

THE CHANGING ROLE OF THE PUBLIC CLIENT IN CONSTRUCTION PROCUREMENT

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The public sector obligation to improve the performance of construction procurement has resulted in several changes to the organisation, roles and systems adopted for development schemes. For example, a less than expected outturn performance of traditional arrangements and the increase demand for public services led to the adoption of integrated procurement systems. These changes have seen a transition of client's role from merely a funder to an active player working collaboratively alongside the private sector (as service providers) at different periods over the last three decades. These changes were expected to improve construction procurement performance dramatically as they allow the clients to enhance their organisational capabilities by assigning major part of their roles to the private sector. However, the literature does not show that the procurement performance has improved as a result of the changes in the client organisation. While research continues to emphasise the importance of the client role in the construction procurement, so far limited attention has been given to the development of the client's internal organisation for better procurement performance. This paper reports a comprehensive review of the role of the client in construction procurement identified by various researchers to establish the role that the client has been performing over the last three decades. This has been achieved by applying a chronological mapping method of materials published on the subject over the last three decades. The analysis indicates that there are critical elements within the client role which have been consistently addressed over the last three decades. In addition, there are elements which have emerged as a consequence of the shift towards integrated systems. An understanding of critical and emerging elements will allow the clients to identify the gap between the required and the existing capabilities within their organisations, and to assess their procurement arrangement.

Keywords: procurement, public client, tendering.

INTRODUCTION

The public sector effort to improve the performance of construction procurement has driven changes to the organisation, roles and systems adopted for development schemes. The changes in the client roles were expected to improve construction procurement performance dramatically as it requires the clients to overcome the shortage of skills and knowledge by assigning major part of their roles to the private sector. However, the literature does not show that the performance has improved as a result of the changes took place in the client organisation. While research continues to emphasise the importance of the client role in the construction procurement, so far

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limited attention has been given to the development of the client's internal organisation for better procurement performance.

Increasing value and complexity of construction projects over time resulted in the development of different models to aid the construction client in selecting design, construction, management and financial services procurement packages (Kumaraswamy and Dissanayaka, 1998). Masterman (2002) highlighted that client's organisation characteristics and culture is the key factor in developing a sound procurement strategy. Depending on the characteristics of the client team, the procurement strategy may involve third parties (consultants) to support the client objectives of achieving better performances in the project delivery. For public projects, the success and productivity of the relationship for the client and these parties depends on the mutual understanding between the public sector and the consultancy firms (Turner, 2002; Office of Government Commerce, 2003). In addition, Mitchell *et al.* (2011) claimed that the development of the construction project is fragmented between different organisations that have separate objectives and priorities. Inefficient integration between all these parties urges the improvement of procurement in the construction industry (Bankvall *et al.*, 2010). Cohen and Eimicke (2008) argued that the public sector manager should learn to work within multi-organisation network and learn how to identify the most critical influencing factors in managing the relationship.

To overcome these current challenges, client procurement planning approach should be improved with re-allocation of responsibilities, the use of cost based strategies, early contractor involvement, the development of framework agreements, and the adoption of a systematic and strategic approach (Meehan and Bryde, 2011; Watermeyer, 2012). However, Kashiwagi (2008) has argued that, apart from the use of alternative procurement systems, the application of the best-value concept and principles of efficiency, accountability and appropriate transfer of risk and control are several key elements in maximizing value and sustainability of construction activities. This could be achieved with early planning, minimizing contractors direction and management, and minimizing confusion.

Given the above challenges to improve performance, a comprehensive review of the role of the client in construction procurement identified by various scholars has been undertaken to provide a greater understanding of the role that the client has been performing over the last three decades. This has been achieved by applying a chronological mapping method of published literature on the subject over the last three decades.

Changes in procurement systems

Procurement from Ancient Syrian and Greek culture to modern nation has achieved broad social outcomes, and public clients can utilise their purchasing power through the adoption of integrated procurement framework, driven by economic, environmental, and equity values (Nijaki and Worrel, 2012). The construction sector in last five decades has noticed changes in the adoption of different procurement systems. The changes are argued due to several reasons such as client attitude, economic situation, and expectation of procurement outcomes. Particular focus has been given towards integrating design and construction in order to deliver the expected performance of the client. Figure 1 presents changes in the adoption of various procurement systems in the UK during the period from 1987 up to 2010. Up to 1998, the separated procurement was the most dominant system, but at the same

time design and build was becoming more popular. Since 1998 separated and design and build procurement systems have been relatively getting equal share of the construction procurement value. Masterman (2002) argues that the changes in procurement systems since 1945 are mainly a result of transformation in client attitudes and needs more than any other factors.

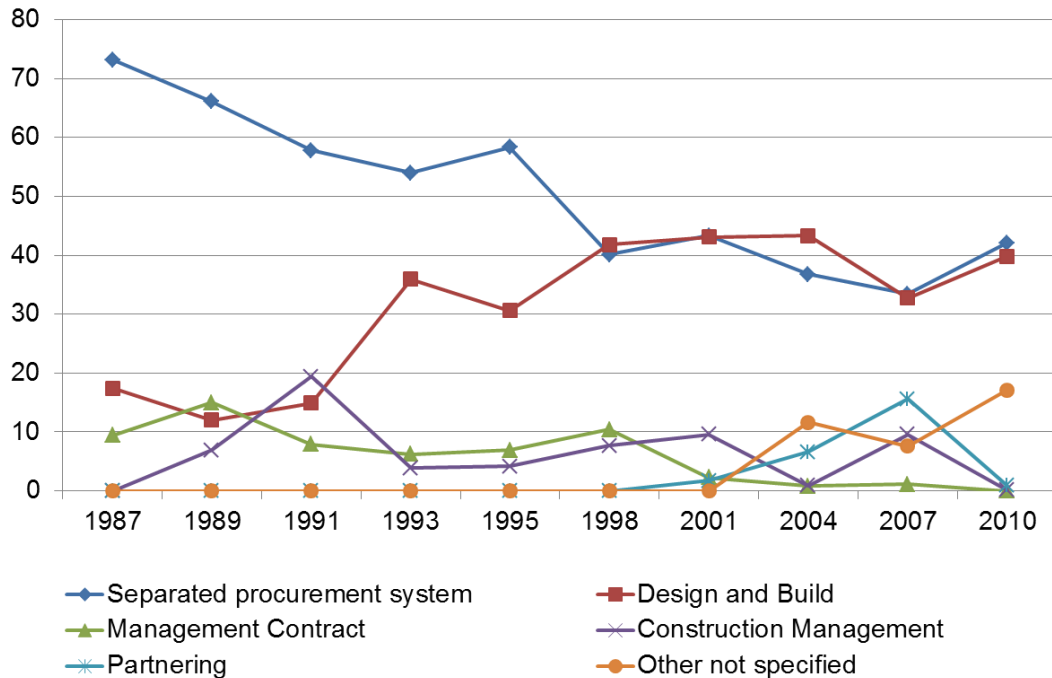


Figure 1 Changes in adoption of various procurement systems in the UK (source: RICS 2010)

On the other hand, Pietroforte and Miller (2002) show that the US government uses a range of systems in procuring construction, operation and maintenance of public facilities depending on economic and social situations. While the adoption of the procurement systems continue to vary, the shortage of work in the 1980s led to a tighter competition and more projects with lower prices being completed within budget and time (Griffiths, 1989). Similarly, Love *et al.* (1998) argued that economic downturn and recession will continue to have a significant effect on the way construction projects are procured.

The review of UK Government reports by Murray and Langford (2003) about public procurement conclude that reports before 1994 provided general and unclear improvement recommendations. In contrast, Latham (1994) and Egan (1998) reports provided the Government with the mechanisms and specified targets, which helped in developing key performance indicators whereby performance could be measured (Masterman, 2002; Murray and Langford, 2003). The period following Egan (1998) report shows a direction toward the adoption of integrated procurement systems with a desire for implementing performance indicators to assess the efficiency of the construction procurement.

The new models of construction procurement in the UK are driven towards team integration and collaboration (Cabinet Office, 2014). The Cabinet Office Guide argues the client should lead the development of processes and systems that are easily adaptable to any procurement system. Similarly, the new changes introduced in PFI2 framework (Treasury, 2012) such as increasing the public client equity and returning

some of the soft services suggest an increasing role of clients in the public sector construction.

RESEARCH METHOD

This study was conducted in several phases comprising: literature review, data collection, data analysis, findings, discussion and conclusion. Initially, the historical development of the procurement system was reviewed. Cooper (2010) suggested that accumulation of past research is necessary condition for systematic knowledge building. Then, a selection of papers relevant to the procurement systems and the client role were obtained from journals and conference proceedings published between 1984 and 2014. Keyword search was used to identify the selected papers. Cooper (2010) further argued that secondary research channels such as Journals, proceedings and government reports grant useful information for the primary research.

The review on the papers emphasised the importance of client role in attaining effective construction procurement. A comprehensive list of the procurement activities was extracted mainly from ISO (2011), RIBA (2013), (Office of Government Commerce, 2003) and ECI client best practice guide (ECI, 2013). A total of 450 papers were found to be relevant to the role of the client in the construction procurement. Further review of the abstracts resulted in shortlisting 200 papers which were classified into three categories based on the date of publication: 1984 to 1993, 1994 to 2003 and 2004 to 2014. After that, a random sample of 25 papers was selected from each category and the review focused on these papers as the source for identifying the changing roles of the client during that period of time. Due to space limitation, a complete list of papers is not included in this paper. The client role in each of the selected sources is presented in Table 1. The initial observation suggests that papers published in the last decade (period between 2004 and 2014) attributed more tasks to the client organisation in order to improve the performance in the construction procurement.

ANALYSIS RESULTS

The published papers have consistently addressed some of the roles, where other roles addressed for some period of time. Table 1 illustrate the frequency each role is considered during the last three decades.

Development of the project brief

The development of the project briefing reflects client capabilities in handling other roles such as risk management, requirement management, and selection method. The development of the project brief is the task that has been extensively researched in relation to the client organisation, especially during the most recent published literature (period of 2003 to 2014). This may be due to the growing realisation of the importance of good briefing to project performance and the need to enhance the client capability to undertake such important role. The client organisation is required to include comprehensive information about the project for example project scope, objectives, milestones, quality expectation, list of stakeholders, operation need and deliverables. Deficiency in the client brief leads to major changes at the design phases. These changes are most likely to cause delays to the project schedule and incur the client organisation additional costs.

Table 1: Project activities in which the client has a role to play

Role descriptions	No. of sources attributed the role to the client		
	1984-1993	1994-2003	2004-2014
Procurement strategy	4	6	6
▪ Selection of procurement Route	-	3	4
▪ Team Building	7	3	3
Project brief	3	2	6
Risk Management	3	3	4
▪ Risk allocation	2	2	4
▪ Monitoring and reporting risk	-	1	1
Performance management	3	1	4
▪ Performance assessment	-	-	1
▪ Regular Feedback	2	-	-
Procurement method	-	-	5
▪ Identify source of funding	4	4	3
▪ Contractor selection method	5	3	4
▪ Consultant selection method	1	1	2
Project Initiation	-	2	5
▪ Identify need of consultancy services	1	-	4
▪ Set out procurement objectives and outcomes	6	7	5
▪ Test Market	1	-	2
▪ Project Planning	2	-	1
▪ Value management	2	-	4
▪ Agreeing project objectives with stakeholders	-	-	2
Project control	-	-	-
▪ Requirement management	7	8	6
▪ Change control	-	1	3
▪ Quality management	4	-	-
▪ Obtaining authorities approvals	1	-	-
▪ Periodic systematic audit	1	-	-
Tendering and award	1	-	3
▪ Award criteria	-	-	3
▪ Set quality/prices criteria	-	-	3
Operation and maintenance/ Facilities management	5	-	2
Project design	-	-	-
▪ Concept design	1	-	-
▪ Design management	-	-	3
Information coordination	-	5	-
Standardisation	2	-	-

Risk management

When selecting an appropriate procurement system for a construction project, the client considers the provision to transfer part of the risks to the contractor. One of the key objectives is to achieve higher cost and time certainty before letting the construction contract. However, the achievement of this objective highly depends on the quality and clarity of scope developed by the clients and their advisers before it is used to development proposals by the contractors. When the scope is not comprehensive or lacks clarity, changes become costly during the construction stage especially when using procurement systems other than separated procurement, when valuing the cost of these changes mainly depends on new prices from the contractor. Consequently, it could be concluded that significant part of the procurement risk remains with the client, and therefore the client should develop appropriate capabilities to manage the risks. Table 1 also shows the importance of risk allocation as it has received a consistent attention when adopting any procurement system, over the last three decades.

Performance management

The review of three-decade literature on construction procurement suggests that time, cost and quality are still the three main performance criteria. It is often argued that the performance of different procurement systems tends to differ against the criteria. That is, a procurement system may exhibit a better performance than others for certain criteria. For example, PPP procurement tends to yield higher time and cost certainty, whereas other procurement systems such as separated system may provide better quality outcomes. Due to lack of actual data which enable an objective comparison between different systems, the performance of a system against the other is often estimated based on previous experience and past performance in different projects. This lack of performance data does not support learning in the construction industry. Since 1984, research has highlighted the importance of using feedback from previous project when developing new schemes. Nevertheless, evidence suggest that the construction sector still has not fully utilised lessons from the past, and therefore, to improve construction procurement, it needs to give greater attention in the development of not only information management but also utilising regular review in developing new knowledge and skills.

Selection of procurement method

The reviewed literature has consistently focussed on investigating three activities under procurement method, namely contractor selection method, consultant selection method and identifying source of funding. Amongst the three, contractor selection methods and criteria have been the focal point when deciding the most appropriate procurement method. The focus on the contractor selection criteria could be attributed to higher adoption of integrated procurement systems where the designers are mostly appointed by the main contractor. So contractor selection criteria take into consideration the consultant selection as well. The procurement funding strategy is an important element in the contractor selection evaluation especially when adopting PPP procurement systems. Additionally, it is also important for the client organisation when planning project cash flow in order to avoid delay that could be attributed to lack of funding from the client side.

Roles which have not been addressed consistently in the last three decades (1984-2014)

In addition to client roles in the activities discussed above, there are roles which have not been addressed consistently in the last three decades. These roles are manifested in seven main activities, discussed below:

Procurement initiation

Procurement initiation was an area of research interest between 1984 and 1993, but it received less attention in the following decade (1994-2003) before gaining greater focus during the period 2004-2014. Despite this, the results presented in Table 1 show that settings out procurement objectives and outcomes continue to be the key issue of the procurement initiation. Public clients are facing this issue more than private ones due to the level of the stakeholder involvement and diversity in publicly funding projects. In contrast, private clients' procurement objectives and outcomes are arguably more stable and clearer.

Project control

Under project control, reviewed literature suggests the client has role to play in requirements management and change control. Requirements management is the most crucial task at any procurement system. Unclear requirements might delay the

procurement process, lengthen the negotiation period (in the case of PPP), and lead to changes at the project execution stages. As a consequence, controlling changes becomes a challenge to the project team and disagreement between the team members is likely to influence team relationship when each of the team members' interest has diverse priorities and objectives. The reviewed literature shows that requirements changes are one of the major causes of cost and time overrun and greater focus by the client organisation is required to control the project requirements over the procurement life cycle.

Tendering and award

Literature in the last decade (2003-2014) provides the client organisation with divers' evaluation and award frameworks which generates a range of quality criteria with different weights depending on complexity of the construction projects and client priorities. This indicates that client is interested in implementing value based award criteria rather than award based on lowest prices. Furthermore, the ratio of quality (performance) and price has been generally considered to determine estimates of 'value for money' when awarding contracts. The role of the client is mainly to determine evaluation criteria that support the procurement objectives and outcomes identified at the initiation stage.

Operation and maintenance/facilities management

The reviewed literature indicates that operation and maintenance/ facilities management received the greatest attention in research during the period from 1984 to 1993. None of the reviewed literature addressed operation and maintenance during the period from 1994 until 2003. However, some literature highlighted operation and maintenance recently during the last decade (Umar and Idrus, 2012). This difference of attention across three decades could be attributed to the adoption of PPP, where the operation and maintenance were pooled in one package with project design, construction and finance which are outsourced to the private sector. The lack of information of operation and maintenance create difficulties when assessing and justifying value for money of PPP system.

During the period from 1984 to 1993 the client was more involved in the operation and maintenances activities and most data were documented within the client organisation. In the case of PPP, client organisation has very limited access to operation and maintenance costs because all information is under the contractor custody.

Project design

The literature suggests a tendency to move away from separated procurement to the adoption of integrated procurement systems. In integrated system, the design should be the main responsibility of the main contractor. However, literature in the decade of 1984 to 1993 highlighted that the client has a role to play in early stages of design process (such as concept design stage), after the development of the brief. In a decade between 2003 and 2014, the emphasis of client role in the design process is even more pronounced with their significant responsibility in the design management. This requires a greater involvement of the client organisation, and the need to evaluate existing capabilities and develop them as appropriate to enable efficient fulfilment of the design management role.

Information coordination

The procurement in the construction industry heavily relies on the quality of information and efficiency in communicating information. At the same time, the

construction procurement is becoming more complex due to increase in projects complexity, increase in the volume of information and technology development. With these changes, papers published during the last decade indicate less attention to investigate the improvement in the quality of information and efficiency in communicating and sharing information between participants.

Standardisation

Consistency in organisations operations influence their performance by minimizing variations and wasting time on repeated work. Examples of areas to standardise in public construction procurement: government arrangements, repeated parts of procurement documents, procedures and methods, procurement policy. Standardisation is well recognized in other sectors like automotive sector. In contrast, it is argued that standardisation is difficult to be adopted in the construction due to complexity and one-off nature of construction projects. However, the review of sources published between 1984 and 1993 show that standardisation is one of the tasks which the client should have the key role, and therefore develop their capabilities. Last two decades show less interest in investigating the client role in standardising process and documentation. The client organisation remains a focal point in the construction sector and assessment of its role standardisation provide the client with indications of possible improvement. However, lack of recent studies requires furthers investigation that highlight: the level standardisation in the sector, the relationship between standardisation and procurement performance, possible standardisation and how the client could utilise standardisation to improve performance.

DISCUSSION

The vast majority of published papers indicate close relationships between the roles of the client and the procurement performance. For example, implementing appropriate team selection methodology and team management increase the likelihood of better performance in the initial procurement process.

It is worth noting that research would seem to have spent greater attention to the roles related to the development of the procurement strategy and risk management, than to those under project brief and performance assessment. Here, the importance of having a clear and intensive project brief has been realised, but the determination of appropriate performance objectives, assessment criteria and methodology remains debatable and lacks consensus.

The outcome of the published papers analysis shows that there are critical elements within the client role which have been consistently addressed over the last three decades. In contrast, the emphasis of seven out of twelve roles varies across activities and time period. The general trend indicates greater direction toward studying specific tasks or activities within some roles such as the procurement initiation role. However, after high focus on studying roles like operation and maintenance and quality control during the period between 1983 and 1994, these roles received less attention during the period between 1994 and 2014. The causes of the changes could be as a result of the client achieved maturity within these roles or other roles become first priority to researchers. How the clients are considering and prioritising various roles highlighted over the period between 1984 and 2014 is questionable. Further investigation of the level of clients' involvement within these roles requires direct interaction with construction procurement main participants, i.e. clients, consultants and contactors.

CONCLUSIONS

Based on a thorough review of literature, this research has catalogued activities in the procurement process, in which the client should exercise appropriate roles to ensure successful projects. The roles of the client have been identified across literature covering three decades, which provide a sound basis for analysing different emphasis that they have received. The findings suggest that the emphasis varies across activities and time periods. Client roles in some activities have been consistently addressed, highlighting their importance. Although client roles in other activities have not been consistently addressed, it does not mean that the clients do not exercise their roles in these activities. Instead, they are just less important than others. This is particularly the case for client roles in, for example, information coordination, quality management and standardisation. Although there has been a tendency to adopt integrated procurement systems over the last three decades, the correlation between client role and integrated procurement systems is not conclusive, due to lack of continuity of literature which addressed client roles in the integrated systems. This review has raised further questions: how the role can be defined? What are the relationships between client roles and procurement systems? What are the capabilities to support the client to undertake their roles, and how can they be assessed? Should the client possess all the capabilities? What are the measures of success? It could be argued that satisfactory fulfilment of these roles provide a sound basis for the development of an integral solution that enable efficient involvement in the development of the construction scheme and simultaneously ensure progressive performance in the construction procurement. These are the subject of further investigation.

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