

FLEXIBLE MOBILE PAYMENT MODEL

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ABSTRACT

Mobile Payment is a new technology in world of online shopping. Mobile Payment (M-Payment) is a kind of payment for goods, bills and services with mobile device like Cell Phone, Smart Phone and PDA (Personal Digital Assistant) and uses the advantage of wireless and other technologies. Mobile devices can be used in variety area of payment such music, video, ringtone, transport tickets, books, and magazine. The existence of M-Payment Systems is back to 1997 when the first two mobile phones enabled on Coca Cola vending machine that installed in the Helsinki area in Finland. This project focuses on business to customer (B2C) view of this business and review M-Payment technology. There is lots of different M-Payment method, M-Payment system, Transaction model and M-Payment model. This project focuses on direct-mobile billing (DMB), Mobile Web Payment (WAP) and Short Message Service (SMS). The proposed model named *Flexible Model* is based on these payment methods. In this study, some questions collected from users to know their needs and their previous experiences in using M-Payment. These answers have been analyzed using SPSS. From this knowledge, the author proposes a payment model which can satisfy all users. The proposed model is tested and some future works are suggested at the end of this study.

ABSTRAK

Pembayaran bergerak ialah teknologi terbaru di dalam dunia membeli belah di atas talian. Pembayaran bergerak (M-Payment) ialah suatu pembayaran untuk barangan, bil, dan perkhidmatan dengan menggunakan telefon bimbit, telefon pintar, dan Pembantu Digital Peribadi (PDA) serta menggunakan kelebihan tanpa wayar dan pelbagai teknologi yang lain. Alatan bergerak boleh digunakan dalam pelbagai bidang contohnya muzik, video, nada dering, tiket kenderaan awam, buku dan juga majalah. Kewujudan M-Payment telah bermula sejak 1997 apabila dua telefon bimbit yang pertama dibolehkan kepada mesin layan diri Coca Cola yang telah dipasang di kawasan Helsinki, Finland. Project ini difokuskan daripada sudut pandangan perniagaan kepada pelanggan (B2C) dan mengkaji semula teknologi M-Payment. Terdapat banyak perbezaan di dalam kaedah M-Payment, sistem M-Payment serta model transaksi dan M-Payment model. Projek ini difokuskan lagi kepada Pembayaran Bil Bergerak Secara Terus (DMB), pembayaran sesawang secara bergerak (WAP), dan Sistem Pesanan Ringkas (SMS). Model yang telah dicadangkan ialah model fleksibel iaitu berasaskan kaedah pembayaran. Di dalam kajian ini, terdapat beberapa persoalan telah dikumpulkan daripada pengguna untuk mengetahui keperluan dan pengalaman di dalam menggunakan M-Payment. Jawapan ini telah dianalisa dengan menggunakan SPSS. Daripada maklumat ini, penulis telah mencadangkan model pembayaran yang akan memuaskan hati pengguna. Sistem yang telah dicadangkan akan diuji dan kajian dimasa hadapan telah dicadangkan diakhir kajian ini.

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CHAPTER 1

INTRODUCTION

1.1 Introduction

Mobile Payment (M-Payment) is a kind of payment for goods, bills and services with mobile device like Cell Phone, Smart Phone and PDA (Personal Digital Assistant) and uses the advantage of wireless and other technologies. Mobile devices can be use in variety area of payment such payment for digital content like music, video, ringtone, online game, subscription, wall paper and etc, or tickets like bus, subway, train, airplane and parking meter, books, magazine (Dahlberg et al. ,2008;Valcourt, Robert & Beaulieu, 2005a).

The existence of M-Payment Systems (M-Commerce) is back to 1997 when the first two mobile phones enabled on Coca Cola vending machine. It was installed in the Helsinki area in Finland. In this payment model, system send SMS text message to vending machine for payment. Also in 1997 the first mobile phone banking system was started working at Merita bank of Finland which also uses SMS(Ahmed, 2011).

M-Payment is an innovated branch of E-Commerce, before the existence of M-Commerce people use computer to connect networks and buy or sell thing through it, this situation has some limitation for people like connectivity, or availability. Then people start to use smaller device like laptop computers, PDA and etc, But they still had problem with connectivity of devices, this problem has been solved by new media called wireless network connection and people could connect everywhere via this new connection method. By appearance of M-Payment systems people adopt it faster because of its mobility, ubiquity, convenience, instant connectivity and personalization and low cost of device.

M-Payment procedure can be widely adopted by customer if it cover all payment scenarios and people are ensure the confidential treatment of data , also they need have their payment confirmation by SMS or Email. Customers are not interested to buy a new mobile device for using this technology. They need a system which is easy to handle and responds quickly, also large number of merchant accept it to use. At least this dissertation will come up with designing a model which can cover most needs of customers.

M-Payment methods can be categorized in four primary models:

1. Short Message Service (SMS) based Transaction payment (Anon, 2006).
2. Direct Mobile Billing (DMB) (Anon, 2006).
3. Mobile Web Payment (WAP) (Anon, 2006;VanSteenderen, 2002).
4. Contactless M-Payment (NFC) (VanSteenderen, 2002;Card et al., 2007).

The current M-Payment is categorized in two groups: (Jerry Gao, Jacky Cai and Shim, 2005), 1- Account based payment system (ABPS) : (Rabara ,2010) and 2- Point Of Sale (POS) payment system :(Jerry Gao, Jacky Cai and Shim, 2005). In ABPS three types of payment are available which are: Mobile base payment system, Smart card payment system and credit card payment system. And POS payment

categorize in two parts: Automated POS payment and Attended POS payment. Chapter 2 will cover more information about these different categories.

In addition, the most important part of mobile commerce is a M-Payment model which can provides the methods that customer or merchant can use it for their transactions and their security will be obtained. This dissertation will focus on M-Payment model and methods which are in use now and design a new model base on combination of some existence methods and models.

1.2 Problem Background

The extreme change of wireless technology cause rapid increscent of people who are using mobile phones and at the same time it cause the increase of the development of mobile commerce. The features of mobile commerce that ubiquity, reach ability and personalization bring opportunities for entrepreneurship to market their product and service through mobile device such as mobile phone, features phone, smart phone and PDA phone. Due to this circumstance, the practical user interface for mobile device need to be deal with the context of use and context of medium. Besides take advantage the benefits of mobile commerce also need to respect the limitation of mobile device.

The first problem that is considerable in M-Payment is on the SMS based system which is not insurable and is not as fast as the other system but in some kind of M-Payment method customers forced to use this system, for example in mobile banking reload a TAC code will send after out purchase via SMS, if customers were at some place which is not reachable user cannot get the SMS and the process will be incomplete.

For the other kind of payment method like NFC user should have special chip on your device, so you forced to change your cell phone and it impose customer an extra cost. So maybe some people do not like to pay extra cost to use this method and because of that they do not accept this system.

The other problem which users faced is that, most of them have simple cell phone and they have not opportunity to use M-Payment. They can just use SMS based payment method, thus for the model which employees other payment method this types of users will be on the side.

Based on it, this study will analyze the current M-Payment models and methods in order to develop a set of requirements to an integrative solution for a model to improve M-Payment usage.

1.3 Problem Statement

The main problem of M-Payment systems is *“How to develop a mobile payment model based on combination of previous mobile payment models, which can cover some previous model’s deficiency?”*

1.4 Project Objectives

1. To investigate existing M-Payment models.
2. To identify customer feedback about using M-Payment.
3. To suggest the M-Payment model based on combination a few existing M-Payment models in B2C.
4. To test the proposed M-Payment model using a case study.

1.5 Project Scope

1. The study focus on current M-Payment models and systems.
2. The study focus on key challenge for a suitable M-Payment methods.
3. To design a M-Payment model which created by combination of the different M-Payment payment method based on Iranian students idea in UTM.

1.6 The Project Importance

Development of M-Payment model requires developer to highlight the importance of customer comforts, easy access to the system and safety of money transmissions to decrease user's frustration while they use mobile technology. Due to these properties the M-Payment model need to cover the advantage of old payment models and remove some disadvantage of those. This dissertation will concentrate on the new payment model which will be proposed.

1.7 Summary

This chapter discussed about the overview of the study which is a brief introduction about the appearance of M-Commerce and different type of M-Payment models and methods. This dissertation will cover four objectives that need successfully achieved in order to design a new payment model by combination of some M-Payment methods.

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