

A Light Weight Retail Customer Relationship Management System with Persuasive Technology: a Case Study of Koipy

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Abstract

Many businesses use customer relationship management (CRM) system to collect and maintain the customer relationship. Retail stores are facing huge volume of customers every single day. So naturally people think the CRM penetration rate is high in the retail industry. However, from our observation in Singapore, it is not the case due to financial and labor constraint. This paper examines the implementation of Koipy, a CRM app built for iPad/iPhone to analyze how the retail industry could use mobile technology to perform commercial operations and how persuasive technology could be used to change customer behaviors to for the benefits of the merchants.

Keyword: persuasive technology, customer relationship management, elaboration likelihood model

I. Introduction

Customer Relationship Management (CRM) systems have been widely used in many businesses and organizations. CRM is about acquiring customers, knowing them well, providing services and anticipating their needs [1]. Companies who adopt CRM will be able to understand more about the customer behavior and hence increase the profitability of the business by increase the customer spending or customer loyalty. Therefore, large corporations such as bank, insurance company, etc.

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put lots of effort into building a comprehensive and heavy-weight system to uncover the customer behavior patterns. However, the situation is very different in smaller companies as they do not have the huge financial and technical resources to adopt and operate a full scale CRM system. In this paper, we focus on CRM for small and medium enterprises (SMEs) in the retail industry of Singapore.

Retail industry is a dynamic and competitive environment. They are facing large volumes of individual end users every single day. As Rogers stated in [2]: “Companies recognize that customer relationships are the underlying tool for building customer value, and they are finally realizing that growing customer value is the key to increasing enterprise value”. It seems all retailers should have a CRM implemented, but if we take a close look at the retail industry in Singapore, we can discover it is not the case. Although CRM is a very useful system, it usually requires a long term effort. It generally takes several steps such as data collection, data organization and data analysis before generating valuable business insights. Each step requires a company to invest significant manpower and money. SMEs are not willing to put so many resources into a system which could not pay back in a short time span. That essentially is the key to the low adoption rate of CRM in SMEs in the retail sector.

Koipy is an eight month old company in Singapore which provides IT solutions using mobile technology for the retail industry. Koipy CRM is an app built for iPad and iPhone. It utilizes the mobility and the intuitiveness of the iOS devices to provide generic CRM functionalities to SMEs. Because of the constraint of the capacity and the computation power of iPad and iPhone, Koipy CRM adopted cloud technology where data storage and computation are all taking in the server. Koipy CRM is a light weighted retail CRM system specifically designed for SMEs to use in their daily operation. It aims to minimize the financial and manpower barrier for retailers to adopt CRM technology in their business. It tries to remove as much workload as possible from the staff by

letting the consumers to actively involve. Koipy CRM is designed based on the principles of Persuasive Technology (PT) to engage consumers.

The concept of PT is raised by B J Fogg. When he wrote his thesis "Charismatic Computers" [3] in Stanford University, he demonstrated that computers have the ability to change people's thoughts and behaviors in predictable ways. He then brought up the concept of captology, a coined word describing the overlap between persuasion and computers [4]. After the birth of the concept, persuasive technology received heavy attentions from various industries such as commercial, public healthcare, environment protection, and potentially anyone who is interested in human-to-human or human-computer interactions.

This paper is organized as follows. Following this introduction, we review the literature on retail CRM and PT. Next, we present the business background and principles of Koipy CRM followed by the evaluation of the impact of Koipy CRM.

II. Literature Review

A. Retail CRM

The power in retail has been shifted from sellers to buyers [5] [6], hence buyers have higher expectation than before. Their expectations have also risen in recent years, making CRM a necessity in today's customer-driven business environment [7]. Reichheld's studies showed 5% of retention rate increment will cause 35% to 95% increment on the net present value delivered by customers [8]. So large corporations usually invest a lot in CRM to collect and analyze customer behavior data. Naturally, retail industry is one sector that many people think has a high adoption rate of CRM. Ondrus even claimed that "every successful company in the sector uses this type of system to analyze customer behavior and predict sales [9]." However, from the Singapore context, the CRM adoption rate is much lower than expected, as least in SME sector.

According to the statistics, there are 19,672 establishments in year 2010 in Singapore. Among them, 17,586 companies (89.4%) have staff sizes less than 10 [10]. So we can safely claim that the majority of the retailers in Singapore are SMEs with limited manpower. The traditional retail CRM works with full spec computers (operated by cashier) and magnetic swipe cards (hold by customer). The card which is given to the customers by cashier is usually named “membership card” or “VIP card”. Every time that particular member makes a purchase, the transaction will be recorded and stored in the system.

The hardware cost of this system is a large investment for a small store. Take the magnetic strip card as an example. It usually costs \$0.5 to \$1 per piece in Singapore, which makes the card almost impossible to distribute to every customer freely. Therefore, the cashier usually needs to “pick” the looks-promising customer to give out the card. Alternatively, some stores simply “sell” the card to cover the manufacture cost.



Figure 1. Traditional Retail CRM

On top of the hardware cost, the manpower limitation is really the key issue of the low adaptation rate of CRM in Singapore’s retail industry. Like many developed regions, local people in Singapore do not like to take low wage manual jobs. Since Singapore government implements a strict policy on foreign workers, many of those job positions are not filled. As a result, almost all retails could not hire enough staff to serve their customers. In this case, a traditional retail CRM requires too much human work. A typical work flow of issuing a card in traditional retail CRM is like this:

- a. Cashier gives a customer a membership form
- b. The customer fills the form and gives back to cashier
- c. Cashier manually keys it into the system
- d. Cashier gives the customer a membership card

The process is long and tedious. A lot of the retail staffs are not well trained in customer relations and many of them are part-timers. It is very difficult for them to be confident enough to feel comfortable with the system. The customers are also hesitating to get the membership card considering the time and financial cost.

B. Persuasive Technology

A persuasive system may be defined as "computerized software or information systems designed to reinforce, change or shape attitudes or behaviors or both without using coercion or deception [11]". Persuasive Technology is still a new research area, but researchers have already contributed many perspectives on the definition, the function view, the design, the ethics concern, etc. Many frameworks have been built up and people are digging deeper to explore the techniques to do effective persuasion via machines. Persuasive technologies have been applied in different perspectives of our daily lives, for example, retail settings [12], multi-device environment [13], kitchenware [14], etc.

The commonly used framework in PT includes

1. Fogg's Functional Triad [15], which divided computer functions in three basic ways: as tools, as media and as social actors and represents different roles that a persuasive system can play. It is one of the earliest works in PT.
2. Persuasive System Design Model [16], which distinguishes key issue, persuasive context and persuasive system design. It is a very comprehensive model for designers to refer to.

3. Fogg's behavior model (FBM) [17], which asserts that for a person to perform a target behavior, he or she must (1) be sufficiently motivated, (2) have the ability to perform the behavior, and (3) be triggered to perform the behavior. These three factors must occur at the same moment; else the behavior will not happen. FBM pointed a direction for designers to think about when changing people's behavior.

4. Elaboration Likelihood Mode (ELM), which is a theory about how receivers will process the incoming messages. There are two types of process can be engaged: a central route involving systematic cognitive thinking and a peripheral route involving cognitive shortcuts [18]. ELM originated from psychology domain, and has been studied by various sociology and psychologists.

Central route: Central route analyzes the persuasion messages logically, and makes the decisions based on the evidences and arguments. It requires ability and motivations to do so but the persuasive consequences will be firm as the outcome is usually a result after serious consideration.

Peripheral route: On the other hand, peripheral route does not involve extensive cognitive processing. The persuasive effects often rely on environmental characteristics of the message, such as credibility or attractiveness of the source.

Many persuasive systems try to evoke the peripheral route of the persuadees so that target audiences could adopt the new behavior or attitude without much cognitive evaluation. A paper reporting a case study about web 2.0 marketing demonstrated that the peripheral route to persuasion strategy realized with the support of web 2.0 marketing towards low-involvement consumers [19].

In this paper, we take ELM as the theory foundation and we will study the persuasiveness of Koipy CRM over traditional retail CRM.

III. Case Study

Koipy CRM is designed especially for retail industry. It abandons the traditional computer and magnetic strip card. Instead, it uses iPad and QR code [20] card. The cashier only needs to put the QR code card in front of the iPad camera, the system will be able to identify the customer. It significantly decreases the hardware cost. The QR code card costs about 5 cents only, which is close to a paper name card price. Merchants have no problem to distribute the cards any more.



Figure 2. Koipy CRM

But most importantly, Koipy CRM emphasizes on the saving of manpower. The merchant staffs do not need to assist customer to fill up any membership form any more. What they need to do is merely distributing the card to the end user and asks them to read the instruction on the card. It will be able to lead the consumers to do the data registration by themselves. It totally simplifies the process for both of the staffs and consumers as no one has to do manually paper work in store.

A successful CRM system needs to be able to two jobs. 1. Collect and store the customer data. 2. Increase the customer loyalty. Both may need to persuade the customers to change their behavior.

For the 1st point, traditional CRM takes the central route, so the staff needs to persuade the customer that a VIP card worth the money and time to apply. Customers have to calculate carefully to make sure the money spent for the card will be offset by the membership privileges. It is a cognitive process, and customers usually decide not to participate.

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In another hand, Koipy CRM emphases to put customer undergo the peripheral route. It divides it into three small steps. 1. The customer is willing to take the card. 2. The customer is willing to use the card next time. 3. The customer is willing to give out his personal information. Koipy CRM changes those three steps into a series of no brain actions. 1. Koipy QR code card is usually given to customer for free (since the cost is so low). So majority of the customers will take the card. 2. Koipy CRM is a point-based system, so each time customer pays, he will accumulate points accordingly. People basically will do that since there is always good to have more points in the account. 3. Register personal information is extremely easy in Koipy CRM. Koipy CRM supports SMS registration. The customer only needs to text the card number to the SMS server of Koipy. The registration process will be done automatically. Quite a number of customers will do that instantly in the store. The customer can fill in more personal particulars later online. For others who are cautious. They will investigate the situation deeply. So they will check in the website cognitively and decide whether to register their particulars online, which typical central route behavior is.

Increment of the customer loyalty is the essential function of a CRM. Traditional CRM uses discount, points and various ways to persuade the customers that are good deal so they can come back more often. Koipy instead put a lot of effort on the intuitive and instant feedback system. Traditional CRM usually does not provide ways to help customers to check their points and rewards they can redeem. Koipy CRM automates the process by integrating SMS services. Each time the customer made a purchase. The system will send a message to customer informing the accumulated points, the rewards that are available and how many points away from the next reward. It motivates the customers to come by next time to either redeem the reward or achieve the next level reward. If they forget the rewards, they can send a checking SMS and the reward information will revert to the phone immediately. If there is a reward expiring in a few days. The system will send a reminder to the customers.

IV. Evaluation

To evaluate Koipy CRM, we studied the data from Koipy. On average, the registration rate of Koipy CRM across various merchants is 56.04%. In another word, more than half of the clients who get the card will register their profile either via SMS or website. It is a very impressive figure. And for merchant staffs that naturally spend more time with their clients such as hair salon, the activation rate could go as high as nearly 100%. Probably because of those staff have more creditability and attractiveness, which is crucial in the peripheral route persuasion. Enrolling customers into the loyalty program is always the first step for a CRM system. The main difference between Koipy CRM and a traditional retail CRM are how merchants select customers and how customers are persuaded to join. Because of the hardware cost, traditional CRM need staffs to do the filtering job. They need to pick up the customers who have a higher chance to drop by often, so the investment on the card is worthy. Or some merchants charge for the membership card. Either way, it will miss some potential good customers. Koipy CRM virtually can reach out to every customer because of the low manufacture cost of cards. Therefore, Koipy can engage much more customers compare with traditional ones. Also, it is easier to persuade customers to join the program. Koipy does not require the customers to cognitively understand the loyalty program before they can make the decision. It utilizes the peripheral route by divide and conquers method. A big behavior change has been divided into smaller steps, and each of them does not require customers to think through. So the absolute number of data captured of Koipy is far much higher than a traditional CRM.

Koipy has not yet gathered enough data to proof the customer loyalty improves statistically since Koipy is still young. Nevertheless, merchants who use SMS to do reward reminder have reported quite positive results. 4% of the recipients will come back to store within three days after receiving a SMS reminder about their expiry of rewards. It could also be explained by ELM. SMS reminder serves as an alert which notify the customers. The customers do not need to actively consider about the message. Instead, it informs the client a place where he got the rewards which are expiring soon.

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Many customers will make a booking in a few days to make sure he would not waste the rewards.

We are still collecting the data to analyze the effect on customer loyalty of Koipy CRM.

V. Conclusion

Koipy CRM is a light weighted CRM system implementing mobile technology for business use. It focuses on providing simple and effective solutions to maintain the customer relationships between SME retail merchants and their customers. Unlike the traditional membership system which engages customers in central route, Koipy CRM tries to persuade customers step by step in peripheral route.

A successful CRM needs to be able to collect customer data and maintain the relationship. The research data showed Koipy CRM could effectively persuade the customers to participate into merchants' loyalty program. We will work further to determine whether Koipy CRM would enhance the loyalty effect.

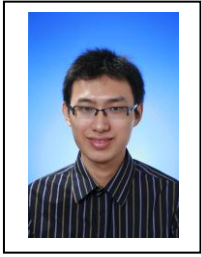
This case study contributes towards better understanding of retail CRM implementation. Persuade technology is very useful in change people's behavior. The previous CRM normally focus on the business functions only. Koipy CRM brings in the PT principles to engage the customers to take part in the process. This case study should be useful in helping researchers and practitioners better understand the retail SME industry and how to implement a system for them.

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