

A Study of Consumer Loyalty on Instant Messaging Services*

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ABSTRACT

This study is focused on instant messaging service (IMS) providers' efforts to maintain a steadfast group of consumers who are willing to continuously use one service without switching to another. Various factors, carefully selected to reflect the unique features of instant messaging, were tested to verify their relationship with consumer loyalty. The results suggest that consumer loyalty of IMS users is most significantly affected by trust and perceived reputation a consumer has on the provider of IMS. Network externality, or the size and proximity of relationships formed through an IMS, also proves to have effect on consumer loyalty. Consumer loyalty in IMS users of different age or different internet usage is affected differently by each factor.

Keywords: Instant Messaging, Consumer Loyalty, Network Externality

1. Introduction

With the growth of the Internet industry, instant messaging service (IMS) has emerged as a significant means of communication among Internet users. IMS allows its users to exchange short messages, similar to Internet relay chatting (IRC) but specialized in one-to-one communication. It also provides its users with friend-list function which displays selected people online who are able to communicate. File transfer

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and other additional services are also available depending on its service providers (Cao *et al.* [2]). IMS population is constantly growing, and is expected to more than double by 4 years from 2007 according to the Radicati Group (Instant Messaging Planet [23]). With its dramatic increase in number of consumers, the competition between service providers to recruit more customers has intensified. The IMS's distinctive characteristic as a means of communication with developed social network inside a particular service makes it difficult to attract consumers only through normal Internet promotion methods. Many researches have been conducted surrounding the use of IMS itself or the efficacy in its use, but not much is researched about why a user selects and constantly uses a particular IMS among variety of choices provided in the market.

This paper aims to identify the factors which influence consumer tendency to 'stick fast' to a particular IMS service. Such tendency is represented by concept of consumer loyalty and hypothesized to be connected to a variety of traits, including customer satisfaction in service and individual characteristics. The size and proximity of social network inside a service was also measured and hypothesized in relation with consumer loyalty.

The rest of this paper is organized as follows: In section 2, the previous researches related to the topic are examined. In section 3, articulated description of the models and hypotheses used in this study follows the review. In section 4, the collection and interpretation of the data are then introduced and analyzed. The result of analysis made are discussed and compared with the hypotheses to draw a conclusion in the last section.

2. Literature Review

2.1 Instant Messaging

Most research on instant messaging is focused on technology, and its research in behavioral studies has only begun recently as IM triumphed as a major communication tool in the internet. The behavioral researches on IM can be generally categorized in two- first on the tendency to use IMs, and secondly on IM's positive and negative

effects in its use.

On the first category, Cao and Everard researched on cultural effect in decision to use IMS (Cao and Everard [2]). Strader *et al.* studied the relation between network externalities and acceptance of IM technology along with e-mailing (Strader *et al.* [19]). Yen *et al.* dealt with consumer selection between e-mail and IMS, suggesting two communication methods as counterparts (Lencaster *et al.* [10]).

For the latter category, Lin *et al.* focused on IM's role as medium of virtual relationship and examined the effect on its users (Lin *et al.* [13]). They studied the effect of IM usage in teenagers of Taiwan with its further interpretation on virtual relationships. Others found IM valuable in maximizing efficiency in workplace, such as Ward *et al.* who suggested adopting IM in service frontline of public business (Ward and Kern [21]).

Although there are several researches on IM as a means of communication, research on IM service as competitive service is still inadequate. A diverse array of IMS is provided by large internet corporations, and these corporations are mainly interested in how they can win a competitive share of the market. In Korea, a local messenger brand NateOn defeated MSN and now holds the Korean market with largest number of members¹-it would be interesting to discover how this unique phenomenon took place.

2.2 Consumer Loyalty in the Internet

The definition and common application of consumer loyalty has been much researched (Oliver [15], Reichheld [16]). Oliver defines consumer loyalty as tendency to adhere consistently to a certain brand or product without changing one's preference. This has much implication in marketing-maintenance of customers who constantly use a company's product is critical for consistency of its sales. This concept of consumer loyalty has been extensively used in Internet consumer researches, particularly in internet shopping malls (Min [14], Shin *et al.* [17]). For other cases, Floh and Treiblmaier researched the factors of consumer loyalty in internet banking (Floh and Treiblmaier [5]).

¹ 'NateOn Members reach 25 million' The Joonang Ilbo, Seoul, 2008.

3. Research Model and Hypothesis

3.1 Research Model

This research attempts to verify the factors that affect consumer loyalty in IMS by statistically testing multiple hypothetical factors which we believed to be relevant. These hypothetical factors were carefully selected to reflect the actual reasons for adhering to one service.

The concept of perceived usefulness and perceived ease of use adopted in this paper derives from Davis's Technology Acceptance Model (Davis [4]). This model is used to describe people's reaction to a new type of service provided and therefore is often adopted in analyzing Internet-related services such as Internet shopping (Koo [7]). In this study, perceived usefulness for the service itself was ignored, since we assumed that using IMS sufficiently enough to develop consumer loyalty meant the consumer was much sure of its perceived usefulness.

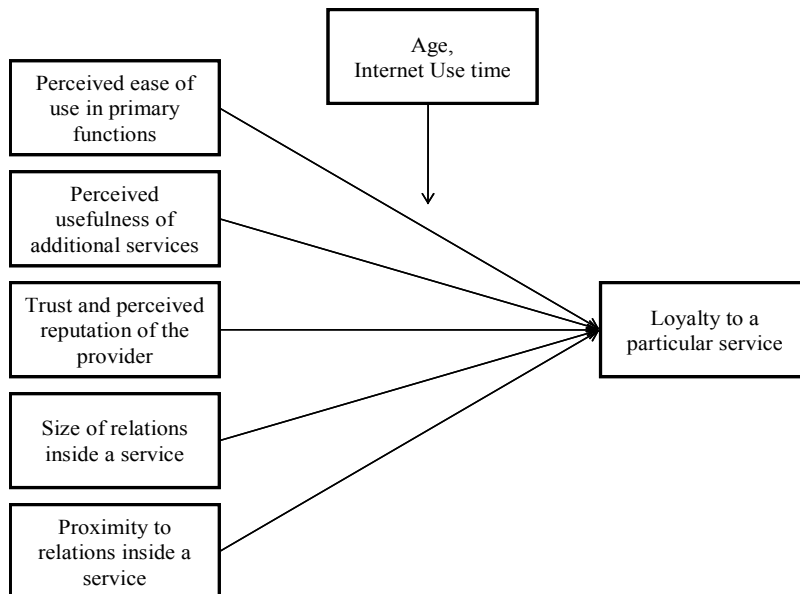


Figure 1. Research model

The trust and perceived reputation of the provider was referred from research on consumer trust in an Internet store (Jarvenpaa [6]). A research was conducted on con-

sumer trust's relation to consumer loyalty in e-shopping, which is similar to one hypothesis in this research but focused on the service itself than the provider (Min [14]). The size and proximity of relationships inside a particular service is unique to this research, but referred to some ideas in social network theories including network externalities (Song and Walden [18]). The overall research model is represented by Figure 1.

3.2 Research Hypothesis

The degree of how convenient an IMS is as a tool of communication is assumed to be a direct variable which affect consumer loyalty. The TAM uses similar applications that associate perceived ease of use with consumer behavior (Davis [4]). Since simple and easy communication method of IMS is one of its major appeal to customers (Cao *et al.* [2]), perceived ease of use can bear significant relation to consumer loyalty among IMS users. From these assumptions we draw our first hypothesis.

Hypothesis 1: Perceived ease of use in primary functions of IMS will positively affect its consumer loyalty.

One of the prominent features of IMS is that it is often provided with its own set of additional services unrelated to the functions of IMS itself. Researches on consumer loyalty assume that loyalty directly relates to consumer satisfaction, which is also partially linked to satisfaction in peripheral functions (Oliver [15]). To measure this degree of satisfaction to such services we adopted the concept of perceived usefulness. Perceived usefulness is a significant variable in TAM as well as perceived ease of use (Davis [4]). As hypothesized, the degree of how useful a user think the services is directly related to likeliness he or she will adhere more to a certain IMS. The second hypothesis drawn from such ideas is as follows.

Hypothesis 2: Perceived usefulness of additional services will positively affect its consumer loyalty.

IMS is mostly provided by large Internet businesses which are well known to users. The perceived reputation and trust on the company was hypothesized to be related to consumer loyalty in IMS provided by the company. Researches on consumer

trust discovered that the significance of consumer's positive recognition on a certain company may alter many aspects of behavior on the service provided by the company (Jarvenpaa [6], Lee [12], Ye *et al.* [22]). The measurement on perceived reputation was also adopted from these researches.

Hypothesis 3: Trust and perceived reputation of the provider will positively affect the consumer loyalty of its IMS.

The most conspicuous feature of IMS compared to other types of Internet-based service is that each IMS service has a set of relationships which develop inside a particular service for each user. Such feature was thought to be one of the most detrimental factors that affect consumer loyalty in an IMS. One similar research involved relationship between peer-to-peer network size and the behaviors of its users (Song and Walden [18]). In this case we developed our unique set of operational definition and measurements to clearly reflect this special tendency. Two separate variables were measured in this category-size and proximity, and both were hypothesized to have a positive effect on consumer loyalty. Two hypotheses were developed for this cause:

Hypothesis 4: The size of relations formed inside a particular IMS will positively affect the consumer loyalty in the IMS.

Hypothesis 5: The proximity to relations formed inside a particular IMS will positively affect the consumer loyalty in the IMS.

People of different age and different internet use time are likely to display different purposes and behaviors in using the Internet (Kurniawan *et al.* [8]). For IMS, this idea was adopted to analyze the difference of main factors which enhances consumer loyalty to a service. Age and internet use time were used as moderating variables in the model to observe any difference from altering the group of subjects.

Hypothesis 6: Age and Internet use time will affect the type of determining factors which influence consumer loyalty.

The operational definition of variables in the hypotheses and the questions used to measure are as Table 1.

Table 1. Operational Definition of Variables and Their Measurement Questions

Variable	Operational Definition	Measurement Questions	Reference
Ease of use	The easiness in using Primary functions of IMS	It is easy to communicate using the IMS. There is no significant difficulty in using the IMS. I understand clearly the functions of the IMS. It is convenient to use the IMS.	Davis [4]
Usefulness of additional services	The degree of perceived usefulness toward additional services provided with the IMS	The additional services provided with the IMS provide useful information. The additional services provided with the IMS help much in efficient Internet use. The additional services provided with the IMS are useful.	Davis [4]
Trust in provider	Trust in enterprise or company which provides the IMS	The provider of the IMS offers quality services. The provider of the IMS is honest The provider of the IMS is trustworthy.	Jarvenpaa [6] Lee [11] Ye [22]
Reputation of provider	Perceived reputation of enterprise or company which provides the IMS	The provider of the IMS has a good reputation. Acquaintances and friends have a good impression of the provider of the IMS.	Jarvenpaa [6]
Size of relations inside a service	The number of relations within an IMS	My friend list in the IMS is larger than those of other people. I communicate with many people using the IMS. There are many people who listed me in the friend list.	Song <i>et al.</i> [18]
Proximity to relations inside a service	Proximity to people communicating with the IMS	I often talk with people in my friend list in the IMS. I talk sincerely through the IMS. I am close to people who communicate through the IMS.	Walker and Thompson [20]
Loyalty	The degree of commitment which a customer is willing to use an IMS consistently	I will use the IMS for an extensive period of time. I am unwilling to shift to other IMS. I have a very high frequency in using the IMS. I am willing to recommend this IMS to others.	Oliver [15]

4. Result AND Analysis

4.1 Sample Characteristics

The subjects of this research were selected among IMS using population-people

who do not use IMS were not allowed to participate in the survey. The data include samples from 1 high school, 2 undergraduate campuses, and an MBA program with students working in various businesses. The samples were expected to have generally high internet use rate and proximity to concept of IMS.

A total of 300 questionnaires were distributed through the Internet and by hand, and 176 issues were actually counted for analysis, excluding unreturned, inadequate, or omitted issues. The return rate was 58.67%. In case of simultaneous usage, the subjects were asked to answer questions for a specific IMS in account of a service which they use most frequently.

4.2 Hypothesis Testing

The reliability of every variable was measured by Cronbach's alpha. The result displayed all variables with alpha over 0.7, and no item was proved to be in need of exclusion. The factor analysis result displayed that five components were extracted, and all measurements of each variable were loaded well on its corresponding component. The analysis exhibits that our design of questionnaire was statistically reasonable with strong correlation within a measured variable.

Regression analysis was main method through which we tested our hypothesis. This method is often used to figure the relationship between dependent and independent variables (Kym *et al.* [9]). Hypotheses 1, 2, 3, 4, and 5, which involve the general tendency in all data, were tested through linear regression to verify if relations in our assumption exist. Hypothesis 6, which involve moderating variables, was tested through separate testing of each linear regression done in the previous hypotheses. For example, to study the difference in determining factors by age, we divided the data into two groups representing different age groups. Linear regression was run separately in each group and the results were compared. The input data for each case was average of measured numbers in each variable. SPSS 12.0 for windows was used to perform all calculations.

From Table 2, which included results from linear regression of all data collected, we found that the variable with the strongest correlation with consumer loyalty was trust and perceived reputation of the provider. Most other variables displayed positive correlation with desirable p-value (Less than .05). Perceived usefulness of additional services was the only exception, without any signifiers of correlation with consumer loyalty. From such results the test on the first five hypotheses is complete:

Table 2. Linear Regression Results: All Data

	Unstandardized Coefficients		Standardized Coefficients	T	p-value
	B	Standard error	Beta		
(Constant)	.763*	.334	.170	2.288	.023
EasyToUse	.175*	.070	-.058	2.478	.014
AddUseful	-.042	.051	.316	-.827	.409
Provider	.344***	.073	.235	4.690	.000
Size	.200**	.066	.199	3.005	.003
Proximity	.182**	.069		2.636	.009
No. of observations = 176, adjusted R square = .331, F-value (significance) = 18.321 (0.000)					

Note) *** $p < 0.001$ ** $p < 0.01$ * $p < 0.05$.

Hypothesis 1: Perceived ease of use in primary functions of IMS will positively affect its consumer loyalty-accepted

Hypothesis 2: Perceived usefulness of additional services will positively affect its consumer loyalty-rejected

Hypothesis 3: Trust and perceived reputation of the provider will positively affect the consumer loyalty of its IMS-accepted

Hypothesis 4: The size of relations formed inside a particular IMS will positively affect the consumer loyalty in the IMS-accepted

Hypothesis 5: The proximity to relations formed inside a particular IMS will positively affect the consumer loyalty in the IMS-accepted

To test hypothesis 6, we ran two separate sets of regression, each consisting of two groups either divided by age or internet use time. The results in Table 3 displayed significant difference in affecting factors, which implications will be discussed in the next section. The analysis of the group consisting of people aged below 30 displayed correlation to provider-related traits and size of relationships inside an IMS, with strongest correlation to provider-related traits. Another analysis of the remainder, over age of 30, displayed correlation to perceived ease of use, proximity to relationships, and provider related traits. Perceived ease of use was the principal affecting factor of consumer loyalty in this group. Analysis of people who use internet less than three hours a day displayed strongest correlation in size of relationships inside an IMS, and provider-related traits along with proximity of relationships were also

significant. The remainder of the group, with internet use time exceeding 3 hours a day, displayed no particular correlation to any of the factors except trust and perceived reputation of the provider.

Hypothesis 6: Age and Internet use time will affect the type of determining factors which influence consumer loyalty-accepted

Most hypotheses in the research models were accepted. That perceived ease of use has positive correlation to consumer loyalty follows other precedents which applied TAM in relation to consumer behavior (Koo [7]). The perceived usefulness of additional services was proved to have no relationship to consumer loyalty- the benefits of the IMS itself was more important in making loyal consumers than the usefulness of additional services. Trust and perceived reputation of the provider was the most important affecting factor in consumer loyalty. Such provider-related traits were influential in all divisions of data tested in this research. Size and proximity of relationships also proved to have much influence, and varied tendency in different age groups is notable.

Table 3. Summary of Multiple Analysis Results

	All data	Age < 30	Age ≥ 30	Internet < 3hr	Internet ≥ 3hr
EaseToUse	○	×	◎	×	×
AddUseful	×	×	×	×	×
Provider	◎	◎	○	○	◎
Size	○	○	×	◎	×
Proximity	○	×	○	○	×

Note) ◎ Most significant, ○ Significant, × Not Significant.

4.3 Discussion

The most pronounced result in our hypothesis testing is firm correlation of trust and perceived reputation of the provider. From this we concluded that loyalty to IMS is significantly brand- dependent in a unique way. Most IMS are provided by large internet service franchises which are well known to most internet users. A 1997 research on internet shopping malls shows that brand information and brand percep-

tion is more influential in the internet than other offline markets (Alba *et al.* [1], Danaher *et al.* [3]). Since quality of products or services purchased online is less tangible, consumers tend to rely on brand perception in making their choice. The research subject for the previous researches are different from those for this research, but IMS has characteristics comparable to the products sold in online markets, presented in previous researches on brand perception and consumer loyalty. We also note that the brand perception measured in this research is directed to the brand of internet service providers, not the brand of the product itself.

The network externality, as proved in researches related to p2p and blogging services, had significant influence on consumer loyalty of IMS (Strader *et al.* [19], Song and Walden [18], Lee and Lee [12]). People with more, friendlier relationships formed inside an IMS were less likely to leave the particular service. This implies that service providers could make some systematical enhancements to encourage expansion and maintenance of social network inside the IMS.

The perceived usefulness of additional services did not significantly affect consumer loyalty. While a large variety of additional services are currently provided in many IMSs to increase the satisfaction of consumers (Cao *et al.* [2]), the service providers might be reasonable to consider more investment on the mainstream services than additional ones.

Difference between separate groups of analysis also has much implication in marketing. People of young age were influenced more by size of relations than other factors, and people of older age displayed exceptional influence from perceived ease of use. We predicted that people of age under 30 are more likely to be attracted to conspicuous indicators of social network (length of friend list). Older people, who are less accustomed to new computer applications, could be more attracted to IMS with less difficulty in use. Users with short internet use time were loyal to a service when they had more network externalities, while users who use internet for an extended period of time had no particular affecting factor except provider-related attractions. The specific reasons and implications for these results are not much figured, and are in need of further research.

These implications can be further applied to Social Networking web sites. Led by MySpace and Facebook, Social Networking sites have achieved a great lot of popularity in recent years: Facebook currently has 350 million active users (2009. 12, <http://>

www.facebook.com/press/info.php?statistics). Social networking sites share many characteristics with IMS, including its free service, limited competition, and the presence of network externalities. Since not much is currently researched by this recent phenomenon, the interpretations of this research might be helpful in researching the recent competition between these Social Networks.

5. Conclusion

This research focused on IMS as a competitive service, and attempted to verify the influential factors that affect a user's tendency to constantly use a particular service. Instant messaging services have many novel aspects to consider as an internet-based service that are different from those of online games, internet shopping malls, portal sites, and other internet services that have been subjects of continuous research. We selected five of the factors that are important and unique to this particular area of service, and tested its relationship to consumer loyalty through linear regression.

The main findings of this research are as follows: First, trust and perceived reputation to a certain IMS is critical to consumer loyalty in the service. Second, Network externalities also have significant influence on consumer loyalty. Third, Groups of different age and internet use time display different significance in each factor to consumer loyalty. Since research on IMS market is currently limited, these results can be helpful in supporting further research in the area. We especially expect further researches which would help explain the diverse results of different analysis groups in this research.

The results of this research should be interpreted with consideration to some limitations. First, we considered IMS use voluntary and only for use of social communication. Since a significant portion of IMS users use these services under control of job environment regulation or use them solely for work efficiency, the model and results of the research could not reflect the tendency of all IMS users. Second, the data used for this research was not sampled sufficiently, without applying intricate sampling models. The lack of collected data was also an issue, while analysis with more data would be efficient and precise in measuring general tendency.

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