

Chapter 7

Electronic Procurement in the Construction Industry

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ABSTRACT

The benefits of e-business have been widely promoted but the Architecture, Engineering, and Construction (AEC) sector has lagged behind other sectors in the adoption of e-procurement. The prospective benefits for the AEC sector are suggested by the proven advantages of general e-procurement where adoption has been faster and deeper. However, several studies indicated that barely 20% of documentation is tendered electronically, suggesting there are barriers to e-procurement. In order to promote adoption of e-procurement in the AEC sector, it is important to establish the status of the industry and identify the drivers as well as barriers to e-procurement. This chapter provides a detailed discussion of the state of the industry and its drivers and barriers while ranking these according to its importance. It acts as a reference guide to allow those implementing e-procurement in construction to make informed decisions as to where to focus their efforts to achieve successful realisation incorporating the benefits and avoiding the pitfalls in the process. The chapter also provides some insight into the current state, trends, and future directions of e-procurement in the construction industry.

DOI: 10.4018/978-1-4666-2665-2.ch007

INTRODUCTION

E-business is defined as the application of Information Communication Technologies (ICT) to business activities and processes. The applications of e-business are too numerous to mention and are dealt with in other chapters of this book. However, one of the business processes that can gain significant benefit from the adoption of ICT is procurement. The construction industry is one such sector with a significant procurement component and in most countries contributes between 8-10% of the Gross Domestic Product (GDP). Therefore it can benefit from the substantial efficiency saving that e-procurement is purported to bring.

National Procurement Strategy for Local Government (2003) defined procurement as

the process of acquiring goods, works, and services, covering both acquisitions from third parties and from in-house providers. The process spans the whole life cycle from identification of needs, through to the end of a services contract or the end of the useful life of an asset. It involves options appraisal and the critical 'make or buy' decision.

The increased use of the Internet offers greater opportunity for e-Procurement, which can offer viable electronic alternatives to traditional paper-based processes. Rowlinson and McDermott (1999) define procurement for construction as “the acquisition of project resources for the realization of a constructed facility.” The procurement process not only incorporates the buying of goods and services but is also a strategic actor within the construction process. The UK public sector has created a plethora of initiatives to explore methods of improving the strategy and processes of procurement over the last 12 years starting with the Modernising Government White Paper (1999) (Cabinet Office, 1999). This will be further developed and discussed later in the chapter indicating their impact on the construction industry.

General procurement actions can be clustered and defined in three different ways: indirect procurement, direct procurement and sourcing (Minahan & Degan, 2001). Indirect procurement comprises selecting, buying and management of supplies for daily operation of an organisation. In the construction industry, examples of indirect procurement are the office supplies, facilities management aspects of schemes and construction related computer software packages. Direct procurement is occasionally called supply chain management and involves purchasing goods and organising activities to manufacture a completed product or products. Construction industry examples include the purchase of materials, plant and labour services. According to Kim and Shunk (2003), sourcing pertains equally to indirect and direct procurement and is in the form of a four phase models (information, negotiation, settlement, and after-sales). In construction, project sourcing normally takes place on behalf of a client through the tender process. Tendering involves the first three stages of this model. Contractors' sources vary through a variety of means such as on-line catalogues and mini tenders.

One of the issues relating to procurement that has been identified as improving the process is electronic procurement. All of the above types of procurement in construction can be carried out electronically. E-Procurement is defined as “the use of electronic technologies to streamline and enable procurement activities” (Hawking, et al., 2004, p. 5). Rankin (2006) provides a fuller definition of e-procurement as the business-to-business purchase and sale of products and services by electronic means (today primarily using the Internet). E-Procurement improves numerous facets of the procurement process and therefore has great potential to improve public sector procurement.

One of promoted benefits of e-business generally is that it has been seen to promote sustainable use of energy (European Commission, 2010a). E-procurement (an application within e-business)

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