

A STUDY OF FACTOR AFFECTING CUSTOMER SWITCHING BEHAVIOR OF MOBILE TELECOMMUNICATION 3.5G SERVICES

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Abstract: Recently, Mobile Telecommunication businesses contend with each other to expand their customer base by using an aggressive marketing strategy. In order to determine if this strategy is effective, customer's and their switching behavior needs to be studied. This study identifies and analyzes direct, indirect factors affecting customer switching behavior such as attractiveness of alternatives, network externality, switching cost. The research results show that attractiveness of alternatives, network externalities have a direct impact on customer switching behavior. These factors also have a moderated effect on customer switching behavior but the switching cost does not influence customers directly.

1 INTRODUCTION

As the service industry becomes diverse and enhanced, competition increases among providers and brand preference is reduced (Fornell, 1992), prompting companies to practice defensive marketing in an attempt to maintain existing customers and attract new ones. In the mobile communication service industry, the cost for signing up a new customer is ten times greater than maintaining an existing client, thus customer retention has become an essential element of survival in the industry (Bolton, 1998). Accordingly, there is a need to examine customer behavior associated with switching to the competition. There are three main objectives of this study.

The first is to look into the dynamics of the mobile communication market based on previous studies conducted on the switching barrier.

The second is to explain how network externality is expressed in 3.5G services and exchanges influences with customer switching behavior.

Finally, this study attempts to conduct empirical analyses base on the correlations among the factors

that affect switching behavior based on the two aforementioned theories.

2 LITERATURE REVIEW AND HYPOTHESES

2.1 Switching Behavior

Carpenter & Lehmann(1985) defined switching behavior as 'customer shift to other companies' products' and Reichheld & Sasser(1990) as 'customer defection'. Switching behavior can be explained as a concept that counters customer retention and intent to repurchase, and customer retention refers to the overall notion that encompasses the behavior of actual usage as well as the attitude toward the intent of continued usage (Oliver, 1999; Allen & Rao, 2000). Studies of customer retention in the service industry have focused on customer satisfaction and switching behavior as major factors that affect how customers can be retained. According to past studies, although the intensity varies in the relationship between

customer satisfaction and customer retention, the former is generally regarded as a contingent factor for the latter (Anderson and Sullivan, 1993; Jones, 1998; Oliver et al., 1993; Kim, Sang-Hyeon, 2002). This implies that high customer satisfaction has a negative effect on switching behavior, an opposing concept of customer retention and intent to repurchase. Accordingly, it can be concluded that the higher the degree of satisfaction about the current mobile communication service, the lower the probability of switching to 3.5G services. This study focuses on the switching behavior prompted by 3.5G services, and the definition of switching behavior shall include both churning to other service providers and upgrading to 3.5G services within the same provider.

H 1: Customer satisfaction toward current mobile communication service has a negative(-) effect on switching behavior to 3.5G services.

2.2 Switching Barrier

Jones(2000) defined switching barrier as the psychological and financial difficulties that a customer faces in the process of changing service providers. Switching barrier consists of the switching cost and alternative attractiveness, and these factors play moderating roles between customer satisfaction and switching behavior (Anderson et al., 1994; Jones et al., 2002).

Jones(1998) categorized the switching cost into continuity cost, contractual cost, searching cost, learning cost, initial cost and dissociation cost. However, since mobile communication providers offer similar services and usage of 3.5G services is not significantly different from conventional mobile phone, the searching and learning costs can be disregarded. Furthermore, since consumers are not involved in face-to-face interactions with their service providers, the dissociation cost of severing personal relationships does not have to be considered. Accordingly, this study only deals with continuity, contractual and initial costs.

Alternative attractiveness is defined as consumers' awareness of service providers that can replace current providers (Jones et al, 1998) and related to the concept of service augmentation in related literatures (Porter, 1980). Service augmentation refers to providing additional services to be distinguishable from other service providers. In turn, when there is an alternative that provides better services, consumers will disconnect the relationship with current providers and opt for the better option (Bradford, 2000). On the other hand, if the

alternative lacks attractiveness, consumers will continue to use current services albeit not completely satisfactory (Porter, 1980).

H 2: Switching barrier has effects in the relationship between customer satisfaction toward the current service and switching to 3.5G services.

H 2-1: Switching cost has a positive(+) effect between customer satisfaction and switching behavior.

H 2-2: Alternative attractiveness has a negative(-) effect between customer satisfaction and switching behaviour

H 3: Switching barrier has effects on switching behavior to 3.5G services.

H 3-1: Switching cost has a negative(-) effect on switching behavior to 3.5G services.

H 3-1a; Continuity cost has a negative(-) effect on switching behavior to 3.5G services.

H 3-1b: Contractual cost has a negative(-) effect on switching behavior to 3.5G services.

H 3-1c: Initial cost has a negative(-) effect on switching behavior to 3.5G services.

H 3-2: Alternative attractiveness has a positive(+) effect on switching behavior to 3.5G services.

2.3 Network Externalities

First studied by Katz and Shapiro(1985), they defined network externalities as the concept that "the value consumer gains from a product or service is proportional to the size of the network that the product or service belongs to". In other words, network externalities come into consideration when the value of a product or service depends on the number of its users.

Consumers generally wish to be linked to large-scale networks because they expect products or services with large user bases provide higher quality and value. Accordingly, network externalities are referred to as consumption externalities of quantity, which does not provide much value on its own but signifies network characteristics of a product or service whose value increases with expansion of the user base (Shapiro, 1999).

The value of 3.5G services would be marginal without a significant user base of video telephony, which is the core of 3.5G services. Once the number of video telephony users increases, the value of 3.5G services will also increase due to the bandwagon effect. Thus the following hypotheses were established.

Table 1: Manipulative definition of variable.

| Category | Research Variables | | Manipulative Definition | Items Evaluated | Questionnaire Structure |
|-----------------------|-------------------------------|------------------|--|---|-------------------------|
| Customer Satisfaction | Overall Customer Satisfaction | | Customer recognition and sentiment after service experience | •Overall level of satisfaction regarding fundamental services and provider | I-1, 2 |
| Switching Barrier | Alternative Attractiveness | | Degree of awareness regarding providers that offer alternative services | • Whether 3.5G services are offered • Awareness of characteristics and quality of 3.5G services (High-speed data service, video telephony, USIM card, roaming) | II-1, 2, 3, 4 |
| | Switching Cost | Continuity Cost | Cost associated with trouble in switching service providers | • Psychological/financial cost associated with notification of new phone number • Cost associated with lost contacts • Reluctance to use video telephony due to compromised anonymity | II-5, 6, 7, 8 |
| | | Contractual Cost | Cost of losing financial benefits by staying with the current service provider | • Cost of losing current service provider's membership services • Cost of losing discount benefits | II-9, 10 |
| | | Initial Cost | Additional costs associated with switching to a new service provider | • Sign-up fee for the new service provider • Cumbersome sign-up procedure • Cost of signing up for new value-added services and loss of current contents | II-11, 12, 13 |
| Network Externalities | | | Customer awareness of the user base for new services | • Change in behavior according to network externalities • Degree of awareness regarding the number of users for new services | III-1, 2, 3 |
| Switching Behavior | | | Customer's switching behavior from current service | • Intent of continued use of services from the current provider • Possibility of switching to new service • Conviction of switching to new service | IV-1, 2, 3, 4 |

H 4: Network externalities have a negative(-) effect between customer satisfaction toward current service and switching behavior to 3.5G services.

H 5: Network externalities have a positive(+) effect in switching behavior to 3.5G services.

3 RESEARCH METHODS

In order to verify the hypotheses of this study, manipulative definition was established for each variable based on the previous studies described in Chapter 2 to elicit evaluation items for this study. Online surveys were conducted from November 12 to 16, 2007 for male and female mobile telephone users between the ages 10 and 60. Among 180

questionnaires retrieved, those with incomplete or insincere responses were discarded and the remaining 158 were used as the survey data for the study. Likert 7-point scale was used for every question except for the items regarding demographics, and SPSS 12.0 was used to perform statistics analysis, reliability analysis, factor analysis and regression analysis.

4 DATA ANALYSIS

4.1 Characteristics of Sampe Space

The statistics related to the 158 respondents for the survey. The male-female ratio was somewhat

balanced at 53.2% and 46.8%, but 83.8% of the respondents were in the 20-40 age group.

4.2 Analyses of Variable Scale Reliability and Propriety

The internal consistency method was used for verifying reliability of this study. The survey questions were used without modification because there was no indication of reliability being undermined, and the Cronbach's Alpha coefficient for the factor variables used in the study were between 0.6 and 0.9, displaying a high level of internal consistency.

In addition, factor analysis was performed for each item that constitutes a variable to analyze propriety and find out whether each variable was isolated and assessing a unique property. VARIMAX rotation based on major element analysis was used to elicit factors, and factor loading was set at 0.4 for those with Eigen value of 1.0 or higher, which yielded 5 factors. The analytical result indicated that the two variables that explain switching cost - contractual cost and initial cost - should be grouped as a single factor. It was determined that the respondents regarded both contractual and initial costs as being associated with switching to or signing up for a new service provider, and the two variables were redefined as the initial switching cost.

4.3 Verification and Analysis of Hypotheses

Verification for the 5 research hypotheses were conducted in two stages. First, multiple regression analysis was used to verify the factors that directly affect switching behavior. H1, H3 and H5 are classified as direct factors. The second stage involved analyzing the moderating effect that influence the relationship between current mobile service satisfaction and switching behavior, for which H2 and H4 correspond with. Hierarchical multiple regression analysis was used to analyze the moderating effect. In addition, the average value of each factor was calculated for regression analysis. Adoption criteria of hypothesis were set at 95% reliability and a significance level of 0.05 or lower.

Summarizing the analytical result, 5 of the 7 hypotheses established for the study were adopted and the remaining 2 were discarded.

Table 2: Result of Analyses.

| Hypotheses | Result |
|----------------|--------------------|
| Hypothesis 1 | Adoption |
| Hypothesis 2 | Partially adoption |
| Hypothesis 2-1 | Discard |
| Hypothesis 2-2 | Adoption |
| Hypothesis 3 | Partially adoption |
| Hypothesis 3-1 | Discard |
| Hypothesis 3-2 | Adoption |
| Hypothesis 4 | Adoption |
| Hypothesis 5 | Adoption |

4.4 Additional Analysis: Effect of Intensifying the Switching Cost Research Model

Additional analysis was performed for this study to assess how switching costs customer satisfaction and switching behavior based on the fact that the initial switching cost in particular has influence on the two factors. The respondents were divided into two groups based on whether they felt the initial switching cost was high or low to analyze the effects between degree of satisfaction and switching behavior. The result indicated that there is significant influence between level of satisfaction and switching behavior for the group that felt the initial switching cost was high, but the influence insignificant for the other group.

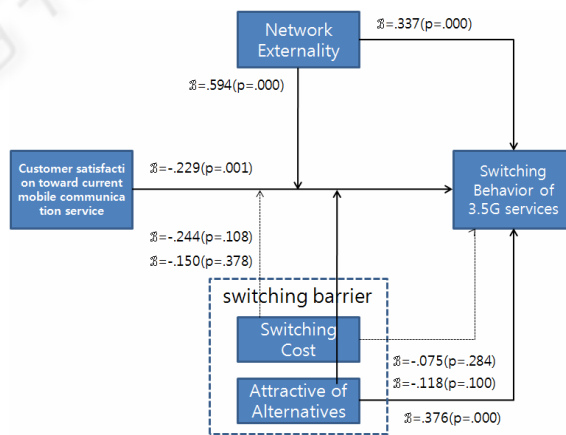


Figure 1: Research Model for Study Results.

The result corresponds with the basic research model demonstrating that customers who feel that there is a high cost of switching mobile service providers recognize the cost as a switching barrier and will not display switching behavior. Therefore, it can be learned from the additional analysis of this

section that the initial switching cost reinforces the research model of this study.

5 CONCLUSIONS

This study analyzed a comprehensive model of switching behavior to examine consumer awareness of the new 3.5G mobile communication services and the factors that affect the switching behavior to 3.5G services. The study was conducted in two stages. First, the study assessed the factors that directly affect the level of satisfaction as well as network externalities, perceived switching cost and alternative attractiveness of 3.5G services. Second, the interaction effects of network externalities, alternative attractiveness and switching cost were examined as moderating variables between satisfaction and switching behavior.

The expectation of 3.5G services providing various distinguishing features from conventional mobile communication to offer new sources of satisfaction has been reflected in this study. In the case of video telephony, the flagship 3.5G service, network externalities significantly affect consumers' switching behavior in terms of the perception of how many others were using the service.

As for the switching cost, number portability and sign-up fee waiver offered by the service providers allow consumers to alleviate the burden of notifying their new numbers to their contacts or signing up for new services.

Whereas previous studies on the subject have focused solely on the switching barrier, this study bears significance in that network externalities were analyzed from the consumer behavior perspective. Moreover, the study provides a foundation for establishing a practical strategy for securing a 3.5G service customer base to gain a competitive edge.

However, this study failed to cover factors such as consumer usage characteristics and more than 80% of the survey respondents were in the age group between 20 and 40. It is therefore necessary to diversify the age groups of the sample space to increase the accuracy of the study. Questions have been raised regarding the effectiveness of the strategies implemented by the mobile communication providers to maintain and acquire customers for 3.5G services, but this study did not examine whether customers display switching behavior according to the strategies. In turn, it would be necessary in future studies to assess whether service providers' strategies are effective based on the mechanisms explained in this study as well as

the number of 3.5G service subscribers and changes in the actual profit structure.

REFERENCES

- Sang Hyeon Kim, Sang Hyun Oh, 2002, The Determinants of Repurchase Intentions in the Service Industry : Customer Value , Customer Satisfaction , Switching Costs , and Attractiveness of Alternatives, Korean Marketing Association, 17(2), pp. 25-55
- Allen, D. R., Rao, T. R., 2000, Analysis of Customer Satisfaction Data: A comprehensive guide multivariate statistical analysis in customer satisfaction, loyalty and service quality research, Milwaukee, Wisconsin: ASQC Quality Press
- Anderson, E. W., M. W. Sullivan, 1993, The Antecedents and Consequences of Customer Satisfaction for Firms, *Marketing Science*, 12, pp. 125-143
- Anderson, E. W., Fornell, C., Lehmann, D.R., 1994, Customer Satisfaction, market share, and profitability: Finding from Sweden, *Journal of Marketing*, 58, pp. 53-66
- Bolton, R. N., 1998, A Dynamic Model of the Duration of the Customer's Relationship with a Continuous Service Provider: The Role of Satisfaction, *Marketing Science*, 17, pp.45-65
- Bradford, Neeru Sharma, Patterson G., 2000, Switching costs, alternativeness and experience as moderators of relationship commitment in professional, consumer services, *International Journal of Service Industry Management*, 11
- Carpenter, Gregory S., Donald R. Lehmann, 1985, A Model of Marketing Mix, Brand Switching and Competition, *Journal of Marketing Research*, Vol.22(August), p.318-329
- Fornell, C., 1992, A national customer satisfaction barometer: the Swedish experience, *Journal of Marketing*, Vol. 55.
- Jones, M. A., 1998, Satisfaction and Repurchase Intentions in the Service Industry: The Moderating Influence of Switching Barriers, Unpublished dissertation, University of Alabama
- Jones, M. A., Mothersbaugh, D. L., Beatty, S. E., 2002, Why customer stay: measuring the underlying dimensions of services switching costs and managing their differential strategic outcomes, *Journal of Business Research*, 55, pp. 441-450
- Katz, M., Shapiro, C., 1985, Network Externalities, Competition and Compatibility, *American Economic Review*, 75(3), pp. 424-440
- Oliver , R. L., 1993, Cognitive, Affective, and Attribute Bases of the Satisfaction Response, *Journal of Consumer Research*, 20(December), pp. 418-430
- Oliver, R. L., 1999, Whence Consumer Loyalty?, *Journal of Marketing*, 63(special issue), pp. 33-44
- Porter, M. R., 1980, *Competitive Strategy: Techniques for Analyzing Industries and Competitor*, New York, The Free Press

- Reichheld, F. F., Sasser, W. E., 1990, Zero Defections: Quality comes to services, Harvard Business Review, 68(September-October), p.105-111
- Shapiro, C., Varian, H. R., Information Rules: A Strategic Guide to the Network Economy, Harvard Business School Press, Boston, MA



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