

DEVELOPING SUPPLY CHAIN PROCUREMENT SYSTEMS IN SOCIAL HOUSING

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This paper reports on a knowledge transfer partnership project (KTP) with a Supply chain organisation and Liverpool John Moores University. An aim of the project is to develop a procurement approach that captures better quality information from supply chain organisations working for registered social housing landlords (RSL). The aims and objectives of the KTP are given along with a suggested methodology to investigate the barriers to information transfer that the new procurement approach must overcome in order to effectively gather rich information. The paper provides a contextual description of social housing and procurement and introduces a theoretical framework that is based upon a literature review in the area of transaction economics. The areas of information uncertainty, opportunism and asset specificity are identified as areas for further investigation through the use of semi structured interviews with supply chain organisations.

Keywords: transaction economics, supply chain management, social housing.

INTRODUCTION: THE SOCIAL HOUSING SECTOR

Housing is a vital requirement for every individual and every society. Social housing organisations provide affordable housing to those whose needs are not met by the market, (i.e. private housing) on a secure basis with a key function of providing housing that is affordable to people on low incomes.

There are four categories of social housing providers;

1. Local Authorities (LAs) are owners and managers of social housing. In England and Wales, local housing authorities are the unitary authorities and district councils.
2. Arms Length Management Organisations (ALMOs) of local authorities, are companies that are set up by a local authority to manage and improve all or part of its housing stock. The company is owned by the local authority and operates under the terms of a management agreement between the authority and the ALMO. An ALMO is managed by a board of directors which includes tenants, local authority nominees and independent members.
3. Housing Associations (HAs) are run as businesses but they do not trade for profit. Any surplus is reinvested into the organisation to maintain existing homes and to help finance new ones.

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4. Registered Social Landlords (RSLs) are independent, non-profit distributing bodies, controlled by governing boards, which have responsibility for ensuring that RSLs operate in accordance with the requirements of statute, external regulators, and other stakeholders. Many RSLs operate across local authority boundaries and have to manage relationships with a wide range of agencies across their areas of operations.

The 2008 budget included a commitment to spend £8 billion on new, affordable and social housing over three years enabling the Housing Corporation to deliver 70,000 new affordable homes each year by 2010/11. The 2009 budget gave the housing market a further £1 billion to help meeting demand for properties and help the construction industry recover in the current recession.

Registered Social Landlords (RSLs) can use a combination of the housing Corporation grant and private funding to develop affordable housing, but since 2004, private sector organisations have been able to compete for public funding to develop social housing. Consequently RSLs are under increasing pressure to improve the quality of their homes and services, but at the same time to reduce costs, principally in order to maintain rent affordability.

Changing Patterns of Ownership

The size of the social rented sector in England reached its height in 1979 when there were over 5.5 million social rented units, 31% of the English housing stock. At that time private renting (including non-profit provision) accounted for 12% of the stock, and the vast majority of this sector was then either regulated or rent free. Owner-occupation accounted for 57% of the stock, having become the majority tenure in the late 1960s. (Whitehead and Scanlon 2007)

During the 1980s the size of the social rented sector declined significantly but the ownership was also restructured, increasing the role played by non-profit Housing Associations at the expense of local authority (council) housing.

The most important reason for the declining social sector has been the large and continuing expansion of owner-occupation. By 2005 owner-occupation accounted for around 70% of the much larger stock of 21.8 million units. Private renting was measured at 11% (although there was some belief that this was an underestimate, especially in London). Social renting thus only accounted for 18% of the total stock - some 4 million units, a net reduction of 1.5m units since 1979. Within this total 53% was provided by local authorities and 47% by Housing Associations. (Whitehead and Scanlon 2007)

In recent decades there has been a gradual decline in the relative and actual size of local authority stock as a consequence of three key factors;

1. The right to buy. Since 1979 over 2 million council homes have sold to tenants under the right to buy. The scheme has received much criticism because, in areas where demand for housing exceeds supply, the stock of social housing was depleted faster than it was replaced; because speculating investors were able to buy up council properties through deferred transaction agreements, hastening the rise in property costs because the remaining stock of council housing was concentrated in undesirable areas with little employment opportunity, further isolating and stigmatising the tenants.

2. The stock transfer programme. The Housing Green Paper confirmed the Governments' commitment to large scale stock transfer These transfer all or part of a local authority's stock through a privately funded management buyout to a newly formed HAs, representing a major shift in provision from council to the RSL sector.
3. New build and acquisitions by RSLs. New social housing is now provided almost entirely in the RSL sector.

The next section of the paper considers the supply chain organisation and the objectives of the KTP.

Fusion 21

Fusion 21 (F21) was created in 2002 and introduced a radical new approach to construction procurement for Housing Associations. Fusion's RSL original partners are Riverside, Arena, Plus Housing Group, Knowsley Housing Trust, Maritime Housing, Helena and South Liverpool Housing and Knowsley Metropolitan Borough Council. Its strategic goal is to become a market leader in sustainable procurement and social reinvestment. It uses the aggregated demands of its Registered Social Landlord (RSL) framework partners who are primarily involved in the repair and maintenance of social housing, to actively manage a supply chain framework and drive down costs. F21 manages the procurement and cost control of multiple work streams such as heating installations, roofing and door and window replacement which amount to approximately £60m per annum and it levies a percentage of contract value. As a consequence it provides the benefits of centralisation for a decentralised supply chain. The levy is reinvested in the provision of training opportunities to allow local unemployed individuals entry into the construction industry (currently a total of 543).

The study is part of a two year Knowledge Transfer Partnership between Fusion 21 and Liverpool John Moores University. The project is funded by the Economic and Social Research Council and the Technology Strategic Board¹. The author is using the work with the supply chain organisations as part of a doctoral study.

RESEARCH OBJECTIVES

The overall project objective is to develop an innovative procurement process framework to improve client project brief development, project cost predictions and improve the control of supply chain organisations within Fusion 21's work stream frameworks.

The project has four interlinked phases;

Phase A: A client briefing process protocol will be developed to capture the clients brief with the aim of improving project definition, management and control. During this stage an environmental assessment of Fusion 21 and its RSL clients has been completed, which assesses business strategies, senior management views and current inter-organisational systems.

Phase B: This phase will focus on procurement processes used within Fusion 21 framework organisations, in order to develop models and define organisational capability with an overarching aim of improving Fusion 21's cost management functions.

¹ Further details can be found at; <http://www.ktponline.org.uk/action/details/partnership.aspx?id=7193>.

Phase C: This phase seeks to develop a procurement approach with Fusion 21's partners which will support continuous cost management improvement. The outcome of this phase is to develop a supply chain management and improvement strategy that has performance metrics derived from resource cost data.

Phase D: The final phase embeds the validated cost models and procurement protocols within the organisation.

In order to develop a theoretical basis for the work a literature review on issues that influence information exchange and contracts was undertaken. The next section of the paper reviews some of the literature uncovered.

THEORETICAL FRAMEWORK; TRANSACTION COST ECONOMICS

Transaction cost economics has been considered in construction by a number of authors (Eccles 1981; Reve and Levitt 1984; Turner and Simister 2001; Winch 2001; Turner 2004) whose work, with the exception of (Eccles 1981) work in the USA, has been predominantly conceptual. A theoretical framework of transaction economics can assist in the understanding of the communication that exists between parties prior to the formation of a contract, the focus being on the behavioural approaches firms take to the collection of price data, the "search and informational" processes suggested by (Hodgson 1993). The relative costs of the differing governance structures is beyond the scope of this project as a method of assessing governance costs has yet to be established.

The recent conceptual work of Winch (Winch 2001) and Turner (Turner 2004) considering the relevance of transaction cost economics and the governance of construction projects provides a useful framework for the understanding of relationships between organisations, their communicative behaviour and their treatment of uncertainty¹. (Winch 2001) elaborates on Williamson's (Williamson 1996) earlier work by identifying three fundamental elements that effect organisations relationships during an exchange of a good or service across a technologically separable interface. The factors identified were contingency (which related to a transaction and includes uncertainty, frequency and asset specificity), behavioural (that include bounded rationality, learning and opportunism) and context.

Williamson (Williamson 1983) identified that goods and services can be produced more efficiently if parties invest in transaction specific assets, which cannot easily be put to other uses if the buyer/seller relationship breaks down. These assets can include human capacity specificity (development of knowledge or skills), physical asset specificity (development of specialist equipment), site or location specificity (location), dedicated capacity (to protect from surge) or brand name (this can relate to franchises), temporal specificity that has been identified as being similar to sequential interdependence. The value of the transaction specific asset depends on the continued existence of the buyer/seller relationship; consequently one party that hasn't invested in the relationship may appropriate value by using the asset in another context. This

¹ Construction price and cost information are considered in this study as transaction specific assets between contracting organisations and their supply chain organisations. Construction price information is communicated *ex ante* from the supply chain organisation to the contractor who considers this information as cost information for onward communication to a client. Supply chain cost information is considered as the costs of the supply chain resources net of on-costs of overheads, profit and contingency.

means that if the investor is unsure as to the safety of the value yielded from the relationship, the investment may not be made. Winch (Winch 2001) suggested that the most appropriate choice of governance mode occupies a three dimensional space as a function of contingency factors i.e. learning (related to frequency), asset specificity (related to opportunism) and uncertainty (related to bounded rationality). The operationalisation of this framework was not completed and the work remained abstract. When it was applied in a project context he suggested that projects start with very high levels of uncertainty at inception until the completion of the project when all the information concerning the project is assembled and embodied within the project. Winch identified that this can be considered as similar to Porter's value chain (Porter 1985) that identified both vertical and horizontal dimensions.

Project organisations can be viewed as temporary organisations (Cherns and Bryant 1984; Turner and Simister 2001) via which a client assembles resources and motivates them to achieve an objective. In complex systems such as construction, clients tend to interact with multiple actors and although it has been suggested that (Winch 2001) their "line of visibility" is deeper than that in manufacturing, it could be suggested that their line of influence is not. (Winch 2001) argues that contracts are written to:

"specify authority systems to facilitate change, provide incentive systems to motivate project actors, use administrative systems to handle uncertainties, provide conflict resolution procedures."

It has been suggested that the only way of economising on transaction costs in construction is to increase the contractor's economic incentive to cooperate. This could be done through procurement arrangement, lengthening relationships, sharing risks in alliance agreements, increasing the importance of reputation and cooperative skills in relation to price in procurement.

There are a range of governance structures (Williamson 1996) that influence the transactions of organisations, these range from the open spot markets through simple, complex contracts, relational contracting to vertical integration. Turner (Turner and Simister 2001) used these parameters to develop a three dimensional schema of reward, risk and safeguard to analyse contract types in their ability to align client and contractor objectives by providing incentives. They identified that, as uncertainty was an unavoidable aspect of contracting that incentive intensity, adaptiveness and reliance on monitoring could be considered as dimensions of a schema that could be used to analyse the governance mechanism.

Each governance mechanism has strengths and weaknesses, reliance on open markets has been identified as providing the most incentive to maximise the net value by economising on the units of production, however the low asset specificity means that the seller can be easily replaced and results in low levels of trust. Contracts provide protection to both buyer and seller, however as they are incomplete, parties may pursue potential gains through opportunistic behaviour. In this case, more complex governance mechanisms can be used to manage the uncertainty, settle disputes and adapt to new conditions. As identified earlier, the optimum governance structure is impossible to determine however the asset specificity of a selling organisation may help to understand the relationship that exists between it and the buying organisation.

Transaction costs are also seen to be affected by four key concepts, bounded rationality, opportunism, asset specificity and informational asymmetry (Hobbs 1996).

Information Asymmetry

Information asymmetry refers to a situation where one party has more knowledge in a transaction. (Lee and Whang 2000) This creates an imbalance of power in transactions in the supply chain. For example, within a supply chain the manufacturer may have superior knowledge on product quality, production capacity, and delivery lead-time. Whereas, the retailer will have greater knowledge of demand within the market. If neither party share this information it can lead to inefficiencies in decision making, inventory control, increased lead times and an increase in costs due to disputes. (Simchi-Levi and Kaminsky 2000). Further, consequences include loss of trust, dysfunctional relationships and opportunistic behaviour, even when the best processes, technology and training are in place.

Many of the discussions around supply chains and inter-organisational systems are based on the principle that information is freely available and shared equally among partners. However, within the construction industry the level of shared information is low.

It is generally accepted within the construction industry that by improving the availability of appropriate information, uncertainty and inefficiency will be reduced (Sheombar 1997). But traditional business relationships have thrived on making money on information asymmetry. Unless there is positive proof that sharing information is equally beneficial to all members of the supply chain, it will be difficult to convince supply chain members to share information.

A key component for the success of a supply chain is the mutual agreement and trust of each of the parties together with alignment of business strategies and commitment among the organisation for long term business cooperation.

Information Sharing

Construction information contains a range of decisions over the total life cycle of the project. But much of this information is lost through ad-hoc decision making and recording processes leading to information asymmetry between supply chain partners. Information sharing is an important component of co-operation and trust within supply chains. Information sharing can sometimes require the release of sensitive and strategic information to third parties at the risk of opportunistic behaviour. The release and sharing of information can therefore pose to be a rather challenging task, requiring a high degree of trust and commitment among the supply chain members is required. Supply chain members are often reluctant to share information across the supply chain for many different reasons: their competitive edge might be sacrificed; sensitive information may be leaked to competitors.

Even more significant are the cost savings that can be achieved through the automation of the procurement process and integration of a company's systems, lower administration costs, streamlined approval processes.

There are currently two streams of research in information sharing. The first being the value of information sharing, how it is measured and analysing the factors influencing the value of information sharing. Currently, there has not been any research on information sharing within Social housing supply chains. The second approach tends to be related to how information is shared through the use of supporting systems and tools.

This project will be adopting the first approach in assessing the important of information sharing and its impact on cost control, performance and monitoring services. The next section of the paper considers the method used for next phase of the project.

Pilot Study

Twelve interviews are to be carried out with a selected work stream in order to explore how the transactional factors identified earlier e.g. of opportunism, asset specificity and uncertainty affect barriers to information transfer across the supply chain. Twelve plumbing organisations have been selected for this first phase and the interviews are currently being carried out. The interviews are to be transcribed and the content to be analysed. The data analysis will form the basis of the further paper.

CONCLUSION

This paper has introduced a KTP project that is being undertaken with a supply chain management organisation and Liverpool John Moores University. The aim of the project is to seek to capture more detailed information from RSL supply chain organisations and then to use such information to improve project price predictability, develop a better understanding of the consequences of design decision and to allow for supply chain benchmarks to be developed.

An introduction to social housing and procurement has been given and also a description of the environment within which the project is undertaken has been given. The paper has identified a theoretical framework that is based on transaction economics in order to provide a structure for data gathering from supply chain organisations.

The project has commenced by investigating the type of information held within the supply chain and the potential barriers of sharing this information. Improving the exchange of information is seen to have the followings benefits, including the ability to screen and compare products, prices, sources, availability and substitutes, reduced negotiation costs, greater price transparency (making it easier to see how prices for the same product may vary based on geographic region, size of order, or relationship). Decision making becomes more informed and quicker whilst transaction costs are reduced, thus added further value through the supply chain.

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