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STRAATEGIC ALLIANCES BETWEEN CONTRACTORS AND SUBCONTRACTORS - A TENDER EVALUATION CRITERION FOR THE PUBLIC WORKS SECTOR

T. L. KWOK
Queensland University of Technology, Brisbane, AUSTRALIA

K. D. HAMPSO1
Queensland University of Technology, Brisbane, AUSTRALIA

Abstract
A strategic alliance is a co-operative arrangement between two or more organisations that forms part of their overall strategy, and contributes to achieving their major goals and objectives. Strategic alliances in building construction may be a useful evaluation criterion in assisting public sector construction managers evaluate and select tenders and encourage more co-operative relationships amongst construction project team members.

This paper reviews competitiveness of the Australian building construction industry in the context of the theory of strategic alliances between contracting firms and subcontractors; and explores whether implementing strategic alliances provides contracting firms any competitive advantage over competitors. A theoretical concept of strategic alliances is proposed and appropriate indicators of competitive advantage are developed.

An analysis framework comprising six attributes of strategic alliances—trust, commitment, interdependence, co-operation, communication and joint problem solving is described. These attributes were used to collect data from 59 building construction firms in South-East Queensland to assess their respective levels of strategic alliance. The formation of strategic alliance relationships between contracting firms and subcontractors is proposed as a component of the tender evaluation process for public works sector.

Keywords: Strategic alliances; partnering; contractor and subcontractor relationships; building construction; competitive advantage; tender selection criteria; public works construction.

Tom Kwok is a Doctoral Researcher in the School of Construction Management and Property at QUT. Before he joined QUT, he worked in the building construction industry for 20 years with a number of commercial building construction companies.

Dr Keith Hampson is Director of Research and Senior Lecturer in the School of Construction Management and Property at QUT. He had 13 years construction industry experience in Australia and internationally before joining the University.
1.0 INTRODUCTION
Building construction contracting is regarded as very competitive and high risk business. This competitiveness is largely due to cost traditionally being the prime factor in the tender selection process. A recent survey of the Australian building construction industry (Construction Industry Development Agency, 1995) overwhelmingly—75% of the respondents—indicated their success due to their companies’ ability to be the lowest cost tenderer. Park (1979) argues that while the awarding of contracts for building construction work on the basis of competitive bids offers advantages to both owners and contractors, many of construction industry’s problems can be attributed directly to the practice of making price the sole criterion.

A report by the National Public Works Conference and National Building and Construction Council Joint Working Party (NPWC)(1990) showed that during the late 1980’s the Australian building and construction industry had substantial increases in the incidence of contractual claims and disputes compared to the previous ten years. This trend continued with increasing disputation and litigation, and win-lose attitudes promoted adversarial and confrontational relationships among project team members. Doing everything the “same old way” is sure to produce the “same old results” (Kaydos, 1991). It is necessary to create a win-win situation—not only to a more co-operative approach to build mutual trust, respect and good faith—but also from a confrontational and adversarial attitude to a harmonious relationship. Forming strategic alliance relationships between contracting firms and subcontractors is one possible approach.

2.0 THE STRATEGIC ALLIANCE RESEARCH PROJECT
A research team from the Queensland University of Technology, School of Construction Management and Queensland Government, Department of Public Works and Housing is reviewing opportunities for more efficient building industry practices in Queensland.

2.1 Background Literature
The purpose of competitive advantage is not to retreat from competition, but to compete selectively from an advantageous strategic position. Porter (1980) defined three generic, competitive strategies—overall cost leadership, differentiation and focus. According to Langford and Male (1991) since the latter strategy can also employ cost leadership or differentiation, there are, in practice, only two major generic strategies—cost or differentiation. Hillebrandt and Cannon (1990, p24) argue that traditional methods of contracting with selective tender limit production differentiation. Differentiation is possible only until selection has taken place; thereafter competition is on price alone. For a contracting firm to be differentiated from its competitors, it can adopt one or more forms of competitive advantage—strategic management in construction (Male, 1991), bidding strategy (Skitmore, 1991), technological and organisational innovation (Lansley, 1991), technology strategy (Hampson, 1993), strategic planning (Betts and Ofori, 1992) and strategic alliances (Howarth et al, 1995).

Research on strategic alliances has posited theories addressing the reasons why firms enter into closer business relationship—efficiency creation through economies of scale specialisation and/or rationalisation (Lorange and Roos, 1993; Gugler, 1992), maximise use of facilities (Lindsay, 1989), complementary capabilities (Henricks, 1991), growth and improvement in competitiveness (Spekman and Sawhney, 1990), beat competitors (Roberts, 1992; Lindsay, 1989), spreading financial risk and sharing costs (Spekman and Sawhney, 1990)—each predicting when strategic alliances will be formed. Such relationships can be found in many forms—mergers and acquisitions
(Nevaer and Deck, 1990), joint ventures (Kogut, 1988), license agreements and supplier arrangements (Borys and Jemison, 1989), networking (Buttery and Buttery, 1994), mentor/protégé (Thompson, 1993), partnering (Cowan, 1992) and alliances (Lei and Slocum, 1992).

Takac and Singh (1992, p33) defined “alliances” as the joining of forces and resources between firms, for a specific or indefinite period, to achieve a common objective. They further explained that the term “strategic” provided an additional dimension to the definition. Such dimensional components require strategic issues to:

- *Have a futuristic vision*
- *Have an impact on multi-functional or multi-business environments*
- *Necessitate consideration of factors in the firm’s external environment.*

A number of studies have addressed the concept of strategic alliance in manufacturing industries such as aerospace (Gugler, 1992), automobiles (Burgers, Hill and Chan, 1993) and Computers (Mohr and Spekman, 1994).

Industry professionals and researchers indicate that the formation of strategic alliances between firms is becoming an increasingly common way for firms to find and maintain competitive advantage (Mohr and Spekman, 1994); and that the growth of alliances is a key to sustained competitive advantage for industry success (Gulati et al, 1994).

### 2.2 Research Proposition and Key Objectives

This study focuses on vertical relationships between contractors and subcontractors in adjacent stages of a value chain (Harrigan, 1988). It also focuses on the contractors’ perceptions of their relationships with key subcontractors.

The research proposition is that the level of strategic alliances between contractors and subcontractors will be positively related to competitive performance. This study sets out to investigate the balance between co-operation and competition, hence the principal research question “Do strategic alliances matter in gaining or sustaining competitive advantage?” To answer the principal question, a series of supplementary questions was developed. Subsequently, two questions structured this investigation:

1. Can strategic alliance attributes be measured?
2. Is there a relationship between strategic alliance and contractor’s performance?

The key objectives of this research program can be summarised as follows:

1. To examine the strategic importance of strategic alliance business relationships in building construction; and
2. To assess the relationship between strategic alliances and contractor performance.

### 2.3 Research Methodology

The research began with the introduction of a framework comprising six dimensions sourced from the literature describing attributes of strategic alliances. A specific and important industry sector—public building construction in Queensland—was selected. Contracting firms having a more positive response along the attributes of strategic alliances are hypothesised to gain competitive advantages over competitors. Six measures of competitive performance were selected. This analysis framework allowed relationships to be examined between strategic alliances and competitive performance.

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1 A potential future direction of complementary research is the subcontractors’ perceptions of their relationships with contractors.
The research methodology adopted for this investigation consisted of detailed survey questionnaires. A list of building contractors was obtained from the Queensland Government Department of Public Works and Housing. The list comprised seventy-one registered contractors who had offices located in South-East Queensland, and were capable of performing projects upward of AUD$5m. Each contractor was contacted by telephone prior to mailing a questionnaire in order to identify the principal type of business and the names of the key personnel—General Manager, Construction Manager, Estimator and Project Manager—and to seek co-operation for the study.

2.4 Strategic Alliance Attributes

According to Cowan (1992), the philosophy of partnering is underpinned by the following key elements—commitment, equity, trust, mutual goals and objectives, implementation, continuous evaluation and timely responsiveness. Mohr and Spekman (1994, p137) argue that the characteristics of partnership success include attributes of the partnership, such as commitment and trust; communication behaviours, such as information sharing between the partners; and conflict resolution techniques, which tend towards joint problem solving, rather than domination or ignoring problems. In reference to interorganisational co-operation buyer-seller relationships, Nielsen and Wilson (1994, p1) define co-operation as one firm working with other firms for mutual benefit. Spekman and Sawhney (1990, p6) referred to interdependence, to engage in any exchange is to become dependent on one’s trading partner so that each partner can achieve its own objectives as well as the objectives of the partnership. Partnering is implemented on a project-by-project basis whilst strategic alliance relationship is established on a long term basis.

The above authors indicated relevant attributes for the success of business relationships between firms. This research team selected the following attributes as describing the independent variables of strategic alliances in this research. The following represents the literature source for these six broad dimensions:

- **Trust** - Larson (1991, p177) illustrates that trust referred to several aspects of behaviour in confidence that the other side could be relied upon, the relationship would not be exploited by the other side, and extra effort would be consistently made.
- **Commitment** - This type of win-win attitude (Bruce and Shermer, 1993, p74) is an absolute necessity if an alliance is to endure: there must be a complete commitment to jointly risking, sharing and winning as a unit.
- **Interdependence** - Firms join forces to achieve mutually beneficial goals and objectives, they acknowledge that each is dependent on the other (Mohr and Spekman, 1994, p138).
- **Co-operation** - Not based on altruism, but on the recognition that, with positively related goals, self-interests require collaboration; and co-operative work integrates self-interests to achieve mutual goals (Tjosvold, 1991, p46).
- **Communication** - Mohr and Spekman (1994, p138) indicate that timely, accurate and relevant information is essential if goals of the partnership are to be achieved.
- **Joint Problem Solving** - Problems are solved openly. Spekman and Sawhney (1990, p7) indicate that open and honest communication of relevant information leads to constructive resolution of conflict.
2.4.1 Measuring Strategic Alliance Attributes
A clear perspective of the current situation is an important first step in relating the concept of strategic alliances between the contracting firms and its subcontractors. It was requested the contractors to indicate these attitude (i.e. ranging from Strongly Disagree to Strongly Agree) towards subcontracting firms to the following statements:

Trust
- We help each other to get out of difficult situations (Lewis, 1990).
- Our word is reliable, we fulfil our respective obligations (Mohr and Spekman, 1994).
- We share commercial and technical information relating to projects without the need to protect ourselves (Mink, Mink and Owen, 1987).

Commitment
- The relationship has developed from the top management of both parties and has also extended to all levels of both organisations (Bennet and Jayes, 1995).
- We see this relationship as long term commitment (Howarth, Gillin and Baily, 1995).
- We share resources (Bureau of Industry Economics, 1995).
- We actively build trust (Howarth, Gillin and Baily, 1995).
- There is no conflict between individual and joint goals (Mohr and Spekman, 1994).

Interdependence
- We give each other work (Lewis, 1990).
- We have a mutual reliance on each other (Mohr and Spekman, 1994).
- We treat each other equally as business partners (Howarth, Gillin and Bailey, 1995).

Communication
- We maintain openness in order to prevent hesitation, reservation or other defensive behaviour (Varney, 1989).
- We communicate openly and with trust in mutually pursuing opportunities and solving problems and conflicts (Mink, Mink and Owen, 1987).
- We communicate regularly to compare current performance against expectations (Mink, Mink and Owen, 1987).
- We consult each other before making key decisions (Lewis, 1990)

Co-operation
- We co-operate out of mutual need and desire (Lewis, 1990).
- We co-operate to share risks (Lewis, 1990).
- Co-operation between us provides a foundation for business growth (Bureau of Industry Economics, 1995).
- We believe that co-operation with each other will reduce the likelihood of opportunistic behaviour (Bureau of Industry Economics, 1995).

Joint Problem Solving
- Problems and conflicts are part of teamwork (Mink, Mink and Owen, 1987).
- We feel free to admit and difficulties even when they relate to uncomfortable issues (Mink, Shultz and Mink, 1991).
- When problems occur, we concentrate on solving them rather than trying to blame the other party (Howarth, Gillin and Baily, 1995).

2.4.2 Measuring Contractors’ Performance
Vertical strategic alliances between contractor and subcontractors are formed in order to gain competitive advantage by improving business performance through better estimates and tender submissions (CIDA, 1993). One might also expect that the better and closer business relationship between the contractor and its subcontractors would produce superior client satisfaction through improvement of on-site construction
processes due to fewer complaints of subcontractors’ works by Client and also fewer disputes to subcontractors by Client. Two subjective measures were used: one related to business performance and the other to on-site construction processes.

Tender success rate and business turnover were used to describe business performance. Planning work, co-ordination of subcontractors, standard of workmanship and quality of subcontractors were used to measure on-site construction processes. Tender success and business turnover are common industry measures for business performance, while planning work, co-ordination of subcontractors, standard of workmanship and quality of subcontractors are some of the assessment measures used by the Queensland Government Department of Public Works and Housing as post-contract evaluation on contractor’s on-site performance.

2.5 Data Collection
Preliminary telephone investigations of the seventy-one contracting companies (as mentioned in section 2.3) revealed that two companies were no longer in business and the other ten were in business other than building contracting. The remaining 59 companies were all involved in building construction and formed the sample for this study.

300 survey questionnaires were mailed out to the key personnel—General Manager, Construction Manager, Estimator and Project Manager—of the 59 Companies, with follow-up telephone discussions within a week after the target questionnaire return date for those not returned. A total of 112 responded to the survey (37% response rate). These 112 responses also represented 51 out of the 59 companies (representing 86%); and six survey questionnaires were eliminated from the analysis due to incomplete responses. Of the 51 companies responded, 26 companies (51%) had no experience of strategic alliance relationships with subcontractors, 12 companies (24%) had strategic alliance relationships but had subsequently abandoned such relationships, and 13 companies (25%) indicated, at the time of the survey, that they had strategic alliance relationships with subcontractors. This study focused on the 13 contracting companies which had strategic alliances with subcontractors at the time of the survey.

The unit of analysis is the contracting company. The responses from each company were totalled and the “median” was used to represent each company’s view. The “median” was selected in order to minimise distortions of data due to outliers from multiple replies from one company.

2.5.1 Measurement—Independent Variables of Strategic Alliance
The questionnaire survey instrument was pretested in two separate pilot studies (14 questionnaires in the first pilot study and 6 questionnaires in the second pilot study). None of them was in the final target group for the survey.

One of the objectives of this study was to examine relationships between strategic alliance attributes and competitive advantage in terms of business performance and on-site construction process. The most popular test of interitem consistency reliability is the Cronbach’s Coefficient Alpha (Sekaran, 1992, p174). Reliability analysis was conducted by using the Statistical Package for the Social Sciences (SPSS) and items with low item-to-total correlation were deleted (Mohr and Spekman, 1994, p141). In reference to the items described previously in Section 2.4.1 Measuring Strategic Alliance Attributes, one item was deleted from the each of the constructs except “Interdependence” where all items were deleted. Table 1 shows the remaining elements as used for the final analysis.
Regarding standards of reliability, Nunnally (1978, p245) stated: *in the early stages of research on predictor tests or hypothesised measures of a construct, one saves time and energy by working with instruments that have only modest reliability, for which purpose reliability of 0.70 or higher will suffice.* Cronbach’s Alpha values were computed, and all values were exceeding Nunnally’s reliability of 0.70. Through this process, measures retained for analysis demonstrated favourable reliability. Tables 1 and 2 list summary statistics on the Independent and Dependent Variables respectively.

<table>
<thead>
<tr>
<th>INDEPENDENT VARIABLES</th>
<th>ELEMENTS</th>
<th>MEAN</th>
<th>STD DEV</th>
</tr>
</thead>
<tbody>
<tr>
<td>TRUST</td>
<td>• We help each other out of difficult situations.</td>
<td>4.00</td>
<td>0.61</td>
</tr>
<tr>
<td></td>
<td>• We share commercial and technical information relating to projects without the need to protect ourselves.</td>
<td>3.92</td>
<td>0.89</td>
</tr>
<tr>
<td></td>
<td>Cronbach’s Alpha = 0.76</td>
<td></td>
<td></td>
</tr>
<tr>
<td>COMMITMENT</td>
<td>• Co-operative business relationship developed from the top management of both parties.</td>
<td>3.50</td>
<td>0.96</td>
</tr>
<tr>
<td></td>
<td>• We see this co-operative business relationship as a long term commitment.</td>
<td>3.92</td>
<td>0.89</td>
</tr>
<tr>
<td></td>
<td>• We share resources.</td>
<td>3.38</td>
<td>0.85</td>
</tr>
<tr>
<td></td>
<td>• We actively build trust.</td>
<td>4.15</td>
<td>0.72</td>
</tr>
<tr>
<td></td>
<td>Cronbach’s Alpha = 0.71</td>
<td></td>
<td></td>
</tr>
<tr>
<td>COMMUNICATION</td>
<td>• We maintain openness to prevent hesitation, reservation or other defensive behaviour.</td>
<td>3.81</td>
<td>0.75</td>
</tr>
<tr>
<td></td>
<td>• We communicate openly and with trust in mutually pursuing opportunities and solving problems and conflicts</td>
<td>3.96</td>
<td>0.78</td>
</tr>
<tr>
<td></td>
<td>• We communicate regularly to compare current performance against expectations.</td>
<td>3.38</td>
<td>0.87</td>
</tr>
<tr>
<td></td>
<td>Cronbach’s Alpha = 0.80</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CO-OPERATION</td>
<td>• We co-operate out of mutual need and desire.</td>
<td>3.73</td>
<td>0.53</td>
</tr>
<tr>
<td></td>
<td>• We co-operate to share risks.</td>
<td>2.92</td>
<td>0.84</td>
</tr>
<tr>
<td></td>
<td>• Co-operation between us provides a foundation for business growth.</td>
<td>3.66</td>
<td>0.75</td>
</tr>
<tr>
<td></td>
<td>Cronbach’s Alpha = 0.72</td>
<td></td>
<td></td>
</tr>
<tr>
<td>JOINT PROBLEM SOLVING</td>
<td>• We feel free to admit and discuss difficulties even they relate to uncomfortable issues.</td>
<td>4.08</td>
<td>0.79</td>
</tr>
<tr>
<td></td>
<td>• When problems occur, we concentrate on solving them rather than blaming the other.</td>
<td>4.31</td>
<td>0.85</td>
</tr>
<tr>
<td></td>
<td>Cronbach’s Alpha = 0.87</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: Measurement scale 1 to 5, 1-Strongly Disagree, 3-Neutral and 5-Strongly Agree

2.5.2 Measurement—Dependent Variables of Performance
The questionnaire asked the contractor to evaluate the effect that strategic alliances had on their business performance and on-site construction processes. Table 2 summarises the results.
Table 2 Summary Statistics - Dependent Variables

<table>
<thead>
<tr>
<th>DEPENDENT VARIABLES</th>
<th>ELEMENTS</th>
<th>MEAN</th>
<th>STD DEV</th>
</tr>
</thead>
<tbody>
<tr>
<td>BUSINESS PERFORMANCE</td>
<td>● Tender Success Rate</td>
<td>3.04</td>
<td>0.99</td>
</tr>
<tr>
<td></td>
<td>● Business Turnover</td>
<td>3.27</td>
<td>0.81</td>
</tr>
<tr>
<td>Cronghach’s Alpha = 0.92</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CONSTRUCTION PROCESS</td>
<td>● Planning Work</td>
<td>3.50</td>
<td>0.46</td>
</tr>
<tr>
<td></td>
<td>● Co-ordination of Subcontractors</td>
<td>3.54</td>
<td>0.48</td>
</tr>
<tr>
<td></td>
<td>● Standard of Workmanship</td>
<td>3.65</td>
<td>0.66</td>
</tr>
<tr>
<td></td>
<td>● Quality of Subcontractors</td>
<td>3.70</td>
<td>0.52</td>
</tr>
<tr>
<td>Cronghach’s Alpha = 0.79</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: Measurement scale for Business Performance 1 to 5, 1-Delayed, 3-Annotated and 5-Increased
Measurement scale for Site Construction Process 1 to 5, 1-Poor, 3-Average and 5-Excellent

2.6 Data Analysis and Results

Having completed the reliability analysis as shown in Section 2.5.1 and 2.5.2, 14 items were used as the basis of the strategic alliance measurement, with six performance indicators for measuring competitive performance. This section builds on these results and examines relationships between strategic alliance and competitive advantage to answer the principal research question “Do strategic alliances matter in gaining or sustaining competitive advantage?”

2.6.1 Method of Analysis

Spearman rank correlation coefficient was used to determine the relationship and quantification of the strength of the relationship (Wright, 1976, p240) between strategic alliance elements and competitive advantage indicators. The limiting value of Spearman coefficients is -1 to +1, the sign (+ or -) denotes the direction of relationship. The +1 expresses perfect positive correlation, -1 expresses perfect negative correlation while the midpoint, 0, denotes a lack of any relationship.

According to Levin and Rubin (1994, p382), there is no single standard or universal level of significance for testing hypotheses. However, they also stated that the higher the significance level is used for testing a hypothesis, the higher the probability of rejecting a null hypothesis when it is true (p382). Emory and Cooper (1991, p529) indicate that the most common level is 0.05 although 0.01 is also widely used and other levels such as 0.10, 0.025, or 0.001 are sometimes chosen. Hampson (1994) stated that given a limited number of cases in exploratory research (total of 5 in that instance), a Spearman rank correlation coefficient of greater than 0.6 was considered significant, representing a level of significance = 0.15. Due to the limited number of cases (total of 13) in this research, Haynes (1997) has suggested not to use a significance level of less than 0.10 in order to have a statistically significant result (i.e. if the p-value is less than 0.10, one can be reasonably confident that the null hypothesis is false). Accordingly, this research has used a p-value of 0.10 as the limiting value.

2.6.2 Results

Table 3 summarises the results of this Spearman Correlation Analysis for all companies that had strategic alliance relationships with subcontractors at the time of the survey. Table 1 previously showed these elements into broader dimensions.
3.0 RESEARCH FINDINGS
This section describes the findings of relations between strategic alliance attributes and business performance in terms of tender success and business turnover; and between strategic alliance attributes and on-site construction process in terms of planning work, co-ordination, standard of workmanship and quality of subcontractors.

Table 3 Spearman Coefficients for strategic alliance elements and competitive advantage indicators—13 Companies with Strategic Alliance Relationships

<table>
<thead>
<tr>
<th>Strategic Alliance Elements</th>
<th>Tender success</th>
<th>Business Turnover</th>
<th>Planning Work</th>
<th>Coord of Subcontr</th>
<th>Standard W’ship</th>
<th>Qual of Subcontr</th>
</tr>
</thead>
<tbody>
<tr>
<td>We help each other out of difficult situations.</td>
<td>-0.49 *</td>
<td>-0.58 **</td>
<td>0.24</td>
<td>0.10</td>
<td>0.20</td>
<td>0.58 **</td>
</tr>
<tr>
<td>We share commercial and technical information relating to projects without the need to protect ourselves.</td>
<td>-0.42</td>
<td>-0.45</td>
<td>0.26</td>
<td>0.54 *</td>
<td>0.49 *</td>
<td>0.61 **</td>
</tr>
<tr>
<td>The co-operative business relationship has developed from the top management of both parties.</td>
<td>-0.03</td>
<td>-0.12</td>
<td>0.13</td>
<td>0.26</td>
<td>0.25</td>
<td>0.34</td>
</tr>
<tr>
<td>We see this co-operative business relationship as a long term commitment.</td>
<td>-0.36</td>
<td>-0.41</td>
<td>0.32</td>
<td>0.26</td>
<td>-0.11</td>
<td>0.24</td>
</tr>
<tr>
<td>We share resources.</td>
<td>-0.66 **</td>
<td>-0.63 **</td>
<td>-0.26</td>
<td>-0.06</td>
<td>0.16</td>
<td>0.44</td>
</tr>
<tr>
<td>We actively build trust.</td>
<td>-0.54 *</td>
<td>-0.65 **</td>
<td>0.16</td>
<td>0.05</td>
<td>0.10</td>
<td>0.57 **</td>
</tr>
<tr>
<td>We maintain openness in order to prevent hesitation, reservation or other defensive behaviour.</td>
<td>-0.08</td>
<td>-0.15</td>
<td>0.28</td>
<td>0.69 **</td>
<td>0.60 **</td>
<td>0.65 **</td>
</tr>
<tr>
<td>We communicate openly and with trust in mutually pursuing opportunities and solving problems and conflicts</td>
<td>-0.02</td>
<td>-0.14</td>
<td>0.39</td>
<td>0.67 **</td>
<td>0.63 **</td>
<td>0.71 **</td>
</tr>
<tr>
<td>We communicate regularly to compare current performance against expectations.</td>
<td>0.34</td>
<td>0.04</td>
<td>0.66 **</td>
<td>0.55 **</td>
<td>0.19</td>
<td>0.06</td>
</tr>
<tr>
<td>We co-operate out of mutual need and desire.</td>
<td>-0.06</td>
<td>-0.20</td>
<td>0.61 **</td>
<td>0.46</td>
<td>0.32</td>
<td>0.55 **</td>
</tr>
<tr>
<td>We co-operate to share risks.</td>
<td>0.32</td>
<td>0.18</td>
<td>0.28</td>
<td>0.44</td>
<td>0.33</td>
<td>0.39</td>
</tr>
<tr>
<td>Co-operation between us provides a foundation for business growth.</td>
<td>0.23</td>
<td>0.10</td>
<td>0.21</td>
<td>0.10</td>
<td>-0.27</td>
<td>-0.15</td>
</tr>
<tr>
<td>We feel free to admit and discuss difficulties even when they relate to uncomfortable issues.</td>
<td>-0.52 *</td>
<td>-0.70 **</td>
<td>0.23</td>
<td>0.06</td>
<td>0.13</td>
<td>0.24</td>
</tr>
<tr>
<td>When problems occur, we concentrate on solving them rather than trying to blame the other.</td>
<td>-0.11</td>
<td>-0.23</td>
<td>0.25</td>
<td>0.33</td>
<td>0.15</td>
<td>0.23</td>
</tr>
</tbody>
</table>

* Spearman Correlation Coefficient with a Significance Level less than 0.10
** Spearman Correlation Coefficient with a Significance Level less than 0.05

3.1 Business Performance
Elements of trust, commitment and joint problem solving were found to be significantly and negatively related to both tender success and business turnover. Though communication and co-operation were found to be non-significant, they were also negatively related to both tender success and business turnover. This result suggests that the formation of strategic alliance relationships between contractors and subcontractors in the building construction industry reduces the likelihood of increasing tender success and business turnover. This result is contrary to the one of the key benefits of forming improved relationships among project participants as recommended by Construction
Industry Development Agency (1993). One of the important project participants includes subcontractors. The proposed benefit is improved relationships among project participants to produce better estimates and tender submissions, hence increasing the tender hit rate therefore increasing market share and reducing marketing cost. However, the findings are consistent with contractors, in this research sample, who had abandoned the strategic alliance relationships with subcontractors because the final prices from subcontractors were not competitive and failed to maintain a competitive price.

According to Langford and Male (1991)(as mentioned in Section 2.1), two major generic strategies to be competitive in construction—cost or differentiation. This research results support the view that while one contractor was adopting a differentiated strategy (i.e. forming strategic alliances with subcontractors) to be competitive, its competitors were adopting low cost strategies. According to Hillebrandt and Cannon (1990, p24), differentiation is possible only until selection has taken place; thereafter competition is on price.

3.2 On-Site Construction Processes

The findings for trust as a predictor of competitive advantage relative to on-site construction process is highly significant in the area of quality of subcontractors. Coordination and standard of workmanship also demonstrate a significant relationship with sharing commercial and technical information.

Commitment was found to be insignificant. The high level of fragmentation of the building construction industry may be one reason that contractors perceived a difficulty in having any high level of commitment regarding the business relationships with subcontractors. There is a positive relationship between the element of commitment in actively building trust and quality of subcontractors. A lacking of trust between the contractor and its subcontractors may prevent the achievement of a higher level of commitment.

Communication is related positively and significantly to on-site construction processes in terms of planning work, co-ordination, standard of workmanship and quality of subcontractors. Communicating openly and maintaining openness can not only prevent hesitation, reservation or other defensive behaviour (i.e. us and them mentality) but also allows parties to trust one another in pursuing opportunities and solving problems and conflicts. Hence, the importance of communication becomes critical in signalling future intentions and might be interpreted as an overt manifestation of more subtle phenomena such as trust and commitment (Mohr and Spekman, 1994, p146).

Co-operation for mutual need and desire was found to be significant only in the areas of planning work and quality of subcontractors. There are no other significant relationships.

Joint problem solving was not related to any of the competitive measures of on-site construction processes.

4.0 STRATEGIC ALLIANCES AS A TENDER EVALUATION CRITERION

Queensland Government State Purchasing Policy (1992) indicated that in assessing construction tenders, in addition to price, financial capability and technical capability, decision-makers must also take into consideration tenderers’ such as—past performance on contracts, quality of work, ability to meet construction deadlines, claims and disputation history, history of payments to workers, subcontractors and suppliers, safety and industrial relations record, litigation and arbitration history, management skills and complexity of work.
Since approximately 80 to 90% of the value of work on a construction project is performed by subcontractors (Millman, 1990), it is imperative for the head contracting firm to use keen judgement when selecting subcontractors for the project. At the tender evaluation stage, it is logical for the principal or the client to request a list of subcontractors which the head contractor intends to engage on the project. Giles (1995) states that the client is encouraged to require tenderers to name or at least provide a selection of names of proposed subcontractors for major trades.

Based on the results of a survey on the level of satisfaction between contracting firms and subcontractors, Latham (1994, p83) makes a number of recommendations for improving team work on site. One of the recommendations is to involve subcontractors earlier to achieve project objectives, and develop greater team involvement through the project life cycle and beyond.

This background literature review has identified clear opportunities for enhanced co-operative effort by the head contractor and subcontractors, for example including subcontractors’ names and prices in the head contractor’s tender submission for the client’s evaluation. It is imperative for the client to formulate criteria, including evaluation of subcontractors, as one component of the tender evaluation process.

The Queensland Government Department of Public Works and Housing currently uses a number of methods to assess suitability of a potential tenderer. One method is to invite those contracting firms considered suitable and capable through a two stages selection process—pre-registration stage; and tender screening and selection stage. The pre-registration selection process rejects unsuitable applications and justifies their exclusion limiting the tenderers to an “acceptable” number, no more than six tenderers be invited to tender (NPWC, 1990).

After adopting pre-registration to qualify tenderers, the firm with established strategic alliances may promote advantages regarding the strength of quality of subcontractors and planning and co-ordination that underpin the high standard of workmanship, without the usual delays, complaints and disputes. Therefore, indicators relating to on-site construction process used by the Queensland Government’s post contract evaluation and used in this research justify this action.

5.0 CONCLUSION
The rationale supporting the decision to form strategic alliances is well documented in the literature relating to the manufacturing industry, especially in the aerospace, automobiles and computer industries. Partnering has been practised by building construction industry professionals to minimise conflicts in building construction by removing traditional barriers between clients and contractors. However, little guidance exists regarding benefits of closer business relationships to minimise the adversarial approach between the head contracting firm and subcontractors. This paper has drawn on the formation of interorganisational relationships concept and the philosophy of project partnering in building construction to establish this research framework.

Having established from the literature that the strategic alliance attributes—trust, commitment, interdependence, co-operation, communication and joint problem solving—are key to successful business relationships, this research team focused on the Queensland Government public building sector to examine the usefulness of strategic alliances as one component of the tender evaluation process.

This research examining contracting firms with strategic alliances broadly demonstrates that these alliances are associated with a negative impact on business performance. Conversely, strategic alliances are shown to have a positive relationship to
on-site construction processes. These results do not include firms which did not have a strategic alliance partnership with subcontractors at the time of the survey.

The authors suggest that the dichotomy between differentiation and low cost generic strategy evidences itself in a comparison of building construction firms in traditional public works tendering. Public sector clients should be aware of the on-site benefits achievable through contractors and subcontractors working more closely together. This relationship may result in a higher initial tender price than typically achieved using the open competitive tendering amongst all contracting firms regardless of their relationship with subcontractors. However, the long-term facility life-cycle costs may reflect the value for money result obtained from a higher standard of on-site construction processes.

REFERENCES

Bennet, John and Jayes, Sarah, *Trust the Team - The Best Practice Guide to Partnering in Construction*, Centre for Strategic Studies in Construction, University of Reading, UK, June 1995


Bruce, Gregory and Shermer, Richard "Strategic Partnerships, Alliances used to Find Ways to Cut Costs" in *Oil & Gas Journal*, pp71,74,76, November 8, 1993 OGJSpecial


Burgers, Ewa and Butterly, Alan, *Business Networks*, Longman, Melbourne, Australia, 1994


Haynes, Michele, Statistical Consultant - School of Mathematical Sciences, Queensland University of Technology, Brisbane, Queensland, Personal discussions, 1997


Lei, David, Slocum Jr., John W., "Global Strategy, Competence: Building and Strategic Alliance" in California Management Review, pp81-97, Fall 1992
Lewin, J, Partnerships for Profit - Structuring and Managing Strategic Alliances, Free Press, NY, 1990
Lindsay, Jennifer, Joint Ventures and Corporate Partnerships, Probus, Chicago, Illinois, 1989
Lorange, Peter and Roos, Johan, Strategic Alliances - Formation, Implementation, and Evolution, Blackwell, Cambridge, Massachusetts, USA, 1993
Queensland Government, State Purchasing Policy, Government Printer, Queensland, 1992
Spekman, Robert E. and Sawhney, Kirti, Toward a Conceptual Understanding of the Antecedents of Strategic Alliances, Marketing Science Institute, Cambridge, Massachusetts, USA, 1990
Thompson, Kevin D. "Forging a Perfect Partnership" in Black Enterprises, pp66-68, 70, Sept 1993