

Entertainment on Mobile Internet Services: from the Korean Consumer Perspectives

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Abstract. Elaborating on the rapid evolution of mobile internet services in Korea, this paper investigated young consumers' preferences and attitudes towards mobile entertainment services through person-to-person questionnaires. We tried to find out "how" mobile entertainment services differ from other mobile services from the consumer perspectives: expectation and satisfaction. After careful investigation of what the consumers actually said, it could be said that the speed of services was never met to consumer expectation in mobile entertainment services, while they never really cared about contents aspects of mobile internet services.

1 Introduction

It has been reported that South Korea is one of the leading countries in the world in number of people owning a mobile phones with 64% of the total population (KMIC, 2001). According to the NIDA(National Internet Development Agency of Korea, 2003, 2004, 2005), the subscribers of mobile internet services through major mobile telecommunication service carriers has dramatically increased over the past 4 years, reaching from approximately 32% in 2002 to 42.8% in 2005 of the entire mobile telecommunication service subscribers. The figure is approximately 39% of the total population of Korea.

Among the internet contents provided by the mobile telecommunication service carriers, ring tone and melody download service has consistently been the consumer favorite, while the services for mp3 music file download instantly became the second most popular services since its introduction to the market in 2004. Download of games and multimedia files has been also consistently requested (see Table 1). All these heavily requested contents and services can be viewed as entertainment services since they do not particularly convey information on certain purpose nor provide functions for daily transactions such as banking and purchasing. That means entertainment became the single most important revenue stream source for mobile internet contents providers and telecommunication service carriers. Therefore, while the market is expected to expand enormously, the factors that contribute to consumers' ex-

pectation on current mobile entertainment services as well as to their satisfaction or lack of satisfaction would be important for the providers and carriers to keep generating consistent revenue streams. Consumer behavior research, particularly on consumer perception on service quality is critical for identifying consumer preferences, attitudes and predispositions towards innovative mobile services.

Table 1. Trends of mobile internet services and usage for Korean customers (%)

Mobile Internet Services	2003	2004	2005
Ring tone download	32.8	82.9	96.8
Multimedia file download *	6.1 (0.0)	56.5 (46.0)	87.5 (45.4)
Game	18.0	55.0	37.1
Information search	12.6	15.6	19.9
Mobile banking	--	4.5	8.4
GPS location service	--	3.1	7.6
Total No. of Respondents	3,276	3,103	3,063

When a service needs to be evaluated, it is the consumers' experience what ultimately counts. The consumers are not concerned about how a service is provided, but only the resulting quality they receive. The notion is well reflected in ETSI's (1990) definition of quality of service(QoS) in the context of digital networks as "... the collective effect of service performances, which determine the degree of satisfaction of a user of the service". Choi et al. (2003) revealed that service repurchase intention among Korean mobile internet users was significantly related to experienced value and satisfaction. This may particularly be true for entertainment services through mobile internet, with ever increasing consumers and service applications in this technology-driven business. For mobile service providers, balancing customer satisfactions and expectations is an important issue to maintain customers' royalty.

This paper investigates customers' perception towards mobile internet services in Korea through in-depth questionnaire surveys. We tried to identify the attributes of mobile internet services where the customers have the greatest or the least expectations and satisfaction in the services provided. Though we did not engage in a quantitative measurement of specific mobile network parameters related to the user perception, the study generally provides guidelines for the mobile entertainment services to meet the expectation with growing network performance demands of consumers in Korea. We tried to explain the relationship between the intangible user experiences of satisfaction and expectation and rather tangible attributes of mobile internet services. We also examined how the mobile entertainment services in Korea met to the challenge from the customers' expectation compared to the other mobile services.

2 Research Methodology

Data was collected from young consumers living in Metropolitan Seoul area, using questionnaires on current wireless internet services through mobile telecommunication service carriers. A total of 370 consumers (215 males and 155 females) whose

age ranges from 14 to 40 years old (with the average age of 23.2 years) participated in the study over the span of 2 weeks. About 67% of the participants were high school and college students, considered in general to be the major mobile consumer groups. The data was collected by a person-to-person questionnaire which asks participants their satisfaction and expectation levels using a 7-point scale subjective rating method.

The mobile services examined were grouped in four categories: 1) personalization services, with such services as ring tone, background figure, or avatar figure download to decorate and customize consumer's mobile phones, 2) entertainment services, with such services as game or multimedia file (ex. mp3 music and mpeg files) download, 3) communication services, with SMS, MMS, and instant messengers to send and receive messages of different types, and 4) information provision, with such services as stock quotes, news and weather telecasting, and traffic information. Participants were advised with constituent services for each category prior to questionnaire responding.

Two aspects of mobile services were examined: system and contents. In each aspect, five different attributes of the mobile services in that aspect were examined through questionnaires. These attributes examined for each aspect of mobile services are important since they have been used for market research by mobile telecommunication service carrier companies in Korea, for monitoring and evaluating the behaviors and attitudes of the consumers (NIDA, 2005).

(1) System Aspect

- Reliability and Stability of System (reliability)
- Download Speeds (speed)
- Degree of Privacy in Services (privacy)
- Usability of System (usability)
- Screen Aesthetics (aesthetics)

(2) Contents Aspect

- Validity of Contents (validity)
- Accordance with Users' Intent (accordance)
- Contents Update Rate (update)
- Volume of Contents (volume)
- Variety of Contents (variety)

For each aspect, the questionnaire first asks users subjective satisfaction ratings in terms of the five attributes that influence the perceived quality of mobile internet services: How would you rate your satisfaction with your current mobile internet services in terms of the above attributes on the scale of 7 (with 1 being the lowest and 7 being the highest)? The questionnaire then asks users subjective expectation ratings with the same scale: How would you rate your expectation with your current mobile internet services in terms of the five attributes, based upon the current mobile telecommunication technology status in Korea on the scale of 7 (with the same manner)?

The questionnaire was carefully designed to ask consumers on the satisfaction first and on the expectation later since it could influence respondents' perceived satisfaction by evaluating in comparative manners.

3 Results and Analysis

3.1 System Aspect

Satisfaction. Korean consumers' overall satisfaction with the current mobile internet services was not great, scoring at around 4.4 out of 7 points. ANOVA shows a strongly significant difference between services ($F= 5.10, p= 0.002$). A Tukey Post-Hoc test shows that consumers were more satisfied with entertainment services and communication services than with other services. No significant attribute could be found that affects the user satisfaction in system aspect. However, consumers seemed not happy with download speeds for the personalization and entertainment services, while satisfaction levels for all the other interactions between services and attributes remained very similar. These two services consist mostly of downloading multimedia files: ring tones, background graphics, and avatar figures for the personalization service, and movie and music files, and game contents for the entertainment service. Consumers were not satisfied with the speed in these download services, since downloading multimedia files with bigger size with the current speed raised the costs.

Expectation. Overall consumer expectation with the current mobile internet services was generally higher, with average scores at around 5.6 out of 7 points. Consumers had significantly greater expectations with multimedia entertainment services and communication services ($F= 4.25, p= 0.005$) than with personalization and information services. The effects on attributes ($F= 13.15, p= 0.001$) and service * attributes interaction were also found to be mildly significant ($F= 1.68, p= 0.082$). It was shown that consumers did not expect much on screen aesthetics compared to the other service attributes (Fig. 1). This was particularly apparent with the personalization, communication, and information services, while consumers expect rather higher aesthetics in entertainment services.

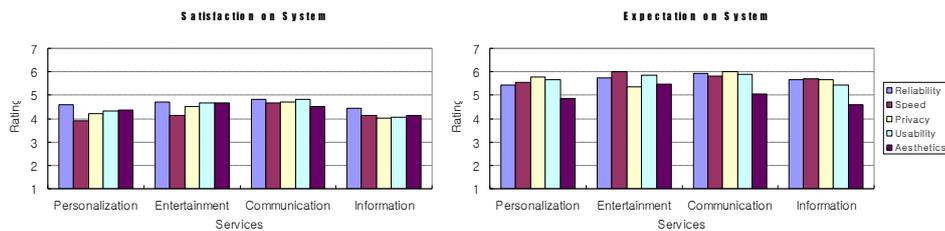


Fig. 1. Consumer satisfaction and expectation ratings on the system aspect of the current mobile internet services

3.2 Contents Aspect

Satisfaction. Overall user satisfaction with the current mobile internet services in contents aspect was similar to that in system aspect, scoring at 4.4 out of 7 points. No services or attributes was found to be significantly different from the others in consumer ratings.

Expectation. Overall user expectation with the current mobile internet services was slightly lower than that in system aspect, scoring at around 5.4 out of 7 points. Just like satisfaction, no services or attributes was found to be significantly different from the others in consumer ratings.

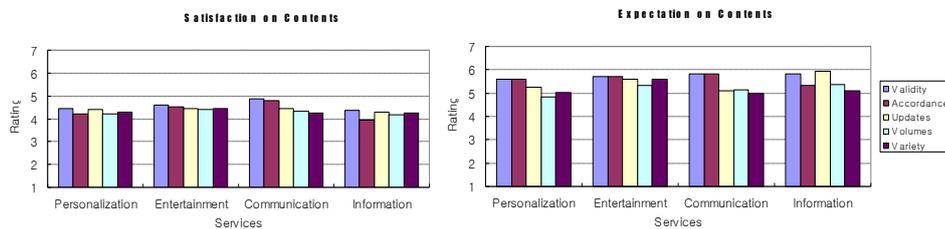


Fig. 2. Consumer satisfaction and expectation ratings on the contents aspect of the current mobile internet services

4 Conclusion

Based on the research carried out in this study with the current mobile services in Korea, which are regarded one of the leading mobile industries in the world, two conclusions can be drawn. First, the young consumers seemed not satisfied with the service speed, particularly for the services aiming for personalization and entertainment. Second, the young consumers seemed to be more sensitive to system aspect, such as speed, than to contents aspect, such as volumes and update rate, of mobile internet services.

Since the two categories of services in personalization and entertainment showed similar patterns in consumer attitudes, we can derive certain characteristics that are common to both services. Consumers enjoy self-engagement in those services: personalization in which users spend much time decorating and customizing to their delight and also to express their identity and preferences, and entertainment in which users engage in for their pleasure. Those two service categories differ from communication and information services since the services were designed to amuse consumers more than to provide simple telephony for communication or information. And it was speed that the consumers concerned the most in these services.

The personalization services can also be viewed as a sort of entertainment service since the activities the users engage in while personalizing their mobile phones, such as setting ring tones and background graphics, are intended to amuse the users them-

selves. From this perspective, it can be said that the whole mobile internet services are directed more and more towards entertainment, and consumers expect more and more speed to enjoy the services. While the consumers expected good screen aesthetics for the entertainment services, it seems, in general, unnecessary for the mobile telecommunication service carriers to invest lots of resources into the design for aesthetics, as it was shown that the users did not have great expectations in screen aesthetics for the other services.

Personalization services have continuously been an important revenue source for mobile service providers from the early days, while the entertainment services became the killer applications with the inclusion of the required functions and devices in the mobile phones recently, as such entertainment services became available for the mobile users as music, music videos, games, and now TV broadcasting.

The rapid evolution of mobile entertainment services in music, video, and games on mostly 2.5G or 3G phones provide new revenue streams for mobile telecommunication service carriers. For these carriers and content providers (CPs) to efficiently market applications and contents through mobile networks, extensive knowledge and understanding of the consumer behaviors and needs is required. While entertainment services become one of the so-called killer applications on the net and most young mobile telecommunication subscribers become willing to spend more money in entertainment services, it seems like that the entertainment service does not provide much difference in service performances from other services from the consumers' perspectives. It is expected that this study provide guidance for the mobile telecommunication service industries to build strategies to make their customers feel satisfied and happy in entertainment-dominant services, thus preventing to lose royalties in their services and maintaining customer retention (Karvonen and Warsta, 2004; Balaji, Landers, Kates, and Moritz, 2005).

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