Secure Automated Clearing House Transactions

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INTRODUCTION

U.S. society is at the precipice of a major revolution in the payments system. Given today's advancing technology, it is becoming clear to industry experts that consumers and businesses are ready for the transition to electronic movement of funds. Banks of all sizes are beginning to innovate, the Federal Reserve is encouraging transition to electronic funds as opposed to paper, and consumers are slowly getting used to the idea of safe transfer of funds electronically (Santomero, 2005). In the end, it will be the consumer who decides, and critical to the transition will be providers creating simple and secure solutions so users have confidence in the payment systems.

Among the potential barriers to such systems are the many potential security concerns that are present in today's networked world. Another phishing scheme or data breach of some sort is reported in the national media almost daily (Bellovin, 2004). But even with the security concerns, the rush to move funds electronically is akin to the Gold Rush. The decline of paper checks over the last decade, together with the increased use of debit cards over credit cards, the use of credit and debit for small food and retail purchases, and the increase in awareness of electronic movement of money through companies like PayPal through eBay, appear to suggest that the American public may be ready for the transition to electronic transfer of funds.

Security is an ongoing concern. While exact figures are extremely difficult to obtain due to a consistent lack of many organizations' willingness to disclose breaches (Computer Security Institute, 2003; Hoffer & Straub, 1989), industry estimates are that security breaches occur in 90% of organizations each year and cost $17 billion (Austin & Darby, 2003). A more recent survey found that in 2004 the total losses for 269 companies was $141 million (Computer Security Institute, 2004).

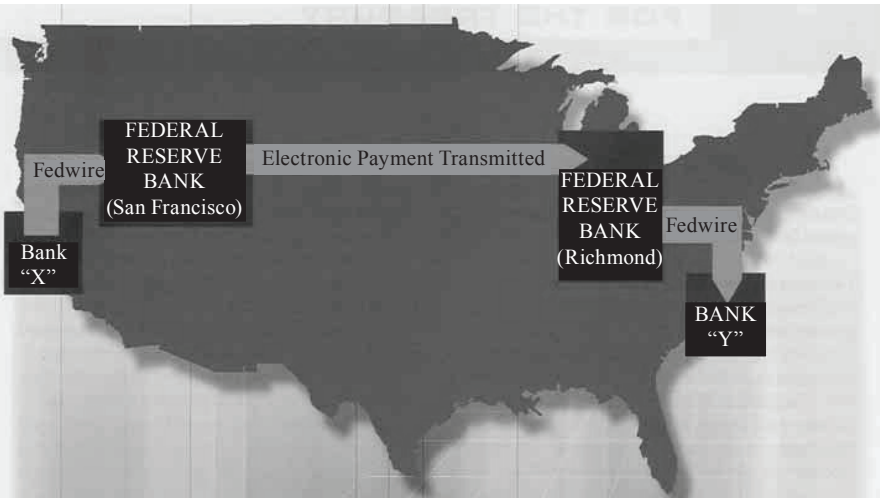
BACKGROUND OF TODAY'S PAYMENTS SYSTEMS

Consumers and businesses have long preferred to pay for goods and services with the paper check (Santomero, 2005). This method succeeded primarily because of consumers' confidence in the banking system, specifically the Federal Reserve and its ability to make good on checks at a low cost.

Since the advent in the 1950s of the credit card and the more recent widespread acceptance of the debit card (now bypassing the credit card in transaction volume), it would seem that consumers and companies are more ready than ever to accept a transition away from paper checks to different forms of electronic movement of funds (Chakravorti & Jankowski, 2005).

Because of the widespread acceptance of the use of debit and credit cards, processing of paper checks has been experiencing a steady decline since the 1990s. Research from the Philadelphia Federal Reserve Research Department found that less than 18% of U.S. households used debit cards in 1995. By 2001, nearly half of all households used them. Coincidently, as paper checks and their accompanying profits decline, the debit card allows banks to profit, as opposed to having to share revenue with the credit card companies. Using debit cards is a cheaper way for consumers to pay for goods, as they use their own funds and do not have interest charges (Santomero, 2005).

Figure 1. A cross-country electronic payment (adopted from the Federal Reserve Bank of Richmond, 2006)



Automated Clearinghouse

In the 1970s, the development of the automated clearinghouse (ACH) provided a way for banks to move funds electronically from businesses to consumers and vice versa. Banks control the ACH network, and the technology is most useful to companies processing large volumes of transactions. The ACH transaction incurs minimal costs to banks and is a cheaper way for merchants to receive payments. However, ineffective delivery to end users of the ACH product has prohibited its widespread use. It can easily be argued that electronic movement of funds via the banks and the Federal Reserve's ACH network is more secure and fraud-proof than the use of paper checks (Kandra, 2005). Figure 1 depicts how an ACH may take place.

However, confidence and convenience is the key to any payment system's acceptance. Use of paper checks is expected to decrease by 23% for consumers over the next two years (Bielski, 2006). It seemed that 2003 was a pivotal year for transition from paper to electronic movement of funds. The trend is in one direction: UP. From 2000-2003 payments by checks dropped from 57% to 45%. Automated clearinghouse transactions and debits increased from 21% to 32%. In all there were 13.8 billion more electronic transactions in 2003 than in 2000.

The National Association of Automated Clearinghouse Association tracked ACH payments from the second quarter of 2004 to the second quarter of 2005 to have increased from 2.2 billion to 2.6 billion—an 18% increase in one year. Even more intriguing is the increase in consumers using ACH as a payment vehicle. The increase of the consumers initiating a bill payment to suppliers with a debit from their account and a credit to the supplier was 38% during the same year. By 2010, the Federal Reserve expects to process only 2.5 billion checks, down from the current 40 billion (Orr, 2005).

It seems the trend is worldwide, as other nations have been in one stage or another of acceptance of electronic funds for some time. The reasons are all the same, and most experts agree that it saves time, reduces costs for paper handling, and offers flexibility (Panurach, 1996).

Security and Acceptance of Electronic Payments

Security is still considered the leading factor in building confidence today in consumers and businesses alike as they transition to electronic forms of payment. In 2005, 600,000 names and social security numbers of employees were stolen from Time Warner computer backup tapes, and information about 1.4 million customers was stolen from DSW shoe store. Even though data is becoming more traceable and quickly retrievable, fears continue (Compiled, 2005). Electronic information can be quickly identified and accountholders notified, whereas paper trails are less likely to be traceable. In any case, with identity theft and other forms of security breaches on the rise, consumers are more aware