

FACTORS AFFECTING TEAMWORKING IN CONSTRUCTION SERVICE DELIVERY PROJECTS

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Towards the end of the last century research into construction looked at how the improvements achieved in manufacturing could be transferred into the industry. Means such as lean construction, process management, culture change, teamworking, integrated supply chain management, prime contracting and strategic alliancing have been proposed and have, in certain cases, realized important progress. However, despite the recurrence of reports on the industry and initiatives such as the M4i and Rethinking Construction, the industry does not seem to be reaping the benefits promised. There are dissenting voices that suggest that the models sought to be applied to construction are inappropriate. The purpose of this research is to ascertain whether the literature suggests reasons why progress has been slow and to verify in the field that the suspected problems exist in practice. This is an interim report on an ongoing study. An extensive literature review carried out suggests that there are problems in applying long-term collaborative working to short-term project-based contracts. Furthermore, extant research has concentrated on isolated aspects of construction such as site management, technological improvement or IT and not looked at the holistic perspective. Empirical research, in the form of interviews and questionnaires, was carried out with manufacturers, consultants, contractors and clients engaged upon a variety of long-term contracts. This research identifies that real problems exist in the practical implementation of teamworking and that these problems have been largely overlooked by previous studies. The hypothesis is made that the advent of service delivery focused projects, such as PFI, which are long-term Asset and Service projects, may be the route which has eluded previous seekers after change in the industry. Future developments of the research are proposed.

Keywords: long-term, service delivery focus, supply chain management, teamworking.

INTRODUCTION

The work described here forms Phase I of a two-phase research project to establish whether there are factors inhibiting teamworking in construction. If there are, then Phase II will seek to determine how those factors may be overcome.

In industry, there is a move towards Service, rather than simply Asset delivery, although tangible assets are often included in the Service package (Levene *et al.*, 2001). This study will look at how Teamworking in the supply chain is increasingly required in the context of the Asset/Service package and, using examples from the construction industry, show that there are obstacles in the way of the adoption of the remedies often proposed for the industry.

The field of study is the construction supply chain incorporating asset design, asset delivery and delivery of service through the built asset. There is a shift in the industry towards service delivery, to think longer-term and towards collaboration (Bresnen and Marshall, 2000). It is the premise of this piece of research that this shift is more

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difficult to implement than academic and industrial commentators suggest and that research into the implementing of team working is needed.

REVIEW OF EXISTING KNOWLEDGE

Significant strategic change is implied and exhibited by:

- changing mindset from construction to service,
- seeking and targeting new market sectors,
- developing new attitudes towards risk

Research is only beginning to appreciate the full impact of these changes. The 'textbook' design for a construction organization no longer fits recent experience of corporate restructuring (Langford and Male 2001).

Given the importance of the employee in supplier and customer relationships (Bowen and Ford 2002), it can be seen that the measurement of service quality (Collier and Meyer 1998) will have much to do with the perceptions of the people involved and thus have a tendency towards qualitative evaluation. Bernon (2001) puts forward the need for a supply chain integrator. If there is a need for such an entity, it may not take a physical form, but there may well be a need for a co-ordinating process. A number of writers draw attention to disconnection between design, construction and customer. (Voss *et al.* 1985)

Although, in cases, cultural change is a condition precedent to behavioural change, in practice the two are intermeshed. An imposed culture change programme which is unaccompanied by matching behaviour on the part of the change agency is likely to result in merely espoused cultural change rather than embed in the functional, corporate or industrial culture. At the same time, attempts to alter behaviour in a cultural climate hostile to the required mode of behaviour will not last. Certainly if the people who are the object of cultural change initiatives perceive a difference between the desired culture and the observed behaviour then the desired culture will not inhere.

It has been noted that the contribution margins in service delivery are better in service than in construction over the long term. Furthermore, construction margins are historically very variable, leading to fluctuations in the level of employment in the industry and further contributing to the ephemerality of acquired knowledge. In turn, this is partly responsible for the shortage and cost of suitably practiced and qualified staff when the industry is enjoying one of its periodic booms. The enthusiasm for the Private Finance Initiative of the UK Government suggests that up to 40% of the industries turnover will be attributable to 20- to 30-year service delivery projects (Grout, 1997) where the emphasis is on collaborative working relationships between players whose contacts in the past have been anti-magnetic. Research from an associated project (the BRiC Project), however, indicates that although PFI projects are giving rise to increased team working between the principal players in Service Delivery-Focused projects this only extends to the first two or three tiers in the supply and sales network.

Because understanding of the services potentially available from suppliers and buyers situated laterally in many organizations' business networks is often lacking, linkage between buyers and suppliers is essentially dyadic. Due to this tension, the interaction between them concentrates on contract content, price, terms, and conditions. This

leads to organizations competing with their suppliers and customers and not combining with them to offer enhanced service.

Since the nature of the move towards service delivery which is referred to above will, if successful, extend over decades, it is clear that the rigid contractual structures which have been the norm in the industry will necessarily have to be supplanted by active relationship management and realignment between the parties to deliver services which, over time, will be capable of being remodelled.

Review of the current state of the industry, as revealed by the literature, shows that progress towards the more effective use of team working is affected by a number of drivers and inhibitors.

Drivers

- An impetus towards higher quality is demanded by consumers in general and by construction clients in particular, whose requirements have been raised by their expectation of higher standards from other industries.
- A move towards service fostered by the industry's desire to smooth and increase its revenues at the same time that new players, more versed in both service and collaborative working, are becoming influential in construction service delivery projects.
- An awareness of transactional costs has encouraged organizations to synchronize their business transactions with a more limited number of suppliers, and, to a lesser extent, with fewer customers. This has been manifested in Lean Construction, greater attention to process design and the integration of systems and supply chains.

Inhibitors

- The professional system, in which activities are allocated to discrete actors, such as consultants, main and sub-contractors, specialists and advisors, has contributed to the fragmentation of the design and construction process (Winch, 1996).
- The latter approach has been endorsed by the contractual framework that regulates the traditional construction project.
- The payment systems, of both individuals and organizations, promote the seeking of sectional advantage, such as by the payment of individual bonuses to contract managers.
- Although the construction industry is pervaded as much as any other by the presence and use of IT systems, these are predominantly stand-alone and do not facilitate the exchange of information with related organizations (Brown *et al.*, 1996).
- The project nature of the industry does not encourage the sharing of learning from past projects due, in large part, to the transience of relationships.

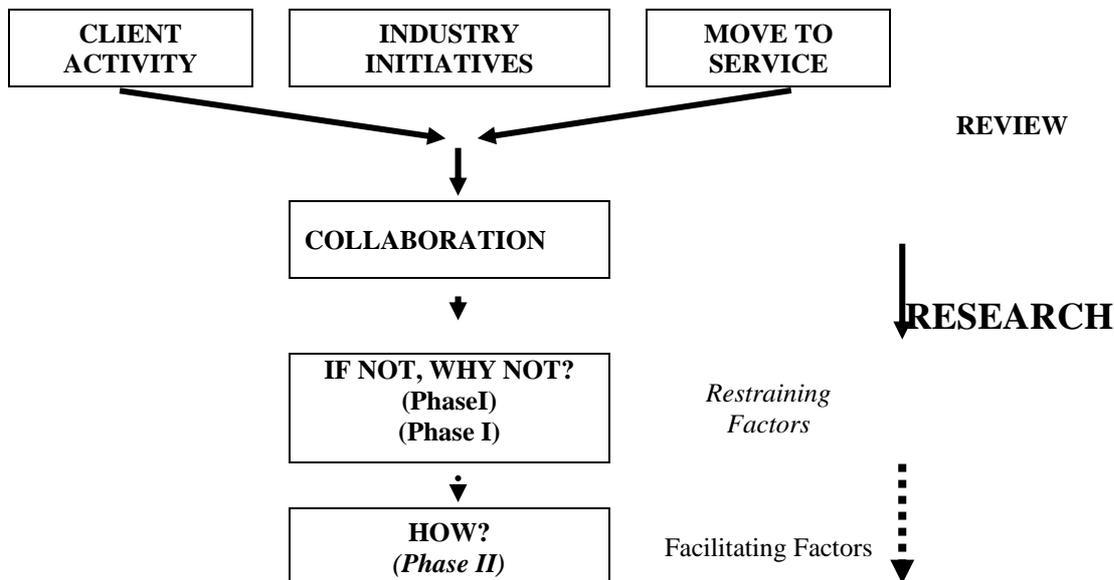
If this study were restricted to the literature then it would have been established that the industry was under-performing and that a number of factors had been identified as being responsible. The number of initiatives tried, in progress and projected, suggest that a huge effort is needed to affect the necessary mindset shift in the industry. If the evidence is so clear, then why is progress not more rapid? Put another way, if the

actors recognize the diagnosis, then why do they not take the medicine? Rather than resort to louder and more insistent exhortation, would it not be logical to pose these questions to the practitioners?

If previous research has shown what factors are driving the industry towards change, then the purpose of the empirical research is to show that if the factors restraining change remain as powerful as they apparently do, then has that research ignored other factors which are inhibiting change? Consequently, the empirical research specifically seeks out those factors, asking the question “If you, your function and organization – together with your business network - accept the need for teams working together, then what factors are preventing the exercise of collaborative team working?”.

As noted in the Introduction, this paper reports on Phase I of a study designed to establish what factors may be restraining collaborative working. Phase II will investigate what means are conducive to collaborative working. The overall study plan is shown in Figure 1.

Figure 1: Showing Phase One research in the context of the overall research plan.



AIM

- To identify factors in the construction supply chain which may impede team working in a service delivery context and to indicate ways of reducing their influence
- To assist in framing the larger Second Phase Data Collection which is intended to be described in a subsequent paper
- To provide knowledge of benefit to practitioners in the field

EMPIRICAL RESEARCH METHODS

The literature indicates that greater integration of supply chains and alignment within them is desirable. However, actual experience reveals that many firms simultaneously operate in a number of industries and, having hundreds of customers and suppliers, intuitively would have difficulty in aligning with all of them at the same time. To test

this hypothesis two customer organizations (and what would be described in supply chain parlance as “focal firms” (Harland *et al.*, 2001) were selected. For comparative purposes, one was a major contractor and the other a management and technical consultant. They and two to three tiers (represented by two or three firms each) of their supply chains were surveyed.

The data collection consisted of three rounds:

1. Preliminary face-to-face interviews to delineate the scope of the research and the extent of the focal firms’ involvement and selection of supplier and customer firms.
2. Telephoned interviews with suppliers to scope a research questionnaire.
3. Submission of questionnaires to focal firms and partners.

Before the preliminary interviews were held, suitable candidate firms and individuals were identified in discussion between the authors and collaborators in a cognate research project. The outlines of this study were described to potential informants and information obtained to ensure that they and their organizations were sufficiently distinct from each other, yet had wide experience of the industry as a whole. In-depth face-to-face interviews were held with two customer organizations and these established that they were familiar with the area of study and recognized the suspected problems. What was needed from prospective informants was:

1. Agreement to participate in the research
2. Introduction by focal firms to their supply chain
3. Provision of non-confidential information.
4. Interest in the results of the research

The last point was particularly important since the research was intended to be of benefit to practitioners. Subsequent data were collected from 10 informants. The second round of data collection took the form of semi-structured telephone interviews. Each respondent had previously signified his/her agreement to take part and had been advised that the interview would take up to an hour and would be conducted by appointment to ensure that adequate time was available. Each interview was prefaced by a standard introduction to the project. Following the telephone interviews, written questionnaires were drawn up, their content having been furnished by questions which arose from the literature, which had arisen from an earlier study of construction alliance management (Corley 2000) and from the telephoned interviews. The questionnaires had 53 main questions with areas for expansion or comments. They were distributed by e-mail and all but two returned the same way. It will be seen that the data collection sequence was progressively more specific at each round, having been derived from the literature and practical experience at the first round, leading to questions intended to locate the firms and their respondents in the second round and detailed in the third round. Thus, each round of questioning built on the previous round. In the final round, 10 of the questions required completion of a Likert scale, 9 a quantitative response and 16 a yes/no, either/or answer. At the same time, the three different media used in the three rounds sought to moderate the known disadvantages of each medium and to lessen bias.

Position	Type of Firm
Procurement Manager	M&E Services
Project Manager	Contracting Conglomerate
IPT Leader	Central Government
Head of Procurement	Contractor/Developer
Divisional Director	Consultant
Managing Director	Systems Supplier/Installer
Managing Director	Supply Chain Consultancy
Marketing Manager	Component Supplier
Key Account Manager	Specialist Contractor
Divisional Director	Consultant

RESULTS AND ANALYSIS

The respondent organizations were distributed equally between new-build and service, with a representation of manufacturing and supply-only. Most of the firms had worked with others in the sample with one having worked with all of them. All of the individual respondents had been in their present post for between 3 and 10 years, and if they described their present posts as predominately supply-side, had knowledge of customer-side and vice-versa.

The respondents, individual and corporate, are representative of the industry and well-placed to inform on the current state of their firms and the industry. Annual turnover of the parts of the organizations for which the respondents were able to speak varied between £1 million and £4 billion. All of the organizations regarded themselves to an extent, varying between 10 and 100%, as being within the construction industry although there was disagreement about what “construction” meant, some seeing this strictly as the physical act of construction, others considering design or consultancy as being part of the construction process. One organization was initially sceptical of its position as a member of a construction supply chain even though 70% of its (largely) consultancy turnover lay within the AEC area. Interesting to note, and confirmatory of the supposed move to service, was that in general, and including organizations whose product was supply-only or supply and installation, firms put the service element of their offering at a higher level than the proportion of their business that they had stated it to be in turnover terms. One respondent distinguished between service which was expressly part of the product offering, and accordingly paid-for, and service which was offered free-of-charge in a collaborative spirit. There was confirmation of a Pareto effect on both supply and sales sides of the respondent organizations but, acknowledging the relatively small sample size, it seemed that the closer that an organization was to the end-customer, the lower the number of customers each organization had. By contrast the commodity supplier claimed to have 48 000 customers. All but two of the firms were registered under ISO9000 and one of the exceptions stated that this was deliberate, as their services were diverse. However, all the organizations reported that they had detailed internal procedures in place. There was a considerable number of conflicts revealed, principal among which was that between customer demands and internal procedures. This was dealt with by procedural derogation. This was less marked in the case of suppliers but a common feature of both sides was that the amount of business transacted was a factor in determining the amount of flexibility deployed and an associated attribute was that of the relative power between buyer and supplier. On balance the larger organizations had the most power but there was also a sense that clients were the least prepared to

be flexible, often to their own detriment. This was confirmed by firms who thought that they had more power over their own suppliers (and were therefore their suppliers' customer) than they had over their own customers. (See Cox 2001) Another conflict that came through clearly was a difference between strategy and tactics. When asked specifically or by implication, many organizations, and not just those directly surveyed, were thought to act such that when that faced with a choice between overall strategy and short-term advantage, the latter would often triumph. This effect was reinforced in three ways:-

- Employees were incentivized in ways which fought against the firm's overall strategy
- The strategy was not equally owned throughout the organization. Although "other people in the organization" appreciated the value of collaborative working with customers, this appreciation was stated to be much less widely held with respect to suppliers (being 33% less appreciated).
- Respondents asserted that they managed their relationships with customers and suppliers at no more than two tiers' distance.

There was a widespread feeling that clients' protestations were not always matched by their actions and that firms which were furthest from the end-customer had more value to add but that downstream customers were not interested. Organizations believed that they were aware of the latest developments in management thinking but only one thought that construction was level with the best in the field. The others thought that the industry lagged behind others by from three to five years. A problem often referred to was the importance of personal relations. Frequently, process impediments were overcome by the interaction of individuals in the associated organizations but there were difficulties when personnel moved on or when the organizational structure changed. Paradoxically the strategic management of procurement policies sometimes damaged local business arrangements. Much of the literature discusses team working in terms of the individual within an organization. Collaborative working is largely described in terms of inter-firm relations. "Collaboration" does not necessarily betoken mutuality. What is described as collaboration when seen from a powerful partner's perspective can often look like coercion to the junior partner. What this research shows is that although firms may espouse collaboration their behaviour is not invariably consistent and certainly not how an individual team member would be expected to behave. Alignment theory (cf. Gattorna and Walters 1996) would suggest that in order for organizations (and this includes supply chains) to be strategically aligned then four key elements need to be in alignment: -

- The market/and or client base
- The organization's strategy with which it responds to the market
- The organization's culture which represents its internal capacity to implement this strategy
- The leadership/management style it uses to shape the culture and drive the strategy.

However, it is clear that the understanding of many of the informants of this study is that in practice firms actually work in the same context in which Gattorna and Walters view alignment, that is to say *customer* focus in the supply chain and do not practise the same alignment in their relations with their own *suppliers*.

This disparity is evidenced in the following factors:

Strategy/Tactics

Despite corporate strategy advocating team working, when faced with a choice between long-term strategy and short-term profit, firms tended to behave tactically.

Global/Local

Good working relationships that obtained locally were often destroyed by corporate policies.

Supplier/Buyer

Firms were prepared to adapt themselves to customer requirements but were not so adaptive to the needs of their suppliers.

Tier-limited Collaboration

Where firms operated in team with buyers and suppliers, this co-operation did not extend beyond two tiers. At the further reaches they had no interest in team working (despite outer suppliers suggesting that they had much to offer).

Alignment Hiatus

Strategic alignment on the demand side countered by lack of alignment on the supply side.

Collaborative/Transactional

The continuance of transactional behaviour even within long-term trading relations.

Organizational/Project

The short-term interests of the parent organization being put before those of the long-term service project.

Asset/Service

Construction organizations are accustomed to deal with the here and now. Distant abstract service considerations receive less priority.

Supply Chain/Business Network

A tendency to think of supply as linear and to ignore the value potentially added by lateral linkages to, for example, the supply chains of other suppliers to the customer.

Customer Requirements/Internal Procedures

Conflict between what the customer wants and inflexible internal systems (often developed to meet the diverse needs of a variety of customers).

It is not the purpose of the research reported here to show how these factors might be overcome, but it is felt that ignorance of their existence is not helping the industry to advance the practice of team working which is widely recognized to be necessary.

CONCLUSIONS

This piece of research was undertaken on the conjecture that previous research had failed to disclose reasons for underperformance in the construction industry. The empirical investigation now carried out has shown that a number of progressive organizations active in the industry are aware of factors which are impeding the team working which is acknowledged to be an antecedent of accelerated progress. It is confirmed that there is a sustained move towards service delivery and the literature indicates that, in service delivery, interaction between individuals and organizations is

instrumental. Certain positive facilitating factors have been alluded to by respondents. These include the segmentation of buyers and suppliers and the benefits that may accrue from extending the management of supply networks beyond one or two tiers. It is suggested that there is unlocked potential available through diffusing the management of supply networks throughout the networks themselves and not simply the management of a portion of a supply chain to be by one powerful actor. This has been a shortcoming of prime contracting. Although it has not been the purpose of this phase of research to seek out factors that will promote more effective team working, evidence has already been adduced to show that these factors exist. The construction industry has been largely defensive about its alleged shortcomings and has tended to accept guiltily the strictures made of it. This research has given the opportunity for frank discussion of problems that have been acknowledged to exist, the further discussion of which may enable effective solutions to be found.

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