Case study

Project alliancing vs project partnering: a case study of the Australian National Museum Project

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Abstract

Significant differences between project partnering and project alliancing occur in the selection process, management structure of the organisations undertaking the project and nature of risk and reward incentives. This paper helps clarify the nature of project alliancing and how alliance member organisations were selected for this case study. A core issue that differentiates between the two approaches is that in partnering, partners may reap rewards at the expense of other partners. In alliancing each alliance member places their profit margin and reward structure "at risk". Thus in alliancing, the entire alliance entity either benefits together or not all. This fundamentally changes the motivation and dynamics of the relationship between alliance members.

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Introduction

The National Museum of Australia Project delivery management plan was established on the basis of an alliance concept. The core principle was to achieve a positive outcome for all alliance members including the client (also an alliance member) through shared commitment to a common goal of project realisation delivering best value to the client and acceptable reward outcomes to alliance members. The assumption made is that all parties can achieve a win-win situation provided they work together to help each other gain not only a realistic reward for their input but to gain a competitive edge in the market as a result of their experience on this milestone project. While this also applies to a partnering approach, important characteristics differentiate partnering from alliancing.

This paper is presented in five parts. The first part describes the concept of partnering and some features of that arrangement that have attracted much attention, and in many cases enthusiasm. In the second part the concept of project alliances is introduced and explained. The Australian National Museum project is then presented as a case study to illustrate how project alliance partners were selected and how this process may be instigated for general building construction projects. Discussion, comment and analysis is then provided on the differences between project partnering and alliancing. Finally, conclusions are drawn that provide a useful contribution to our growing understanding of this element of project procurement.

Project partnering

Understanding of partnering has been growing over the course of the mid-1980s and early 1990s – but it is still difficult to define partnering in a clear and unambiguous manner (McGeorge *et al.*, 1996, p. 188; Bresnen and Marshall, 2000a). The Construction Industry Institute (CII) of the

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USA and the US Army Corps of Engineers undertook the first major studies of partnering as it was conceived to have applied in the USA at the time (Weston and Gibson, 1993; CII, 1996). The CII definition was as follows:

> ... a long term commitment between two or more organisations for the purpose of achieving specific business objectives by maximising the effectiveness of each partner's resources ... The relationship is based upon trust, dedication to common goals, and an understanding of each other's individual expectations and values. (CII, 1996).

The USA experience of partnering appears to be generally favourable.

Larson, for example, reports on a study of 280 partnering projects of varying type and scope from heavy process engineering through to hospital extensions (Larson, 1995). Over half of these projects were awarded to an open, competitive, low-bid process. Their analysis revealed that selection by lowest cost tender is less effective than that considering wider selection criteria. In another study reviewing performance of domestic US Army Corps of Engineers districts (within USA) in 1992, 31 of 37 used partnering. The survey used data available for 16 of 19 partnering projects (12 civil and four military engineering projects). Using criteria for success of cost change, change order cost, claims cost, value engineering savings and duration change, a comparison of these were made with 28 non-partnering projects. Both cost and change order criteria indicate significant improvements through using partnering. They also report that none of those interviewed who were involved in partnering were dissatisfied with partnering (Weston and Gibson, 1993).

Both studies from data gathered on US Army Corps of Engineers (Weston and Gibson, 1993; Larson, 1995) indicate significant gains from the use of partnering. This experience has been repeated in Australia as reported in a significant partnering study funded by the Construction Industry Institute Australia (CIIA). The CIIA stress that there is no partnering contract as such, rather an agreed partnering charter forms the basis of a working agreement that is intended to shape a non-adversarial culture to promote win-win working relationships between partners. This is achieved through the aim to "foster cooperative and mutually beneficial relationships among project stakeholders and developing an explicit strategy of commitment and communication. These goals are documented in a charter that stands alongside legally-binding contractual arrangements" (Lenard *et al.*, 1996, p. 11). The CIIA report is based upon a comprehensive study of 32 Australian projects with some 131 questions asked of senior members of partnering teams.

The impact of partnering in the UK has been a large reduction in costs with substantial waste being sliced from the supply chain through opportunities presented by the partnering approach. Green and Lenard cite costs being driven down by up to 30 percent and waste reduction of 20 percent being achieved by UK contractors using partnering This is delivering a fundamental paradigm shift in the way construction projects can be carried out and illustrates positive outcomes in improved and more trusting working relationships, and better conflict management (Green and Lenard, 1999).

The practice of "forcing" or premature "requiring" partnering behaviours of trust and commitment exemplified by entering arrangements where dispute resolution through the legal system is essentially banned has been criticised. Lazar (2000) argues that "... premature insistence on the presence of inter-organisational trust as a precursor to collaborative behaviour between owner and contractor may actually be fatal to the development of a successful partnering relationship" and concludes that partnering is a development process with great stress being laid upon relationship and trust-building activities. Partnering workshops for example need to be continuous and not once-off at the project start; empowerment is also seen as vital to trust enhancing as it allows people at a variety of organisational levels to make and adhere to commitments and promises. Others have also raised concerns about the potential for coercion to join partnering arrangements (Green, 1999).

Partnering is about people within partnered organisations making commitments and building trust to work together towards project goals. The partnering structure both official and unofficially accepted is that problems will be resolved without recourse to legal remedies but through joint problem solving. While this environment does deliver mutual benefits it falls short of guaranteeing that each party will equally benefit.

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There appears to be a partnering continuum ranging from pseudo-partnering, where the rhetoric prevails but little effort is invested to make the principles work, through project partnering where partners may come together for a specific project and where strong but sporadic investment in relationship building may be made, through to strategic partnering where long-term futures of the relationship are valued (Thompson and Sanders, 1998). In the latter case, relationship building and relationship maintenance are highly important features (Lendrum, 1998).

Partners in a partnering arrangement may and often do make varying profit levels and indeed some partners in such arrangements may well make a substantial financial loss. Thus within partnering projects there can be winners and even bigger winners or winners and losers. Gains and losses are severally but not jointly allocated.

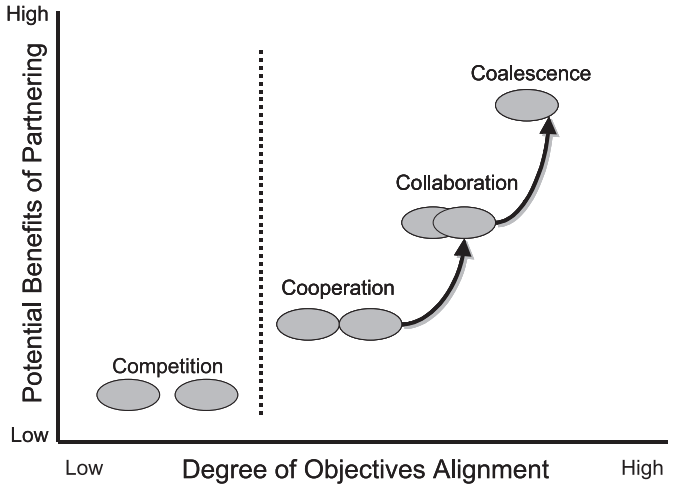
Project alliancing

Project alliancing is different from partnering in that it is more all-embracing in its means for achieving unity of purpose between project teams. It can be seen as occupying the position on a partnering continuum of alliance partners coalescing into a virtual company as illustrated in Figure 1 (Thompson and Sanders, 1998).

Alliance partners are selected on the basis of their expertise and ability to meet stringent performance criteria before price is considered. In alliancing, trustworthy, committed and competent firms are invited to join with the owner/client to develop the project. As an alliance of talented professionals pooling resources to achieve the project goal, they develop the project price target through design development with agreed risk and reward sharing arrangements. The expected cost savings are derived from improved value for money through leverage of skills and expertise of the alliance partners in developing the project concept through to delivery. The concept relies on a "best value" outcome rather than for example a least expensive or quickest project outcome. Defining features of alliances are as follows (see also Figure 2):

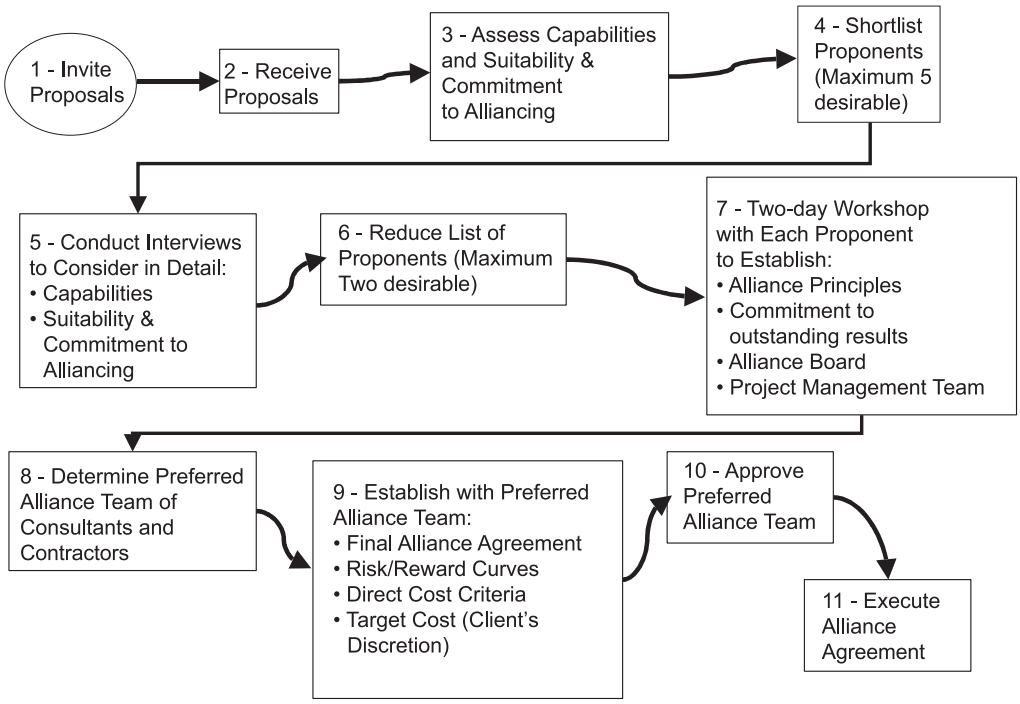
- Selection by general performance criteria that demonstrate world-class excellence, innovation capacity and superb relationship management skills.
- Substantial design development after joining the alliance.
- Joint budget and cost/time committed targets established through an alliance board represented by key senior project champions from each alliance member and the owner/client.
- Agreement on a risk and reward formula where an open-book accounting approach is undertaken to determine cost reimbursement together with agreed and verified site management costs to establish a base target cost. The firm's corporate profit (usually determined from audited figures over an agreed period) is placed as an "at risk" component to ensure that the agreed project costs are met. A bonus reward mechanism to be shared by all parties is jointly established to encourage further innovation and excellence. Thus the agreed project cost can only be determined once the alliance partners have been selected.
- The issue of extras for contract variations amongst alliance partners does not substantially arise because of the nature of the alliance's work in pre-planning and defining the project scope before agreeing the risk and reward arrangements. Variations have to comprise substantial and demonstrably significant changes in scope. On-site construction variations are project managed by the alliance team.
- The intense integration of alliance partners through the above-described

Figure 1 Partnering continuum



Source: Thompson and Sanders (1998, p74)

Figure 2 Alliance selection process



Source: KPMG (1998)

process requires excellence in communication at a personal level, at a business level, and at operational level. This generally requires a quantum leap in the use of shared IT systems and information processing integration.

The interviewing process to derive a shortlist of potential alliance members requires sophistication and judgement of a client as does the facilitated workshops. Once a successful alliance team is established, the final agreement can be formulated including the alliance charter, the target costs and time, and other performance requirements and the risk/reward agreements. Once the alliance conditions are approved by the project funding body the project can be executed.

National Museum of Australia Project – a case study

The Australian National Museum design and construction (D&C) project was established under the alliance arrangement. An alliance arrangement was chosen because it promised a fast delivery vehicle for a highly complex project of national (Australian) cultural significance requiring very high quality of construction, unique and significantly innovative design and high value for money. The National Museum of Australia project is a landmark, iconic project and so the decision to anchor down a design through a design competition was made. The design for the project was fixed in concept and general scope and thus a D&C procurement solution was not viable.

Another issue affecting the procurement choice was that this project was subject to astrict probity process that offered a model to the construction industry for high levels of ethical relationships between the design and delivery sectors of the industry. The "no dispute" report called for improved relationships to be forged (NBCC, 1989) with other reports and publications calling for similar actions (CIDA, 1993; Office of Building and Development, 1997; Clayton Utz, 1998; KPMG, 1998). The Commonwealth of Australia's procurement guidelines have six core principles:

(1) value for money;
(2) open and effective competition;
(3) ethics and fair dealing;
(4) accountability and reporting;
(5) national competitiveness and industry development; and
(6) support for other Commonwealth policies (Auditor-General of the Australian National Audit Office, 2000, p. 45).

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The alliancing concept met these objectives within the constraints of time pressures for the project opening ruling out the traditional design-bid-build approach and many other D&C related options.

The design consortium agreed to take part in an alliance and the design consortium leadership group had representatives sitting on the alliance selection panel and thus had considerable influence in decision making that affected their liability and reputation. The selection panel for the successful alliance team for building and services contractors also included the client representatives, a legal advisor and a former member of a construction company. Probity advisors, project managers, cost consultants and the alliance facilitators also supported this panel (Auditor-General of the Australian National Audit Office, 2000, p. 120).

Selection of the construction alliance partners was based upon the 12 criteria listed as follows:

(1) Demonstrated ability to complete the full scope of works including contributing to building, structural mechanical and landscaping design. The focus was on proof of performance on similar complex projects where the proponents had actively contributed to a design process to improve project outcomes. At least three examples were requested with evidence of buildability or constructability.
(2) Demonstrated ability to minimise project capital and operating costs without sacrificing quality. Evidence of at least ten examples was requested of projects brought within or below budget, demonstrating understanding of life cycle costs using value analysis or other appropriate technique used to demonstrate life cycle costs savings, as well as smarter ways of achieving a quality outcome.
(3) Demonstrated ability to achieve outstanding quality results. A minimum of three examples of what was considered to be of outstanding quality was required. Testimonials, industry and professional association awards provide suitable evidence supplemented by a formal presentation with photographs and/or other clear forms of evidence to convey quality performance.
(4) Demonstrated ability to provide the necessary resources for the project and meet the project program. At least three projects greater than A$50 million were required to demonstrate this capacity. The organisation chart and CV of key staff was also a source of evidence together with mobilisation plans and global method statements of how the work was planned and organised. The client-nominated auditor also assessed financial capacity. This requirement was necessary to ensure that only financially sound and capable partners would be selected. The financial systems used by the alliance partners was also an issue to meet the open-book approach and a capacity for transparency for auditoring.
(5) Demonstrated ability to add value and bring innovation to the project. At least three examples were required of process improvements introduced over the past three years. This required a demonstrated commitment to continuous improvement, innovation and/or breakthrough invention.
(6) Demonstrated ability to achieve outstanding safety performance. This required at least one example of a past safety plan from a previous project and presentation of supporting data such as lost claims/million man hours over the past three years, corporate OHS safety policy and how policy was translated into action.
(7) Demonstrated ability to achieve outstanding workplace relations. At least three years of data and statistics of performance on disputes and how they were managed. Corporate workplace policy and action plans and evidence of the nature and experience of workplace agreements over the past three years.
(8) Successful public relations (PR) and industry recognition. At least three examples of successful PR and industry recognition from previous projects such as proactive community involvement, previous track record of managing community expectations and credible stakeholder involvement. Examples of where a potential PR disaster may have been turned around.
(9) Demonstrated practical experience and philosophical approach in the areas of developing ecological sustainability and environmental management. A minimum of one environmental

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management system (EMS) plan developed and implemented was required. There was also a focus on nominated people having good understanding, experience, and qualifications to formulate and manage EMS plans.

(10) Demonstrated understanding and affinity for operating as a member of an alliance. Each of the participating companies was required to provide examples of working in a non-adversarial and collaborative manner as well as to demonstrate their views on participating on risk/reward schemes. The willingness to wholeheartedly support and embrace the alliance philosophy was required. There was a focus on ideas, team working, sound past relationships and general knowledge about the alliancing concept.

(11) Substantial acceptance of the draft alliance documented for the project including related codes of practice, proposals for support of local industry development, employment opportunities for Australian indigenous peoples. There was a focus on demonstrating an outstanding record of ethical and socially responsible working with government, local communities and accepting broader responsibility.

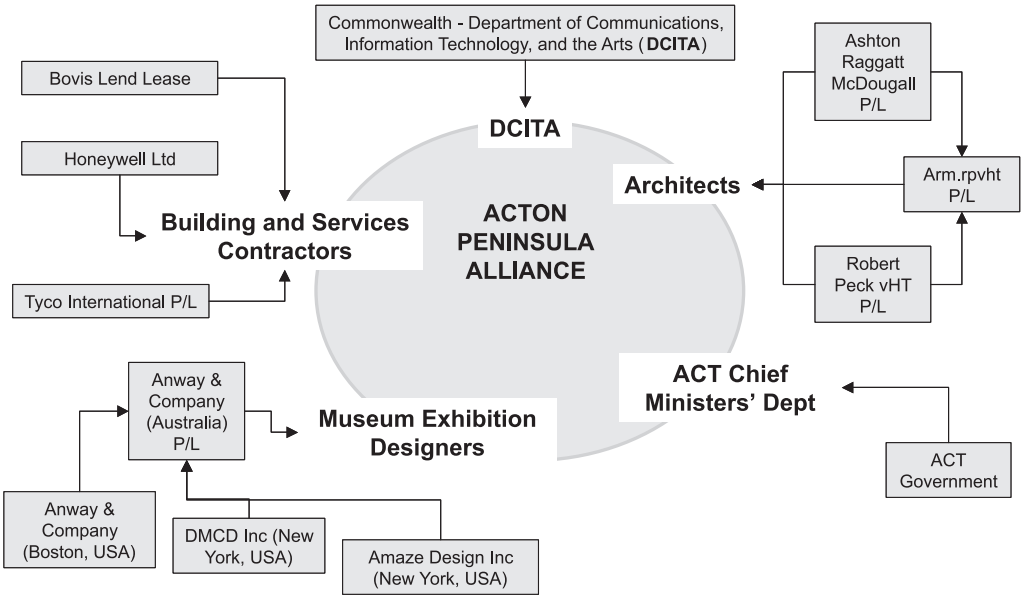
(12) Demonstrated commitment to exceed project objectives. This required a demonstration that the proposed alliance partnership were truly committed to the project ethos with highest level corporate championing and an understanding of the calibre and qualities that differentiated the project needs from a business-as-usual case where conflict and adversarial actions prevail.

After selection of the successful alliance partner, each unsuccessful contender was given the opportunity for a debriefing meeting with representatives of the selection panel to provide feedback on reasons why their submission and presentations were not successful. Several of the contending firms declined the opportunity. Of those who took the opportunity, all approached the de-briefing in a positive manner and sought to learn from the exercise. Their feedback to the de-briefing panel was that there was unanimous support for the use of alliancing, that traditional contracting does not produce a good outcome for everyone and that there was a desire to develop alliancing further in the building construction industry.

Several feedback comments expressed surprise that the process was so rigorous, transparent and professional. This placed acute demands upon participants to achieve very high levels of communication and presentation skills related to factual matter of substance rather than sales and marketing rhetoric. One interesting comment made was that the cost of the presentation and its preparation by aspiring alliance teams was less that the cost of tendering for an equivalent project. This was primarily because there was no tendering based on cost estimate preparation or detailed planning. While considerable effort was required in preparing proposals based upon the 12 criteria outlined above, this was developed from existing presentation and management information resources and was limited to explaining how this kind of project could be delivered without detailed reference to design details. The assumption governing the process was simply that by having the best-qualified people working together in the best interests of the project, the best and most effective solutions would emerge. This is a substantially, if not totally, different mindset than that which prevails in other project delivery strategies including those that use partnering, where mechanisms for cooperating and managing disputes may be subject to greater focus. Figure 3 illustrates the alliance as it emerged.

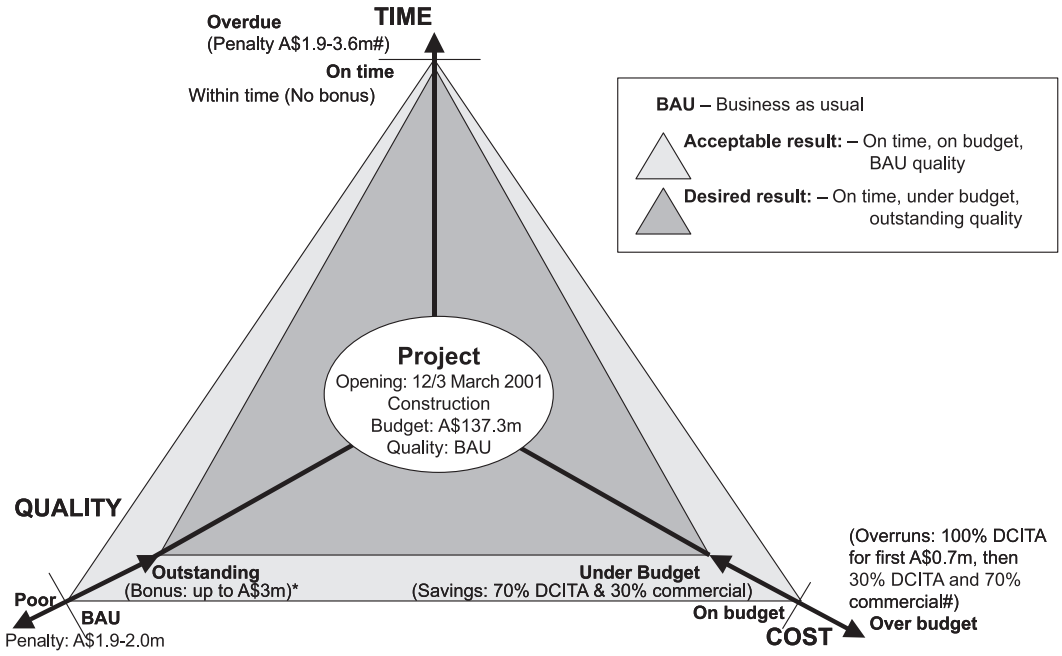
Motivators attracting parties to an alliance are pivotal in establishing successful risk and reward relationships that are based on agreed targets. Rewards, however, include intrinsic factors such as job satisfaction, recognition, access to learning and other less obvious factors that enhance the experience of working on projects such as participatory decision making. These rewards were not made explicit, yet as others have argued, these should be recognised in designing and evaluating partnering and alliancing relationships (Bresnen and Marshall, 2000b). A risk and reward graph indicates the gain/pain share of the overall success of the project measured against key performance indicators. Risk and reward provisions encourage but do not guarantee cooperative behaviour between alliance members, including the client (Bresnen and Marshall, 2000c). Figure 4

Figure 3 Alliance members



Source: Auditor-General of the Australian National Audit Office (2000, p38)

Figure 4 A typical risk and reward graph for cost time and quality



Source: Auditor-General of the Australian National Audit Office (2000, p103)

illustrates the risk and reward relationships. The risk and reward structure for the National Museum of Australia is made up of cost, time, design integrity and quality. There was no reward for finishing early – but there was very significant financial pain if it was even one day late. Before risk and reward can be established there must be an agreed turn out cost (TOC). The TOC is the agreed amount the building would cost to deliver, as determined by the Alliance Leadership Team that includes the project client.

Discussion

The important distinction between partnering and alliancing is that with partnering, aims

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and goals are agreed and dispute resolution and escalation plans are established, but partners still retain independence and may individually suffer or gain from the relationship. The contractual relationship between the client and contractor is similar to a traditional contract. With alliancing, the parties form a cohesive entity, which jointly shares risks and rewards to an agreed formula. Thus if the project is delivered one day late, for example, all partners jointly share the penalty. Rewards are likewise awarded for successfully exceeding expectations. The contractual arrangements are significantly different.

The way that alliance partners are selected on the basis of service provision first, and cost considerations later is a novel approach to the delivery of a project. Rigorous selection criteria and process is an important issue for clients who have either little inclination to place so much emphasis on a transparent and ethical process or do not have, or wish to commit, the required resources to perform a selection process in this manner. The approach adopted in the National Museum of Australia project was highly time and resource consuming from the client's viewpoint but necessary for public accountability circumstances to demonstrate that the client's risk acceptance by not first selecting on the basis of lowest price was well founded.

The alliance team's formation of a management group as a true joint management group with democratic membership ensures that trust and commitment is truly encouraged and manipulation discouraged by the system of alliancing was an important feature. This supported trust and commitment and resulted in enhanced perceptions of the desirability of working on the project. Results from a survey of trust and commitment issues (unpublished at this point) indicates that questions such as "We share technical and commercial information relating to our projects without the need to protect ourselves" returned a response of double the confidence measure than a "business as usual measure". Another indicative question asked was "I feel part of the project's community" which also had an almost double score response comparing the business as usual with the alliancing project[1].

Risk/reward arrangements also encouraged a team approach to innovative problem solving. The Australian National Museum project adopts practices followed by other alliance projects in the energy and mining industries, for example the Andrew Drilling Platform Project – North Sea UK (KPMG, 1998) and the East Spar Development (ACA, 1999). The success of transferring this form of project procurement from heavy engineering construction to building construction is a focus of this Australian milestone project.

Conclusions

This paper has described both partnering and alliancing and the authors have attempted to clearly indicate where differences lie. The Australian National Museum project provides a useful illustration of alliancing in practice.

The paper first established the advantages of partnering as a concept in that it delivers considerable benefits to clients, contractors and designers that participate. Alliancing was introduced and placed in context in a continuum of relationship-based procurement of which alliancing may be seen as the highest level of mutual commitment where benefits and risks are treated as a whole-of-alliance concern. It was stressed that the at-risk profit component for project success rather than individual partner team performance provided a strong incentive for partners to truly collaborate to ensure that the resources and skills available to the alliance as a unit compensated for any weaknesses.

The selection process was discussed and a model of the process presented. The key selection criteria were also presented and discussed. Vitally important distinctions were drawn between a partnering and alliance approach. Teams or partners in partnering arrangements are often selected with project price determination as a key component. With alliancing the philosophy was to first select the best possible team of project partners and then develop the design in line with its original integrity but using the intelligence, skills and abilities of the alliance team to seek efficiencies, in buildability and administrative, as well as to mould the project outcome to meet the budgeted TOC[2] representing best value for the project's scope and quality. The philosophy for the alliance concept is that when the best available people are hired to work in a truly collaborative and

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cooperative way, then the project outcome will represent best value.

This best value primacy may be the defining element of an alliancing approach. While the National Museum of Australia project presents only one case, findings from this case study cannot be generalised. However, it nevertheless presents a useful example of alliancing experience for building projects.

Finally, the selection process and the behavioural characteristics required of both client and the design/construction teams indicates that this approach should be limited to clients and team partners who share a sophisticated understanding of how true collaboration may be established and maintained. Alliancing requires a highly sophisticated and involved client to drive and benefit from the process. Novice or unprepared team partners might find this approach too challenging to fully reap the benefits that can be gained including the vital one of project success in terms of the quality of inter-team relationships.

Notes

1 It is beyond the scope of this paper to discuss the various surveys and data gathered on this case study project. Several key papers will emerge over the coming year that will deal with these in depth.
2 Literally the cost that the project would "turn out" to cost.

References

ACA (1999), *Relationship Contracting – Optimising Project Outcomes*, Australian Constructors Association, Sydney.

Auditor-General of the Australian National Audit Office (2000), *Construction of the National Museum of Australia and the Australian Institute of Aboriginal and Torres Strait Islander Studies*, Audit Report, Australian National Audit Office, Canberra.

Bresnen, M. and Marshall, N. (2000a), "Partnering in construction: a critical review of the issues, problems and dilemas", *Construction Management and Economics*, Vol. 18 No. 2, pp. 229-38.

Bresnen, M. and Marshall, N. (2000b), "Motivation, commitment and the use of incentives in partnerships and alliances", *Construction Management and Economics*, Vol. 18 No. 5, pp. 587-98.

Bresnen, M. and Marshall, N. (2000c), "Building partnerships: case studies of client-contractor collaboration in the UK in construction industry", *Construction Management and Economics*, Vol. 18 No. 7, pp. 819-32.

CIDA (1993), *Building Best Practice in the Construction Industry – A Practitioner's Guide*, Commonwealth of Australia, Sydney.

CII (1996), "The partnering process – its benefits, implementation, and measurement", Bureau of Engineering Resources, University of Texas at Austin, Austin, TX.

Clayton Utz (1998), "Alliance contracts: a glimpse of the future", *Australian Construction Law Newsletter*, August/September, pp. 7-8.

Green, S. and Lenard, D. (1999), "Organising the project procurement process", in Rowlinson S. and P. McDermott (Eds), *Procurement Systems: A Guide to Best Practice in Construction*, E&FN Spon, London, pp. 57-82.

Green, S.D. (1999), "Partnering: the propaganda of corporatism?", in Ogulana S.O. (Ed.), *Profitable Partnering in Construction Procurement*, E & FN Spon, London, p. 735.

KPMG (1998), "Project alliances in the Construction Industry", *Literature Review*, NSW Department of Public Works & Services, Sydney.

Larson, E. (1995), "Project partnering: results of study of 280 construction projects", *Journal of Management in Engineering – American Society of Civil Engineers/Engineering Management Division*, Vol. 11 No. 2, pp. 30-5.

Lazar, F.D. (2000), "Project partnering: improving the likelihood of win/win outcomes", *Journal of Management in Engineering*, Vol. 16 No. 2, pp. 71-83.

Lenard, D.J., Bowen-James, A., Thompson, M. and Anderson, L. (1996), *Partnering – Models for Success*, Construction Industry Institute Australia, Adelaide.

Lendrum, T. (1998), *The Strategic Partnering Handbook*, McGraw-Hill, Sydney.

McGeorge, W.D., Chen, S.E., Barlow, K., Sidwell, A.C. and Francis, V. (1996), "Current management concepts in the construction industry", *Australian Institute of Building Papers*, Vol. 7, pp. 3-12.

NBCC (1989), *Strategies for the Reduction of Claims and Disputes in the Construction Industry – No Dispute*, National Building and Construction Council, Canberra.

Office of Building and Development (1997), *Partnering and the Victorian Public Sector*, Office of Building and Development, Department of Infrastructure, Victorian Government, Melbourne.

Thompson, P.J. and Sanders, S.R. (1998), "Partnering continuum", *Journal of Management in Engineering – American Society of Civil Engineers/ Engineering Management Division*, Vol. 14 No. 5, pp. 73-8.

Weston, D.C. and Gibson, G.E. (1993), "Partnering-project performance in US Army Corps of Engineers", *Journal of Management in Engineering, American Society of Construction Engineers*, Vol. 9 No. 4, pp. 410-25.

This article has been cited by:

1. Raktim Pal, Ping Wang, Xiaopeng Liang. 2017. The critical factors in managing relationships in international engineering, procurement, and construction (IEPC) projects of Chinese organizations. *International Journal of Project Management* **35**:7, 1225-1237. [Crossref]
2. Che IbrahimChe Khairil Izam, Che Khairil Izam Che Ibrahim, CostelloSeosamh B., Seosamh B. Costello, WilkinsonSuzanne, Suzanne Wilkinson, WalkerDerek, Derek Walker. 2017. Innovation in alliancing for improved delivery of road infrastructure projects. *International Journal of Managing Projects in Business* **10**:4, 700-720. [Abstract] [Full Text] [PDF]
3. L.-P. Kerkhove, M. Vanhoucke. 2017. A parallel multi-objective scatter search for optimising incentive contract design in projects. *European Journal of Operational Research* **261**:3, 1066-1084. [Crossref]
4. Islam El-adaway, Ibrahim Abotaleb, Seifeldeen Eteifa. 2017. Framework for Multiparty Relational Contracting. *Journal of Legal Affairs and Dispute Resolution in Engineering and Construction* **9**:3, 04517018. [Crossref]
5. Anna-Maija Hietajärvi, Kirsi Aaltonen. 2017. The formation of a collaborative project identity in an infrastructure alliance project. *Construction Management and Economics* **33**, 1-21. [Crossref]
6. HietajärviAnna-Maija, Anna-Maija Hietajärvi, AaltonenKirsi, Kirsi Aaltonen, HaapasaloHarri, Harri Haapasalo. 2017. Managing integration in infrastructure alliance projects. *International Journal of Managing Projects in Business* **10**:1, 5-31. [Abstract] [Full Text] [PDF]
7. Jenny Wøien, Ali Hosseini, Ole Jonny Klakegg, Ola Lædre, Jardar Lohne. 2016. Partnering Elements' Importance for Success in the Norwegian Construction Industry. *Energy Procedia* **96**, 229-240. [Crossref]
8. P. E. D. Love, F. Ackermann, B. Carey, J. Morrison, M. Ward, A. Park. 2016. Praxis of Rework Mitigation in Construction. *Journal of Management in Engineering* **32**:5, 05016010. [Crossref]
9. Karen Manley, Le Chen. 2016. The impact of client characteristics on the time and cost performance of collaborative infrastructure projects. *Engineering, Construction and Architectural Management* **23**:4, 511-532. [Abstract] [Full Text] [PDF]
10. L.P. Kerkhove, M. Vanhoucke. 2016. Incentive contract design for projects: The owner#s perspective. *Omega* **62**, 93-114. [Crossref]
11. Shamil George Naoum, Charles Egbu. 2016. Modern selection criteria for procurement methods in construction. *International Journal of Managing Projects in Business* **9**:2, 309-336. [Abstract] [Full Text] [PDF]
12. Xianhai Meng. 2015. The role of trust in relationship development and performance improvement. *Journal of Civil Engineering and Management* **21**:7, 845-853. [Crossref]
13. Florence Crespin-Mazet, Malena Ingemansson Havenvid, Åse Linné. 2015. Antecedents of project partnering in the construction industry — The impact of relationship history. *Industrial Marketing Management* **50**, 4-15. [Crossref]
14. Che Khairil Izam Che Ibrahim, Seosamh B. Costello, Suzanne Wilkinson. 2015. Key indicators influencing the management of team integration in construction projects. *International Journal of Managing Projects in Business* **8**:2, 300-323. [Abstract] [Full Text] [PDF]
15. Yongjian Ke, Thayaparan Gajendran, Peter R. Davis. Relational Contracting in the Construction Industry: Mapping Practice to Theory 175-184. [Crossref]
16. Lena E. Bygballe, Geert Dewulf, Ray E. Levitt. 2015. The interplay between formal and informal contracting in integrated project delivery. *Engineering Project Organization Journal* **5**:1, 22-35. [Crossref]
17. Marcus Jefferies, Graham John Brewer, Thayaparan Gajendran. 2014. Using a case study approach to identify critical success factors for alliance contracting. *Engineering, Construction and Architectural Management* **21**:5, 465-480. [Abstract] [Full Text] [PDF]
18. William Ey, Jian Zuo, Sangwon Han. 2014. Barriers and challenges of collaborative procurements: An exploratory study. *International Journal of Construction Management* **14**:3, 148-155. [Crossref]
19. Saïd Boukendour, Will Hughes. 2014. Collaborative incentive contracts: stimulating competitive behaviour without competition. *Construction Management and Economics* **32**:3, 279-289. [Crossref]
20. Florence Yean Yng Ling, Shi Ying Ong, Yongjian Ke, Shouqing Wang, Patrick Zou. 2014. Drivers and barriers to adopting relational contracting practices in public projects: Comparative study of Beijing and Sydney. *International Journal of Project Management* **32**:2, 275-285. [Crossref]
21. Che khairil Izam Che Ibrahim, Seosamh B. Costello, Suzanne Wilkinson. 2013. Development of a conceptual team integration performance index for alliance projects. *Construction Management and Economics* **31**:11, 1128-1143. [Crossref]
22. S M Hosseinian, D G Carmichael. 2013. Optimal gainshare/painshare in alliance projects. *Journal of the Operational Research Society* **64**:8, 1269-1278. [Crossref]
23. Khairil Izam Ibrahim, Seosamh B. Costello, Suzanne Wilkinson. 2013. Key practice indicators of team integration in construction projects: a review. *Team Performance Management: An International Journal* **19**:3/4, 132-152. [Abstract] [Full Text] [PDF]

24. Travis R. Johnson, Peter Feng, William Sitzabee, Mark Jernigan. 2013. Federal Acquisition Regulation Applied to Alliancing Contract Practices. *Journal of Construction Engineering and Management* **139**:5, 480-487. [Crossref]
25. Yuming Hong, Daniel W.M. Chan, Albert P.C. Chan. 2012. Exploring the applicability of construction partnering in Mainland China. *Facilities* **30**:13/14, 667-694. [Abstract] [Full Text] [PDF]
26. Deborah Hughes, Trefor Williams, Zhaomin Ren. 2012. Differing perspectives on collaboration in construction. *Construction Innovation* **12**:3, 355-368. [Abstract] [Full Text] [PDF]
27. Paul Culmsee, Kailash Awati. 2012. Towards a holding environment: building shared understanding and commitment in projects. *International Journal of Managing Projects in Business* **5**:3, 528-548. [Abstract] [Full Text] [PDF]
28. Bryan Franz, Robert M. Leicht. Initiating IPD Concepts on Campus Facilities with a "Collaboration Addendum" 61-70. [Crossref]
29. Gang Chen, Guomin Zhang, Yi-Min Xie, Xiao-Hua Jin. 2012. Overview of alliancing research and practice in the construction industry. *Architectural Engineering and Design Management* **8**:2, 103-119. [Crossref]
30. Daniel W. M. Chan, Patrick T. I. Lam, Joseph H. L. Chan, Tony Ma, Thomas Perkin. 2012. A Comparative Study of the Benefits of Applying Target Cost Contracts Between South Australia and Hong Kong. *Project Management Journal* **43**:2, 4-20. [Crossref]
31. Xianhai Meng, Brendan Gallagher. 2012. The impact of incentive mechanisms on project performance. *International Journal of Project Management* **30**:3, 352-362. [Crossref]
32. Xianhai Meng. 2012. The effect of relationship management on project performance in construction. *International Journal of Project Management* **30**:2, 188-198. [Crossref]
33. John F.Y. Yeung, Albert P.C. Chan, Daniel W.M. Chan. 2012. Defining relational contracting from the Wittgenstein family-resemblance philosophy. *International Journal of Project Management* **30**:2, 225-239. [Crossref]
34. Pertti Lahdenperä. 2012. Making sense of the multi-party contractual arrangements of project partnering, project alliancing and integrated project delivery. *Construction Management and Economics* **30**:1, 57-79. [Crossref]
35. Richard G. Mathieu, Raktim Pal. 2011. The selection of supply chain management projects: A case study approach. *Operations Management Research* **4**:3-4, 164-181. [Crossref]
36. Mary Hardie, Graeme Newell. 2011. Factors influencing technical innovation in construction SMEs: an Australian perspective. *Engineering, Construction and Architectural Management* **18**:6, 618-636. [Abstract] [Full Text] [PDF]
37. Joseph H.L. Chan, Daniel W.M. Chan, Patrick T.I. Lam, Albert P.C. Chan. 2011. Preferred risk allocation in target cost contracts in construction. *Facilities* **29**:13/14, 542-562. [Abstract] [Full Text] [PDF]
38. Daniel W.M. Chan, Albert P.C. Chan, Patrick T.I. Lam, John F.Y. Yeung, Joseph H.L. Chan. 2011. Risk ranking and analysis in target cost contracts: Empirical evidence from the construction industry. *International Journal of Project Management* **29**:6, 751-763. [Crossref]
39. Peter E. D. Love, Peter R. Davis, Robert Chevis, David J. Edwards. 2011. Risk/Reward Compensation Model for Civil Engineering Infrastructure Alliance Projects. *Journal of Construction Engineering and Management* **137**:2, 127-136. [Crossref]
40. Peter E. D. Love, Dina Mistry, Peter R. Davis. 2010. Price Competitive Alliance Projects: Identification of Success Factors for Public Clients. *Journal of Construction Engineering and Management* **136**:9, 947-956. [Crossref]
41. Daniel W.M. Chan, Albert P.C. Chan, Patrick T.I. Lam, James M.W. Wong. 2010. Identifying the critical success factors for target cost contracts in the construction industry. *Journal of Facilities Management* **8**:3, 179-201. [Abstract] [Full Text] [PDF]
42. Alistair Brandon-Jones, John Ramsay, Beverly Wagner. 2010. Trading interactions: supplier empathy, consensus and bias. *International Journal of Operations & Production Management* **30**:5, 453-487. [Abstract] [Full Text] [PDF]
43. John F. Yeung, Albert P. Chan, Daniel W. Chan. 2009. Developing a Performance Index for Relationship-Based Construction Projects in Australia: Delphi Study. *Journal of Management in Engineering* **25**:2, 59-68. [Crossref]
44. Helen Clare Lingard, Keith Townsend, Lisa Bradley, Kerry Brown. 2008. Alternative work schedule interventions in the Australian construction industry: a comparative case study analysis. *Construction Management and Economics* **26**:10, 1101-1112. [Crossref]
45. Karen Manley. 2008. Implementation of innovation by manufacturers subcontracting to construction projects. *Engineering, Construction and Architectural Management* **15**:3, 230-245. [Abstract] [Full Text] [PDF]
46. John F. Y. Yeung, Albert P. C. Chan, Daniel W. M. Chan, Leong Kwan Li. 2007. Development of a partnering performance index (PPI) for construction projects in Hong Kong: a Delphi study. *Construction Management and Economics* **25**:12, 1219-1237. [Crossref]
47. Helen Lingard, Kerry Brown, Lisa Bradley, Caroline Bailey, Keith Townsend. 2007. Improving Employees' Work-Life Balance in the Construction Industry: Project Alliance Case Study. *Journal of Construction Engineering and Management* **133**:10, 807-815. [Crossref]

48. Douglas C. Bower, Derek H. T. Walker. 2007. Planning knowledge for phased rollout projects. *Project Management Journal* **38**:3, 45-60. [Crossref]
49. John F.Y. Yeung, Albert P.C. Chan, Daniel W.M. Chan. 2007. The definition of alliancing in construction as a Wittgenstein family-resemblance concept. *International Journal of Project Management* **25**:3, 219-231. [Crossref]
50. Tayyab Maqsood, Derek Walker, Andrew Finegan. 2007. Extending the "knowledge advantage": creating learning chains. *The Learning Organization* **14**:2, 123-141. [Abstract] [Full Text] [PDF]
51. Sai On Cheung, Kenneth T. Yiu, Pui Shan Chim. 2006. How Relational are Construction Contracts?. *Journal of Professional Issues in Engineering Education and Practice* **132**:1, 48-56. [Crossref]
52. Amit Sachan, Subhash Datta. 2005. Review of supply chain management and logistics research. *International Journal of Physical Distribution & Logistics Management* **35**:9, 664-705. [Abstract] [Full Text] [PDF]
53. Paul Chan, Rachel Cooper, Patricia Tzortzopoulos. 2005. Organizational learning: conceptual challenges from a project perspective. *Construction Management and Economics* **23**:7, 747-756. [Crossref]
54. JOUKO KARJALAINEN, TERO HAAHTELA, PEKKA MALINEN, VESA SALMINEN. 2004. PROFIT AND RISK SHARING IN A VIRTUAL ENTERPRISE. *International Journal of Innovation and Technology Management* **01**:01, 75-92. [Crossref]
55. Peter E.D. Love, Zahir Irani, David J. Edwards. 2004. A seamless supply chain management model for construction. *Supply Chain Management: An International Journal* **9**:1, 43-56. [Abstract] [Full Text] [PDF]