



Chapter X

Micropayments for E-Commerce Transactions: A Solution to Credit Card Use in Thailand

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ABSTRACT

Online payments in electronic commerce (e-commerce) are usually carried out with credit cards because they are the most convenient to use. Web sites that do not accept credit cards risk losing their customers. Yet potential customers do not include only credit card holders. There are a lot of potential customers who do not have credit cards, some for cultural reasons, others because of trust implications and others because of cost. Even among those who have credit cards, some do not buy online just because they do not feel that the system is secure enough to give away their credit card information over web pages. More importantly perhaps, credit card payments are not suitable for small-value purchases due to their high-incurred overheads to merchants.

This research project presents an alternative concept and the resultant advantages of an online payment system known as “Micropayments.” A model named “NEZcard,” which resulted from requirements gathering survey, is proposed. The NEZcard model takes into account the factors of convenience, anonymity, security, and continuity of use.

INTRODUCTION

Electronic payments (or e-payment) have become a vital part of e-commerce and the emerging realm of e-business. However, in Thailand very few web sites accept payments online. The only online payment method available for Thai e-commerce merchants is credit cards. The problem in this is that not everyone owns a credit card in Thailand and there is also a serious antipathy towards using credits cards online because of mistrust and potential fraud.

The obstacles for e-commerce payments in Thailand are based on the following assumptions:

- Merchants find it difficult to enlarge their customer base. People who own credit cards usually abandon their purchases when they find that the vendor does not accept credit cards.
- People who do not own credit cards find it too troublesome to buy online but rather pay offline, e.g. at a 7-11 store where the goods have been sent for collection and payment, or they just go to the nearest shopping centers and physically buy the goods.

These two extremes leave the e-commerce environment in Thailand with large gap between expectations and deliverables that need to be filled by some payment methods. These methods should be as convenient as using credit cards, as anonymous as using cash, and secure.

Micropayments have been discussed by many researchers. Rivest and Shamir (1996) invented *Payword* and *Micromint*. Both schemes relied on hash calculation to produce unique chains of “tokens” or “coins”. Chi (1997) worked on evaluation and comparison of many schemes including *Millicent*, *Payword* and *Micromint*. Each of these schemes incorporated mechanisms to deal with anonymity, and security. In other research, Schmidt and Muller (1999) proposed the framework for evaluation of micropayment schemes, including taking into account the impact within economic, technological and social areas and was used to develop the data which supports the proposed model.

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