

Chapter 10

English Auction Issues in Mobile E-Commerce

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ABSTRACT

Advances in electronic-commerce (e-commerce) have resulted in significant progress towards strategies, requirements, and development of e-commerce applications. With the increasing number of e-commerce services over mobile devices, there are certain issues to be resolved before the deployment of complete mobile e-commerce (m-commerce). The various kinds of issues that can be generally classified in mobile e-commerce are technological (network, client, software, etc.) and application (user interface, security, etc.) issues and in particular the issues in auctioning process are classified into service discovery, customization, closing price prediction, and bidding categories.

Recently, agent technology is playing a dominant role in the field of artificial intelligence (AI), distributed computing, and Internet commerce. Agents are set to represent on behalf of customers and vendors in m-commerce to resolve the various issues in the near future. This chapter presents the various issues in m-commerce including issues in English auctions as the major focus that needs to be tackled to make m-commerce successful in the coming years. It provides solutions to some of the challenges by employing cognitive agents. It also presents architectures, techniques, and surveys of the auctioning process in mobile e-commerce.

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INTRODUCTION

Electronic commerce continues to see phenomenal growth. The belief is that emerging wireless and mobile networks will provide new avenues for growth by creating new opportunities in e-commerce. The exponential growth of wireless and mobile networks has brought vast changes in mobile devices, middleware development, standards and network implementation and user acceptance (Franz, 2008). However, constraints of both mobile networks and devices influence their operational performance. Mobile e-commerce is an evolving area of e-commerce, where users can interact with the service providers, through a mobile and wireless telecommunication network with monetary benefits especially via the Internet (Muller, 2002). It offers services and applications that can be adopted through different wireless and mobile networks with the aid of smart handheld devices.

The convergence of e-commerce, wireless and mobile networks, and Internet technologies have now emerged as mobile e-commerce, popularly known as m-commerce/mobile commerce. It exploits the advantages of Internet, mobile computing, and mobile communications in order to provide a large number of advanced services to mobile users. The proliferation of Internet-enabled mobile devices have created an extraordinary opportunity for e-commerce to leverage the benefits of mobility due to which mobile e-commerce is gaining popularity (Sunilkumar, 2003; Oliphant, 2002).

Some of the mobile e-commerce services (Oliver, 2007) include intelligent service directory, smart business meeting scheduler, mobile shopping (e.g., Mr. Aryans software agent books a flight from a PDA, then reserves a rental car and a restaurant on his arrival), location sensitive information (e.g., obtaining map services, local hotels, and weather information), on-line auctions

supporting mobile bidders to bid ubiquitously, telemetry (e.g., receiving traffic updates and logistics tracking), mobile banking (e.g., billing of services, buying stocks, and contacting banks through mobile devices), and so forth.

The objectives of this chapter include the following: (1) To describe the framework, characteristics, applications, and auctions in mobile e-commerce. (2) To bring out the various issues in mobile e-commerce including issues in English auctions as the major focus of this chapter. (3) Necessity of Automation of the auctioning process as a solution to some of the pressing issues. (4) To present a survey of some research works done in English auctioning process in mobile e-commerce.

This section presents framework, characteristics and applications of mobile e-commerce. The framework (Franz, 2008) of mobile e-commerce consists of six pillars on e-commerce base. The six pillars that bridge e-commerce and mobile e-commerce are electronic information, relationship, transactions, wireless infrastructure, asynchronous communication, and automation. The characteristics of mobile e-commerce are ubiquity, convenience, instant connectivity, personalization, localization, automation, adaptation, intelligence, security, and time sensitivity. Mobile e-commerce applications can be broadly categorized as communication, information, entertainment, and commerce applications.

MOBILE E-COMMERCE

Mobile e-commerce is an evolving area of e-commerce, where users can interact with service providers, through a mobile and wireless telecommunication network with monetary benefits, especially via Internet. This section covers characteristics, frame work, applications, auctions, and issues in mobile e-commerce.

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