

# Public Sector E-Commerce

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## INTRODUCTION

Electronic commerce or e-commerce has the potential to streamline existing functions and services in the public sector by reducing transaction costs or the cost of doing business. This article provides an overview of some of the critical e-commerce issues for the public sector focusing on its impact on reducing transaction costs.

## BACKGROUND

E-commerce in the public sector has been defined as any process or transaction conducted by a government organization over a computer-mediated network that transfers ownership of or rights to use, goods, services, or information (Stowers, 2001). Public sector e-commerce has also been defined as the subset of e-government involving the exchange of money for goods and services purchased over the Internet by citizens and businesses (Reddick, 2005). The main aspect that defines e-commerce is transactions between government and citizens or businesses involving the exchange of money. Therefore, e-commerce is the use of the Internet and the Web to transact business. More formally, e-commerce is digitally enabled commercial transactions between and among organizations and individuals (Reddick, 2004b).

Generally speaking, one definition of electronic government or e-government refers to the use of technology, particularly Web-based Internet applications, to enhance the access to and delivery of government information and services to citizens, business, partners, employees, other agencies, and entities (GAO, 2001). E-commerce is a subset of e-government, is more restrictive in that it focuses on government transactions over the Internet. E-commerce is one way for government to reduce transaction costs and hence save budgetary resources, an especially critical function in fiscally restrained governments as witnessed by some of the transactional services offered online.

## E-COMMERCE TRANSACTIONS

Survey data on the U.S. state government use of e-government was compiled by this author and was taken

from the Center for Digital Government (2003) (Table 1). The 2002 data indicates that the top five most popular online services were job searches (done by 48 states), unclaimed property searches (46 states), college admissions (45 states), legislative tracking (45 states), and personal tax filing (43 states). Other interesting observations were that driver's license renewals were done in eight states and auto registration renewals were provided in 18 states. Therefore, many of the top services involve information searches such as online job searches and unclaimed property search.

The results in Table 1 indicate that e-government has changed the traditional way of advertising for a government job. It has also made it much easier for citizens to locate lost property. The college admissions process has been streamlined because of the Internet. In terms of e-commerce and transactions being completed online, filing personal taxes, for instance, was done in almost all of the states. This article focuses on the development of transaction-based e-commerce, since e-commerce is not possible unless there is a transaction between two parties over the Internet. A model of e-government adoption can be used to explain the evolution of e-commerce.

There are several stages of e-government growth. In the first stage, there is the cataloging of information on government Web sites (Layne & Lee, 2001). In this stage, there is no interaction with the citizen or business, just the presentation of downloadable forms or Web content for users. Most governments are in this stage of development because they have their own government Web sites disseminating information to the public. However, e-commerce is not prevalent in this stage because there are no transactions taking place between the user of the government Web site and the agency providing information or services.

The second stage is the transaction phase (Layne & Lee, 2001). There is some initial evidence in the United States suggesting that e-government has entered the transaction-based phase of e-government adoption (Edmiston, 2003; Holden, Norris, & Fletcher, 2003; Layne & Lee, 2001; Reddick, 2004a; Reddick, 2004b; Reddick, 2005; Wang & Rubin, 2004; West, 2004). This phase is where e-commerce comes to life. Governments make available working databases that support online transactions such as renewing a driver's license or filing taxes (Table 1). As a result of putting live databases online, govern-

Table 1. Top 35 U.S. state government online services. Ranking of services in 2002 (0 to 50 scale) (Compiled from data from the Center for Digital Government, 2003)

Ranking of Service	Online Services	Number of States offering these Online Services	Ranking of Service	Online Services (continued)	Number of States offering these Online Services
1	Online Job Search	48	19	UI Filing and Payment	17
2	Unclaimed Property Search	46	20	Retirement Benefits	15
3	College Admissions	45	21	Contractor Look Up	14
4	Legislation Tracking	45	22	Personal Property Tax Payments	13
5	Personal Tax Filing	43	23	UCC Filings	12
6	Court Decisions Look Up	34	24	Social Service Directory	9
7	Sex Offender Look Up	33	25	Driver's License Renewal	8
8	Business License Look Up	32	26	Adoption Services	7
9	Vital Records	31	27	Corp. Biennial Reports	7
10	Business Tax Filing	30	28	Criminal History Lookup	6
11	Professional License Look UP	30	29	Motor Vehicle Citation Payments	6
12	Fishing and Hunting Licenses	28	30	Vanity Plates	6
13	List of Active Contracts	27	31	Auto Licensing	5
14	Apply as a state employee	23	32	Child Support Payments	4
15	Park Reservations	22	33	Lobbyist Registration	4
16	Renew Professional Licenses	22	34	Court Filings	2
17	Auto Registration Renewal	18	35	Online Voter Registration	2
18	Business Registration	18			

Note: UCC = Uniform Commercial Code; Top five e-commerce services in bold

ments can cut back on staffing offices since citizens and businesses now have the option of going online for selected services. There is, of course, still the problem of the digital divide where certain groups, such as minorities, elderly, low income, and those with disabilities do not have as much access to the Internet or are not as Web savvy, although this gap is shrinking over time (U.S. Department of Commerce, 2002). Besides the important issue of the digital divide, this article examines transaction costs theory and its impact on e-commerce adoption.

## TRANSACTION COSTS THEORY

One of the reasons for the adoption of information technology, and especially the Internet, is the reduction of transaction costs. Information technology helps government decrease in size because it can reduce transaction

costs—the costs incurred when government buys on the marketplace what it cannot make for itself (Fountain, 2001; Laudon & Laudon, 2003; Thurmaier & Chen, 2005; Williamson, 1985). The principle idea of transaction cost theory in its application to e-commerce is that governments incur transaction costs when they conduct business. Simply stated transaction costs are the costs of making an economic exchange. The costs in government transactions include search and information costs, bargaining costs, and policing and enforcement costs (Thurmaier & Chen, 2005).

Information technology with the aid the Internet can also reduce internal management costs. According to the agency theory, the government can be viewed as a “nexus of contracts” among self-interested individuals rather than a unified entity (Horn, 1995). In this theory, a principal (e.g., departmental manager) employs “agents” (employees) to perform work on his or her behalf, however,

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