



Do collaborative approaches to procurement lead to improved project outcomes?

Collaboration in procurement

The potential benefits of collaborative approaches to procurement are the subject of industry discussion and debate and include: integrating teams earlier in the process to offer valuable advice, assisting designers to develop efficient buildable solutions resulting in cost savings, reduced project durations and improved buildability. However, the current lack of empirical evidence documenting the financial benefits of collaboration is potentially limiting the uptake of collaborative approaches to procurement across the UK construction industry.

Taking the perspective of main contractors and sub-contractors, this case study aims to provide empirical evidence documenting the financial outcomes of collaborative approaches to procurement. This research also investigates the relational factors affecting the industry's ability to achieve a paradigm shift towards more collaborative approaches to procurement, supporting the business case for procurement reform across the UK construction industry.

Current procurement culture

Traditional approaches to procurement focus on achieving the lowest cost over best value for money. This framework can lead to adversarial relationships, erosion of profit margins, reliance on litigation, and poor productivity. In recent years the interest in collaborative approaches to procurement has increased with the aim of establishing broader, often long-term objectives and value rather than focussing only on lowest cost. Despite increased interest in collaboration the business case has not emerged with enough strength to influence change.

Why methods of procurement matter

Methods of procurement have been found to have a significant impact on the performance of a team as it creates an environment that either supports or hinders collaboration and innovation. Traditional procurement methods have been criticised for their sequential approach to delivery, which creates an environment in which cultural and organisational differences can thrive, limiting communication, coordination and integration of project teams.

Choice of tendering method can also contribute to the outcome of a project – single stage tendering drives competitive pricing but can foster adversarial behaviour to support lowest cost; two stage tendering is seen as a means of encouraging collaboration. The traditional form of contract is cited for promoting a culture of defensiveness and transferring risk to others and prescribing terms that lead to participants working in silos with little time for shared problem solving.

The fragmented supply chain (sub-contractors supply 90 per cent of the labour and materials to UK construction industry) is an additional challenge as the client and main contractor is regarded as the primary relationship limiting the collaborative ethos being passed downstream.

New models of construction procurement

In 2014 the UK Government provided guidance for three procurement models for publically procured projects; Cost Led Procurement, Two Stage Open Book and Integrated Project Insurance. All three of these models intend to support earlier supplier engagement, cost transparency and team integration and collaboration (Cabinet Office 2014). The models are built around the principle that the supply chain responds to a set of client requirements and declared budget. This aims to overcome historical issues whereby the supply chain would develop a price against the client requirements without having a clear understanding of the client's budget (Cabinet Office 2014).

Project Alliance Agreements (PAA) are increasingly viewed as the ultimate form of collaboration and are most commonly seen in large infrastructure projects. The PAA is designed to reinforce the links between incentivisation, contractual performance and behavioural performance driving a no blame culture and diverting project teams away from traditional defensive behaviours.

Barriers and solutions

Competitive, purely cost-focussed procurement practices often undermine the principles that are required to achieve effective collaboration and promote short term, commercially driven, transactional relationships that do not necessarily deliver best value for a client. To achieve a paradigm shift in procurement practices the industry requires informed clients with a focus on broader objectives (other than simply lowest cost) who have an incentive to achieve value for money over the long term as opposed to the cheapest initial solution.

Research framework

This research project takes a mixed methods approach using quantitative data and qualitative data collection and analysis. Data was obtained from three organisations through the parent organisation of a main contractor, a concrete frame contractor and a mechanical and electrical (M&E) contractor. A static import from the contract review form (CRF) was obtained in February 2017 for analysis featuring information including: form of contract, procurement route, tendering

method, programme information, commercial information and client details.

Criteria was applied to the dataset to reduce the total sample to 203 projects (completed or substantially completed between 2011 and 2017) across the three organisations: main contractor 61 projects; concrete frame contractor 66 projects; and M&E contractor 76 projects. Criteria included identifying primary collaborative indicators – procurement route, tendering method, form of contract and repeat client. Key data identified to inform metrics included: project planned duration; project actual duration; original project value; final project value; and margin erosion (target margin vs estimated final margin).

Semi structured interviews were also conducted with 17 industry professionals from 11 organisations including main contractors, trade contractors, client organisations and cost consultancies. Interview questions brought focus to:

- procurement route, tendering method, form of contract
- sharing information and timing of sharing information
- managing risk and problem solving
- behaviours and trust
- client influence

Quantitative results and trends include:

Tendering

- single stage tendering resulted in significantly greater erosion of margin for both the main contractor and the M&E contractor compared to two stage or negotiated tendering methods.
- the results suggest that from the perspective of all three parties and clients, single stage tendering does not provide cost certainty at the outset and presents the greatest likelihood of the main contractor and M&E contractor making a loss when compared to two stage or negotiated method.

Repeat relationships

- in all three cases the erosion of margin was significantly less where the parties were working for a repeat client as opposed to a one-off client.

Procurement route

- the main contractor and M&E contractor experienced significantly less margin erosion under framework agreements, compared to D&B and traditional projects.
- results indicate procurement route has less of an impact on the successful outcome for the concrete frame contractor compared to the other two parties.

Trend

- the findings categorically revealed that across all three parties the use of single stage tendering resulted in the highest percentage of agreed variations, EOT's and the likelihood of a project being delivered late compared to two stage and negotiated methods.

Qualitative results and trends include:

Tendering method

- tendering method (specifically the impact of single stage or two stage tendering on project outcomes) was the most prominent theme throughout the interviews.
- two stage tendering was unanimously preferred by the main contractors and sub-contractors as the process allows more time to understand a project before committing to a fixed price.
- main contractors and sub-contractors need to ensure they are fully supporting clients in unlocking value through the process not using it purely for their own gain.

Early contractor involvement (ECI)

- ECI is favoured positively by contractors and sub-contractors as it provides opportunity to gain a good understanding of a project and to drive out risk.
- opportunity for significant input by main contractors and sub-contractors is often limited to RIBA Stage 3 and beyond.
- the challenge for main contractors and sub-contractors is to ensure the full value is leveraged for clients through the use of ECI.

Cost plans and designing to cost

- issues related to cost plans often arise as a result of timing and sequencing issues between the cost plan and the design process.
- once issues with the cost plan become evident they can negatively influence the behaviours of project and result in a breakdown of the collaboration process.

Market conditions

- market conditions and the economic cycle were cited as the primary influencing factors over how a client selects a procurement strategy and brings a scheme to market.
- this presents a major challenge to the industry in terms of establishing and maintaining collaborative approaches to procurement over the long term through the ups and downs of the economic cycle.

Action needed to find middle ground

Supporting collaboration alongside making appropriate checks and balances is required to ensure full value is leveraged through collaborative procurement processes and a middle ground is reached. A number of factors incorporated within procurement will support the industry to move towards the middle ground and deliver improved project outcomes for all parties. These include:

advocating two stage tendering; advocating open book pricing to support transparency; clients to focus on selective tendering to appoint the 'right team'; supply chain to invest in developing the right skills that add value to clients at the front end; ensuring robust procedures are in place to manage cost plan and design development; aligning objectives through shared profit e.g. clients offering contractors equity in a scheme.

Establishing the middle ground is key to securing a more equal balance of power between clients and construction organisations leading to better outcomes for all stakeholders.

Next step

Breaking down decades of adversarial work practices and the lack of trust and shared values rooted in short-term transactional relationships that are core to the current construction industry's modus operandi is fundamental to achieving better outcomes.

An immediate recommendation is to limit the use of single stage tendering; this form of tendering results in a false sense of cost certainty and an increased likelihood of projects being delivered late and over budget.

Collaborative approaches to procurement can result in improved financial outcomes for main contractors and sub-contractors. That said, the findings also suggest that clients are not fully benefiting from collaborative approaches to procurement. The supply side must consider how they can better support clients in terms of delivering value adding contributions throughout the procurement process as opposed to simply limiting their own risk. Failure to do so will impact on the likelihood of clients adopting such practices resulting in a lost opportunity for the supply chain.

Finding the middle ground will encourage clients to adopt collaborative approaches to procurement. This will result in better outcomes for all parties, regardless of the economic cycle which has typically seen clients default to adversarial, price-focussed approaches during times of austerity.

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The Laing O'Rourke Centre for Construction Engineering and Technology, in the University of Cambridge Department of Engineering, was launched in 2011 with industry partner Laing O'Rourke to fulfil a shared vision of transforming the construction industry through innovation, education and technology. The Construction Engineering Masters (CEM) degree programme is designed to shape the next generation of industry leaders and undertake innovative research projects that deliver value to industry.

Case study

This case study is based upon a Laing O'Rourke Centre for Construction Engineering and Technology Construction Engineering Masters dissertation titled: *Do collaborative approaches to procurement lead to improved project outcomes?* (2018). The research is by Elliot Mawbey, Principal Digital Engineer Southern UK Lead, Laing O'Rourke

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