Chapter XIII

Electronic Money and Payment Systems

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ABSTRACT

This chapter describes the demands on any acceptable type of money or payment system and examines how well the existing electronic money and payment systems satisfy those demands. Certain weaknesses in security and performance still remain in these systems and they need to be overcome before the systems can be completely accepted. It is also not clear what kind or government regulations may be brought to bear on these systems. Even with these weaknesses and uncertainties, a variety of systems are thriving, and their details are given in this chapter.

“Electronic money is likely to spread only gradually and play a much smaller role in our economy than private currency did historically. Nonetheless, the earlier period affords certain insights into the way markets behaved when government rules were much less pervasive. Those insights, I submit, should be considered very carefully as we endeavor to understand and engage the new private currency markets of the 21st century.”


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INTRODUCTION

Some consider electronic money as “the killer application for electronic networks” that is “going to hit you where it really matters—in your wallet. It’s not only going to revolutionize the Net, it will change the global economy.” While the jury is still out for such proclamations, the interest in electronic money and payment systems has grown steadily. Even though electronic money has not yet become ubiquitous, there is enough emerging evidence that the use of electronic money is growing and sometime in the distant future, electronic money may replace money as we know it today.

The term electronic money is used in a variety of contexts. Some consider electronic money as a substitute for cash, some associate it with systems used to carry out retail transactions, and others think of it as a prepaid electronic device that can record a monetary value for use by consumers. Electronic money, in a sense, is nothing more than a collection of bits recorded in an electronic storage device. These bits represent a monetary value that a consumer may have purchased at some point of time. The consumer may use these electronic bits to make a purchase and the stored value in the device would be appropriately reduced. The use of electronic money itself is an exchange of bits between two storage devices where the ‘volume’ of bits stored in one device is reduced by the amount of the transaction and the volume in the other device is increased by the same amount.

A number of systems of electronic money are currently in operation. For example, Mondex (www.mondex.com) is a type of smart card that can be used to store money as well as carry out transactions. Other systems in use include Visa Cash (www.visa.com), and Proton (www.protonworld.com). Many of these smart cards are reloadable, i.e., these can be used as purses; money can be loaded into or taken out of these electronic purses. Typically an electronic reader, similar to those in ATMs, is used with smart cards and electronic purses to complete a transaction. Creators of these smart cards believe that these cards would replace traditional purses some day.

Electronic money, as just defined, differs from the traditional payment systems that many of us are familiar with: credit and debit cards. Access to an electronic

*Figure 1: A smart card*
An Open and Service-Oriented Architecture to Support the Automation of Learning Scenarios
www.igi-global.com/article/open-service-oriented-architecture-support/51367?camid=4v1a