Chapter XVI
The Influence of Familiarity and Security on Decision Making Processes in E-Commerce:
The Role of User Experience

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ABSTRACT

E-commerce can enhance its acceptance among users through fostering online trust, which is vital for decision-making process. The perception and computation of trust is crucial for vendors and users for the success of e-commerce. The calculation and measurement of trust antecedent involves complex aspect such as presence of security controls and familiarity within the Web site. Most companies are acquiring "security technology" because everybody else is doing the same, but not because there has been a proper assessment of its association with trust. The purpose of this chapter is to analyze the role of trust antecedents such as security and familiarity when they are used collectively to do online transactions. Trust, in general, is an important factor in conducting e-transactions, which revolve around uncertainty and ambiguity. The fuzzy logic approach provides a means for coping with this uncertainty and vagueness that are present in e-commerce. Therefore, the fuzzy logic approach has been deployed to develop scales to measure the effects of users' familiarity and perception of security in an online business-to-consumer (B2C) context. This research provides guidelines to vendors on how they could ascertain the trust level of their business and ways of mitigate the negative impact on the trust level.

INTRODUCTION

E-commerce has already demonstrated its great benefits for both consumers and vendors. As time goes on, cheaper access to the Internet and the increasing involvement of mobile devices will yield more potential online customers. Online transactions in e-commerce can occur without any

prior human contact or established interpersonal relationships. This lack of interpersonal trust creates a circumstance for a **security** risk. The responsibility is upon vendors to deploy appropriate use of technologies to reduce risk and foster trust, and to assist in improving customer awareness of genuine risks in order to increase their confidence in conducting online transactions.

Given that e-commerce is thriving, one may be tempted to assume that security aspects must have been addressed, and that the resulting environment is a trusted one. Unfortunately, however, the evidence suggests that as the use of e-commerce increases, so does the number of users who are encountering problems with it. Lacohee (2006) mentioned in their research that consumers repeatedly reported that they believe it is impossible to guarantee that electronic transactions or electronically held data can be secure against increasingly innovative forms of attack.

The Internet Fraud Complaints Center (2005) reported they received 231,493 complaint submissions in 2005 in respect of **e-commerce** fraud. This is an 11.6% increase over 2004 when 207,449 complaints were received. These filings were composed of fraudulent and non-fraudulent complaints primarily related to the Internet. These complaints were composed of many online activities such as auction fraud, non-delivery, and credit card fraud, as well as non-fraudulent complaints such as computer intrusions, spam/unsolicited e-mail, and child pornography (Figure 1). It is reported by IC3 that over 91.5% of all complaints were related to the Internet or online service.

The chart in Figure 1 has shown that fraud has found an opportunity to flourish within the Internet environment. In Figure 1, Internet auction fraud was by far the most reported offense, comprising 62.7% of referred fraud complaints. This represents an 11.9% decrease from the 2004 levels of auction fraud reported to Internet Crime Report (IC3). In addition, during 2005, the non-delivery of merchandise and/or payment represented 15.7% of complaints (down 0.1% from 2004), and credit and debit card fraud made up an additional 6.8% of complaints, which was up 25.9% from 2004 levels. Check fraud, investment fraud, and computer fraud complaints represented 5.4% of all remaining complaints. Other confidence fraud, identity theft, financial institutions fraud, and child pornography complaints together represented less than 2.5% of all complaints

The literature on **trust** can be quite confusing because the term is being used with a variety of meanings (Jøsang et al., 2007). According to them, trust can be interpreted as the reliability of something or somebody. Trust is the subjective probability by which an individual, A, expects

Figure 1. Top ten IC3 complaint categories