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The Implementation of UK Procurement Policy in University Refurbishment Projects

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Abstract:

The Higher Education (HE) sector's deliverable has social, economic and environmental implications. The construction industry has a positive role to play, in assisting the sector to achieve desired outcomes, in relation to these implications. Since the formation of Her Majesty's (HM) coalition government in the UK in 2010, there have been a number of reports and strategies published, concerning efficiency and procurement in the construction industry. Such reports include HM Treasury's 2011 Construction Strategy, which sets out a model for construction procurement in the public sector. It is important to both the University Institutions, as well as HM's UK Government that the recommendations are implemented. The Government has a significant role, through the 'Higher Education Funding Council for England', to ensure it receives perceived value, when providing funding. This paper explores the 2011 construction strategy, and its associated documents. The reports are then related to a case study, which is an organisation providing teaching, research and other services within the North West of England. Data is collected with a pragmatic philosophical viewpoint from qualitative data, in the form of interviews, document analysis and participant observation. The findings of the research, form part of an on-going research project into collaboration. The research's value is in relating the government's agenda for improvement, to a sector, that due to recent reform has become more aligned with the private sector. The findings identify, that the case study is already moving towards the methods of best practice, identified in the strategy and associated documents. However, further support will be required from the Cabinet Office, to achieve full compliance, including integrated procurement, in smaller university organisations.

Keywords:

Retrofit, Carbon Reduction, Procurement, University Institutions

Introduction

The UK Government's commitment to carbon reduction is seen in the Climate Change Act 2008. In Section 1(1), found in Part 1 of the Act, the secretary of state is put under a duty to reduce the UK carbon account by 80%, from 1990 levels by the year 2050. For the year of 2020, a reduction of 34% is required. There is an agenda to reduce carbon transfers to Universities, through funding requirements, set by central government (Universities UK; GuildHE; HEFCE, 2010, p. 7). As such, universities require their supply chains to collaborate, in order to implement carbon savings in a time of austerity. This collaboration with the supply chain is undertaken at project, and organisational level. In addition, Universities collaborate amongst each other, at inter-organisational level. An advanced form of collaboration is where

business activities are amalgamated between organisations, to reduce repetition and receive economies of scale. Amalgamated services may be facilitated through third party organisations, such as the Cabinet Office. This paper empirically relates the UK Government's contemporary agenda for collaboration, to a case study in the higher education sector. The psychological reasons 'why' practitioners collaborate is not explored.

Contextual Information

Project Collaboration

The implementation of collaboration at project level is explored in detail by Crowe and Fortune (2012). The paper is an inductive study into collaborative contractual behaviour, in the Higher Education Sector. The data is collected from interviews, obtained from three directors of supplier organisations, providing services to the higher education sector. During the interviews, the participants explored their understanding of collaboration, while reflecting on practice. Project level collaborative features emerging from the work, include: integration of supply chain knowledge into design; integration of other stakeholders; lessons learned meetings; procurement route; contractor selection; and incentivisation. Procurement included pre-construction involvement of contracting organisations. In addition, the pre and post contract integration of the contractor's knowledge in design is considered. There are similarities in the data with the Cabinet Office's 2011 Construction Strategy, which are not explored in the work.

The integration of supply chain and stakeholders knowledge, into design is a requirement set out in the construction standards, which are expected to be adopted by all government funded clients (Cabinet Office, 2011, p. 8). In the construction standards (Cabinet Office, 2012a), it is stated that procurement routes should be limited to those that support integrated team working. Types of procurement listed, include that associated to the Private Finance Initiative; Design and Build; and Prime Contracting. Further clarity in relation to procurement routes is provided in Cabinet Office's Construction Trial Project report (Cabinet Office, 2012b). The methods identified by the report include Cost Led Procurement, Integrated Project Insurance, Two Stage Open Book and centralised procurement.

In Crowe and Fortune (2012) one inhibitor to collaboration, is identified as competitive tendering. The procurement model of integrated project insurance, relates to where a client invites suppliers to compete, for the delivery of a project. In the model there is a step away from competitive tendering, towards a two stage approach. The team works up the scheme in line with a budget, which is checked against benchmarks. Cost overruns are financed through Integrated project Insurance. During a presentation at the CUBE in Manchester in March 2012, the Construction Category Head of the Cabinet Office's Efficiency & Reform Group related this form of procurement to the PPC 2000 (ACA, 2008) form of contract. PPC stands for Project Partnering Contract. The multi-party contract is entered into by both constructors and consultants, and represents a paradigm shift in contractual relationships.

There are mechanisms within construction contracts that are associated to collaboration. One identified in the Strategy (2011, p. 13), as required in construction contracts is fair payment. Support for the ethos of fair payment also emerges from the

2009 Construction Act. Although they are not identified as mandatory, the strategy makes reference to project bank accounts. In relation to health and safety, a mechanism is set out in Section 3.5 (Cabinet Office, 2012a, p. 10) of the standards. This section specifies that clauses are to be included in contracts, providing that regular visitors to site should demonstrate their health and safety competence through such a scheme as CSCS. In addition, the standards state that contractors undertaking construction should be registered with a site management and/or good neighbour scheme, such as the Considerate Constructors Scheme.

The construction standards also set out mechanisms associated to project management which include value management, value engineering and whole life cycle costing (Cabinet Office, 2012a, p. 6). Section 2.4 of the standards sets out that value management should be undertaken to consider economic, environmental and social costs. This is in line with recent Legislation for Contracting Authorities, namely the Public Services (Social Value) Act 2012. This act applies to all Universities that receive more than 50% of their funding from public sources, as provided in Section 3(1)(W) of the Public Contracts Regulations 2006. The 2012 Act sets out under Section 1(3), an authority must consider “how what is proposed to be procured might improve the economic, social and environmental well-being of the relevant area”. This act legislates against contractors being selected based on lowest price only.

Other Legislation that promotes collaboration is the Health and Safety at Work Act 1974. The CDM regulations are made under authority of this act. Section 5 and 6 of the regulations specifically require cooperation. The Approved Code of Practice (ACoP) supports the CDM regulations, and is referred to in the Standards (Cabinet Office, 2012a, p. 7). In the ACoP, (HSE, 2007, p. 16) it provides that “clients should seek to appoint those who can assist with design considerations at the earliest opportunity so that they can make a full contribution to risk reduction during planning stages”. This statement is made among others in relation to contractors. Therefore, it can be seen that collaborative behaviour is required in order to be compliant, with the ethos emerging from legislation. In the case of health and safety, there is a requirement for early contractor involvement in design.

Organisational Collaboration

Universities have an organisational viewpoint, which becomes evident when applying for funding from the Higher Education Funding Council for England (HEFCE). In the proposed submission form for HEFCE’s Investment Framework, there is a requirement for an organisational or institutional viewpoint. The strategic viewpoint includes for the condition of the estate; space efficiency; carbon reduction; environmental performance; affordability; and institutional sustainability. To achieve the organisational viewpoint on these matters, there is a requirement to have an element of collaboration, between those that procure and construct building works. The organisational collaboration may be set out in a practice and procedures manual, to be implemented on a project by project basis.

Standardised procedures can be implemented in the form of a framework. Crowe and Fortune (2012) identify that frameworks are used to facilitate inter-organisation communication between supply chain partners, which provide similar services, in relation to health, safety and cost. In addition, competition is identified as being an inhibitor to the transfer of cost knowledge. In the procurement models set out in the

strategy (Cabinet Office, 2011), there is a move away from traditional competition with the integrated project insurance and two stage open book models.

The two stage open book and cost led procurement models, presented in the strategy (Cabinet Office, 2011), involve the use of a framework. The cost led procurement approach, involves a client putting in place a team of an integrated supply chain, which includes constructors and consultants. This integrated approach is similar to that currently the case, with the Management Agent Contracts used on the Highways, and the NHS's Procure21+ model. Under the cost led procurement approach, contractors able to deliver the scheme within the cost ceiling are selected based on a score. The score is derived at by examining the tendering organisation and its staff, representing a deviation from traditional competitive tendering methods. The two stage open book approach selects contractors in a similar fashion to the cost led approach, with the formation of the contract sum using open book methods.

Standard procedures may set out how different systems inter-operate, to provide an overall deliverable. Inter-operation of systems, however, brings with it an element of risk (McAdam, 2010, p. 3). Where data is transferred between systems manually, it creates work for practitioners, and brings with it risks associated to human error. The logical way to overcome this risk is through the use of a single consolidated electronic system, to manage the required deliverable, for the purposes of funding, governance and management of the organisation. The consolidated system also needs to manage the procurement process including contract administration. A similar consolidated system to be used at project level is explored by Bew and Underwood (2009) and Bew and Richards (2008). The suggestion in this paper is to extend the idea, from use at project to organisational level.

Inter-organisation Collaboration

Public sector funding is provided to universities, through the Department for Business Innovation and Skills, which sets the grant that is awarded to The Higher Education Funding Council for England (HEFCE). HEFCE in turn provides capital expenditure to the institutions, through the Capital Investment Fund 2 (HEFCE, 2011). Capital funding is provided in relation to learning and teaching (£49million); and research (£549million). As part of the funding requirements, inter-organisational data is provided from Universities to HEFCE. The Strategy (Cabinet Office, 2011) sets out that government's agenda for inter-organisational sharing of data, for example that in relation to 'Benchmarking' and the 'Construction Pipeline'. The sharing of data allows inter-department approach by central government, when managing supplier relationships.

The Strategy (Cabinet Office, 2011, p. 8) provides that supply chains will be developed through the use of forward programmes. The Cabinet Office provides data in the Construction Pipeline for larger projects, a small number of which relate to University buildings, in comparison to their overall population. A more accurate assessment could be made through the data provided from HEFCE. In addition, the new models for construction procurement require the inter-organisational sharing of benchmarking data. The Cabinet Office has started to collect this data from governmental departments (Cabinet Office, 2012c). If universities are to use the new models of procurement, they will also need to share data on an inter-organisational basis. For example a University may only construct one student accommodation

building every 10 years, as such would not have the internal benchmark data, within their organisation.

In addition to data, practice is shared on an inter-organisation basis. In relation to Universities shared practice is evident in work undertaken by Association of University Directors of Estates (AUDE) and the Cabinet Office. AUDE is a professional network. Shared practice is also identified in the Strategy (Cabinet Office, 2011, pp. 13-15), in relation to the standardisation of contracts and frameworks. In relation to frameworks, where bespoke forms of qualification are used, it is identified in the Standards that the supply chain can incur nugatory costs. To overcome this issue a standard form of pre-qualification is produced by BSi, namely PAS 91:2010. The standard form of questionnaire included within the document, provides clients with the health and safety performance information, as required by the Standards (Cabinet Office, 2012a, p. 8).

Integrated Procurement

Bakker, Walker, Schotanus, & Harland (2008) relate collaborative procurement to different organisational forms. The data for the study is collected from 33 explorative interviews, and government agency reports published in the UK. The reports include that by the 'Office of the Deputy Prime Minister', 'Beecham', the 'Audit Commission', and the 'NHS Purchasing and Supply Agency'. The research identifies professional networks, which can be related to inter-organisational collaboration. In addition, third party advisory, third party purchasing and shared services are identified, which represent full procurement integration.

The review of frameworks to reduce duplication is identified in the Strategy (Cabinet Office, 2011, p. 15). Fully integrated procurement is where organisations share services, in order to reduce duplication and enjoy economies in scale. Centralised procurement is seen as a model in the Construction Trail Projects report (Cabinet Office, 2012b). Central frameworks identified in the report include that for Modular Buildings; Building Materials; Project Management and Full Design Team Services; Estates Professional Services; and Environmental Sustainability. A local Authority example is the Greater Manchester Combined Authority.

A truly integrated system would be similar in nature to that described by Bew and Underwood (2009) and Bew and Richards (2008) in the form of iBIM; with all data stored remotely. Under a fully integrated system different institutions would have full and open access to each other's data from a shared server, for the purposes of procurement, design and estates management. Professionals working for different Universities would be able to access designs for similar buildings, and supply chains through a shared system.

Research Methods

Literature is used to develop a Taxonomy for Collaboration. The Taxonomy is then related to a single University organisation, herein referred to as 'the case study'. Data is collected during a period where the researcher worked within the case study, and as such the research involves participant observation. Data is collected from field notes and interviews undertaken in 2011/12. There is a focus on an Interview of the Assistant Director of Estates (ADE). Thematic analysis is employed to interpret the data. The study provides an empirical representation and as such a reflexivity journal

was not employed. There is no attempt to understand the meanings behind the interview data. In the context of this research, to understand ‘why’ people collaborate.

To ensure the validity of the data, a strategy provided by Robson (2002, p. 174) has been employed, which includes: prolonged involvement of the participant observer; triangulation of the data; peer debriefing through publication; checking of transcripts by interviewees; and audit trail during data collection. Other data includes that provided in the form of standard documents published by the organisation including policy documents. It also includes the data explored during the contextual section of this paper. The data is provided in such a way to protect confidentiality.

The case study is partially selected on a pragmatic basis, in that the researcher was working within the organisation. The case study was also selected based on its broad contribution to teaching and research. A 2010/11 review published by the case study identifies that 25% percent of its income originates from funding council grants; 31% tuition fees and educational contracts; 24% research grants and contracts; 18% operating income; and 2% from endowment and investments. It can be seen that that the organization is funded in such a way that it could not be described as strictly public or private sector. The organisation undertakes a broad spectrum of projects. A project, herein referred to as ‘the project’, is selected from within the organisation as a further focus within the case study. The selection was made on the basis that it fits a profile of a retrofit project, associated to the carbon reduction agenda. The projects final account sum fell between £800thousand and £1million.

Data

Project Collaboration

ADE identified that “the way that this organisation approaches the formal contract situation is we would much rather work in a partnering type environment and leave the contract behind”. The project was let using the Joint Contracts Tribunal’s (JCT’s) Standard Building Contract without Quantities 2005 revision 2. This suite of contracts does not include the collaborative features, included its 2011 suite of contracts. There are minimal amendments to the contract, in accordance with the case studies procedures manual, discussed later in the paper. In contrast, when discussing the overall institution, ADE indicated that “in the last couple of years” there had been a “move to D&B” by the organisation; and on a recent couple of “projects we’ve novated the architect and novated the M&E”.

The project was procured in four phases. The design included in the tender was phase one works, which on completion represented 15% of the final account sum. The two other phases were included in the contract as provisional sums, in which the main contractor priced for overheads, profit and preliminaries; these phases were tendered to sub-contractors after start on site. The main contract had been let between the parties prior to start on site. Three of the phases were in the contract prior to construction; and an additional fourth phase was added during construction.

The work was undertaken in a live environment within a listed building. Parts of the design could not be undertaken, until elements of the building fabric were opened up. The use of a two stage tendering approach allowed for design integration, even though a design and build approach was not undertaken. To integrate operation into the design and construction of the project, a representative of the building operators

attended regular project team meetings. ADE supported this stance, by recognising the importance of a building operator's involvement. The building operator was a different department than that of estates within the case study. Methods to promote operational integration not considered for the purposes of the project included the use of 'design, build and operate' and 'private finance initiative' forms of contract.

There was no formal process of risk management at project level. Instead risk was managed at an informal level. ADE identified that risk management is "about good judgement rather than the hard output of a risk register". In addition there was no formal life cycle costing undertaken by the design team. Perhaps this was due, as identified by ADE, to lifecycle costing being "not something that's been effective in the whole business case of having a project approved". The project was however undertaken to offer energy savings over the life cycle of the estate. In addition, there was no formal change management process used on the project. ADE indicated that formal change management is not used for projects with a value of less than £1million.

Organisational Collaboration

The organisation undertakes an estate wide viewpoint which can be seen in its estates strategy. In the strategy there is a commitment to health and safety; space efficiency; functional suitability; carbon reduction; and institutional sustainability. The commitment is confirmed by the organisation, meeting the requirements of Capital Investment Fund 2, as indicated by HEFCE. ADE also indicated that he had been "tasked with looking into understanding what the carbon impact is both from an embedded carbon and operational perspective".

The case study's estates department operates procedures manual for use within its sub-department, which undertakes construction professional services for projects up to the value of £2.5million. The sub-department is herein referred to as PSU. There is a separate part of the organisation that deals with major projects. The procedures manual sets out a process where contractors are selected from a framework to tender. The project case study was procured using a framework by PSU. Contractors are then selected, on the return of a compliant tender, typically based on cost. ADE indicates "it's not something we would then start a Dutch auction about". The procedures manual does cover for the eventuality of where contractors are selected, on a basis other than cost.

The institution provides consultants with access to an electronic system where members of the design team can find guidance. The online system also provides access to standard documents including preliminaries and contract conditions. The contract conditions provided are the minor works, intermediate and standard (without quantities) forms of contract, of JCT's 2011 suite. Within the minor works and intermediate forms there is the option for design portions. The 2011 suite is a later edition than that used in the project, due to timescales in procurement. Minimal amendments are made to the standard forms of contract. The use of standard contracts with minimal amendments for construction works, is an inter-organisational approach to working, using a third party, namely the JCT. In contrast the form of consultants' appointment is indicated by the case study's Contracts Governance Policy, as being bespoke.

The project's contract is traditional and lump sum; there is no inclusion for financial incentivisation, in respect of shared savings. ADE identified that at project level "we would not be offering financial incentives" with it being "more about repeat work".

The contract includes a mechanism to withhold retention, but not for the provision of a bond. It is left open to be decided, on a project to project basis, by the manual if the items included in the eighth recital of the 2011 suite apply. These items associated collaboration include: collaborative working; health and safety; cost savings and value improvements; sustainable development and environmental considerations; performance indicators and monitoring; and notification of disputes.

On the project, the mechanical and electrical sub-contractors were selected to tender, from a tender list, owned and managed by the University. In the case of where a trade was not on a tender list, a list was created and agreed between the contractor and the consultants. ADE indicated that in the past, sub-contractor selection was made from a university managed sub-contractor framework, however, decided that now “it’s more advantages to have contractors use their own supply chain arrangements”. ADE further indicated that now “the University does not manage relationships with suppliers, local or otherwise”.

When discussing collaboration ADE identified that “the softer side is more about generating those relationships at a senior level away from the site team, away from the consulting team”. The University uses frameworks to develop relationships. ADE confirmed this when indicating that “there’s a high level framework meeting where all the directors and contractors are invited to on a quarterly basis”. A similar scenario was also presented for consultants. The market nature of the UK Economy, however, means suppliers that work for the University also work for other Universities; creating an informal pathway for the inter-organisational sharing of knowledge.

The information was prepared for the project to either level 0 or early level 1, of Bew and Richards 2008 BIM Evolutionary model. All drawings were presented in 2D. ADE indicated that the University did not have an implementation plan for BIM. There was not a formal process to share information between the project and other similar projects within the organisation, for example, for the purposes of costing. However, consultants and employees on the project were also involved with other projects within the University allowing data to be shared informally.

On the project there was no attempt to review performance in relation to a project review meeting or key performance indicators (KPIs). It is however noted, that a performance review meeting has been attended by the researcher, on a different project for the organisation. The review was undertaken in a qualitative, interpretive fashion using reflective practice to form lessons learned. In respect of harder data ADE indicated that “we don’t have key outputs in terms of KPIs hard data metrics”.

Inter-Organisational Collaboration

An inter-organisational approach is where two or more Universities come together for the purposes of developing their supply chain. The institution undertakes an inter-organisational view point. ADE indicated on one occasion that he had offered to help a smaller university, which had not taken up the offer. The case study is a member of AUDE, which is an organisation set up to assist inter-organisational collaboration, during the strategic planning, management, operation and development of HE estates and facilities; doing this through provision of management tools, conferences, discussion forums and training events for members. AUDE provides the forum for informal relationships to be formed. ADE indicated that such informal relationships

are particularly useful with other professionals undertaking the same role within other universities.

Integrated Procurement

Integrated procurement is where two or more organisations come together to procure the services of a supply chain. AUDE identifies the North Western Universities Consortium, which operates in the same location as the case study. The web site of the consortium indicates that the case study is not a member. ADE did indicate however that “We’re just tendering our waste contract as a shared service”. In addition to undertake procurement through a third party organisation it may also be undertaken through shared staff. ADE indicated that the case study undertook limited sharing of staff.

ADE identified that the University has in relation to consultants “moved away from an internal framework arrangement to using OGC, which is a framework arrangement”. The OGC is an abbreviation for Office of Government Commerce. The OGC’s buying solutions is at the time of publishing this paper named the ‘Government Procurement Office’, which is an executive agency of the Cabinet Office. In contrast to this integrated method of working, ADE indicated the organisation had recently started their “own contractor framework for projects up to the OJEU threshold”.

Data Reconciliation with Literature

Data Reconciliation Documents that outline the UK Government strategy to procurement of construction services are explored and related to literature in the contextual information section. The discussion is then used to develop a taxonomy for collaboration in Table 1. There are four progressive levels identified in the table. The items are then ticked or crossed depending on whether that form of collaboration operated within the case study.

Conclusion

The current coalition government in the UK, is attempting to implement a rigid approach, to procurement in relation to construction projects, undertaken using the public purse. Universities are funded in a fragmented way that includes both public and private sector finance. The balance of funding has been shifted away from the public sector towards the private sector. This makes it less clear cut than other bodies, which receive a much larger proportion of their funding from governmental departments. The current mechanism for government to promote compliance with its objectives is through gateways to funding. These gateways are available to be developed further if the current procurement strategy is to be implemented within the organisations. Alternatively the new routes to procurement may be promoted thorough the demonstration and promotion of best practice, and what this can offer to organisations

The significant contribution to capital expenditure, from the public purse creates a requirement for central government to adopt an approach to procurement, within University organisations. The governmental approach is implemented through the Cabinet Office, which has published a series of strategies and reports; a significant report being the 2011 Construction Strategy. The strategy outlines in its executive

summary that it intends to replace adversarial with collaborative ways of working, through the use of model for procurement. Collaborative features considered in the strategy include those at project, organisational level, which includes a radical rethink on the contractual relationship between public sector clients and the supply chain. More time and further research is required to understand the full implication of collaborative practice, in respect of project and organisational level risks.

The biggest step however is the implementation of collaborative features at inter-organisational and integrated levels. There is interest in inter-organisational cooperation as can be seen in the case study. There is also interest in collaboration at an integrated level, which is also seen in the case study. To fully achieve integrated collaboration further research work is required in relation to both the communication software and infrastructure. Further research is also required into the motivation to implement such a system.

Table 1: Taxonomy for Collaboration

Level	Collaboration	Characteristics
1	Project	<ul style="list-style-type: none"> a. Legislation compliance ✓ b. Considerate contractors ✓ c. CSCS ✓ d. Value Engineering/ Management ✓ e. Open book tendering ✓ f. Dispute ladders ✓ g. Change management ✓ h. Design Integration ✓ i. BIM Level 1 ✗ j. Incentivisation ✓ k. Target cost ✓ l. Integrated Project insurance ✗ m. Life cycle costing ✗
2	Organisational	<ul style="list-style-type: none"> a. Practice and Procedures Manual ✓ b. BIM Level 2 ✗ c. Performance Review ✗ d. Estate Strategy ✓ e. Fair payment strategies ✓ f. Project Bank Accounts ✗ g. Frameworks ✓ h. Consolidated software ✗ i. HEFCE CIF Compliant Estate strategy ✓
3	Inter-organisational	<ul style="list-style-type: none"> a. Benchmarking ✗ b. Standardised contracts not amended ✓ c. Standard frameworks ✓ d. Professional Networks ✓
4	Integrated	<ul style="list-style-type: none"> a. Shared data storage with open access for all institutions ✗ b. Shared services ✓

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