

# ACHIEVING WHOLE-LIFE VALUE: THE CHALLENGES OF SERVICE-LED CONSTRUCTION

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Major construction clients are increasingly looking to procure built facilities on the basis of added value, rather than capital cost. Recent advances in the procurement of construction projects have emphasized a whole-life value approach to meeting the client's objectives, with strategies put in place to encourage long-term commitment and through-life service provision. Construction firms are therefore increasingly required to take on responsibility for the operation and maintenance of the construction project on the client's behalf – with the emphasis on value and service. This inevitably throws up a host of challenges, not the least of which is the need for construction firms to manage and accommodate the new emphasis on service. Indeed, these 'service-led' projects represent a new realm of construction projects where the rationale for the project is driven by client's objectives with some aspect of service provision. This vision of downstream service delivery increases the number of stakeholders, adds to project complexity and challenges deeply-ingrained working practices. Ultimately it presents a major challenge for the construction sector. This paper sets out to unravel some of the many implications that this change brings with it. It draws upon ongoing research investigating how construction firms can adapt to a more service-orientated built environment and add value in project-based environments. The conclusions lay bare the challenges that firms face when trying to compete on the basis of added-value and service delivery. In particular, how it affects deeply-ingrained working practices and established relationships in the sector.

Keywords: whole-life value, service-led, construction firm.

## INTRODUCTION

In the UK, academics, industry champions and policy setters have for quite some time now been advocating the need to 're-value' construction (e.g. NAO 2001; Pearce 2002; Barrett 2005). Supporting arguments embrace design, production and facilities management and emphasize the need for the construction sector to shift its attention away from product delivery towards the satisfaction of clients' needs (Saxon 2002). In a recent highly publicized report (Constructing Excellence 2009:4) the authors go as far as stating.

“We believe that an essential step is for suppliers, clients and Government to adopt a new vision for the industry based on the concept of the built environment. This means understanding how value is created over the whole life cycle of an asset, rather than simply looking at the building cost, which is only a part of the total equation.”.

To achieve this they argue that.

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“We need to abandon our existing business models that reward short-term thinking. Instead, we should incentivize suppliers to deliver quality and sustainability by taking a stake in the long-term performance of a built asset.” (ibid.).

This call for construction companies to refocus firm orientation, become involved at an earlier stage and add services to their traditional core product business echoes the recommendations made in a number of high profile publications (e.g. Saxon 2005; ASCE 2007). This vision of creating value over the whole life cycle of an asset could be argued to provide a radically different context where the whole rationale for construction is driven by the client’s business strategy and objectives for a new or enhanced service to its customers. The changes called for increase the number of stakeholders, add to project complexity and challenges deeply-ingrained working practices. It follows that these changes present a major challenge for the sector.

The aim of this paper is to illuminate and bring into context current calls for firms in the construction sector to add value to clients and unravel the many implications of the increased emphasis of long term commitment and service provision. It takes as its point of departure not only the strong exhortations for change made by industry commentators, but also the very real trend of major construction clients looking to procure built facilities on the basis of added value, rather than capital cost. An initial touchstone is therefore the increasing emphasis given to whole-life considerations and to the service dimensions of projects in the public sector domain (e.g. Highways Agency 2005). Attention is then drawn to how projects in this emerging commercial landscape increasingly are becoming service-driven. The second part of the paper positions these changes against the broader literature on services and the ‘servitization of manufacturing’. In many respects, the ideas of adding value and service-led construction have emerged in parallel with broader trends in manufacturing at large. Particular insights are gained by examining the drivers for these changes in manufacturing and considering the seemingly widely held belief that that moving from product delivery to the provision of integrated bundles of products and services requires a significant transformation in the ways that firms are organized (e.g. Galbraith 2002; Sawhney *et al.* 2004; Auguste *et al.* 2006). The third part of the paper highlights and discusses the challenges that construction firms, and equally importantly their clients, face when trying to compete on the basis of added-value and service delivery. In particular, how it affects deeply-ingrained working practices and established relationships in the sector. The paper concludes with reflections on the types of empirical and theoretical inquiries necessary to further our understanding of firm behaviour in this emerging commercial landscape.

## **CHANGES IN THE CONSTRUCTION PROCUREMENT LANDSCAPE**

The UK construction sector has never had the best reputation for meeting its clients’ expectations and change and reform in the sector has been a central concern of the UK Government and large clients for some considerable time (cf. Murray and Langford 2003; Fernie *et al.* 2006). Increasingly voices have been raised rallying for the need of the sector to operate on the basis of adding value for customers and society rather than focusing on cost efficiency (e.g. Pearce 2002; Saxon 2005; Constructing Excellence 2009; CBI 2010). In a recent publication ‘Procuring in a downturn’ the Confederation of British Industry (CBI) concludes that.

"Now more than ever procurers must look to strategies that will help to maximize the value they can extract from their construction partners... Such strategies are

characterized by early engagement, good dialogue, trust and cooperation. They can take the form of frameworks and partnerships to deliver complex workstreams, or come together to facilitate one-off projects" (CBI 2010:1).

These conclusions are very much in line with, and indeed are a logical continuation of, numerous reports, reviews and guidelines on public sector procurement (e.g. OGC 1999; HM Treasury 2000; NAO 2001; CBE 2004).

In practice, public client organizations are increasingly being asked to do more for less, i.e. produce more public value with fewer resources (House of Commons Treasury Committee 2007). Public sector clients, and client organizations in regulated markets, have in the past been restricted in their ability to issue long-term contracts due to the centrally imposed need for frequent market testing. This is now gradually changing and to meet these demands private organizations are increasingly being involved in the provision of public goods and services<sup>1</sup> (cf. Grimshaw *et al.* 2002). Indeed, it could be argued that this involvement through various frameworks and partnerships has changed the role of public sector clients as employers and service providers (*ibid.*). The progressive privatization of highway maintenance capabilities has, for example, affected the way in which both the Highways Agency and Local Authorities procure construction work. The Highways Agency has over the last decade introduced a succession of procurement initiatives, such as Managing Agent Contractor (MAC) and Extended Managing Agent Contractor (EMAC) with associated framework agreements in order to facilitate a service-orientated engagement between public and private sectors (Highways Agency 2005). In a more recent procurement strategy the Highways Agency profess continued dedication to maximizing the scope for delivering value and remain committed to long-term collaborative arrangements (Highways Agency 2009). During the same period Local Authorities (LAs) have been subjected to several directives and initiatives such as 'best value', 'whole government accounting', 'comprehensive spending review' and 'comprehensive performance assessment' leading many LAs to progressively externalize their 'direct service organizations' and adopt framework approaches (e.g. Hampshire County Council 2010). Indeed, frameworks and partnering type arrangements are considered to be one of the most significant tools that authorities are adopting to get better products for a lower cost in construction procurement (Communities and Local Government 2008). Framework agreements are argued to offer numerous benefits in comparison to Compulsive Competitive Tendering (CCT) to deliver sustained ongoing improvements, including: reduced transaction costs (tendering costs), continuous improvement with longer-term relationships, better value and more appropriate customer solutions.

Other areas where the move towards an increase in long-term service oriented contracts and use of framework agreements is clearly noticeable are power and water utilities. In these markets major investment in upgrading and developing assets is increasingly procured through long-term collaborative contracts. For example, in power generation and distribution the main bulk of the National Grid's major investment in upgrading and developing the electricity transmission network is procured through long-term collaborative contracts (National Grid 2009).

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<sup>1</sup> In addition, it could be argued that the emerging importance of whole life considerations and service dimension of projects in the realm of public sector is accelerated by the current environmental, financial and security challenges (HM Treasury 2007; 2008).

The trend towards increased emphasis on service is also noticeable in the major capital projects that are procured through the Private Finance Initiative (PFI). Whilst whole-life considerations and extended contractual undertakings have been an integral part of the PFI discourse since its inception in 1992 it is only recently that service-delivery and means of benchmarking and market testing the services provided has come to the forefront of PFI procurement (NAO 2007). Service provision is now central to PFI projects across most sectors and the projects are increasingly becoming service driven. The proportional division of costs between capital works and operations in recent PFI infrastructure projects now differ significantly from earlier DBFO road projects (Highways Agency 2010). Similar developments have taken place in other PFI markets. In the housing sector emphasis in the design of PFI schemes is shifting from improving and maintaining social housing stock towards the creation of sustainable communities and services to the local communities (cf. CLG 2008). Thus, projects are scoped to include up-front capital works and long term associated services and go beyond delivering affordable rented homes in the aspiration of transforming local authority housing estates and neighbourhoods. Likewise in the educational sector the 'Building Schools for the Future' programme was put in place not solely as a financing route for new school buildings, but as a vehicle that ensures that schools are provided that allow for educational transformation (4Ps 2008).

## **THE SERVITIZATION OF MANUFACTURING**

Significant change has taken place in manufacturing over the past three decades. The abandoning of integrated hierarchies in firms and replacing command economies with contractual relations, notably as in outsourcing to external providers of activities that used to be performed in-house, has transformed the industry. Manufacturing principles have changed radically. Some industries have completely or partially ceased to exist and other more specialized 'high-value' processes or completely new industries have come to replace them. Furthermore, with greater technological advancement, traditional boundaries are disappearing and the convergence of resources and technologies have allowed for significant changes in how services are being designed and delivered.

Traditionally manufacturing organizations have considered services as necessary after-sale add-ons to their core product portfolio. Services such as installation, maintenance and repair have therefore generally been viewed as complementary to selling products (Bowen *et al.* 1990). Increasingly, however, manufacturing firms are developing service business streams to complement traditional product portfolios (Wise and Baumgartner 1999; Oliva and Kallenberg 2003). These firms are progressively moving towards offering customer-focused combinations (or 'bundles') of goods, services, support, self-service and knowledge (Vandermerwe and Rada 1988; Slack 2005). These developments have in recent years been given considerable attention in a variety of academic circles, with distinct literatures to match. There is for example the 'environmental sustainability' literature which focuses on product service systems (PSS) (e.g. Morelli 2002; Mont 2002); the US influenced 'customer solution' literature (e.g. Galbraith 2002; Sawhney *et al.* 2004); the UK influenced literature on 'integrated solutions' (e.g. Davies 2004; Hobday *et al.* 2005); the marketing literature (Windahl and Lakemond 2006; Cova and Salle 2007); and the more project based literature on 'service-led projects' (e.g. Alderman *et al.* 2002; Ivory *et al.* 2006).

The contemporary view, in common for all these literature sets, is that such a move towards more extensive provision of services is a necessity to remain competitive in the current marketplace (Foote *et al.* 2001; Tukker and van Halen 2003; Gebauer and Friedli 2005; Jacob and Ulaga 2008). Several persuasive arguments are put forward for that the ‘servitization of business’ (Vandermerwe and Rada 1988) is a worthwhile endeavour and necessary in order to achieve new growth and profitability (Wise and Baumgartner 1999). Especially common are arguments that the generation of service revenues from an installed asset base can act as a buffer against fluctuating demand cycles (Windahl 2004), and that service provision can provide a sustainable source of competitive advantage (Oliva and Kallenberg 2003; Tukker and van Halen 2003).

Much of the literature takes a supplier perspective, focusing on how the supply side is responding to perceived client pressure in changing supplier behaviour. Customers are portrayed as becoming increasingly demanding due to changes in their own commercial environments. In particular, they are depicted as refocusing on core activities and hence outsourcing capabilities which they previously maintained in-house. (cf. Cova and Salle 2007). But there are also a number of sources which argue that manufacturing companies will be forced into providing more integrated product and service offerings on the basis of the sustainability agenda. This is particularly the case with the literature on product service systems (see for example: Manzini and Vezolli 2002; Mont 2002). Indeed, a substantial part of the original PSS literature has its origins in the environmental sciences and is heavily influenced by notions of sustainability (e.g. Manzini and Vezolli 2002; Morelli 2002; Tukker and van Halen 2003; Mont 2004).

## DISCUSSION AND IMPLICATIONS

As mentioned above the ideas of adding value and service-led construction have, in many respects, emerged in parallel with broader trends within manufacturing at large. Much of our current theoretical understanding of these issues is developed from research conducted in the wider manufacturing arena. As such it is worth considering that the literature on servitization of manufacturing is replete with descriptions of how firms have transformed or are in the process of transforming almost every aspect of the way they do business; i.e. strategies, positions in the value stream, capabilities, organizational structures, cultures and mindsets. Firms are departing traditional ways of working and are adapting necessary organizational structures and processes (Mathieu 2001; Oliva and Kallenburg 2003; Brady *et al.* 2005; Gebauer and Fleisch 2007). Yet, this is by no means a trivial task and several sources suggest that firms frequently struggle in their structural re-alignment of internal in this endeavour (e.g. Hobday *et al.* 2005; Baines *et al.* 2009; Raja *et al.* 2010). Indeed it seems blatantly obvious that such transitions are not straightforward.

It would, however, be erroneous to suggest that the construction sector simply follows established trends elsewhere and that ideas and solutions could simple be transferred across contexts. Models and prescriptions derived from manufacturing are useful in forming theoretical propositions, but can hardly be directly applied to explain or predict organizational behaviour in construction. Thus, it is worth considering the changes that a move towards procuring on the basis of whole-life value and the increasing importance given to service in construction brings with them.

Fundamentally, the long-term nature of the service delivery requirements combined with the added risks associated with the extended timeframes and future business environments place new demands on clients and suppliers alike. This raises the

question of how firms and project organizations best organize to accommodate the new emphasis on service. It seems eminently clear that most firms, regardless of size and specialization, will have to acquire new capabilities or at the very least develop their present skill sets. Similarly, it goes without saying that adapting to more service-orientated business models puts existing contractual arrangements to the test. However, such changes need to be contextualized and investigated in relation to the larger portfolio of activities of the public and private sector organizations. In this scenario two key areas are deserving of research in order to further our understanding. The first is how construction firms manage and protect the expertise and working relationships that support their excellence in specialized niches and secure their positions in more traditional markets, while realizing their remit in more 'collaborative' and service-driven environments. The second is the extent to which organizational and structural changes in the supply chain are met by equivalent changes within client organizations.

The literature is fairly consistent in stating that the success of any attempt to re-organize the firm towards the service provision is highly dependent on the current organizational capabilities and the ability to hone these and acquire those that might be missing. What is sometimes forgotten is that a prime difficulty that will be encountered is that personnel not only have to learn new ways of working, they also have to unlearn old ways of working. Such difficulties are exacerbated by the need of flexibility and the possibility of having to transfer staff between the contexts in response to fluctuations in workload. Furthermore, most large construction companies would need to display different capabilities in different business contexts, often simultaneously. In essence, most firms will have to find a balance between the traditional strengths, which have been successful in the past, and the necessity to develop new capabilities. In other words, firms need to serve the needs of existing customers whilst striving to develop new market opportunities (Leiringer *et al.* 2009). In addition, firms frequently comprise multiple business units, each of which has very different orientations towards products and services. Different business units have vested interests in existing ways of working and changes inevitably upset the status quo. Thus, any shift must be understood not only from a company as a single entity but also from the point of view of the distinct operating divisions of which it is constituted (Leiringer *et al.* 2009; Leiringer and Schweber 2010). Some will already have the necessary capabilities to provide additional services within the organization. Others might choose to develop them in-house or alternatively to obtain them externally through acquisition.

Hence, it is clear that simplistic models of centralized homogeneous firms, working in a single institutional environment, are not suited for research targeting service-led construction (cf. Leiringer and Schweber 2010). Rather there is a need to shift the emphasis from viewing firms as unitary entities and instead capture the dynamics of decentralized firms working in multiple markets on a variety of projects, some of which are service driven. This line of inquiry will lead to a more practical and nuanced understanding of intra-organizational dynamics throughout the project life-cycle. It could also, in turn, lead to a greater appreciation of the working relationships between different organizations at different stages of service-led projects as well as frameworks.

That personnel not only have to learn new ways of working, but also unlearn old ways of working is equally significant from the client organization perspective. This issue is all too often forgotten in the servitization literature. It seems to be assumed that clients

will quite simply develop the required capabilities and mechanisms to efficiently procure value adding service enhanced products. Similarly, in construction, client organizations have been asked to buy into the change agenda (cf. Fernie *et al.* 2006) and invest in new approaches to construction procurement on the basis that they are more than capable to change the way they do things. It is worth remembering, however, that progress towards collaborative working in achieving added-value in the past has been curtailed by a lack of trust between public and private sectors (cf. Leiringer *et al.* 2009), and compulsory competitive tendering has remained a central plank of policy. The processes, routines and ethos of framework procurement will at least partially challenge those associated with this more conventional approach to procurement. So too will long term service driven projects that are not renegotiable at regular short term intervals. The underpinning philosophy is that service-focused operations should be relational, not transactional, and that focus should be on the execution or delivery of a functional result in a manner that is convenient and reliable to the client organization. As such, it is likely that new contractual and relational capabilities will have to be developed within the client organization and the roles of individuals will all need to change. Removing people from the comfort of established roles and instituting new ways of working requires retraining and reorientation and learning mechanisms need to be put into place. Thus, to summarize, whilst persuasive arguments readily are put forward for substantive changes in organizational structures and procedures in order to better project performance in the supply side, deeply embedded routines and practices in the client organization are likely to negate their realization; at least in the short term.

## CONCLUDING REMARKS

Fundamental to the above discussion is that industry practices do not develop independently of governing institutional structures. The broader institutional context in which the change is to take place and the structural characteristics of the sector in question combine to form unique localized challenges for all involved and also form the process and content of academic work. The research challenge is to unravel the myriad of practices contained in terms such as ‘adding value’ and ‘service delivery’, as realized in projects, situated in complex, yet specific environments. And to explore the tensions which participation in frameworks and service-led projects pose for the involved parties and establish the different ways in which these can be managed at intra- and inter-organizational levels. The current research agenda therefore needs to be expanded. This would entail a partial merging of research agendas across public and private sector research with increased emphasis on the consequences of policy implementation for the interplay between public and private interests. More empirical research is needed in order to further our understanding of how public and private organizations align their interests; how organizational behaviour is shaped by the interaction between clients and suppliers; and how client and supplier interests merge and diverge over time. From this perspective the crucial insight offered is that organizational and structural changes in the supply side have to be mirrored by similar changes amongst clients.

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