Chapter IX

Electronic Payment Systems: An Empirical Investigation of Customer and Merchant Requirements

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INTRODUCTION

The advantages of electronic trading are numerous, with benefits for both users and merchants. However, for electronic trading to reach its full potential, factors such as ease of use and improving customer confidence will have to be addressed in relation to many aspects of electronic business. Indeed an important stumbling block for widespread adoption of electronic trading, from a convenience perspective, is the ability to complete transactions electronically at payment and delivery stages. The delivery stage is dependent on the type of product or service, but electronic payments are possible even if many payment options are not widely used. Conventional payment instruments are not well equipped for the speed and cost effectiveness required by electronic commerce. The marketing ploy of the Internet is its ease of use and convenience. Many therefore deem it unacceptable that customers have to utilize conventional payment mechanisms due either to the complexity of existing payment systems or the customer’s fear of conducting financial payments electronically.

Many would argue that the most important stakeholders are customers and merchants. This stems from the fact that unless these stakeholders accept and use a system, the financial institutions and developers will have no reason to implement the system. The objective of this chapter is to investigate customer and merchant requirements for electronic payment systems in order to predict the types of payment systems that emerging electronic business applications will require.

**ELECTRONIC PAYMENT SYSTEMS**

Merchant site designs are moving from simply offering product information to enabling the full order process, including payment. However, in many cases payment is often completed in the traditional way using the telephone or mail to send details. Clearly this does not meet consumer needs for convenience or merchant needs for an integrated order and payment process (Europay, 1998).

Arguments for electronic payment systems can be made on many fronts. Digital money makes it possible to collect payment immediately. For example payment for electricity or phone usage can be collected every hour rather than at regular intervals (Hammond, 1996). Many firms are finding that accepting debit is less expensive than accepting cash. Firms are also attracted to electronic payment options, because consumers appear to spend more when using cards than when spending cash (Kalakota and Whinston, 1996). Also, the increased velocity of transactions that the Internet is stimulating may increase economic growth (Panurach, 1996; Hammond, 1996). Digital money gives the individual the chance to ‘level the playing field’ with the banks and major corporations. Software agents allow people to pay bills precisely when the best discount is available and choose the currency that saves most money at the time (Hammond, 1996).

Banks may also gain from making electronic money a reality because paper currency and coinage is proving increasingly expensive to handle ($60 billion annually in the U.S. for money transportation in 1996). It is also assumed that crimes related to cash would be reduced (Hammond, 1996). However, the question is, what will replace cash and what characteristics does it, will it and should it have?

In order to develop an acceptable payment system, it is imperative to identify issues that are important to stakeholders involved in the business transaction. Identifying the needs of stakeholders may be of use to developers when designing new payment mechanisms and also to businesses implementing electronic commerce solutions.

**EXISTING ELECTRONIC PAYMENT SYSTEMS**

There are five main categories of payment systems in development or operation at present: credit card payment, electronic check, electronic cash, smart cards and micro-payments. Within each of these categories, various companies have devel-
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