International Review of Business Research Papers
Vol. 3 No.4 October 2007 Pp.78-87

Using Third Party Phone Pay Service for Small-Amount Payment in E-commerce Operations

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Lately, business transactions involving credit cards have encountered secure online payment problems, resulting in many consumers being unwilling to use credit cards for internet transactions. ATM bank cash transfers require that the consumer runs to an ATM machine to complete the cash payment. COD payments create a high risk and high cost for internet business operations. Moreover, businesses are starting to slowly provide internet services as the concept of using the internet to do business is slowly gaining popularity among the consumer. In light of the fact that mobile phone companies are starting to offer small-amount Phone-Pay methods, the authors of this paper have studied and proposed how internet companies can apply small-amount Phone-Pay methods to complete business transactions.

Field of Research: e-commerce, small-amount payment

1. Introduction

There have been explosive growth of internet commerce with consumers. Not only has there been large sums of money spent purchasing actual physical products, but virtual products have cornered a very large percentage of the e-commerce market as well, for example, consumers purchase cell phone display wallpaper and ringtones, or periodical searches for thesis research papers just to name a few. Generally speaking, most of these virtual products don't need packaging. Therefore, these products don't require and shipping or logistics charges. Business operators that provide information need only go through the internet to send the information product to the customer to complete the transaction. The fee charged for the product can be very minimal. It may be as small as a few dollars. The current internet transacton methods, such as credit card, bank ATM wire transfers, and COD payment, are impractical because of the processing charges. The processing charges may be more expensive than the actual product purchased. (Zhuang, 2004)

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Raising and sustaining the level of satisfaction with quality of customer service (QOS) is second to none for the internet business. (Hua, 2004). The internet shopping industry must also raise their level of business competitiveness. Dealing with information products that cost just a few dollars, and using limited manpower, a company that possesses an outstanding payment method, will create a mutually pleasing environment for the consumer and the internet business. The internet business operator is badly in need of developing a small-amount payment system.

The purpose of this study is to study the online shopping payment methods, and to propose a more convenient method to internet shopping business for small amount money payment.

2. Literature Review

Online retailer's payment methods include, credit card, ATM bank transfer, post office wire payments, COD, third party payment, online printed bills paid via convenience store, and small-amount phone-pay, etc. These payment methods are described below.

2.1 Online credit card payment

There are primarily three large credit card organizations issuing cards, VISA, MasterCard and JCB, that can verify e-commerce purchases. The credit payment process can help online retailers reduce some operating expenses like logistics costs. The e-retailer can ship products directly without having to use the more expensive COD method, and the consumer can save time by not having to go out to make payments. Moreover, the risk of having to carry cash to make payments is lowered. Therefore, it can be said that the credit card payment method is a very convenient business transaction method.

2.2 ATM bank transfer

The consumer, first of all, must have a bank account and must apply for an ATM card. After making an online purchase, the consumer can take the ATM card to any ATM machine to complete the payment transaction. Most ATM bank transfers processing fee is $17 New Taiwan dollar (around AUD 0.68), which the consumer must pay. Many banks also offer at-home internet ATM banking allowing the consumer to use the ATM card reader at home to directly transfer money. However, there is a NT$30,000 (around AUD 1,200) daily limit. Not all banks offer this service, and ATM home banking requires a card reader before the service can be used. If the consumer has to use an ATM bank machine, he/she has to make a trip to the location. For this reason, some people will reject this method out of laziness. The number of ATM machines in Taiwan are numerous, even the local convenience store around the corner has one. This is a type of inconvenient convenience.

2.3 Post Office wire transfer

The e-retailer must first go to the post office to open a wire transfer account. Then, post the account number information on the internet for the consumer. After the consumer places their order, he/she must go to the post office and fill out wire transfer payment form. Before banking was more developed, this was the most common method used. However, the e-business must wait approximately 7 days before notification of payment is received from the post office. This is a very long period of time, so the post office wire payment method is seldom used for internet purchases.

2.4 COD

It is generally said that COD is a value-added service provided by a package delivery company. An e-retailer must first cooperate with a package delivery company and sign a contract with the said company. After a customer places an order, the e-retailer must go through the delivery company to ship the order to the customer directly. The customer must make payment when the package arrives. After receiving payment from the customer, the delivery company must give the money to the e-business within a specified time period. This pay for the goods when you receive the goods is one of the most favored methods of payment for consumers because it is difficult to be swindled. However, the cost of shipping tends to be high and e-commerce operators often complain about having to cover the cost of COD.

2.5 Third party payment methods

E-commerce companies can provide 3rd party online e-payment methods to establish a service for making and receiving 3rd party online e-payment. However, both, the e-commerce business and the consumer must first be registered members of the 3rd party online e-payment service before payment or collections can be made. Lately, PayPal and ezPay are the two online e-payment companies in Taiwan that provide 3rd party online e-payment service.

The main advantages of the e-commerce businesses using 3rd party online payments are that consumer payments are guaranteed, the same as COD. Internet commerce is a virtual world in which the buyer and the seller can not see each other's situation, often resulting in fraudulent circumstances. For example, sellers frequently use deception on Yahoo's online auction site by not delivering the actual promised goods. This has resulted in many buyers being anxious about whether or not they will receive the actual goods. At the same time, many buyers worry that once the shipment of goods has been made, they discover that the consumer's credit card payment is fraudulent resulting in a loss because of nonpayment for goods. For these reasons, in order to guarantee the business transaction, the buyer is required prepaying the money to the 3rd party online e-payment service. The 3rd party online e-payment service then takes temporary control of the payment and doesn't disperse the money to the e-business until the buyer confirms delivery of said

promised goods. (Yu, 1999)

Third party online e-payment has already become well established choice on the internet using credit cards or internet ATM accounts. Consumers can easily use a credit card or an ATM bank transfer to make 3rd party online transaction, and the e-commerce business operators can accept or make payments without having to establish their own account, while the 3rd party online e-payment service can help manage the consumer payment accounts. However, if a consumer has not registered as a third party online e-payment member, this method of online e-payment can not be used.

2.6 Convenience store payment method of printed online e-billing

After an e-bill with barcode is downloaded and printed out, payment can be made directly at a representative convenience store. The customer can bring the bar coded bill to any large supermarket, post office, or cooperating financial institution nationwide. For the e-commerce business, there is little or no risk of theft and it is safe. For the consumer, can conveniently and flexibly go to any number of large supermarkets (approximately 7000 locations in Taiwan), post office or cooperating financial institution to make payments. (Huang, 2004).

2.7 Small-amount payment

Small-amount payment remittance can be classified into telecommunications company bill remittance and Phone-Pay customer payment provider. Phone-Pay can separated into voice system and simple text message system applying different operating models for online e-commerce. (He, 1999) Although small-amount payment methods have several options, it is necessary for the online e-commerce businesses to sign a cooperative agreement with the telecommunications company. Generally speaking, small-amount payments can be made on the telecommunication's company own billing statements, like a phone bill, internet bill, cable TV bill, etc ... At the end of the month, telecommunication's company own billing statements are combined and mailed out to their own customers which benefits the billing company only. Uncollectible accounts numbers are lower, and security measures are higher. For the consumer, costs are occurred only if the customer uses the service, but it is very convenient.

3. Methodology

This study mainly apply the literature review and industrial interview on the internet small amount payment methods.

4. Findings

4.1 Small amount Phone-Pay method

Small-amount Phone-Pay is an innovative service integrating into a traditional

telecommunications company. With the swift explosion of information as the result of e-commerce comes a pioneering cash payment system. This will be a break key factor for the -commerce business. Phone-Pay method primarily has two parts to it. (Lu, 2004) One part involves voice system and the other involves a two-way SMS system.

Chunghwa Int'l Communication Network Co.(2006) is a company in Taiwan provides interactive voice system that lets the consumer use their cell phone or a landline phone to dial a specified value-added phone number. The interactive voice system requires a double layer password entry, a six number and a four digit passwords. The first password is the last 6 digits of the user's cell phone or the current time in minutes and seconds, and the second password consists of four numbers randomly selected by the computers system. The Phone-Pay consumer only needs to enter the double layer password, and confirm there are no mistakes to obtain the payment information. The e-commerce business operator using the Phone-Pay system website can set the price for the value added information or product accordingly, for example, browsing time, information downloaded or number of web pages. If the password fails, the consumer must redial the system to receive a new password. The user pays for the download, the added-value pay-for information or the reading material and a nominal fee is charged for each Phone-Pay transaction of NT$4~6 (about AUD .16~.24). The fee is deducted from the price of the product. The remaining amount goes to Phone-pay as profit.

The second payment method for Phone-Pay (Chunghwa, 2006) uses a cell phone to authenticate the user's identification. The user dials a set number and enters the two-way interactive payment system. After receiving payment for a website added-value product charge, which has been added to the customer's telecommunications monthly billing statement along with a nominal processing charge, Phone-pay receives the surplus as profit. There is no risk of theft or fraud, it is safe, and it is pay-as you use. E-commerce purchases are immediate, voice interactive Phone-Pay cost only NT$4-6 per each small amount transaction. The cost for each transaction can be decided by the business operator. It is suitable for internet e-commerce shopping especially when the cost of the product ordered is not much. When the internet information first became available, most services were free. Users are gradually accepting this pay-for-use service. The internet needed to gain value in our lives before "value added information" concept could be put into practice on the internet.

As the internet continues to prosper vigorously, there is no choice but to accept the fact that the age of "information has a price" has arrived and the small-amount pay-for-information concept has developed and the goal to get internet users to make use of the traditional landline phone or cell phone to pay for internet costs is here. This payment method works with small money transactions, convenient, and safe. Small-amount payment is safe and with no-risk of fraud. It doesn't require registering personal information, it is pay-as-use, and any e-commerce business can use it. Making payments together with the monthly phone bill is the most convenient and there are no problems with collecting fees. Moreover, because the phone company col-

lects the fees, the e-commerce business can avoid dealing with complicated fee collection systems. It is a win/win system for the e-commerce company and the consumer. (Wu, 2002).

The following two diagrams show the two phone-pay transaction processes.

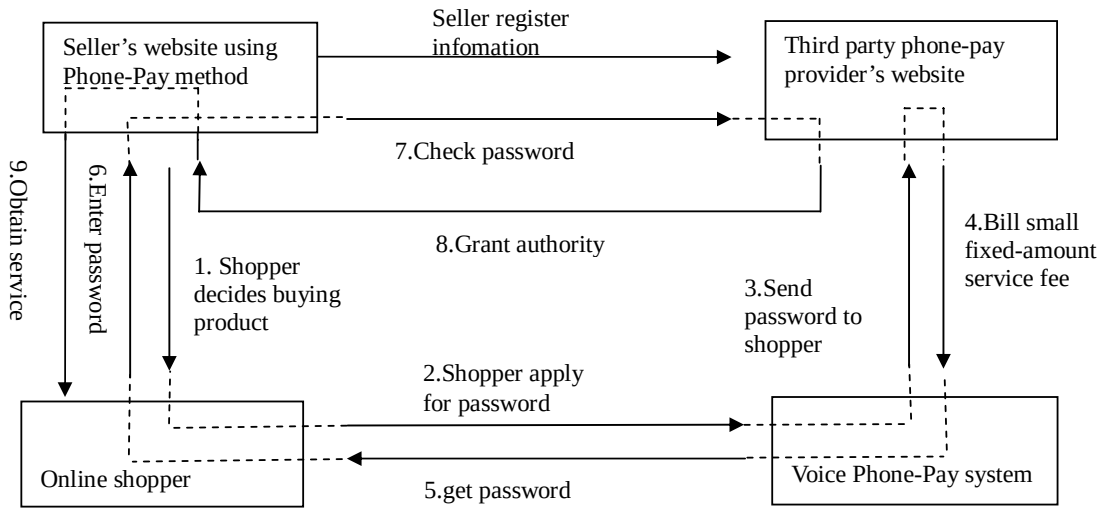

Fig. 1 Interactive Voice Phone-Pay method
(Derived from Chunghwa,2006)

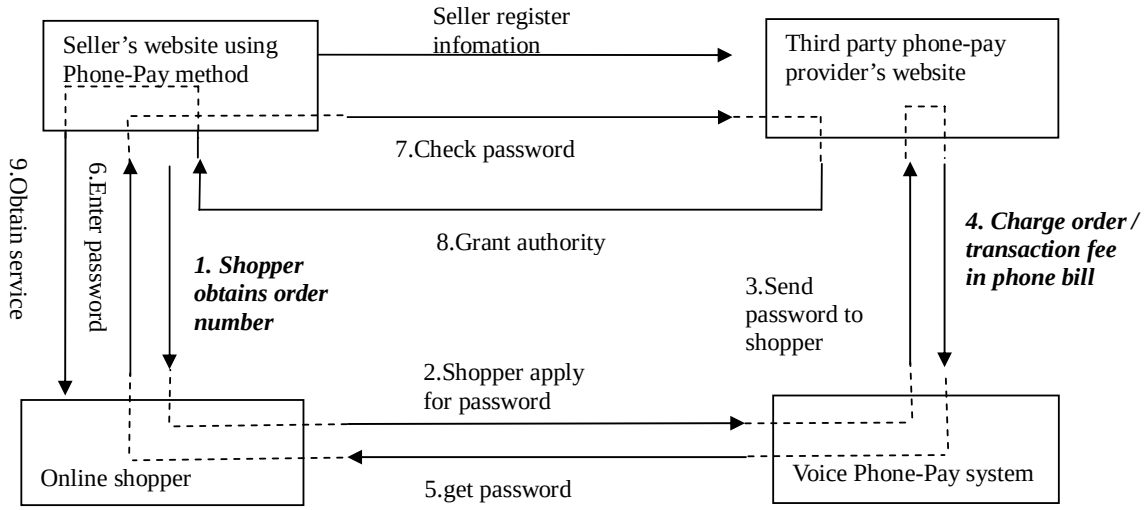

Fig. 2 Two-way SMS Phone-Pay method
(Derived from Chunghwa,2006)

4.2 Small-amount Phone-Pay applications system

E-commerce application is simple for Telecommunication companies that provide Phone-Pay applications system. As the above two figures, first the seller

apply to Phone-Pay service provider. Then, the service provider supplies the necessary software program allowing installation into applicant's website. The program is all necessary technology needed to start up a Phone-Pay system. The only thing that needs to be done is to send the necessary information to the service provider website via the applicant's website.

4.3 Characteristics of Small-Amount Phone-Pay method

Phone-Pay is suitable for all e-commerce transaction, with a phone and internet usage being common and virtually unlimited borderless mobile phone roaming, attaining the goal of convenience in global Phone-Pay usage.

5. Discusions

5.1 The applications of small-amount Phone-Pay method

The following areas are very suitable for this applications. (Chunghwa , 2006; Hua, 2004)

1. Value-added information downloads (MP3, software, games, information, coupons, etc...)
2. Reading, listening, trial-viewing value-added information (E-reports, e-books, movies, music, pictures, games, etc...)
3. Charity donations (contribute money with a phone call)
4. Apply for e-mail, community, webspace
5. Obtain membership credentials
6. Website membership fee

5.2 The benefits and advantages of Phone-Pay method

The benefits and advantages of the phone-pay method can be drawn and described as follows. (Chunghwa , 2006; Hua, 2004)

1. With E-commerce payment is still in its developing stage, it is most suitable for Small-Amount Payment. User's acceptance of this payment concept is gradual. Before E-commerce payment is fully embraced, consumers concern over security measures and long term survival of internet sites will prevent them from making large amount payments. As consumer gradually become accustomed to Phone-Pay method, the amount transferred over the phone can progressively get larger, thus increasing website earnings.

2. A password can be used with any type of e-commerce site, whether it is small, medium or large business website. Currently, when consumers purchase pre-paid cards or join memberships, they can only use the card or membership with the specific website. They have to buy new cards or re-purchase new memberships. It is inconvenient and an unnecessary waste

of time as far as the consumer is concerned. However, with Phone-Pay method, it doesn't matter if it is a large or small e-commence enterprise, obtain a special Phone-Pay account number, or establish a small-amount system can be easily set up. It doesn't matter if you have a pre-paid card of a member, consumers can easily make purchases.

3. Phone payment methods is the most prevalent fee collection system and the easiest system to put into place.

It doesn't matter if e-commerce purchases are made using a pre-paid cash card or a credit card to make payments, there are special conditions restricting their universal growth. Just having to possess a credit card or purchase a pre-paid cash card are limiting factors to their terms or use. Common possession of a telephone was established long ago by individuals and households. Sex, occupation, level of education was not barriers to owning a phone. Three-year-olds to ninety-nine-year-old users were all able to operate a phone. Therefore, the phone has the greatest potential to becoming the most widespread fee-collection tool regardless of an individual's status.

4. High usage rate with no delinquent accounts payable problems, income is stable.

Generally, high-amount payments correspondingly have a higher rate of uncollectible account problems. It would result in a lower rate of usage among consumers. However, the less complicated Phone-Pay small-amount phone payment method has the processing charges included in the transaction price. With the payment uncollectible problem being non-existent, there is a higher rate of usage and a greater room for larger profits.

5. The system that costs the least to establish has the most potential for the highest profits.

The e-commerce business only needs to establish an internet connection and install compatible joint systems control software with the telecommunications company providing the Phone-Pay service and the e-commerce business can establish a fee collection system. There is no need to fork out money for any high cost equipment or maintenance workers. Just work within the restraints of the telecommunications limits and profits can immediately start to roll in. There will be no conflicts with the company's original payment collection system.

6. Borderless Internet is suitable for cross border roaming telephone.

The internet has absolutely no border restriction, but "membership fee collection" and "prepaid cash card" payment systems both have limits on sales distribution and expansion ranges. But the Phone-Pay payment system has no boundaries. Just connect to the internet and start to reap the benefits. Just use the exclusive number for each location and start to reap the limitless benefits from anywhere in the world.

6. Conclusion and Suggestions

The subject of this study addressed the options of e-commerce paying methods and mainly how to apply the small-amount Phone-Pay system. Moreover, the report looks at the present standing of small-amount Phone-Pay payment system and e-commerce development in regards to the relationship between e-commerce operators and consumers. The purpose of this study is to supplement related academic research regarding e-commerce Phone-Pay system.

After completing this research, the authors suggest that the e-commerce business operators consider joining Phone-Pay small-amount payment scheme with a particularly strong recommendation for those business operators who provide downloadable files to use interactive voice Phone-Pay with small transaction. For those operators whose transactions are higher in value, we suggest they use two-way SMS Phone-Pay system. A good website should not only have an attractive website, but it should provide a comprehensive merchandising and cash payment system. Small-amount Phone-Pay system technology is established, but related research and practical application cases have been very few and far between. It is recommended that additional researches and discussions on Phone-Pay payment continue in or that e-commerce operators can better understand.

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