



CRC Construction Innovation
B U I L D I N G O U R F U T U R E

Final Report Implementation of Relational Management

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Value in Project Delivery Systems: Facilitating a Change in Culture

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**Value in Project Delivery Systems:
Facilitating a Change in Culture
[2002-022-A]**

Final Report

1 INTRODUCTION

Construction teams and construction organisations have their own distinctive cultures. There also exists an infrastructure, both social and contractual, which ensures that these projects within which the teams operate are completed successfully. It is these issues which this research has addressed. The project was instigated by Queensland Department of Main Roads, Public Works and John Holland Group in order to address how they might better implement relationship management (RM) on their construction projects. The project was devised initially in order to facilitate a change in culture which would allow the project to be run in a relational manner and would lead to effective performance in terms of the KPIs that the organisations set for themselves, described as business *better* than usual. This report describes the project, its outcomes and deliverable and indicates the changes that were made to the project during the research process.

Hence, the initial premise of the project and the problem to investigate was the implementation of relational contracting:

- throughout a range of projects;
- with a focus on client body staff.

The additions that were made to the project, and documented in the variations to the project, included two major additional areas of study:

- client management and stakeholder management;
- a live case study of an alliancing project.

The context within which the research was undertaken is important. The research was driven by main roads with their desire to improve their operations by focusing on the relationship between the major project participants (however, stakeholder and client organisation management became an obvious issue as the research progressed, hence the variations). The context was initially focussed on main roads, public works and John Holland group organisations but it became clear very quickly that this was in fact an industry-wide issue and not an issue specific solely to the project participants. Hence, the context within which this research took place can be described as below:

The deliverables from the project are a toolkit for determining RM needs in an organisation, a monograph describing the practical implementation of RM and the outline for a RM CPD and Masters course.

2 CONTEXT

The study of relationship management took place in a particular economic, environmental and social context in Queensland during the period 2004 to 2005. This context was strongly determined by the work already undertaken by main roads and public works. The nature of relationship management is such that it can be orchestrated to address sustainability issues within the industry both that an industry level and an organisational level. As such, relationship management has a role to play in both the restructuring of the construction industry and the fulfilling of political objectives in the community. Thus, the context in which this research was undertaken can be described as paraphrased below.

- Empowerment, regional development and a sustainable industry are possible outcomes of RM
- QDPW & QDMR have experience of partnering and alliancing and its success has been proven on large projects but performance is variable and there is a need to refine the approach and the culture
- Need to examine skill sets needed for successful partnering/alliancing and implement these in the organisations.

In order to address these issues, a research rationale was necessary to ensure that existing learnings were recorded and that new learnings from the research could be adequately reported. The research rationale is presented in the section below.

3 RATIONALE

The starting point for this research project was to ensure that all of the participating organisations bought into the research. Thus, an agreement had to be reached on the objective of the research, which was to facilitate a change in culture away from adversarial contracting approaches to collaborative and cooperative contracting approaches. It also had to be agreed that all parties must change in order for this movement and culture change to take place. Also it was agreed there needed to be a thorough examination and audit of how the participating organisations currently work in order to be able to effectively implement a change within these organisations. Thus, the practical rationale can be described as below:

3.1. Practical Rationale

- Partnering and alliancing require a change of mind set – a culture change
- Client side must change along with contracting side
- A fit is required between organisation structure and organisation culture

3.2. Research Rationale

The rationale behind this project has been to conduct research within participating organisations, analyse, rationalise and generalise results and then move on to produce generic deliverables and “participating organisation specific” deliverables. This paper sets out the work so far, the links between the various elements and a plan for turning the research output into industry deliverables. Details of the research process and the various instruments used to undertake this can be seen in documents 2002-022-A-16, 2002-022-A-17, 2002-022-A-18 and 2002-022-A-19 and the project website at <http://www.culture.crcci.info>. This clearly defines the academic research approach which was a rigorous, triangulated methodology.

However, large amounts of qualitative data were also collected and these data were analysed by mechanisms such as content analysis in order to provide a richness in the final outcomes of the research.

In addition, it was accepted as a pre-requisite that RM could only operate effectively if it was implemented with an appropriate project delivery system chosen after a thorough assessment of the project risks and with the whole process being facilitated at the outset.

4 OBJECTIVES AND ACTION

Thus, at the commencement of the research a plan was laid which allowed the participants to evaluate their current position and then to assimilate the findings of the research into the organisation. Given the overriding objective which was to move relational contracting down the value chain, this required the following activities to be undertaken in order to realise this objective.

- Audit of current position;
- Skill sets to be identified;
- Change to be implemented;
- Procedures and roles to be defined.

5 OUTCOMES

The outcome of the research can be broadly defined under five headings as indicated below. These are themselves the subject of separate reports and have been incorporated into the project deliverables. However, they will be briefly summarised below:

- Understanding of team and organisational culture

This is key to the process of relationship management. The participant organisations have been given tools by which they can themselves monitor their organisation and team cultures and have been given learning tools which allow them to facilitate the changes in attitudes necessary to ensure that the cultures and structures within the organisation match.

- Process for selection of a collaborative team to fit with an appropriate contract strategy

Main Roads have gone a long way towards providing a document which maps out the process of choice of an appropriate contract strategy (or project delivery system). This process is undertaken intuitively in public works and as a response to contractual and economic conditions as far as John Holland group goes but all organisations are aware of the need to fit a contract strategy to the collaborative approach that relationship management brings.

- Set of roles, procedures and protocols

All of the participating organisations have in existence their own documents which clearly indicate these and it is necessary when implementing relationship management to re-assess these and to actually document this new way of working. Is it not sufficient to rely on the partnering or facilitation workshop to put this in place, a formal structure must also be laid out.

- A change in attitude

This is the crux of the matter and is both an organisational and an industry level issue. The change in attitude will only take place over a period of time and through experience. However, the use of learning registers and the encouragement of CPD is important in both bringing about and maintaining this change.

- An industry wide education and training initiative

An outline syllabus for both one and two day CPD courses and a six day Masters degree module have been mapped out for relationship management. It has been noted that there is an imbalance in the way contractual issues are taught at tertiary institutions and the need to move away from confrontational and adversarial teaching towards collaborative and co-operative approaches is embodied in the syllabus design.

6 PROCESS

Through the research process a number of reports have now been produced:

	Report Name	Report Number
1.	Report of the Concepts and Definitions of the Various Forms of Relational Contracting	2002-022-A-01
2.	Audit Report on Project Delivery Systems: QDMR and QDPW	2002-022-A-13
3.	Report on Queensland Department of Public Works Survey Results	2002-022-A-16
4.	Report on Queensland Department of Main Roads Questionnaire, Interviews and Case Studies	2002-022-A-17
5.	Report on BWEA Climate Survey	2002-022-A-18
6.	Report on BWEA Research Findings	2002-022-A-19
7.	Report on Joint Risk Management as a Process	2002-022-A-29
8.	Report on Impact on Delivery Systems	2002-022-A-30
9.	Report on Best Practice Case Studies	2002-022-A-31
10.	Report on Teamwork	2002-022-A-32
11.	Report on Relationship Management and Culture Change	2002-022-A-39
12.	Report on Client Management	2002-022-A-40

The reports mentioned above form the basis for the conclusions drawn from this research and key conclusions, *inter alia*, summarised as follows:

6.1. General

- Project delivery system (PDS) approaches are seen differently by different organisations but can be categorised by a set of PDS variables
- A procedure for selecting appropriate PDS and RM components is needed
- Relationship management (RM) is viewed differently by different organisations but can be applied to any project delivery system

- A PDS and RM terminology and set of definitions would aid understanding and communication, particularly for client organisations.
- RM can achieve project, personal and political objectives
- Australian culture is well suited to RM
- Current tertiary and professional institutions need to drive the culture change by incorporating RM more fully into their curricula

6.1.1 Projects

- RM must be implemented throughout the project team, at all four levels
- RM must be continuously facilitated, it is not a one off process
- Certain projects do not require RM
- There are many examples of RM leading to successful projects, but it is not necessarily dispute free

6.1.2 Organisations

- There is often a mismatch between parent organisation culture and project culture
- Senior management and directors set the tone for RM
- Senior management and directors must provide the infrastructure for RM to succeed
- RM is not about mates rates
- Client management is a crucial issue on which RM may succeed or fail

6.1.3 People

- Individuals need to be educated and trained to provide essential skills for RM
- Facilitation is needed to break down barriers to enable open, blame free communication and this facilitation must be ongoing – there are many mechanisms for achieving this
- RM and novel PDS lead to new roles – people must be empowered to play these roles
- Informal communication is essential for RM but needs to be undertaken in an appropriately structured environment with appropriate procedures
- Well run RM projects are satisfying to work in, make work enjoyable and lead to enhanced professional development
- Not everyone is suited to RM

6.2. Deliverables

From this list of conclusions, the following outputs from this research project were deemed most appropriate. These may be categorised under the following headings: industry wide; participant specific, educational.

6.2.1 Industry wide

A series of reports and case studies now exist. These are independent but linked by a common theme – a change in culture.

6.2.2 Relationship management in Queensland: a guide to best practice.

The focus of this monograph is industry wide awareness raising and showcases the participating organisations. The publication will be launched at a national CRC for Construction Innovation symposium and presented by all participants. An agenda for this is as follows:

- A culture change – why?
- Relationship management approaches – a guide to success
- Client management – why and how?
- Project delivery system choices – a strategic decision process
- Skills base for RM
- Roles, procedures and protocols

6.2.3 Participant Specific

6.2.3.1 Reports

Four reports have now been produced which relate specifically to the participants in this project.

6.2.3.2 Toolkit

A toolkit has been produced and it is now being adapted and populated with case studies, instructional materials and procedures from each of the participating organisations. The toolkit currently focuses on both people as individuals but has been adapted to focus on “the organisation”. It will come as hard copy with a CD to enable analysis to be undertaken and advice to be output.

- **Questionnaires**

The questionnaires used in the research can be readily used by participants to periodically check their performance and position.

6.2.3.3 Education and training

Case study material is currently available and can be further enhanced using the existing template. A syllabus, presented below in outline form, has been developed for use as CPD and MSc module material. The aim of the course is to present an overview of RM issues and to lead the student through the process of choosing, setting up, participating in and closing out a RM project.

- **Syllabus**

- **Relationship Management – a new direction**

RM definitions, history and future directions; the RM process; RM – strategic decision making; RM tools, procedures and protocols; RM workshops; the role of the Facilitator; Joint risk management; teamworking – goals, personnel and maintenance; Culture and culture change management; Client management; RM case studies; knowledge management; ICT – impacts and directions; RM drivers, impeters and fallacies

EXECUTIVE SUMMARY

Partnering is defined as a structured management approach to facilitate team working across contractual boundaries. Partnering is primarily concerned with “maximising effectiveness” and partnering has three essential components:

- establishment of agreed and understood mutual objectives;
- a methodology for quick and cooperative problem resolution;
- a culture of continuous, measured improvement

It is these elements that QDMR and QDPW wish to see incorporated into their projects.

Partnering has been discussed by many commentators and categorised as project partnering and strategic partnering. Project partnering is partnering undertaken on a single project. At the end of the project, the partnering relationship is terminated and another relationship is commenced on the next project. Project partnering was pioneered in the USA construction industry during the mid to late 1980s. Strategic partnering takes place when two or more firms use partnering on a long-term basis to undertake more than one construction project, or some continuing construction activity (RCF 1995).

Green (1999) offers a counter view on partnering. Green (1999) has pointed out that the propagation of partnering in construction is to exercise increased control over the construction supply chain. However, another, alternative view is that trust-based partnering encourages parties to adopt higher ethical standards.

Strategic alliances enable organizations to speed up the market-entry process and increase their responsiveness to consumer markets (Howarth et al., 1995). A project alliance (strategic alliance) is a business strategy where sponsor and commercial participants' objectives (client's objectives) are aligned to:

- Maximise performance;
- Reduce cost; and
- Achieve outstanding results in the sponsor's key project objective.

Like partnering and relational contracting, trust between strategic alliance partners is important because it creates an opportunity and willingness for further alignment, reduces the need for partners to continually monitor one another's behaviour, reduces the need for formal controls, and reduces the tensions created by short-term inequities. Hamel (1989) suggests that organizations that enter into collaborative alliances (short-term) are aware that their partners are capable of disarming them. Parties to these alliances have clear objectives and understand that their partner's objectives will affect their success. Cooperative alliances (long-term) encourage alliance partners to commit their resources to the relationship to generate mutual learning (Love et al., 1999). Ketelholm (1993) suggests that cooperative strategic alliances can create a competitive advantage.

Relational contracting embraces and underpins various approaches, such as partnering, alliancing, joint venturing, and other collaborative working arrangements and better risk sharing mechanisms. Relational contracts are usually long-term, develop and change over time, and involve substantial relations between the parties. The characteristics of relational contracts and construction contracts are summarized in the report.

Various authors have suggested that a relational approach to contractual governance entails long-term social exchange between parties, mutual trust, interpersonal attachment,

commitment to specific partners, altruism and cooperative problem solving. It has been suggested that construction contracts are typical relational contracts as construction contracts often involve numerous parties and subcontracts with heavy informational exchange in the construction activities. Relational contracting provides the means to achieve sustainable, ongoing relations in long and complex contracts by adjustment processes of a more thoroughly transaction-specific, ongoing, administrative kind.

Thus, it can be argued that more relational and performance oriented contractor selection would encourage an amicable relational contracting environment and more collaborative teamwork. Relational contracting approaches are expected to work in almost any environment if applied properly.

EXECUTIVE SUMMARY

Conclusions drawn from discussions and case studies:

- 1) Both QMDR (The Queensland Government Department of Main Roads Project Delivery System (MRPDS) Manual Vol. 1) and QDPW have established methodologies for determining when to use alternative project delivery systems and how to determine which delivery system to use. QMDR is very structured whereas QDPW is based on expertise.
- 2) Both departments have their own definitions of partnering, relational contracting and alliancing and feel comfortable in operating to these definitions; there appears to be no need to standardise these definitions.
- 3) Partnering is seen as a “bolt-on” to conventional conditions of contract whereas alliancing is seen to need a different set of conditions to be effectively enabled – management contracts being the preferred route. Alliancing refers to either a win-win or lose-lose situation with both client and contractor – risk is shared and managed; whereas with a partnering contract, the contractor is less likely to lose.
- 4) Contractor and superintendents working as a team is a goal of relational contracting, more open and cooperative relationships. However, it is recognized that most superintendents have a “traditional” mindset and are unwilling to “cooperate and collaborate”; they exhibit the frozen role syndrome as identified by Newcombe. This is a serious culture issue that needs to be addressed.
- 5) The role of the superintendent could usefully be re-defined – using new terminology – this is likely to cause a change in attitude and culture.
- 6) Relational contracting needs to be considered very early in the project process so that contractor input can be made to the design.
- 7) In the past, the cost and time impacts of RFIs dealt with in a procedural manner have been a major source of problems in traditional contracts.
- 8) When all project team members shared the same office on site the whole relationship between team members changed. Ideas between team members were exchanged and solutions brainstormed.
- 9) The role of the client is crucial to successful relational contracting – hence client management is a critical success factor for DPW and stakeholder management for DMR – these may be up for consideration as project deliverables.
- 10) Good quality estimates are the essential prerequisite for any decision to use and negotiation concerning relational and partnering contracts.

EXECUTIVE SUMMARY

A total of thirty questionnaires, distributed to QDPW staff, were analysed in preparing this report. The questionnaires, and the rationale for their distribution can be found at <http://culture.crcci.info/>.

The main findings, thus far, can be summarised as follows:

There is a mismatch in organisational culture in QDPW: project personnel expect to operate in a task culture but perceive that they are working in a role culture;

There is a mismatch in organisational structuring: QDPW and its clients should be operating in a developmental group mode but are, in fact, operating under a systematised mode;

The level of commitment observed in the survey is relatively low on all three dimensions - normative, affective and continuance commitment.

There are also emerging lessons which come from the survey and subsequent interviews and which are backed up by the case studies already undertaken:

Proximity aids both communication and performance - get people in the same office/room on a regular basis;

Alliancing provides a diagonal slice through the organisation thus focusing attention on progress and communication - there is less chance to be defensive within the organisation due to high level commitment to the project;

There is a need to recognise differing objectives and different perceptions of relational contracting at various levels throughout both client and contractor organisations.

There is an intra-organisational issue becoming apparent - QDPW runs projects with temporary multi-intra-organisations as clients and managing these pseudo-organisations is a key issue for QDPW that deserves further exploration.

EXECUTIVE SUMMARY

The following report summarises the findings from a series of one-on-one interviews, questionnaire returns and case studies with Queensland Department of Main Roads (QDMR) focusing on “relationship management” (RM) projects. Over 50 questionnaires supplement the qualitative data presented here and the findings from all three elements of this research are encapsulated in this detailed report, the aim of which is to alert project participants to the findings and stimulate debate as to future directions and potential deliverables of the research project.

This is part of the ongoing process of research and evaluation of findings and incorporates the elements of action research and subsequent evaluation in order to focus on key issues for the success of the RM approach. The findings presented here are intended to be critically appraised and form the basis of further adjustments to the RM approach and to feed into the design of employee development, training and education programmes.

EXECUTIVE SUMMARY

- Thirty-two responses were received from employees representing a response rate of approximately 64%.
- Overall, the results suggest a high level of satisfaction with the BWEA alliance group.
- Areas of comparative strength (indicated by high scores) include:
 - Individual flexibility
 - Group flexibility
 - Top-down support for alliance relationships
- Areas of comparative weakness, as indicated by slightly slower scores on these measures include:
 - Group resilience
 - Bottom-up support for alliance relationships
 - Group coordination
- Strengths & comparative weaknesses suggest that both individuals and groups are able to adapt to necessary shifts in opinion, plans, and behaviours, particularly when planned. Furthermore, the role of leaders and project managers is critical to maintaining relationships and direction in the BWEA project. On the other hand, group resilience, defined broadly as ability to handle unpredicted/unexpected change, was lower. The results suggest that individuals would be more adversely impacted and less likely to be effective if an unexpected change was to occur.
- It should be stressed that scores on all variables and items were rated above the mid-point on the 7-point scale suggesting a general positive overall evaluation of working in the alliance.
- The results suggest that a strong influence on the climate of the alliance is leadership.
- Although individuals feel that they are proactive, collaborative, and flexible, they did not rate their peers as displaying similarly high levels of proactivity or flexibility.
- In addition, results revealed relatively lower ratings on the group coordination measure. This suggests that work units can find it relatively difficult to work well together, particularly without the presence of leaders/managers.
- Findings suggest that individuals and particularly the leaders of the alliance team strongly identify with the alliance. However, individuals reported that they were more committed to the alliance than their colleagues.
- These results should be considered in conjunction with the BWEA Case Study report.

Overview

Brisbane Water (BW) has entered into an alliance with a number of organisations from the private sector in order to design, construct, commission and undertake performance proving of upgrades to three existing wastewater treatment plants located at Sandgate, Oxley Creek, and Wacol in Brisbane. A team of researchers from the School of Management at Queensland University of Technology are working with the Brisbane Water Environmental Alliance (BWEA) team to investigate factors that facilitate or impede alliance contracting.

The project has a number of aims including assessing performance of the BWEA project along the dimensions of innovation and flexibility, assessment of the BWEA team development and culture so as to provide practical guidance regarding team development, evaluation of the initiatives being used to increase the effectiveness of the alliance team, and an assessment of the challenges and issues imposed by project agreements and the nature of the construction project.

Data was collected using semi-structured interviews with 11 members of the BWEA alliance and two individuals external to the alliance team including one board member and one external facilitator. Analysis involved coding the interview transcripts in terms of the major issues that were reported by interviewees.

Lessons from the Interviews

Results of this analysis suggest that three sets of skills were mentioned by interviews as essential in an alliance project. These skills include:

- an ability to work as part of a team,
- the importance of communication skills, and
- an ability to think broadly and creatively.

Interviewees raised issues about skills that are worth noting to assist in further development of the BWEA members and the project as a whole. In particular,

- as a result of group consensus, some members report that they or other members have become less expressive and have 'tamed down'. Subsequently, these members are reluctant to table opinions and concerns. This has implications for creating an environment of innovation, creativity, and future perceptions of task ownership/team member equity (i.e., participation).
- Some interviewees report their positions in the project were not challenging enough in respect to their initial expectations. These members expected the alliance to provide a high level of skills development, however they are seeing it as 'business as usual'.

A number of process issues were identified by interviewees as important influences of effectiveness including the values of the alliance team and the work environment in general. A number of issues were seen as positive influences on the work group culture including:

- BWEA specific merchandise and equipment,
- informal social occasions such as barbecues,
- induction processes, and
- team building workshops.

A number of issues of concern were raised in regard to the alliance culture including the fact that interviewees felt that the actions of the alliance board had a strong impact on the culture, group consensus is a long and time consuming process, and a decline in energy and enthusiasm of the team at this stage of the process.

Interviewees reported that a number of activities assisted in team development, contributing to project success, including brainstorming, innovation days, coaching, and the risk and innovation manager position, services group, team building sessions, and Zero-In targets. Although, these initiatives were relatively well accepted by the interviewees, a few concerns surfaced. These were:

- universality (i.e., equity and consistency) of coaching,
- level of involvement in zero-in target formation by lower levels of the project hierarchy, and
- difficulties in achieving synergy between services group.

Results on BWEA outputs indicate that interviewees believe flexibility is an important capability for success of the project and that BWEA initiatives have helped to develop and foster individual and group flexibility. However, it is worth noting that some barriers to flexibility surfaced from interviewee comments, such as distance between the sites, the budget and approval process for project variations.

Innovation was another output measure and interviewees offered opinions on BWEA innovation output. Generally it was believed the innovation day developed creativity and innovation leading to very successful outcomes. On the other hand, several interviewees believed there was not enough on-going innovation, which was linked to the time/work-load constraints.

Interviewees also provided their own ideas of how to define project and team success. They suggest that project team effectiveness can be demonstrated by:

- individuals have developed skills,
- individuals have obtained knowledge and an understanding of other disciplines, and
- the team has worked well together and would like to do it again.

They suggest project success can be measured by:

- operator satisfaction, client satisfaction,
- outstanding KRAs,
- quality,
- on time, and
- under budget.

These are valuable insights into what members of the project strive to achieve and should be used as input to the formation of future goals for the BWEA project and other alliance projects.

Interviewees described many challenges they have faced and dealt with in the duration of the project. These can be summarised as:

- Barriers between Design and Construction which resulted in frustration and miscommunication. Interviewees report that BWEA has implemented initiatives to address this issue such as team building workshops, geographical similarity, and dispute resolution.

- Many companies and many procedures which meant it was time consuming to standardised systems and procedures for the BWEA project, and once chosen resulted in a steep learning curve for members.
- The decision making process was time consuming, which is incompatible with the fast paced nature of the project.

Finally, interviewees discussed future challenges for the BWEA alliance. Three challenges surfaced as issues the majority of interviewees are concerned about. These are:

- maintaining the momentum of the project and the project team,
- commitment of parent organisations, (i.e. pulling out key members before program end date), and
- Assimilation of members back into their own organisation (i.e., culture and agendas).

The issues discussed within this report provide valuable insights into the strengths of the BWEA project and facilitators of alliance contracting success. Results also highlight some areas of concern and some suggestions from interviewees about addressing these areas.

EXECUTIVE SUMMARY

Radical cultural changes have been recommended in a rapid succession of construction industry reports that probed the problems of construction industries in many countries. This 'cultural revolution' requires the activation of powerful centripetal forces to re-integrate the fragmented systems and segregated sub-teams into a coherent team with a common purpose. This report draws on work by the authors listed above and research conducted here in Queensland. It examines approaches to achieving such transformation (a) through relational contracting and joint risk management strategies and (b) by targeting critical contributors to the development of project cultures. As an example of the latter, a focus is recommended on revamped selection strategies that are designed to drive team members towards the desired collaborative cultural mind-sets and over-riding project goals from the very outset. Other specific tools that are also briefly discussed in this report include lean thinking based approaches to improved operational cultures.

Five key elements of Relational Contracting are:

- (1) the identities and personal attributes of parties are crucial;
- (2) are normally of indeterminate duration;
- (3) norms of behaviour, or shared codes of conduct, inform responses to new developments as they unfold;
- (4) written documentation is treated as a record of what has been agreed, and
- (5) norms of behaviour, or shared codes of conduct, overrule written documents in settling disputes.

Thus, RC provides the means to sustain ongoing relations in long and complex contracts by adjustment processes of a more thoroughly transaction-specific, ongoing administrative kind.

The joint management of risks is a practical manifestation of RC itself and the related collaborative culture. There is a divergence in both interpretations of present risk allocation, as well as of preferred allocation, both between and within the different project participant groups (employers, contractors and consultants).

29 risks are recommended for joint risk management. It is noted that JRM needs collaborative teamwork with pain/ gain sharing relations among the contracting parties. It also highlights the potential for the desired cultural shift towards (1) close co-operation in planning and operations, (2) joint anticipation of potential risks/ conflicts, (3) issue resolution through negotiations, and (4) management of residual risks and conflicts through co-operative restorational techniques.

It is necessary to overcome barriers imposed by (a) the 'lowest price syndrome' and (b) traditionally adversarial cultures, in order to integrate supply chains and spark the desired 'cultural revolution'. A move away from lowest price bids and the incorporation of specific selection criteria that evaluate teamworking track-records (and/or potential) when choosing contractors, sub-contractors and suppliers, is shown to be one way of catalysing the cultural shift at the outset. Potential participants could be thereby proactively conditioned up-front and, committed towards teamworking and Joint Risk Management (JRM).

'Lean thinking' is an example of an operational strategy that can empower the implementation of RC and JRM project delivery strategies.

EXECUTIVE SUMMARY

Procurement concerns the acquisition of project resources and the project delivery system is the strategic decision concerning how these project resources are put together and the structure of the project team is governed. The authors set out a clear definition of the variables that must be considered in selecting a project delivery system but then go on to discuss the roles that individuals play in the project team (actually project coalition). Key issues such as integration and coordination are introduced and the parallel between these and the cooperative and collaborative approaches espoused in relational contracting is drawn out. From interviews, case studies and data analysis the following conclusions have been drawn:

1. Both QMDR (The Queensland Government Department of Main Roads Project Delivery System (MRPDS) Manual Vol. 1) and QDPW have established methodologies for determining when to use alternative project delivery systems and how to determine which delivery system to use. QMDR is very structured whereas QDPW is based on expertise.
2. Both departments have their own definitions of partnering, relational contracting and alliancing and feel comfortable in operating to these definitions; there appears to be no need to standardise these definitions.
3. Partnering is seen as a “bolt-on” to conventional conditions of contract whereas alliancing is seen to need a different set of conditions to be effectively enabled – management contracts being the preferred route. Alliancing refers to either a win-win or lose-lose situation with both client and contractor – risk is shared and managed; whereas with a partnering contract, the contractor is less likely to lose.
4. Contractor and superintendents working as a team is a goal of relational contracting, more open and cooperative relationships. However, it is recognized that most superintendents have a “traditional” mindset and are unwilling to “cooperate and collaborate”; they exhibit the frozen role syndrome as identified by Newcombe. This is a serious cultural issue that needs to be addressed.
5. The role of the superintendent could usefully be re-defined – using new terminology or new contracts or both – this is likely to cause a change in attitude and culture.
6. Relational contracting needs to be considered very early in the project process so that the department can prepare for going down this route and contractor input can be made to the design.
7. In the past, the cost and time impacts of RFIs being dealt with in a procedural manner have been a major source of problems in traditional contracts.
8. The role of the client is crucial to successful relational contracting – hence client management is a critical success factor for DPW and stakeholder management for DMR – these may be up for consideration as project deliverables.

Key issues in implementing relationship management, no matter what project delivery system is used, are common to all projects:

- Define participants' roles;
- Engender understanding of these roles;
- Equip people with skills for these roles;
- Play the roles;
- Openly wash up the project and its outcomes;
- Redefine roles in future as necessary.

Understanding the client, its structure and expectations are essential for a successful project: client management is the central issue for designers, constructors and facilities managers alike in the first decade of the third millennium. This area merits further investigation.

It is clear that what is thought to be a construction project team in many of today's projects is really a coalition, "a temporary combination for special ends between parties that retain distinctive principles". Indeed, this is the basis of an alliancing project; relationship management can turn a coalition of competing objectives into a team pulling together.

In devising and implementing an appropriate project delivery system the following key points are important to bear in mind:

- Vicious Circles exist in the Construction Procurement Process;
- A strategic alliance is a business strategy where sponsor and commercial participants' objectives are aligned and can create a competitive advantage;
- Interdependence and specialization have to be balanced by integration and coordination;
- A set of key variables exist which can uniquely define a project delivery system;
- A contingency view should be adopted in making the strategic decision on choice of project delivery system (which involves at least eight different variables) and the decision to adopt a relationship management approach;
- The roles played by the participants have to be unfrozen and changed, by internalization and identification, depending on the strategy chosen;
- The interdependent autonomy of the resource controllers in the project team has to be recognized and managed (as the construction team is essentially a coalition) – the client is a key participant that needs to be managed;
- The principles behind relational contracting potentially provide the environment to address these issues;
- Implementation of relationship management approaches has been shown to improve project performance;
- Training, education, experience and the right attitude are essential prerequisites for a relationship management approach to be successful.

EXECUTIVE SUMMARY

Purpose

The purpose of these case studies is to illustrate the outcomes from the research and to provide teaching and training materials. Six case studies are reported here – three from Queensland Department of Main Roads, two from Queensland Department of Public Works and one from John Holland Group.

Scope

The case studies deal with different phases in the construction process. For instance, BWEA (from JHG) deals with the design phase, case studies from QDMR deals with the construction phase and one of the case studies from QDPW deals with the tendering phase.

Mechanism and Uses

The case studies have been developed through interviews and record searching. They can be subsequently supplemented and expanded for various purposes, such as training or organisational learning.

Synopsis

Some case studies reflect successful projects, others unsuccessful projects; learnings can be drawn from either type of project. A number of generalisations stem from these projects:

Positive/Negative (+/-) Effects

- + Continuity of team membership
- Mismatches between company and project culture
- + Buy-in to common goals and team building across organisations
 - All parties work towards the same goal
 - Charter objectives were set with all parties consent
- + Careful selection of team members
- + Strong commitment (and involvements) from top management on both sides
- Contractors tried to recover cost during the whole project period
- + Open communication with risks and issues exposed on the table
- + Constructor did not put in unreasonable claims
- + During tender assessment, relationship contracting was introduced to potential contractors at an early stage
- + High profile from the client with the assistance of client consultant on adopting the concept of relationship contracting
- + Good team relationship was established at the beginning of the project
- + Right attitude and good leadership from the project team leaders

EXECUTIVE SUMMARY

Overview

Brisbane Water (BW) has entered into an alliance with a number of organisations from the private sector in order to design, construct, commission and undertake performance proving of upgrades to three existing wastewater treatment plants located at Sandgate, Oxley Creek, and Wacol in Brisbane. A team of researchers from the School of Management at Queensland University of Technology are working with the Brisbane Water Environmental Alliance (BWEA) team to investigate factors that facilitate or impede alliance contracting.

The project has a number of aims including assessing performance of the BWEA project along the dimensions of innovation and flexibility, assessment of the BWEA team development and culture so as to provide practical guidance regarding team development, evaluation of the initiatives being used to increase the effectiveness of the alliance team, and an assessment of the challenges and issues imposed by project agreements and the nature of the construction project.

Lessons from the Interviews

Results of this analysis suggest that three sets of skills were mentioned by interviews as essential in an alliance project. These skills include:

- an ability to work as part of a team,
- the importance of communication skills, and
- an ability to think broadly and creatively.

Interviewees raised issues about skills that are worth noting to assist in further development of the BWEA members and the project as a whole. In particular,

- as a result of group consensus, some members report that they or other members have become less expressive and have 'tamed down'. Subsequently, these members are reluctant to table opinions and concerns. This has implications for creating an environment of innovation, creativity, and future perceptions of task ownership/team member equity (i.e., participation).
- Some interviewees report their positions in the project were not challenging enough in respect to their initial expectations. These members expected the alliance to provide a high level of skills development, however they are seeing it as 'business as usual'.

A number of process issues were identified by interviewees as important influences of effectiveness including the values of the alliance team and the work environment in general. A number of issues were seen as positive influences on the work group culture including:

- BWEA specific merchandise and equipment,
- informal social occasions such as barbecues,
- induction processes, and
- team building workshops.

A number of issues of concern were raised in regard to the alliance culture including the fact that interviewees felt that the actions of the alliance board had a strong impact on the culture, group consensus is a long and time consuming process, and a decline in energy and enthusiasm of the team at this stage of the process.

Interviewees reported that a number of activities assisted in team development, contributing to project success, including brainstorming, innovation days, coaching, and the risk and innovation manager position, services group, team building sessions, and Zero-In targets. Although, these initiatives were relatively well accepted by the interviewees, a few concerns surfaced. These were:

- universality (i.e., equity and consistency) of coaching,
- level of involvement in zero-in target formation by lower levels of the project hierarchy, and
- difficulties in achieving synergy between services group.

Results on BWEA outputs indicate that interviewees believe flexibility is an important capability for success of the project and that BWEA initiatives have helped to develop and foster individual and group flexibility. However, it is worth noting that some barriers to flexibility surfaced from interviewee comments, such as distance between the sites, the budget and approval process for project variations.

Innovation was another output measure and interviewees offered opinions on BWEA innovation output. Generally it was believed the innovation day developed creativity and innovation leading to very successful outcomes. On the other hand, several interviewees believed there was not enough on-going innovation, which was linked to the time/work-load constraints.

Interviewees also provided their own ideas of how to define project and team success. They suggest that project team effectiveness can be demonstrated by:

- individuals have developed skills,
- individuals have obtained knowledge and an understanding of other disciplines, and
- the team has worked well together and would like to do it again.

They suggest project success can be measured by:

- operator satisfaction, client satisfaction,
- outstanding KRAs,
- quality,
- on time, and
- under budget.

These are valuable insights into what members of the project strive to achieve and should be used as input to the formation of future goals for the BWEA project and other alliance projects.

EXECUTIVE SUMMARY

Overview

Brisbane Water (BW), a commercialised business arm of Brisbane City Council (BCC) entered into an alliance with a number of organisations from the private sector in order to design, construct, commission and undertake upgrades to three existing wastewater treatment plants located at Sandgate, Oxley Creek, and Wacol in Brisbane. The alliance project is called the Brisbane Water Environmental Alliance (BWEA).

This report details the efforts of a team of researchers from the School of Management at Queensland University of Technology to investigate this alliance. This is the second report on this project, and is called Stage 2 of the research. At the time that Stage 2 of the research project was conducted, the BWEA project was nearing completion with a further 8 months remaining before project completion.

The aim of this report is to explore individuals' perceptions of the effectiveness and functioning of the BWEA project in the latter stages of the project. The second aim of this report is to analyse the longitudinal findings of this research project by integrating the findings from Stage 1 and Stage 2 of the project. This long-term analysis of the functioning and effectiveness of the alliance is important because at the current time, researchers have little knowledge of the group developmental processes that occur in large-scale alliances over time.

Stage 2 of this research project has a number of aims including assessing performance of the BWEA project from the point of view of a range of stakeholders including the alliance board and alliance management team, alliance staff, and key stakeholders from the client organisation (Brisbane Water).

Data were collected using semi-structured interviews with 18 individuals including two board members, one external facilitator, and four staff members from the client organisation. Analysis involved coding the interview transcripts in terms of the major issues that were reported by interviewees. Below, the issues that emerged from the extensive interview process are outlined.

Themes from the Stage 2 Interviews

The interview data was analysed via qualitative analysis. That is, key themes were extracted from the interview transcripts and these themes became the basis of our analyses. At Stage 2, interviews focused on four questions including:

- Interview Question 1 - Would you define this project as an alliance and why?
- Interview Question 2 - Has the project progressed as expected and why?
- Interview Question 3 - Do stakeholders differ in their perceptions of what an alliance is and how it should be managed?
- Interview Question 4 - What recommendations would you have for future alliances?

Interview Question 1 and Question 2

Interviewees' reported that the project had acted as an alliance and the majority of interviewees' reported that the project had progressed as they expected. Board members and senior managers reported that the alliance had achieved a number of positive outcomes including being innovative in order to meet key result areas, was financially successful, and had progressed according to the timeline. However, this group also noted a number of

negatives of the alliance including the addition of the Site Z project and the time consuming nature of the alliance process. Employees of the alliance reported that the alliance had been innovative and identified teamwork at the beginning of the project as contributing to the success of the alliance. The client group also reported that the project had been successful but this group believed that the alliance partners had possibly gained too much financial gain from the project.

Interview Question 3

Overall, there was agreement that the alliance partners generally have the same understanding of what an alliance is. The most commonly identified theme by the alliance employees and clients was that the alliance board would have benefited from, early on in the alliance, training in project management. In contrast, the most common theme discussed by the board and senior managers was that considerable effort in the early stages of the project had ensured that the alliance partners had the same understanding of alliances.

Interview Question 4

All three sub-groups had a slightly different perspective on this question. Specifically, the most frequently mentioned theme by the board and senior managers was that careful selection of projects that are suited to an alliance method needs to occur to ensure alliance success. The other themes also focused on the necessary ingredients for a successful alliance including generating and monitoring commitment to alliance processes, ongoing education of stakeholders, and a careful selection of people to fill all positions in the alliance.

The BWEA employees emphasised the importance of good leadership for alliance success. The most frequently mentioned theme was that alliance leaders' roles and style were key ingredients in alliance success. The next most frequently mentioned theme was the importance of a well informed board, followed by the importance of leaders paying attention to morale, knowledge sharing and motivation. In contrast, the clients focused on the need for more information and training in regard to what alliances entail. The most frequently mentioned theme by this group was the desire for greater transparency from the alliance team as to the practices that were implemented and why. The second theme focused on the desire of the clients for more information about alliances prior to the project starting.

The Site Z Project

During the Stage 2 interviews, over 75% of participants made reference to a new project proposal between BCC and BWEA at a new site (Site Z). Whilst the majority of respondents reported that the overall BWEA project had been very successful, the introduction of the Site Z proposal introduced some concerns. In particular, a number of stakeholders and in particular, Brisbane Water, indicated that they were less than satisfied with the initial discussions, processes, and proposals put forward by BWEA in relation to this specific proposal.

The addition of the Site Z project to the original alliance project was the source of some concern to many of the interviewees' and clearly represents a situation where a strategic mismatch has occurred between the needs and resources required by the construction project and the strengths and weaknesses of the alliance methodology. This mismatch is of some concern to the alliance partners as it appears to be negatively influencing perceptions of the success of the overall alliance. That is, the addition of the Site Z project seems to be retrospectively altering the perceived efficiency of the overall alliance project.

The Site Z project highlights a dilemma with alliance projects. Alliance contracting is clearly not appropriate in all situations and before entering into an alliance relationship and

agreement it is vital that all partners establish that this type of procurement strategy is appropriate to the scope and aims of a project.

In this particular case, the definition of the client as partner was somewhat misspecified as there was a belief within the alliance that all business units in the BCC and BW understood the aims and methods of alliance contracting. Clearly, this was not the case and interviews with board members further supported this notion. It was noted that as the alliance project had been winding down less time had been spent in carefully analysing the “new” clients’ needs as it was assumed that these individuals had held the same understanding as the previous clients.

General Conclusions Regarding Stage 2 Findings

In summary, analysis and review of the interview data collected at Stage 2 suggests the following points.

- The very strong focus on developing an alliance culture that was observed in Stage 1 had persevered into the later stages of the project but there had been a decline in the support provided for aspect of the project.
- Factors such as staff contracting and turnover due to project lifecycle make it difficult for the remaining staff to maintain the levels of communication, group norms, and structures that had existed previously. Interviewees reported that changes in employee numbers had led to a resultant loss in flexibility and innovation.
- At the board level, a continuing commitment to the philosophy of alliance partnership had resulted in agreeing to do an additional project, the Site Z project, without a great deal of analysis as to whether this project was one in which alliance contracting would be appropriate or effective.
- As a result of including the Site Z project in the alliance process, client perceptions of the alliance were impacted in a negative way.
- The Site Z project highlights the importance of:
 - Carefully defining who the alliance group is and who is not a part of the alliance group
 - Constantly assessing the needs of each client group that enter into an alliance
 - Constant marketing of the reasons for adopting an alliance approach so that new alliance partners and new employees understand the importance and effectiveness of this approach in a given situation
 - The need to set clear parameters on the nature of an alliance and the partnerships involved
 - Readiness to reiterate the strengths and weaknesses of alliance contracting approaches on an ongoing basis

A Summary of Stage 1 Findings

In Stage 1 of the research project, conducted in 2003 and 2004, structured face-to-face interviews were conducted with 11 members of the BWEA alliance and two individuals external to the alliance team including one board member and one external facilitator. Each interview was conducted by one of the three researchers. Interviews ranged in length from 35 to 75 minutes.

- Results of Stage 1 of this project focused on identifying the skills and processes that were perceived to contribute to alliance effectiveness in an early stage of the alliance. At this point in the project, a number of threats for the alliance were identified including;

- The actions of the alliance board were seen as having a strong impact on the culture, but this group was seen as being removed from the day-to-day functioning of the alliance
- Alliance members expressed concerns about how long it takes to achieve group consensus
- Alliance members expressed concerns about maintaining the energy and enthusiasm of the team throughout the entire alliance process

At Stage 1 of the project, interviewees described many challenges they were facing. These can be summarised as:

- The existence of barriers between different groups in the alliance (e.g., design and construction) which resulted in frustration and miscommunication
- The existence of multiple alliance partners meant that many procedures were in use in the project so that it was time consuming to standardised systems and procedures for the BWEA project, and once chosen resulted in a steep learning curve for members
- The decision making process was time consuming, which is incompatible with the faced paced nature of the project

Finally, at Stage 1, interviewees discussed future challenges for the BWEA alliance. Three challenges surfaced as issues the majority of interviewees are concerned about. These are:

- Maintaining the momentum of the project and the project team
- Establishing and maintaining commitment of the alliance parent organisations for the entire length of the project (i.e. pulling out key members before program end date)
- How alliance members would assimilation back into their parent organisation.

Longitudinal Findings and Implications: Linking the Stage 1 and Stage 2 Results

A review of the Stage 1 and Stage 2 results suggests that the project lifecycle has a substantial impact on the types of issues and concerns that are expressed by alliance members. Early on in the project lifecycle, alliance members reported being concerned with group process issues such as communication and interaction difficulties associated with the alliance method. In the latter stages of the project lifecycle, however, alliance members were attempting to maintain their efforts in the face of a reduction in the resources and energy being devoted to maintaining the alliance culture and systems.

A number of common themes emerged as being important influences on project success at all stages of the project. Specifically, at both points in time that we entered the alliance, the role of the board and senior managers were critical in developing and building a culture that emphasised working collaboratively and building relationships with others. At both times, senior management and alliance employees were struggling to balance the high communication and meeting loads that are necessary in an alliance to ensure that all partners contribute to all phases of project development and delivery.

The existence of multiple alliance partners also contributed additional issues at the latter stages of the project. In particular, interviewees reported that employees began to move to new projects and there was a reduction in the resources and energy directed by the partners to maintaining the alliance culture and support networks (such as the emphasis on training alliance employees).

Importantly, the success of the alliance project became an issue in the latter stages of the project as the alliance partners assumed that the key stakeholders had a similar understanding of why alliance contracting had been adopted, as they did. This assumption and a lack of understanding that BW and BCC were large entities themselves that had not

communicated with all their business units why and how an alliance works, contributed to the alliance board agreeing to do a project that does not seem to be suited to an alliance approach. The need to continually educate and reiterate the aims and strengths and weaknesses of alliance contracting is emphasised by the difficulties that the BWEA team is now experiencing with a “new” stakeholder in the form of a different group from BCC.

EXECUTIVE SUMMARY

1. There can be many interpretations of relationship management. In this short report, we are concerned with relationships arising under an alliance project and in managing stakeholders under a more traditional approach to procurement. Each aspect is supported by an example project.
2. Relationship management is more than a characteristic of project management; it is one of its key features upon which the successful accomplishment of the project is likely to depend. Projects are about people – this is not meant as a cliché – and people have to be engaged in the process of design, construction and facilities management. Each step of the way, there is the potential for conflict, disruption and added cost, any of which can be exacerbated by a failure to manage relationships with the care they deserve.
3. Alliance projects (or simply alliancing) are newcomers to the procurement scene. Whilst the concept may be widely understood, comprehension of its practical implications for clients and contractors is vested in relatively few organisations and individuals. There is much learning to be had, not only in respect of behaviour and teambuilding, but also in achieving the right balance between competition and partnership. Projects must deliver best value, but they must fairly reward those who accept risk in return. Openness at the beginning of the process and thorough planning throughout cannot be over-emphasised and will help bind team members.
4. Alliancing has a particular strength when projects are complex or multi-sited and where design requirements (i.e. performance criteria) are known, but where the best way of translating them into a working solution is uncertain or unknown. Alliances are implicitly about flexibility and the 'ability to change one's mind' through working collaboratively on design. In these ways, it is possible to maximise performance for the client whilst minimising whole life costs.
5. Other motivations for alliancing include the desire for a conflict-free working environment, with all parties working to the same client objectives, and job satisfaction from a project that comes to its natural end instead of suffering a lingering death. Problems tend to be resolved when encountered, rather than being left until last.
6. The evidence collected suggests that alliancing works, and works well, but is capable of improvement, not least in ensuring that scope definition and design are rigorous. If there were a weakness in alliancing, it is during this stage, where every effort must be made to pinpoint the 'best-for-project' solution in terms of fulfilling the client's requirements and expectations. The means that sufficient time has to be allowed – more than for other methods of procurement.
7. There is anecdotal evidence to suggest that the current search for best value from a design proposal may not reveal all areas where unnecessary cost can be eliminated (without suffering a loss of performance). A corollary to this assertion is that further cost savings may reveal themselves only when the project is on site. At this point, any savings have to be shared, unlike at the design stage when the client benefits entirely. Designs and their associated costs must be scrutinised before contracts are signed if clients are to have the full confidence of their alliance partners. Attention must also extend to non-financial items, such as health and safety, which can, in fact, have a monetary dimension where performance exceeding an agreed threshold is rewarded by the client.

8. Outturn costs of projects delivered by alliancing are believed to be less than under alternative methods of procurement. However, this has to be seen in the context of the nature of the project: alliancing cannot be good for all situations. Performance (i.e. quality) is judged to be comparable with alternative 'best methods'.
9. Alliancing also has the potential to deliver benefits for major clients, whose project portfolios might gain from a more strategic review of options and priorities. Put another way, a supply-side perspective may reveal a different (and better) way of delivering projects than that existing within the client organisation.
10. The proper engagement of stakeholders, both internal and external to the client organisation and project team, is another key feature of project management. Stakeholder management draws on different skills to those normally associated with managing manpower and machines. Tact, diplomacy and, above all, sensitivity for others' needs is vital. Effective stakeholder management is about taking multiple and, often, conflicting needs into account when acting in the best interests of the client.
11. Key to success in stakeholder management derives from a structured approach to handling the multiplicity of interests that affect a single project. An approach that is ad hoc is unlikely to succeed, primarily because of the complexity of the problems encountered. Efficient organisational skills and procedures, which ensure that all who want to have a say have their say, will go a long way to providing the client with a result that takes proper account of stakeholders' interests. This is likely, in some cases, to require a considerable time-commitment by the project manager. It may even require that the project manager's role be split into two: responsibility for managing contracts and responsibility for managing stakeholders.
12. There are cost implications from providing stakeholder management that clients may be unable to meet. Worse, they may be unwilling to recognise it. Nonetheless, it is incumbent upon project managers to ensure that clients are made aware of the need for stakeholder management, its benefits and the shortcomings that can stem from ignoring it.
13. Effective stakeholder management requires clarity of purpose in communication and a carefully prepared and executed plan for engaging multiple stakeholders. Implicit in this requirement is the use of the most appropriate tools. A communications strategy and plan, in which stakeholders are brought together so that their concerns and other interests can be taken into account, can be followed by formal measurement of their respective influence/impact on the project. A methodology and tools exist to support this activity.



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