

## Chapter 4.14

# Decision Factors for the Adoption of an Online Payment System by Customers

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### ABSTRACT

Along with the exponential increase in online business transactions, the online payment system has gained in popularity because vendors and creditors realize its growing importance as a foundation to improve their information infrastructure and to achieve “paperless” operating efficiency. However, due to per se different characteristics among customers and Web-systems, both sides’ perspectives and technology factors could cause a significant level of variation in customers’ acceptance of online payment methods. Our research involving 148 subjects who participated in a field survey examined the impact of a series of possible decision factors including perceived risk, perceived benefits, vendor’s system features, and customers’ characteristics on the intention to use an online payment system by customers. Some

significant associations are observed and their implications are discussed.

### INTRODUCTION

It is estimated that by 2006, approximately 68.7% of U.S. residents will be using the Internet. This is complemented by the fact that there has been a growth of 115.5% in Internet use between 2000 and 2005 (Internet World Stats, 2006). Also, eMarketer’s (2005) report estimated that U.S. e-commerce retail sales would rise from \$56 billion in 2003 to \$84.5 billion in 2005, growing at above 20% annually, and that number will further grow to \$139 billion by 2008, significantly outpacing traditional retail commerce spending over the next couple of years. This e-commerce growth has provided the impetus and opportunities for tradi-

tional business processes (e.g., sales, marketing, payments, collection, financing, and investing) to transfer online. Consequently, the online payment method has become more popular, as it has been increasingly important for financial sectors to improve their information infrastructure (Lee & Cata, 2005). Online payment, also addressed as an electronic payment or an Internet payment, is defined as “an electronic payment made via a Web browser for goods and services using credit or debit cards” (Bitpipe, 2006). Compared with traditional payment methods such as pay-by-check, pay-by-phone, or wire transfer, online payment is considered more time- and cost-efficient, convenient, and flexible for customers and businesses (Sorkin, 2001; Yu, His, & Kuo, 2002). However, customers can differ and Web-based systems can vary in terms of services and features offered, perhaps leading to a significant level of variation in the intention to use online payment systems. What makes e-customers more widely accept online payment methods? What should e-vendors focus on to accelerate such a technology acceptance process? Our study thus focuses on the impact of these decision factors on the adoption of an online payment system by customers, with a framework exploring how the adoption factors drive or impede customers to accept online payment systems.

Recent empirical studies have investigated the impact of key factors on the customer adoption process of various e-commerce activities such as consumer shopping, entertainment, and stock trading (Eastin, 2002; Gefen, Karahanna, & Straub, 2004; Hsu & Lu, 2004; Huang, Hung, & Yen, 2004). These findings jointly suggest that individuals’ behaviors could be explained by perceived characteristics of the online transaction methods, vendors’ Web site, and product/service characteristics and customer characteristics, not only supporting but also extending the widely-accepted technology acceptance model (TAM) (Davis, 1989), which emphasizes the importance of perceived usefulness (PU) and perceived ease

of use (PEOU) on e-commerce customer decision-making. Lui and Jamieson (2003), for example, incorporate factors such as perceived trust and risk into the TAM; and Ilie, Slyke, Green, and Lou (2005) incorporate perceived relative advantages, perceived compatibility, and gender difference into the TAM framework. Yet, given that online payments are increasingly accepted in the business world, so far few published empirical studies have specifically addressed the underlying factors that could materially affect customers’ decisions to adopt online payments. Research progress in this area will help vendors make better plans regarding the replacement of traditional billing and payment tools with integrated online systems that are facilitated with modern technology.

Existing research has analyzed the assessment dimensions for a variety of electronic payment systems. According to the study by Yu et al. (2002), the systems to be assessed include online credit card payment, electronic cash, and electronic checks; and their assessment dimensions cover the technological, economic, social, institution and legal aspects. However, Yu et al. (2002) have not yet empirically estimated or tested the effects of such aspects, nor have they specified the importance of customers’ characteristics (Internet experience, age, gender, education, income level, etc.), which could strongly influence a customer’s new technology adoption (Akhter 2003; Eastin, 2002). In attempt to fill in this research gap, our study will:

1. Incorporate possible determinants that are previously summarized into an empirical research framework
2. Empirically estimate the influence of those identified determinants

The remainder of this article is organized as follows. Section 2 discusses the advantages of the online payment method and the barriers for switching to online payments. Section 3 presents a research model that illustrates proposed links

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