PERGAMON International Journal of Information Management 20 (2000) 59–72

International Journal of
Information
Management

www.elsevier.com/locate/ijinfomgt

Electronic payment systems development in Thailand

Tanai Khiaonarong*

Department of Information Systems, London School of Economics, Houghton Street, London WC2A 2AE, UK

Abstract

This paper examines the creation of modern electronic payment systems in Thailand. Thailand, like other major developed and emerging economies, experienced payment systems reforms in the 1990s. The country's economic expansion, which started in the late-1980s but unexpectedly ended in the late-1990s, led to the development of three major payment systems. The central bank played a leading role, in the absence of private sector initiative, in investing, developing, enhancing and managing these systems. This included the introduction of a real-time gross settlement system, which became one of the most advanced large-value funds transfer systems in the world during its launch date. The case illustrates the experiences undertaken, in the reform of rudimentary payment systems in an emerging economy context, and the lessons may be relevant for countries facing similar stages of development. Such experiences has also raised relevant issues, including the development of laws supporting electronic payments, the providing of liquidity for payment settlements, the inclusion of risk reduction measures, the reduction of cheque float through electronic data interchange, and the management of change in payment systems. © 2000 Elsevier Science Ltd. All rights reserved.

Keywords: Electronic payment systems; Electronic data interchange; Strategic information systems; Banking strategies

1. Introduction

Payment systems are a core group of strategic information systems which contribute towards economic development, especially in emerging economies, and forms the foundation for financial sector and national information infrastructure developments (Listfield & Montes-Negret, 1994; Talero, 1997). This has become a key concern for central bank in developing countries seeking to improve national financial infrastructures and to increase their potential of becoming major financial centres.

* Corresponding author. Tel.: + 44-0171-9556045; fax: + 44-0171-9557385.
E-mail address: t.khiaonarong@lse.ac.uk (T. Khiaonarong)

PII: S0268-4012(99)00053-5

Thailand, like most developed and emerging economies, started a payment system modernisation program in the mid-1990s. Moreover, the country, like any other nation, has acquired a unique development experience in that process. This experience, which will be discussed in this paper, may be of particular relevance to countries undergoing economic reform and seeking to formulate national on-line banking strategies (Mentzas, 1994; Oppenheim & Shao, 1994).

This paper is organised into four main parts. First, the reform of payment systems in international perspective is reviewed. Second, the case of electronic payment systems development in Thailand is illustrated. Third, payment system performances, some lessons learned, and the issues raised from the development experience are discussed. And fourth, the wider implications of payment systems to other emerging economies conclude the paper.

2. Payment systems in international perspective

Payment systems play a major part in the conduct of a country's monetary policy, financial sector and economic development (Johnson, 1998; World Bank, 1990). They improve macroeconomic management, release funds from the clearing and settlement functions for more productive use, and reduce float levels, improving the control of monetary aggregates. Moreover, firms in different economic sectors use the payment system to transfer funds and to provide competitive financial services.

The principles of payment systems involve the discharge of financial obligations between two or more payment participants (Humphrey, 1995). This basically aims to provide the financial market promptness and certainty in the payment and settlement of borrowed and invested funds. In addition, it also provides consumers the convenience of time and location, the choice of payment options, and the privacy and low cost of making payments. The conceptual model of a typical payment cycle is illustrated in Fig. 1.

The payment cycle involves the transfer of funds that differ in volume and value. This excludes the use of cash because the presentment of this payment instrument between a payer and payee is considered final by principle, and does not involve clearing and settlement functions like non-cash payments. The principles for small and large value payment systems differ by the value and volume of financial transactions, originating from the payment initiator and completing at the payment receiver.

A small-value funds transfer system, also called a retail payment system, usually involves high-volume, low-value transactions. This includes the clearing and settlement of transactions conducted by cheques, GIROs, debit cards, and direct debits, and is typical among household and consumer transactions. Alternatively, a large-value funds transfer system, also called a wholesale payment system, involves low-volume, high-value transactions. This includes the timely clearing and settlement of commercial transactions conducted between businesses and the settlement of cross-bank payment positions.

The recent reform of payment systems has been influenced by two major trends. The first trend involves broad banking reforms, resulting from the deregulation and liberalisation of world financial markets (Oritani, 1990,1991). This has led to the harmonisation of large-value payment systems, particularly in foreign exchange clearing systems in the European Union (Munchau 1997; Graham, 1997). In addition, there has also been increased competition among national payment