



MOBILE ORDERING SYSTEM STRUCTURE AND DEMAND ANALYSIS

**Kuang-Husn Shih, President, Toko University, No.51, Sec. 2, Syuefu Rd., Puzih City,
Chiayi County 61363, Taiwan
E-mail: shihsteve33@gmail.com**

**Fu-Ju Yang, Department of Banking & Finance, Chinese Culture University, 55,
Hwa-Kang Road, Yang-Ming-Shan, Taipei 11114, Taiwan
E-mail: fuju@faculty.pccu.edu.tw**

**Ching-Wen Lin, Department of International Business Administration, Chinese Culture
University, 55, Hwa-Kang Road, Yang-Ming-Shan, Taipei 11114, Taiwan
E-mail: Lincw@niu.edu.tw**

**Ching-Yi Lin, Graduate Institute of International Business Administration, Chinese
Culture University, 55, Hwa-Kang Road, Yang-Ming-Shan, Taipei, 11114, Taiwan
E-mail: cigaw2000@gmail.com**

ABSTRACT

E-service has changed securities market trading patterns. At present, securities dealers mainly provide an internet ordering mode and mobile ordering services, while past trade patterns are mostly based on Internet ordering as the main trading mode. With increasingly powerful mobile phone functions and stable development of the current 3G systems, the willingness of investors to adopt has significantly increased. Hence, this study adopted the Analytic Network Process (ANP) to evaluate the demand on the mobile ordering services of securities dealers to learn about the mobile ordering structure, demands, and concerns of securities dealers.

The study expects to explore the service contents and switching costs of the mobile ordering structure and compare factor importance and mutual influence of service contents and switching costs. The findings can be provided to the system development industry as a reference. It is expected to allow system developers to better understand the demands of securities dealers in the mobile ordering service structure in the future.

Keywords: Mobile Ordering, CRM (Customer Relation Management), Switching Costs, Analytic Network Process (ANP)

INTRODUCTION

Huang (2009) proposed that the rise of the network has delivered immediacy and convenience, as mobile finances can efficiently provide financial services by providing securities dealer customers with complete investment tools, investment information, and customer services. According to Wen et al. (2009) indicated that flow of information uses the Internet as a circulation pipeline, where mobile phone services play a very important role, as a website can provide 24-hour services online. Therefore, the use of websites for finance and investment is the current trend. Contemporary mobile Internet service is not subject to environmental restrictions or time limits, and more importantly, the users do not need to rely on a computer to enter the virtual world of the Internet. With the continuous advancements of mobile communication equipment, mobile Internet service is gradually accepted and recognized as important by investors. Learning historical data, customer background, investment preferences, and other information of the customers, according to the system information, allows enterprises to provide customized services or commodities to customers and build good relationships. Shih (2010) pointed out that the mobile financial and investment services can create a unique service for customers.

With the rapid maturity of the application environments of mobile platforms, securities firms have become gradually concerned about the mobile ordering market. In response to such a developing trend, securities dealers are actively building and perfecting mobile ordering platforms and importing the CA (Certification Authority) certificate mechanism to expand the range of applications of electronic ordering from desktop computers to smart phones. The securities industry should consider how to build a mobile ordering system for better operating performance, which simultaneously considers customer switching costs, in order to attract more customers to mobile ordering. This study plans to collect the mobile ordering service status information, as provided by securities dealers, to explore the significance and relevance of the factors affecting mobile ordering as reference indicators for planning mobile ordering services of securities dealers.

LITERATURE REVIEW

1. Mobile communications system

The mobile ordering system used in this study is a 3G wireless communication system. The currently designed software of securities dealers is aimed at 3G systems, as they are faster and more stable than 2G systems in transmission. The range of a 3G system is wide; therefore, the 3G system is believed to be more suitable by telecommunications companies for mobile ordering systems.

2. Switching Costs

Constantinides (2002) argued that there are some extra costs when switching from e-commerce to mobile commerce, and the costs of mobile commerce is higher than e-commerce. Kim (2004), Grzybowski (2008), Maicas (2008) and Maicas (2009) proposed that switching costs exist in various products and services, including airlines, financial services, and mobile telecommunications. The reason for the switching costs is the customer intention to change suppliers and the cause of switching is reduced satisfaction and loyalty to



the supplier. Porter (1980) argued that, the cost of changing from an original supplier to a new supplier can be regarded as “one-time switching costs”. Matthews and Murray (2007) pointed out when switching suppliers, the switching costs consist of financial and non-financial costs, the switching of service relationships will result in switching obstacles. Meanwhile, service providers may create customer inertia by using switching costs to maintain the service relationship between the consumer and the original supplier to obtain more benefits.

According to Matthews and Murray (2007), in addition to the financial and non-financial costs, consumers are faced with uncertainties in time, psychology, and emotions, as brought when switching to a new service provider. As suggested by Burnham (2003) and Cheng (2007), switching costs is a type of one-time costs generated in the face of supplier switching. Hsin and Su (2009) argued that switching costs include time, money, and energy. Klemperer (1987), Klemperer (1995), Matthews and Murray (2007), and Burnham (2003) pointed out that, switching costs can be divided into Transaction costs, Learning costs, and Contractual costs. Switching costs refer to the perceived potential risks, lost revenue, and consumed energy when switching suppliers. The existence of switching costs grants enterprises with stronger market power to allow them to obtain higher prices in the market, reduce product or service quality, and establish entry barriers, thus, gaining abnormal returns.

3. Customer Relation Management (CRM)

The financial services industry can be roughly divided into banking, insurance, securities, and other industries. In the securities industry, customer transactions are characterized by the highest repeated purchase rate; therefore, excellent CRM systems can bring excellent financial performance to the enterprises. Therefore, the introduction of CRM is regarded as a trend in the financial industries. The mobile ordering system can be set according to the demands of investors, meaning the investor mobile ordering system has a high level of customization. CRM is person-to-person marketing. Securities dealers can learn customer preferences and provide customers with necessary information from transaction records to maintain good customer relations. Pyals and Payne (2001) applied information technology in CRM to better enhance the utility value. Hishamuddin (2007) pointed out that, with the rapid development of information technology after 2000, the concept of CRM emerged. Ortega (2008), Lassar et al. (2008), Renart (2008), Coltman (2007), and Zineldin (2006) had different definitions of CRM. According to Payne and Frow (2005), the definitions of CRM can be divided into three types: 1) CRM as a special technology of a solution scheme; 2) CRM as a kind of solution technology of integrated service, with the customer as the orientation; 3) CRM as an integrated method to manage customer relations, and therefore, creates value for shareholders. Information technology is only a part of CRM.

RESEARCH METHOD

In this study, by applying the method of ANP, three experts were invited to review the content of the questionnaire content in order to remove any inappropriate dimensions. There are a total of 2 dimensions, 6 guidelines, and 7 factors. The modified questionnaires were then sent to eight experts to determine the relevance between dimensions, guidelines, and factors.

Table 3-1 Expert questionnaire dimensions

Dimension	Operational definition
Service contents	Means account management, ordering system, system settings, and other functions, to provide investors with the function of mobile (ordering) securities service.
Guidelines	Operational definition
Account management	Means the provision of queries of information relating to entrusted turnover, inventory, bills, and equities
Ordering system	Means the installation of the ordering software in the general 3G handsets (java) for ordering.
System settings	Means personalized features, such as setting the font size, timeout ordering dial-up, and connection setting charges according to user preference
Dimension	Operational definition
Switching costs	The perceived additional costs spent when the customer (investor) suspends the existing trading relationships and selects a new securities dealer.
Guidelines	Operational definition
Procedural costs	Refers to economic costs of risk, assessment of cost, learning costs; this type of switching costs are mainly related to spent time and effort.
Factor	Operational definition
Learning costs	Refers to the time and energy costs of the investor learning new relevant capacity or technology to make more effective use of new products.
Economic risk costs	Refers to the uncertainty costs caused by possible negative results when the investor selects a new securities dealers in the case of insufficient information; the involved risks include: performance risk, financial risk, and facilitate risk.
Evaluation and search costs	Time and effort in the search and analysis of the investor to make replacement decisions

Guidelines	Operational definition
Financial costs	Consists mainly of benefit loss costs and financial loss costs. This type of switching costs and the actual measurable financial losses are related.
Factor	Operational definition
Initialization costs	The cost of time and psychological cost of the investor in the initial period of establishing a relationship with the new securities dealer or using a new product.
Benefit loss costs	The cost resulted by the economic benefits generated by continuous contracts or relationships with the existing securities dealer lost when switching, for example: transaction fees discounts.
Monetary loss costs	In addition to the cost of purchasing the new product, it includes all the financial expenditures generated by switching the securities dealer, or the costs generated at the initial period of switching the securities dealer.
Guidelines	Operational definition
Relation type costs	Consists mainly of the personal relational loss costs and brand relationship loss cost. This type of switching costs is caused by the psychological and emotional discomfort caused by damage to the relationship through the loss of recognition.
Factor	Operational definition
Personal relational loss costs	The emotional loss caused by damage to the recognition and connection with the business staffs of the original securities dealer after the switching to the new securities dealer.

Source: compiled by this study

This study found that CRM of securities dealers is very difficult. It is suggested that parts of the costs to maintain CRM be transferred to other departments, or the training costs of CRM talents be saved to feed back to investors in order to create a win-win situation. In the future, the inter-industry alliance of insurance or banking industries can be promoted to enrich the information of “account management” to provide investors with more diversified information. At present, most of the information provided by the securities dealers is the same. In the future, according to the needs of the investors, customized information can be established to provide differentiated services. At present, most mobile ordering systems can be used with the help of a mobile phone. In most cases, for customers using mobile ordering, preferential fees of the mobile phone may reduce their switching rate and help improve the revenues of the securities dealers. For the securities dealers, the rise of mobile ordering can reduce the human resources costs of the securities dealers. Through an e-ordering system, the securities dealers can reduce the number of employees and operating costs to enhance profits.

REFERENCE

1. Burnham, T. A. (2003). Consumer Switching Costs: Atypology, Antecedents, and Consequences. *Journal of the Academy of Marketing Science* , 31, pp. 109-136.
2. Cheng, P. Y. (2007). Information technology and switching costs. *Handbook of economics and information systems* , pp. 437-465.
3. Coltman, T. (2007). Why build a customer relationship management capability? *Journal of Strategic Information Systems* , 16, pp. 301-320.
4. Constantinides, E. (2002). The 4S Web-Marketing Mix model. *Electronic Commerce Research and Applications* , 1 (1), pp. 57-76.
5. Grzybowski, L. (2008). Estimating switching costs in mobile telephony in the UK. *Journal of Industry, Competition and Trade* , 8 (2), pp. 113-132.
6. Hishamuddin Bin Lsmail, D. T. (2007). Technology dimension of CRM: the orientation level and its impact on the business performance of SMEs in Malaysia. *International Journal of Electronic Customer Relationship Management* , 1 (1), pp. 16-29.
7. Hsin Hsin Chang, S. W. (2009). consumer perception of interface quality, security, and loyalty in electronic commerce. *Information & Management* , pp. 411-417.
8. Huang, S.-Y., Wu, T.-H., & Chi, Y.-J. (2009, 6). A Study of Environmental Accounting Information Disclosure on Corporate Website. *Journal of Accounting and Corporate Governance* , 6 (1), pp. 1-30.
9. Kim, M. (2004). The effects of customer satisfaction and switching barrier on customer loyalty in Korean mobile telecommunication services. *Telecommunications Policy* , 28, pp. 145–159.
10. Klemperer, P. D. (1995). Competition When Consumer Have Switching Cost: An Overview with Applications to Industrial Organization, Macroeconomics and International Trade. *Review of Economic Studies* , 62 (4), pp. 515-540.
11. Klemperer, P. (1987). Markets with consumer switching costs. *The Quarterly Journal of Economics* , pp. 375–394.
12. Lassar, W. M. (2008). Development a CRM strategy in your firm. *Journal of Accountancy* , 206, pp. 68-73.
13. Maicas, J. (2008). A study of the magnitude and drivers of switching costs in the mobile communications industry. *Cuadernos de Economía y Dirección de la Empresa*, 35, pp. 27-56.
14. Maicas, J. (2009). The role of (personal) network effects and switching costs in determining mobile users' choice. *Journal of Information Technology* , 24, pp. 160-171.
15. Matthews, C., & Murray, D. (2007). Helping bank customers switch: A case study. *Journal of Financial Services Marketing* , 11, pp. 360-369.
16. Ortega, B. H. (2008). The role of information technology knowledge in B2B development. *Journal of E-Business Research* , 4 (1), pp. 40-54.
17. Payne, A. &. (2005). A Strategic Framework for Customer Relationship Management. *Journal of Marketing* , 69, pp. 167-176.
18. Payne, A. &. (2001). Customer Relationship Management in Financial services: Towards information-enabled relationship marketing. *Journal of Strategic Marketing* , 9 (1), pp. 3-27.
19. Porter, M. E. (1980). *Comparative Strategy*. New York: Free Press.
20. Renart, L. G. (2008). Paths to Continuous Improvement of a CRM strategy. *UDK Pregledni Rad Review* , 66 (1), pp. 61-77.



**Proceedings of 2013 International Conference on
Technology Innovation and Industrial Management
29-31 May 2013, Phuket, Thailand**

21. Shih, K. (2010). Mobile Trading experiences and the endogenous trading signal system. *African Journal of Business Management* , 21 (10), pp. 282-298.
22. Wen Hsien Tsai, H. W. (2009). Evaluation of mobile services for the future of 3G operators. *International Journal of Mobile Communications* , 7 (4), pp. 470-493.
23. Zineldin, M. (2006). The royalty of loyalty: CRM, quality and retention. *Journal of Consumer Marketing* , 23 (7), pp. 430-437.