. neither agree or disagree
- d. agree
- e. strongly agree.

A typical question of this type would be “Have your costs improved since adopting a relationship approach to contracting?”

The second type of question was a discussion question. A typical question of this type was “Can you quantify the change?”

At least one dimension of each of the above criteria was addressed. In the case of relationships, five dimensions were addressed, while two dimensions were addressed for each of administrative effort and lessons learnt.

Five local governments and their alliance partners participated in this survey. These were local governments known to have participated in project alliancing at the time of the survey. While the number was small, the local governments involved represented a good cross-section ranging from larger city councils to smaller rural councils. They were located in Western Australia, Victoria (two) and Queensland (two departments of a large local government).

Initially, questionnaires were mailed to the respondents. As response through these was limited, the questionnaire was redesigned for use in a telephone interview. This was much more successful, all respondents preferring this method as they were able to clearly understand the context of each question and the whole process took about fifteen minutes to complete.

6.2 ANALYSE THE DATA COLLECTED.

The response for each of the criteria used for the questionnaire was given a score from one (representing “strongly disagree”) to five (representing “strongly agree”). Table 1 below summarises the questionnaire result.

Table 1: Summary of Questionnaire Results

Criterion	Question	Principal View Summary	Contractor View Summary
Costs	Costs improved	A : 3 N : 2	A : 5
	Comment	Two principals with alliances in early stages were unable to advise whether costs had improved.	All contractors agreed that costs had improved.
Relationships (with contract partner)	Collaborative	SA : 4 A : 1	SA : 2 A : 3
	Cooperative	SA : 3 A : 2	SA : 2 A : 3
	Tolerant	SA : 2 A : 3	SA : 2 A : 3
	Adversarial	D : 1 SD : 4	D : 2 SD : 3
	Untenable	SD : 5	D : 2 SD : 3
	Comment	Openness, teamwork, honesty were common feedbacks. Some minor areas needing improvement.	Openness, teamwork, honesty were common feedbacks. Some minor areas needing improvement.
Quality	Quality of service from contract partner improved	SA : 2 A : 3	SA : 2 A : 3
	Comment	Quality of service provided at least met requirements. Teamwork assisted quality result.	Happy with the quality of service they provided. Also agreed that teamwork was a factor in quality.
Continuous Improvement	Any notable innovation produced	SA : 2 A : 2 N : 1	SA : 1 A : 3 N : 1

Criterion	Question	Principal View Summary	Contractor View Summary
	Comment	Most alliances were producing cost saving innovations. Could have been more innovation. In one case "business as usual."	Most agreed that the alliance produced noticeable innovation. In one case not enough time yet.
Safety	Safety performance improved	N : 5	A : 1 N : 4
	Comment	No improvement as all organisations had mature safety systems at start of contract.	No improvement in most contracts as the organisations had mature safety systems at start of contract. One contractor had used psychological profiling techniques to select suitable team members from safety viewpoint.
Administration	Administrative effort to manage partner increased	SA : 1 D : 4	A : 4 D : 1
	This has had negative effect on organisation	D : 5	A : 1 D : 4
	Comment	Most considered that administration had not increased, nor had negative impact on organisation.	Most considered that administrative effort had increased, but did not have a negative effect on organisation.
Lessons Learnt	Would use relationship contracting again	SA : 2 A : 3	SA : 4 A : 1
	Local Government Authorities would benefit from relationship contracting	SA : 3 A : 2	SA : 3 A : 2
	Comment	All stated that they would use relationship contracting again. Some areas for improvement.	All stated that they would use relationship contracting again. Some areas for improvement.
SA = Strongly agree: A = Agree: N = Neither agree nor disagree: D = Disagree: SD = Strongly disagree.			

In summary, the results from Table 1 show that respondents were positive on the dimensions evaluated. The main exceptions were:

- In two cases it was too early in the relationship for the principal to tell whether costs had improved.

- One principal and one contractor (on different projects) could not identify notable innovations in the delivery of service. Both appear to be the result of it being too early to tell.
- Only in one case was it observed that safety performance of the contract had improved. This was probably due to the mature nature of the safety systems already in place.
- With one exception, principals did not report an increase in the administrative effort to manage their contract partner. On the other hand, four out of five contractors did report an increase in administrative effort. Only in one case (a contractor), however, did this have a negative effect on the organisation.

Radar (spiderweb) charts (see Figure 2 for an example) were produced for the responses to each question – one chart for the principal’s response and one chart for the contractor’s response. The radar charts illustrate in a qualitative sense what the respondents felt their experiences with alliance contracting has been thus far.

The five possible answers from strongly disagree to strongly agree are located on the vertices of the pentagon. Each answer is linked by concentric lines. Each concentric line represents the number of responses received for a particular answer. They are linked by lines between the responses to help illustrate where the trend of answers lie.

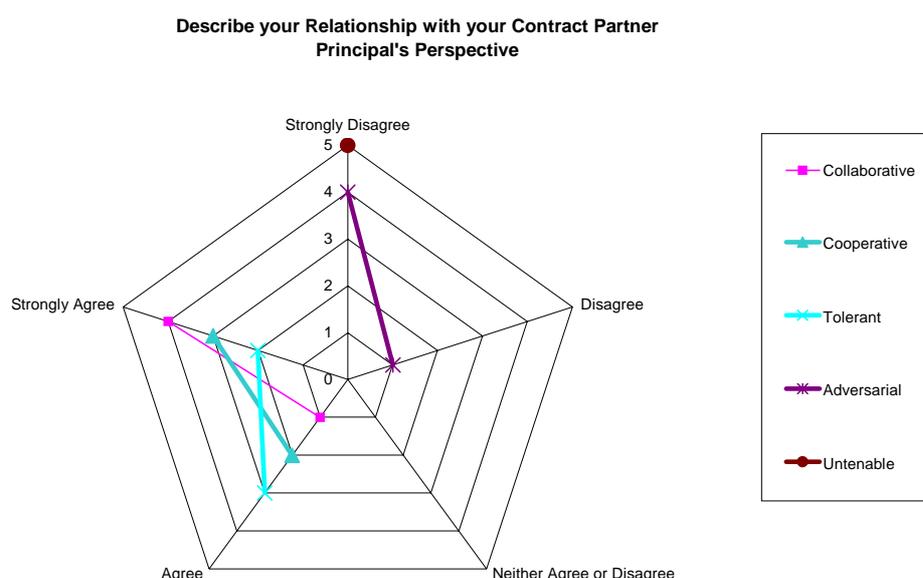


Figure 2: Radar Chart – Relationship with Contract Partner – Principal’s View

Finally, responses to the questions requiring a specific answer were checked for alignment between the partners. Of 65 responses to these questions (13 per contract, each of which was answered by the principal and contractor), the number of responses were as follows:

Complete alignment - 29
Different by one answer rank - 31

Different by two answer ranks - 5

The answer rank difference refers to the distance between two answers. For example, a one answer rank difference would be when one party answers “strongly agree” and other answers “agree.”

No response differed by more than two answer ranks.

This alignment between responses (only 7.7 per cent different by two answer ranks, zero different by more than two answer ranks) was one indicator that the alliance partners were in close alignment on their opinions. A significant difference in perception about the results would have been an indicator that the alliance was under threat, and would also have caused some lack of confidence in the questionnaire results.

Questions in which the respondent could discuss the issue tended to support and explain these responses.

There were some significant innovations resulting from the use of the alliances researched. They included:

- A saving of \$3 million through eliminating a sewage pumping station.
- 20 per cent reduction in the delivery cost of a project through a team based approach that yielded efficient design, on time delivery, and no disruptions.
- Generation of a \$20,000 per annum profit for the alliance and employment of 20 disabled people through combining the resources of the principal, which owned the land, and the contractor, who provided \$1.6 million capital, for a regional waste material sorting system identified by the alliance team.

The lessons learnt showed areas in which the organisations would seek improvement in future alliances. These included:

1. Optimise the selection process.
2. Ensure the budget process is transparent.
3. Improve the outcomes of selection workshops to build stronger relationships earlier.
4. Pre agree the split of profits if more than two partners are involved.
5. Understand the implementation stages of an alliance.

There were also a number of areas identified that would prevent the creation of an alliance between a local government and a contractor. These included:

1. Contractor has something to hide or is not comfortable with the level of intrusion into its business.
2. Principal does not have staff with the suitable skills or culture to manage an alliance.
3. Contractor does not understand the principals needs or cannot meet them.
4. Perception of no openness or honesty in the relationship.
5. Upfront costs may be prohibitive.
6. Either party is not willing to take the “leap of faith.”

6.3 DEVELOP THE DECISION TOOL FOR ASSESSING ALLIANCE VIABILITY

Given the potential of project alliances to save money, deliver innovations and improve relationships, it is clear that they are desirable where they can be used.

To aid the evaluation of whether a project was suitable for the alliance method of delivery, a decision tool was developed based on the lessons learnt, the various checklists and issues raised in the references. Assessment is based on operational, technical, financial, legal and social criteria. While this tool is aimed at the needs of local governments, any organisation could use such a tool before considering whether to use an alliance contract.

The decision process is based on a qualitative analysis matrix, similar to that described in Appendix E of the Australian and New Zealand Standard for Risk Management AS4360:1999 (Standards Australia, 1999). This process qualitatively assigns a 1 to 5 rating (insignificant, minor, moderate, major, catastrophic) and a 1 to 5 (or A to E) similar rating to the likelihood (almost certain, likely, possible, unlikely, rare) of a risk. Various combinations of consequence and likelihood result in a low, moderate, high or extreme level for the risk. Numerical scores can also be used.

The risk with respect to whether the project is best delivered by an alliance process is “What can happen and how can it happen?” Each section of the tool addresses one of the alliance criteria described above. Within each section, questions are based on operational, technical, financial, legal, social and other considerations with respect to whether an alliance was the best form of project delivery.

An example risk could be “Not comfortable with agreed profit and reward model.” The assessor may rate the consequence of this as “major” and the likelihood as “unlikely.” A risk score or level (in this case “high”) would be obtained from looking up the analysis matrix.

Based on the risk assessment, and the answers to a range of other questions about the alliance, the principal would have an input into the decision as to whether to not to use alliancing for the particular project as the risks are too high, or to use it and manage the risks involved.

This tool has not yet been tested because of time constraints.

7. DISCUSSION AND CONCLUSIONS

This research has shown that alliance contracting is being used by local governments and is delivering good results. All the principals and contractors interviewed said they would definitely use alliance contracting again if the opportunity arose in the future. The team based approach, common goals and shared risk appears to create a positive work environment which many respondents claim to be the best way to do business.

The process used for the research was to review the business and project alliance process to assess the main criteria for a successful alliance project, develop a questionnaire around these criteria, seek out potential respondents to this questionnaire, obtain and analyse results, and evaluate from the issues raised in these results a decision matrix, based on risk analysis principles, for principals to use in deciding whether they should not use the alliance process for delivering projects.

One of major difficulties in conducting this research was to find organisations which had sufficient experience of using the alliance process to deliver projects. As relationship contracting becomes better known, it should be possible to extend this research to more organisations.

Of the criteria explored in the questionnaire, that of safety provided least information, probably because the organisations had mature safety systems. This criterion may need review in future research.

Informal feedback from principals suggested that the questionnaire covered all relevant issues and was not too long. Telephone interviews appeared to be the best way of gathering data.

The effectiveness of the change to alliance contracting was captured in the lessons learnt criterion of the questionnaire, from both principal and contractor. This use of both parties provided a balanced view of the process and an insight into what the contractors need to consider when they engage in relationship contracting.

The decision matrix using a risk management approach provide a useful starting point for any local government (or other principal) considering adopting alliance contracting. As it is based on a proven process of assessing risk, it offers flexibility to adapt the context, goals and objectives, and risk management criteria to meet each organisation's particular needs. It is intended to guide the principal to a point from which further analysis could be undertaken.

It is concluded that this research provides a methodology for assessing the usefulness of the project alliance process for delivering civil works in the local government context. The principles discussed, and the decision matrix for assessing whether or not to adopt the alliance process for delivering works projects, are applicable to any organisation.

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