



Main contractor experiences of partnering relationships on UK construction projects

Gerard D. Wood Corresponding author & Robert C. T. Ellis

To cite this article: Gerard D. Wood Corresponding author & Robert C. T. Ellis (2005) Main contractor experiences of partnering relationships on UK construction projects, *Construction Management and Economics*, 23:3, 317-325, DOI: [10.1080/0144619042000287714](https://doi.org/10.1080/0144619042000287714)

To link to this article: <https://doi.org/10.1080/0144619042000287714>



Published online: 17 Feb 2007.



Submit your article to this journal [↗](#)



Article views: 2845



View related articles [↗](#)



Citing articles: 12 View citing articles [↗](#)

Main contractor experiences of partnering relationships on UK construction projects

GERARD D. WOOD^{1*} and ROBERT C. T. ELLIS²

¹*Programme Director, Quantity Surveying, School of Construction and Property Management, University of Salford, Salford, Greater Manchester M7 1NU*

²*Professor of Education in the Built Environment, School of the Built Environment, Leeds Metropolitan University, Brunswick Building, Leeds LS2 8BU*

Received 1 December 2003; accepted 2 July 2004

Partnering provides a major opportunity for improving project performance, whilst offering direct benefits to the whole of the supply chain. Many research studies reinforce this assertion although there is less critical analysis examining the nature of partnering in practice and whether the claims made for it are consistently justified. The experiences of commercial surveyors and managers within the UK construction industry have been gathered in a pilot study, drawing on the opinions of 48 commercial managers employed by a leading national contractor. The perceptions and experiences of partnering relationships are generally positive, although the early optimism at the beginning of such arrangements is seldom sustained throughout the project lifecycle. Attitudes to partnering are similar whether the relationship is upstream (client/main contractor) or downstream (main contractor/subcontractor). The growth in popularity of alternative procurement methods and statutory adjudication are both regarded as having placed contracting parties on a more equal footing. However in today's competitive environment, contractors continue to operate on tight margins and, common to all project stakeholders, the financial imperative remains the commercial manager's principal consideration. Trust is hard-earned and relationships are still characterised by a cost driven agenda.

Keywords: partnering, commercial relationships, trust, procurement

Introduction

The UK construction industry has attracted a great deal of criticism in recent years for its inability to meet the needs of its clients. Seminal reports by Latham (1994) and Egan (1998) both identified a pressing need for change. Subsequently, the UK construction industry has embarked on a sustained campaign to overcome its perceived performance problems through a number of initiatives and radically different approaches to the procurement and management of construction projects. Partnering represents perhaps the most significant development to date as a means of improving project performance, whilst offering direct benefits to the whole supply chain (Dozzi *et al.*, 1996; Larson and Drexler, 1997).

Partnering aims to achieve specific business objectives by maximizing the effectiveness of each

participant's resources and establishing ongoing business relationships (Bennett and Jayes, 1995). Several studies indicate that there is little doubt about the positive aspects of partnering arrangements. Bennett and Jayes (1998) illustrate how to create (undefined) win-win relationships which involve a sophisticated strategy and require a willingness to improve the joint performance. They cite remarkable potential savings of 40–50% in both cost and time. Similarly, Barrick (1998) identifies instances of comparable success: groups such as Rover, Esso, Sainsbury's and the British Airports Authority (BAA) are reported to have reached savings of 40% on costs and 70% on time. Other research is similarly optimistic in claiming that there is a desire to move beyond narrow self-interest towards a spirit of co-operation and trust (Wood and McDermott, 1999) and that partnering can indeed lead to benefits for all parties (Hamza *et al.*, 1999). Lamont (2001) even suggests that people feel genuinely empowered as a direct

*Author for correspondence. E-mail: G.D.Wood@salford.ac.uk

result of partnering and thereby work together more effectively. Indeed, as Bresnen and Marshall (2002) observe, the literature is replete with case study examples of successful partnerships. It comes as no surprise, therefore, that a considerable number of clients and contracting organizations are now adopting a partnering strategy within their commercial relationships, as evidenced by the procurement policies outlined in the Building magazine *50 Top Clients* review (2003).

However, there is less critical analysis of sufficient empirical depth examining the nature of partnering in practice and whether the claims made for it are consistently justified. Much of the partnering literature tends to concentrate on success stories, which are largely anecdotal and focus on the experiences of exemplar organizations. The weakness lies in overlooking the importance of the social and psychological issues associated with the successful integration of partnering into an industry which is traditionally adversarial or, as Critchlow (1998) describes it, intrinsically flawed. This is despite the fact that many commentators place considerable emphasis upon the importance of changing attitudes, improving interpersonal relationships and transforming organizational cultures (Bresnen and Marshall, 2000). Indeed, if such change is not effected then the results can be all too familiar, partnering agreement or not, as illustrated by the case of *Birse Construction Ltd v. St David Ltd* [1999].¹ In this case a signed partnering charter drawn up at a team building seminar agreed to 'produce an exceptional quality development within the agreed time frame, at least cost, enhancing our reputations through mutual co-operation and trust'. Yet it did nothing to prevent a dispute over the existence (or not) of a concluded contract which resulted in litigation (Brown, 2001). Dainty *et al.* (2001) express related concerns in the sub-contract arena pointing to a fundamental mistrust and scepticism within existing supply chain relationships and a need for attitudinal change. Greenwood (2001) concludes that typical contractor/subcontractor relationships are still cost-driven and potentially adversarial. Similarly, Packham *et al.* (2003) suggest that partnering may not offer many tangible benefits to small construction enterprises and often has a detrimental effect upon the contractor/subcontractor relationship.

At the same time, there is also a recognized need for more research into partnering (Bresnen and Marshall, 2000; Lazar, 2000; Li *et al.*, 2000). This paper therefore aims to add to the limited amount of empirical work by investigating the views of a body of commercial managers with experience of partnering relationships within the UK construction industry.

Methodology

Since the aim of this exploratory research was to produce some indicative qualitative and quantitative observations and gain insight into the attitudes and opinions of commercial managers with experience of partnering, there was need to collect data from a relatively homogeneous sample. A leading national contractor was identified who had commissioned a series of one-day in-company seminars under the title of *Balancing Relationships and Commercial Issues*. The organization has an annual turnover in excess of £600 million, operating in national and international markets. Current and completed projects embrace the philosophy of partnering and collaborative working across commercial, education, health, residential and retail sectors. As such, all current staff have both knowledge and experience of partnering arrangements. Commercial surveyors at all levels within the company were required to attend from Assistant Quantity Surveyors through to Regional Commercial Managers and the Commercial Director. Before each seminar commenced, participants (48 number in total) were asked to anonymously complete a questionnaire.

Questionnaire design

The purpose of the questionnaire was to explore the views of an entire body of staff from within a single organization related to their experience of partnering. In order to collect a broad range of information it was decided to gather data under three themes: experiences of the process of partnering; views on the outcomes of partnering; and general reflections on commercial relationships. Through a series of closed and open-ended questions both quantitative and qualitative data was obtained and participants were asked to consider both upstream (client/main contractor) and downstream (main contractor/subcontractor) relationships. In an attempt to avoid confusion over definitions and inconsistencies in rating, where quantitative data was requested, clear and simple terminology was used.

The process of partnering

Numerous authors have tried to analyse the critical success factors for partnering relationships including Tyler and Matthews (1996), Cheng *et al.* (2000) and Black *et al.* (2001). Despite some variation in emphasis, the results of such studies tend to re-affirm Bennett and Jayes' (1998) assertion that the concept of true partnering relies on co-operation and teamwork, openness and honesty, trust, equity and equality, if it is to

succeed. There are some authors (Green, 1999; Taylor, 1999; Ng *et al.*, 2002) however, who feel that partnering is a long way from returning tangible benefits to the contractor because clients still have a deep-rooted cost-driven agenda. As a result they expect to reduce costs, or to pass costs and risks down the supply chain, and thereby do not genuinely adopt a win-win attitude. To examine experiences of the process, a list of partnering characteristics was derived from the above studies and respondents were asked to rate them at various stages in the project lifecycle (Table 1). Whilst the number of items used in such a scale is arbitrary (Oppenheim, 1992), the principal consideration should be whether the scale indicates the extent to which the respondent accepts or rejects the various statements (Cormack, 2000). Accordingly, a simple three point scale is used (low=0; medium=1; high=2) to gauge respondents' views.

The outcomes of partnering

A series of statements describing the outcomes of the process in terms of project performance were also derived from the studies identified. Participants were asked to indicate their views as to whether they

considered the various commonly cited outcomes of partnering to have been achieved. In an effort to encourage respondents to make a judgement regarding the success of the partnership a four-point scale was developed, i.e. having no mid-point or 'neither agree nor disagree' option (Table 2).

General reflections on commercial relationships

Respondents were asked for their views on both client/main contractor, and main contractor/subcontractor relationships in terms of the potential for, and existence of, fairness and equality within their business transactions. They were given the opportunity to expand on their responses in order to explain why they held a particular view. Specific observations are italicized in the findings.

Findings

Client/main contractor relationships

In order to determine whether respondents felt the partnering process demonstrated the characteristics identified in the literature, and whether this viewpoint

Table 1 Characteristics of partnering process

Characteristic	Initially	During early phases	During mid phases	During later phases
Common vision	Low/Med/High	Low/Med/High	Low/Med/High	Low/Med/High
Shared interests	Low/Med/High	Low/Med/High	Low/Med/High	Low/Med/High
Co-operation	Low/Med/High	Low/Med/High	Low/Med/High	Low/Med/High
Teamwork	Low/Med/High	Low/Med/High	Low/Med/High	Low/Med/High
Openness	Low/Med/High	Low/Med/High	Low/Med/High	Low/Med/High
Honesty	Low/Med/High	Low/Med/High	Low/Med/High	Low/Med/High
Trust	Low/Med/High	Low/Med/High	Low/Med/High	Low/Med/High
Equality	Low/Med/High	Low/Med/High	Low/Med/High	Low/Med/High
Equity	Low/Med/High	Low/Med/High	Low/Med/High	Low/Med/High
Win - Win attitude	Low/Med/High	Low/Med/High	Low/Med/High	Low/Med/High
Cost-driven	Low/Med/High	Low/Med/High	Low/Med/High	Low/Med/High

Table 2 Outcomes of the partnership

Statement	Strongly disagree	Disagree	Agree	Strongly agree
Achieve a more collaborative approach				
Demonstrate a change in either organisation's culture				
Genuinely feel less adversarial				
Save money for the client				
Offer better value for money for the client				
Save time for the client				
Produce a better quality solution for the client				
Improve contractor's profit margins				
Offer a greater degree of certainty to the contractor				
Deal with risks fairly				

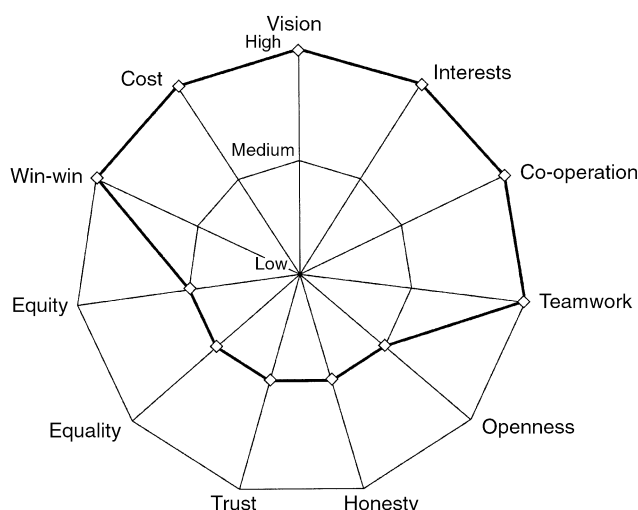


Figure 1 Client/main contractor partnering (initial phase)

was consistently held throughout the process, respondents were asked to rate the various characteristics during the initial, early, mid and later phases of the project (Table 1).

The radar diagrams (Figures 1 to 4) help to interpret the results by mapping the movement (if any) in views from initial through to late phases of the process. The contour representing the median scores for initial phases tends to be dilated towards a 'high' rating, whereas the contours for subsequent phases is more contracted which indicates a shift of opinion as early optimism wanes towards completion of the project. However, at no stage does the median score of any of the characteristics fall below the 'medium' level. This might infer that despite the apparent reduction in some ratings the overall experience of the process remains positive.

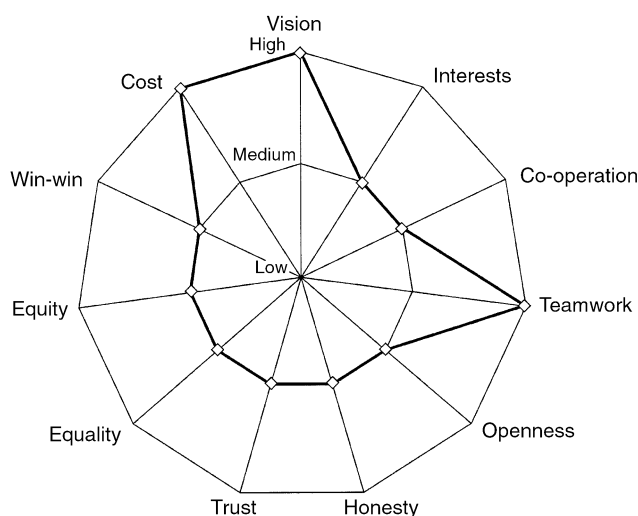


Figure 2 Client/main contractor partnering (early phase)

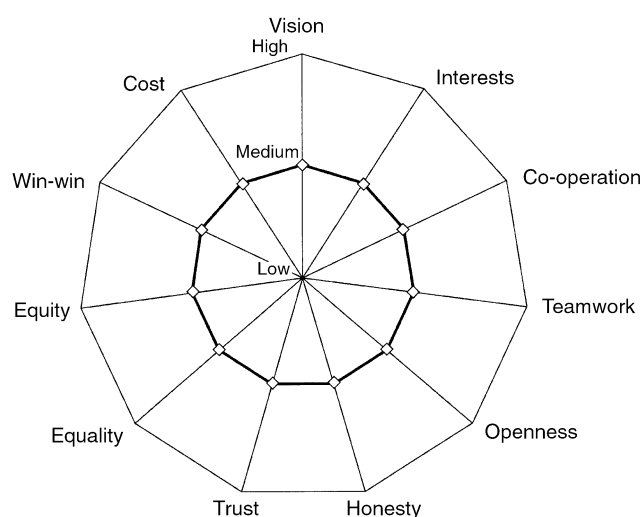


Figure 3 Client/main contractor partnering (mid phase)

In order to assess whether the changes indicated by the radar diagrams were significant, a non-parametric test (Wilcoxon test) was used to compare the distributions of the scores for each characteristic at the initial and later stages, i.e. incorporating the full range of data from all respondents. Table 3 shows that the change indicated by the contour of the median is confirmed as being significant ($p < 0.05$) for five of eleven characteristics in client/main contractor relationships, i.e. common vision, shared interests, co-operation, teamwork and win-win attitude.

The consistency evident in the median scores of trust and equity are also supported by the Wilcoxon test since the p value exceeds 0.05, thereby revealing no significant difference in the distributions. Similarly, the results indicate no significant shift in the ratings of a cost-driven agenda, which is scored as 'high' in three of

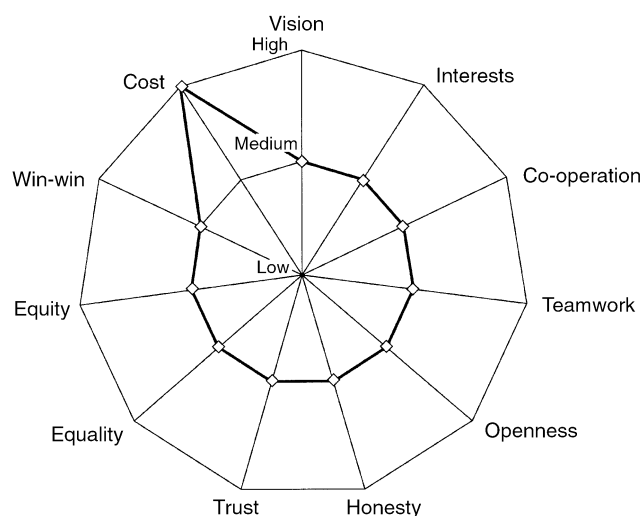


Figure 4 Client/main contractor partnering (later phase)

Table 3 Wilcoxon Signed Rank Test: client/main contractor (SPSS output)

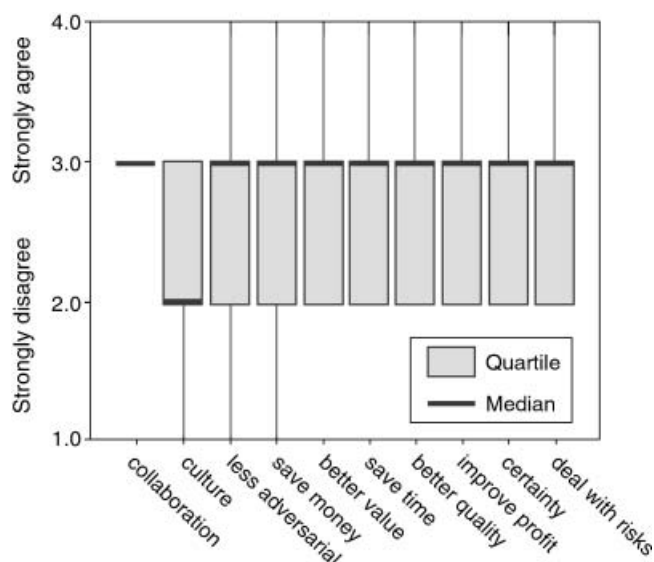
	Test Statistics										
	Vision initial- late	Shared initial- late	Co-op initial- late	Team initial- late	Open initial- late	Honest initial- late	Trust initial- late	Equality initial- late	Equity initial- late	Win-win initial- late	Cost initial- late
Z	-3.049	-3.732	-3.620	-3.556	-2.032	-2.215	-.936	-1.941	-1.613	-2.667	-1.015
Asymp. Sig. (2-tailed)	.002	.000	.000	.000	.042	.027	.349	.052	.107	.008	.310

the four phases. This is perhaps a concern in view of the suggestion in much of the literature that partnering should not be cost-driven. The result for equality ($p=0.052$) could be viewed as marginal. Although there is no discernible difference in the median values for honesty and openness, the test scores reveal a significant difference in the distribution at initial and later phases. The implication is that although the median remains stable at a 'medium' level there may be underlying uncertainty amongst the sample population regarding these characteristics.

Commercial managers, with experience of partnered projects, were also asked to rate ten outcome statements (Table 2) on a 4 point scale (1=strongly disagree; 4=strongly agree). Box plots were considered to be the most useful tool to present and help interpret the results since they provide a visual representation of the distribution of a variable. Each shaded box represents the responses between the 25th and the 75th percentile for one outcome and the line across the box is the median. Whiskers indicate the lower and upper extremes of the range (SPSS, 1998). For example, the less adversarial outcome has an inter-quartile range between 2.0 and 3.0, a median score of 3.0 and lower and upper extreme values of 1.0 and 4.0 respectively. Hence the box plot (Figure 5) clearly illustrates that the majority of respondents 'agree' or 'strongly agree' with most of the outcome statements.

The exception is the culture change statement. As a group, commercial managers were less optimistic about the impact partnering might have on the culture of organizations. Responses ranged from 'agree' to 'strongly disagree' with the median response 'disagree'. These generally positive views of the outcomes of partnering relationships are therefore, perhaps not surprisingly, consistent with the respondents' previous observations of the partnering process. However, the findings also suggest that the full potential of partnering is not yet being realised, and the respondents' general reflections (as follows) go some way towards explaining why this might be so.

Interestingly, when given a straightforward yes/no choice, analysis of the completed questionnaires shows that 84% of respondents feel that the contractual

**Figure 5** Client/main contractor partnering: outcomes

relationship between the client and main contractor *could* be fair, but fewer (56%) consider that the relationship *could* be equal. However, the analysis of supplementary comments indicates that the majority of respondents do not necessarily feel that they *are* currently fair or equal. Reasons cited as to why a relationship does not offer either of these qualities tend to centre on the client's dominant position within the project team, and the use of the term *paymaster* occurs in several responses. Clients are described as invariably having their own contractual terms which enables them to transfer the majority of risk to the contractor.

At the end of the day the client is paying and he is able to determine the allocation of risk and will generally be inclined, or advised by his consultants, to avoid as much as possible.

Evidently there continue to be difficulties in establishing real trust, often fostered by the client's consultants – who are thought to accept neither responsibility nor liability – and a suspicion that clients might wield their greater power during difficult times. Financial control is perceived to be crucial and the conventional view that a client's and contractor's respective objectives are in conflict, remains.

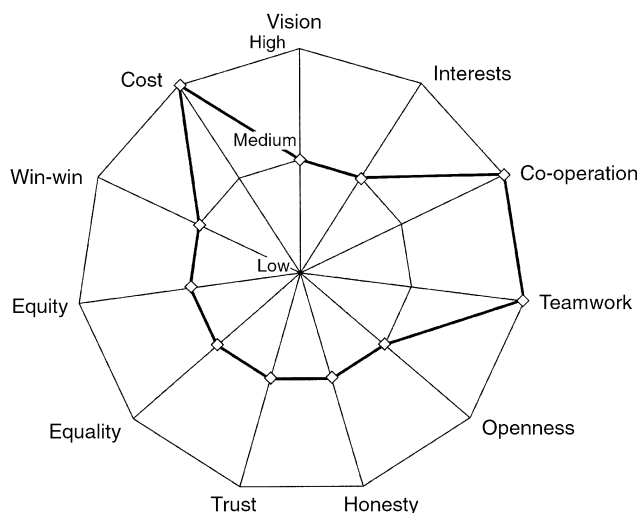


Figure 6 Main contractor/subcontractor partnering (initial phase)

The client requires the project to be delivered as economically as possible; the contractor's objective is profit.

On a more positive note, there is a sense that the current busy construction economy allows the market (contractors) to select less adversarial, or risky, projects thereby forcing clients back to a fairer position.

Main contractor/sub-contractor relationships

Participants were asked to rate the various characteristics of the partnering process but this time in main contractor/sub-contractor relationships during the initial, early, mid and later phases of the project (Table 1).

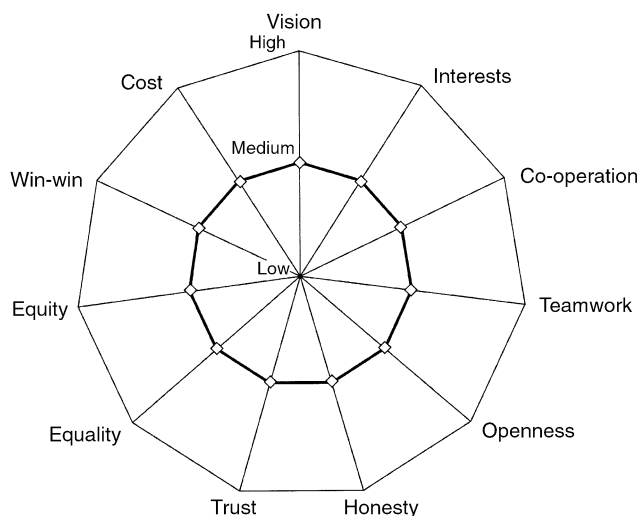


Figure 7 Main contractor/subcontractor partnering (early phase)

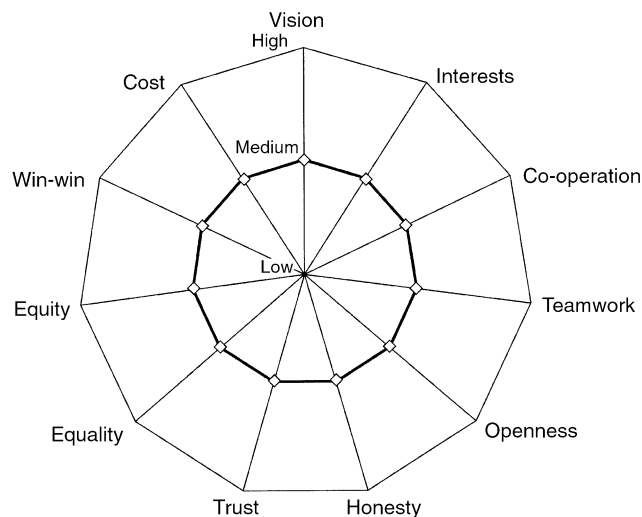


Figure 8 Main contractor/subcontractor partnering (mid phase)

The radar diagrams (Figures 6 to 9) again map the movement (if any) in respondents' views from initial through to later phases of a project. The only movement that can be observed in the contours representing the median scores at the various stages relate to cost, co-operation and teamwork. Although these results are not dissimilar to those identified in the client/main contractor relationship, they do indicate a slightly less encouraging view of the main contractor/subcontractor experience at the initial and early stages. At mid and later stages, however, the contours are respectively identical (Figures 3 and 8, Figures 4 and 9).

Upon further interrogation of the data, again using the Wilcoxon test (Table 4), it appears that the change indicated by the contour of the median is significant

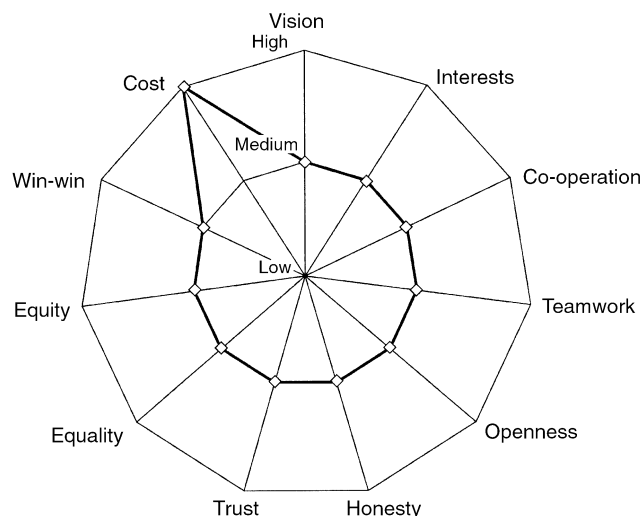


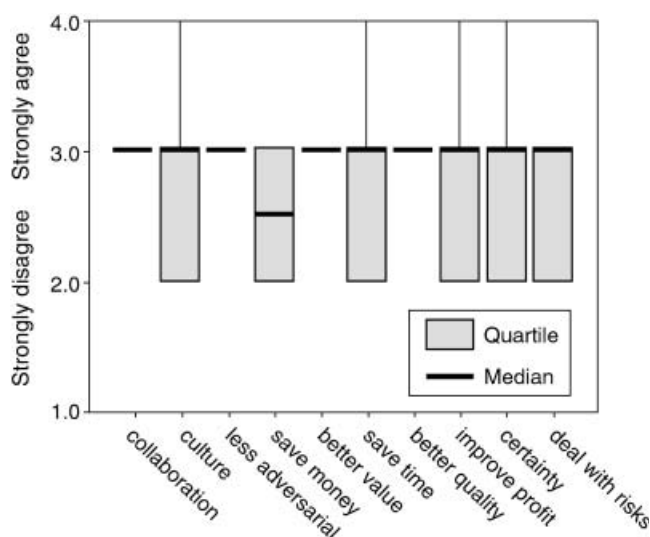
Figure 9 Main contractor/subcontractor partnering (later phase)

Table 4 Wilcoxon Signed Rank Test: main contractor/subcontractor (SPSS output)

	Test Statistics										
	Vision initial- late	Shared initial- late	Co-op initial- late	Team initial- late	Open initial- late	Honest initial- late	Trust initial- late	Equality initial- late	Equity initial- late	Win-win initial- late	Cost initial- late
Z	-2.982	-2.825	-3.874	-2.601	-2.559	-2.132	-1.538	-1.508	-1.732	-2.493	.000
Asymp. Sig. (2-tailed)	.003	.005	.000	.009	.010	.033	.124	.132	.083	.013	1.000

($p < 0.05$) in two of the characteristics: co-operation and teamwork. The consistency evident in the median scores of equity, equality and trust are also supported by the Wilcoxon test since the p value exceeds 0.05. The results indicate no significant shift in the ratings of a cost-driven agenda, which is scored as 'high' in two of the four phases. This raises the same concern, previously identified, that partnering arrangements ought not to be cost-driven. Although there is no difference in the median values for honesty, openness, shared interests, common vision and win-win in main contractor/subcontractor relationships, the test scores do reveal a significant difference in the distribution at initial and later phases. Whilst this indicates that the median remains stable at a 'medium' level, again there may be underlying uncertainty regarding these characteristics.

When asked to rate the same outcome statements for downstream relationships, respondents remain positive regarding the benefits of partnering. All medians except the save money outcome are at 'agree' and the four whiskers all extend to 'strongly agree'. The boxplot does indicate noticeably different opinions between upstream and downstream relationships regarding culture change (Figures 5 and 10).

**Figure 10** Main contractor/subcontractor partnering: outcomes

The analysis of respondents' general reflections on relationships between main contractor and subcontractor also indicates very similar views to those observed in upstream relationships. Eighty-seven per cent of respondents state that the contractual relationship *could* be fair and 58% believe that the relationship *could* be equal. However, as with the client/main contractor relationship, supplementary comments suggest that the essence of a master and servant relationship remains. Hence the main contractor is perceived to have the upper hand, being the provider of work and holding the advantage in contractual negotiations.

We often use the word partnering, however our contract conditions do not reflect this. We often do not use any of the clauses in the subcontract with our trusted subcontractors and sort things out at site level, however we always like the comfort of our conditions.

Inequality, where it does exist, is justified on the grounds that it is the main contractor who has ultimate responsibility for delivering the project as a whole. The interests, therefore, of individual subcontractors are subservient to the overall interests of the project because their motivation is quite simple.

Subcontractors have only one gain and that is to make money.

A significant number of respondents, however, recognize that the requirements of the Housing Grants, Construction and Regeneration Act (1996) have assisted in placing the main contractors and subcontractors on a more equal footing. In particular the introduction of a statutory right to adjudication and the rendering of pay-when-paid clauses as unenforceable, are acknowledged as having created a fairer climate for both parties.

Discussion

The experiences of respondents indicate that the commonly cited factors for a successful partnering process such as co-operation, teamwork, shared vision etc. exist at either a 'high' or 'medium' level throughout the project lifecycle in both upstream and downstream relationships. At no stage does the median fall to 'low'.

Interestingly though, the same is true of the cost-driven characteristic which runs contrary to the ethos of partnering espoused by leading authors such as Bennett and Jayes (1998). This confirms the fear of some authors (Green, 1999; Greenwood, 2001; and Ng *et al.*, 2002) that deep-rooted cost-driven agendas persist within both client/main contractor and main contractor/subcontractor transactions. The corollary is that the potential for conflict also persists. In addition, the findings indicate that the initial optimism within client/main contractor arrangements often becomes tempered during the harsh reality of the project lifecycle. Whilst this is not nearly so negative a picture, it is not inconsistent with the difficulties encountered in the *Birse Construction Ltd v. St David Ltd* [1999]¹ case where commendable aspirations were not realized. Within contractor/subcontractor arrangements there is less optimism to begin with, but the levels remain relatively consistent throughout the project. This perhaps suggests that a contractor's anticipation of improved relationships with clients through partnering is not always fulfilled; whereas their expectations of subcontract dealing are less ambitious but do not deteriorate.

The assessment of partnering outcomes by respondents appears to correspond with the above observations. There is a consensus regarding the benefits of partnering; for example, the results for collaboration, better value, saving time, better quality, improved profit margins and dealing with risks within both upstream and downstream relationships (Figures 5 and 10) are positive. The results for a change of culture and less adversarial outcomes are more equivocal. Of particular note is the difference between perceptions of a change in culture in either organization within both types of relationship. The client/main contractor outcome (Figure 5) shows a median at 'disagree' with a single whisker extending to 'strongly disagree'. Conversely, the main contractor/subcontractor median (Figure 10) is at 'agree' and the whisker extends to 'strongly agree'. This supports the suggestion in the previous paragraph regarding main contractor expectations. They might hope for better relationships with clients but their experience does not demonstrate a real change in culture as yet, whereas subcontract behaviours on both sides may be improving. The HGCRA (1996) is cited as having helped in this respect.

More generally, respondents express views which depict an industry operating on low profit margins, where respective objectives conflict and risks continue to be pushed down the hierarchy from client to main contractor to subcontractor. Hence the commercial imperative and competitive ethos remain, no matter how close the relationship with other parties. Whilst

these concerns are consistent with those expressed by Dainty *et al.* (2001), Greenwood (2001) and Packham *et al.* (2003), there is also a disparity with the positive, if restrained, view of the subcontract arena revealed by the survey results related to process and outcomes.

The inconclusive results as to whether partnering saves money for the client does not confirm the potential for substantial cost reductions often quoted in the literature. This is despite the view expressed by many respondents that partnering arrangements are largely cost-driven.

Conclusions

The results of this study are obviously limited to the experiences and opinions of the commercial staff from within a single contracting organization. The conclusions therefore must be viewed in that light and in no way claim to be either representative or typical of contractors industry-wide. Likewise, the findings are UK specific. However, the research does provide a platform for further investigations that might seek to compare the experiences of other contracting organizations both nationally and internationally.

Partnering is acknowledged within the literature reviewed as delivering a number of tangible benefits. This study confirms a number of these assertions since the findings indicate a broad agreement that both the process and the outcomes of partnered projects are beneficial. Whilst the early promise of partnering might not always be achieved, the survey indicates a positive attitude towards it as an alternative procurement method. In the context of a traditionally adversarial industry this should be welcomed.

As might be expected there are some ambiguities in the results of the study but beneath the veneer of partnering, some of the traits that have characterized the construction industry for many years are still apparent and genuine trust seems some way off. In addition, further work is needed to assess the veracity of the remarkable cost savings which are often attributed to a partnering approach.

Changing the culture within the industry is a long-term goal, which necessarily relies on the establishment of on-going partnerships. In this way, trust could be established between parties and the true potential for win-win outcomes exploited. Whether this will occur as a natural consequence of changes in procurement methods is open to question but the approach adopted by the national contractor cited in this study must be applauded. In challenging conventional thinking and explicitly recognizing the need to balance relationships and commercial issues, there

appears to be a much greater chance of fulfilling the aims and objectives set out by the leading advocates of partnering.

Acknowledgements

The authors gratefully acknowledge the co-operation of the national contracting organization and all their commercial staff who contributed by taking full part in the survey.

Note

1. *Birse Construction Ltd v. St. David Ltd* [1999] 4 BLR 194.

References

- Barrick, M. (1998) Huge partnering savings identified. *Building*, 6 March, p. 13.
- Bennett, J. and Jayes, S. (1995) *Trusting the Team: The Best Practice Guide to Partnering in Construction*, Thomas Telford, London.
- Bennett, J. and Jayes, S. (1998) *The Seven Pillars of Partnering: a guide to second generation partnering*, Thomas Telford, London.
- Black, C., Akintoye, A. and Fitzgerald, E. (2001) An analysis of success factors and benefits of partnering in construction. *International Journal of Project Management*, **18**, 423–34.
- Bresnen, M. and Marshall, N. (2000) Partnering in construction: a critical review of issues, problems and dilemmas. *Construction Management and Economics*, **18**, 229–37.
- Bresnen, M. and Marshall, N. (2002) The engineering or evolution of co-operation? A tale of two partnering projects. *International Journal of Project Management*, **20**, 497–505.
- Brown, D. (2001) After the divorce – problems with partnering agreements., Society of Construction Law, Paper 86, available from: <<http://www.scl.org.uk/papers/papers99on.php>> [Accessed 2 April 2004].
- Building (2003) 50 Top Clients – a building directory *Building (Supplement)*, February.
- Cheng, E.W.L., Li, H. and Love, P.E.D. (2000) Establishment of critical success factors for construction partnering. *Journal of Management in Engineering*, **16**(2), 84–92.
- Cormack, D.F.S. (2000) *The Research Process in Nursing*, 4th edn, Blackwell Science, Oxford.
- Critchlow, J. (1998) *Making Partnering Work in the Construction Industry*, Chandos Publishing, Oxford.
- Dainty, A.R.J., Briscoe, G.H. and Millett, S.J. (2001) Subcontractor perspectives on supply chain alliances. *Construction Management and Economics*, **19**, 841–8.
- Dozzi, P., Hartman, F., Tidsbury, N. and Ashraf, R. (1996) More stable owner–contractor relationships. *Journal of Construction Engineering and Management*, ASCE, **122**(1), 30–5.
- Egan, J. (1998) *Rethinking Construction*. London, Department of the Environment Transport and Regions. Available from: <<http://www.rethinkingconstruction.org/>> [Accessed 15 October 2003].
- Green, S.D. (1999) Partnering: the propaganda of corporatism?, in Ogunlana, S.O. (ed.) *Profitable Partnering in Construction Procurement*, CIB W92 and CIB TG23 Joint Symposium, E&FN Spon, London, pp. 3–14.
- Greenwood, D. (2001) Sub-contract procurement: are relationships changing. *Construction Management and Economics*, **19**, 5–7.
- Hamza, A., Djebarni, R. and Hibberd, P. (1999) The implications of partnership success within the UK construction industry supply chain, in Ogunlana, S.O. (ed.) *Profitable Partnering in Construction Procurement*, CIB W92 and CIB TG23 Joint Symposium, E&FN Spon, London, pp. 39–46.
- Housing Grants, Construction and Regeneration Act (1996) HMSO, London.
- Lamont, Z. (2001) Performing through partnering. *Civil Engineering*, **144** (February), 3.
- Larson, E. and Drexler, J.A. (1997) Barriers to project partnering: report from the firing line. *Project Management Journal*, **28**(2), 46–52.
- Latham, M. (1994) *Constructing the Team*, Department of the Environment, London.
- Lazar, F.D. (2000) Project partnering: improving the likelihood of win/win outcomes. *Journal of Management in Engineering*, **16**(2), 71–83.
- Li, H., Cheng, E.W.L. and Love, P.E.D. (2000) Partnering research in construction. *Engineering, Construction and Architectural Management*, **7**(1), 76–92.
- Ng, S.T., Rose, T.M., Mak, M. and Chen, S.E. (2002) Problematic issues associated with project partnering – the contractor perspective. *International Journal of Project Management*, **20**, 437–49.
- Oppenheim, A.N. (1992) *Questionnaire Design, Interviewing and Attitude Measurement*, 2nd edn, Pinter Publishers, London.
- Packham, G., Brychan, T. and Miller, C. (2003) Partnering in the house-building sector: a subcontractor's view. *International Journal of Project Management*, **21**, 327–32.
- SPSS (1998) *SPSS Base 8.0 for Windows: Brief Guide*, Prentice-Hall, London.
- Taylor, S. (1999) Can partnering work for you? *Contract Journal*, 13 January, 18–19.
- Tyler, A. and Matthews, J. (1996) An evaluation of definitions and the key elements of partnering, in *Proceedings of the RICS Foundation COBRA Conference, September*, Available from: <<http://www.rics-foundation.org/publish/document.aspx?did=2352>> [Accessed 3 September 2003].
- Wood, G. and McDermott, P. (1999) Searching for trust in the UK construction industry: an interim view, in Ogunlana, S.O. (ed.) *Profitable Partnering in Construction Procurement*, CIB W92 and CIB TG23 Joint Symposium, London, E&FN Spon, pp. 107–16.