

Chapter 13

Evolution, Development and Growth of Electronic Money

A. Seetharaman

Multimedia University, Malaysia

John Rudolph Raj

Multimedia University, Malaysia

ABSTRACT

Traditional cash has long been envisioned to be replaced with 'virtual' or electronic cash. Electronic money and electronic payment systems for retail transactions are commanding widespread attention. Undeniably, electronic payment cites advantages such as efficiency and convenience to the consumers. However, with the rapid change and advances in technology, has posed significant risks, related to ensuring security and integrity of electronic payment systems in today's cyber world. Therefore, this study attempts to understand the role of electronic payments for consumers, and to identify the problems and solutions in the emergence of electronic payments. This study also explores the challenges of electronic payments from a security perspective, in particular, and provides preliminary security countermeasures for each of the issues discussed. Beside that, the study also discusses further on the prospects of electronic payment systems. It is essential to put in place an integrated, overall risk-management approach to security, including independent security assessments as one of the components in the use of electronic payment products.

INTRODUCTION

Money in retail transactions is becoming electronic, transformed into information and stored on a computer chip in a plastic card or on a personal computer so that it can be transmitted over open

information systems, such as the Internet. An electronic payment is characterized as a substitute for physical currency. It is a replacement for currency like other payment mechanisms such as credit cards, checks, traveler's checks, and debit cards. Electronic payment is a direct substitute for traditional cash, where value is transferred electronically to pay for goods and services at vending

DOI: 10.4018/978-1-60960-597-1.ch013

machines, retail establishments, over networks, or through direct person-to-person exchange medium. The goal of electronic payment is to make purchasing simpler. For example, stored-value cards let consumers transfer cash value to a card. They are commonly used in public transportation, at colleges and universities, at petrol stations, and for prepaid mobile phone usage.

The potential benefits of e-money to consumers include:

- faster, more efficient transactions
- less need to carry pocket money
- loyalty and frequent user plans
- automatic personal financial record-keeping
- possible financial anonymity
- possible security from theft
- access to electronic commerce
- more personalized banking services and instruments

The potential benefits of e-money to businesses are extensive, which include:

- instant transactions
- substantial cost savings because of the reduction in the physical handling of currency
- easier collection of marketing information on customers; and promotion of 'free banking'

The explosion of electronic payment technology raises a number of security issues. Security factors are perhaps the biggest deterrent for individuals interested in making on-line purchases. Most people fear giving their credit card numbers, phone numbers or addresses not knowing who will be able to retrieve that information without their consent. It is interesting to note that most people don't even give it a second thought when purchasing items with a credit card over the phone, but to ask them to do it from the networks will make them very uncomfortable and unsecured.

From an operator's view, the cost of installing any technological infrastructure with the current equipment will need a significant financial outlay. There is always the barrier of compatibility of the methods of payment being used currently with the adaptation of a new system. Besides that, operators have to find ways and means to limit costs of using the new system than utilizing the current ones. It may be a daunting task of re-engineering the system into converting itself into the electronic money world, but undoubtedly, it is possible to do so in order to keep up with the current trend.

RESEARCH PROBLEM

The emergence of electronic payments can be expected to work just like paper money without the risk, convenience and cost associated with handling, administering and safeguarding traditional currency. It plays a key role in today's global economies. But, there are also obstacles in the widespread use of electronic payments that can slow down its growth in the marketplace. This is compounded by the fact that consumers lack confidence in the potential use of electronic payment systems.

Objectives of the Research

The objectives of the research are:

- a. To understand the role of electronic payment and analyze its related problems
- b. To identify the evolution and growth of the technologies needed for electronic payment systems.
- c. To analyze the security framework to prevent crimes and fraud and to reduce its risks.
- d. To analyze the solutions and the potential development and growth of electronic payments in the marketplace.

18 more pages are available in the full version of this document, which may be purchased using the "Add to Cart" button on the publisher's webpage:

www.igi-global.com/chapter/evolution-development-growth-electronic-money/55011

Related Content

Idea Generation in New Product Development: Roles of Innovation, Strategies, and Initiatives

Pratap Chandra Mandal (2022). *International Journal of Innovation in the Digital Economy* (pp. 1-11).

www.irma-international.org/article/idea-generation-in-new-product-development/311513

Self-Healing in Web Service-Based Systems Using QoS

Mohamed Ali Bouanaka, Kamal Hamaz, Assia Tebiband Mohamed Sandeli (2022). *International Journal of Technology Diffusion* (pp. 1-17).

www.irma-international.org/article/self-healing-in-web-service-based-systems-using-qos/306649

Digitising Standardised Educational Assessment in Africa Using Computerised Adaptive Testing: Transdisciplinary Framework for Action

Jumoke I. Oladeleand Mdutshekelwa Ndlovu (2023). *Impact of Disruptive Technologies on the Socio-Economic Development of Emerging Countries* (pp. 104-117).

www.irma-international.org/chapter/digitising-standardised-educational-assessment-in-africa-using-computerised-adaptive-testing/324826

The Influence of New Information and Communication Technologies on Transaction Costs of Micro-, Small- and, Medium-Sized Enterprises

Utz Dornberger, Luis E. Bernal Veraand Alejandro Sosa Noreña (2008). *Information Technology and Economic Development* (pp. 165-173).

www.irma-international.org/chapter/influence-new-information-communication-technologies/23517

Digital Songlines: Digitising the Arts, Culture and Heritage Landscape of Aboriginal Australia

Brett Leavy (2007). *Information Technology and Indigenous People* (pp. 159-169).

www.irma-international.org/chapter/digital-songlines-digitising-arts-culture/23549