E-COMMERCE APPLICATION FOR CONSTRUCTION MATERIAL PROCUREMENT

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Abstract
This paper first identifies problems related to information retrieval, recording, and sharing in the traditional material procurement process. It then introduces current E-commerce applications and identifies those areas of E-commerce applications that can improve the efficiency and effectiveness of the material procurement process. Finally, it presents a design and implementation of an E-commerce application for construction material procurement.

Keywords
E-commerce, Web, electronic catalogue, bidding system, material procurement.

INTRODUCTION

The value of materials necessary for purchase and use in any construction contract makes up a large proportion of the total contract sum. Typically, materials account for 40-45% of the cost of all construction work (Andrew et al., 1998). Maintaining an efficient and effective material procurement system and being able to get materials at the right price, quality and time are essential for a contractor to survive in a competitive environment.

The emergence of Internet technology allows information to be shared and exchanged through a common global network in a cheap and efficient manner. Companies are now conducting their business using Web-based E-commerce systems. Many believe that E-commerce can provide a win-win situation for both suppliers and buyers, as it provides an expanded marketplace within which buyers and suppliers can communicate directly with each other. Online construction trading markets are not limited by the physical dimensions of store spaces, and can carry a much larger variety of products and different styles and sizes. At the same time, buyers can search through a wide range of products with low transaction costs at any time. More importantly, the direct communication between buyers and suppliers will cut off the multiple layers of intermediaries. These intermediaries take commissions and fees from both buyers and suppliers. The use of E-commerce will therefore directly benefit the buyers so they can efficiently purchase cheaper products with a variety of choices (Bakos 1991).

This paper presents an application of E-commerce for construction material procurement. The first part identifies some problems relating to information retrieval, recording, and sharing in the traditional material procurement process. The second part introduces current E-commerce applications and identifies those areas that can improve the efficiency and effectiveness of the material procurement process. Finally, the design and implementation of an E-commerce system for construction material procurement of trading construction materials in China is described.