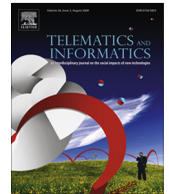Contents lists available at ScienceDirect

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The effects of service interactivity on the satisfaction and the loyalty of smartphone users

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ABSTRACT

Despite the spectacular growth in the use of smartphones in recent years, still deeper attention on the possibility of continuous development is needed. In this regard, it has become important to encourage smartphone users to use the service continuously. To notify the meaningful factors for the satisfaction and intention of the users in using smartphones, this study focuses on interactivity and divides the factor into 5 sub-dimensions: system quality, network quality, content quality, customer support, and compatibility. This study finds several meaningful factors by conducting a survey research: content quality is the most influential factor in shaping satisfaction, followed by compatibility, system quality, and customer support. This study also shows that satisfaction has a positive effect on the continuance intention and network quality has a positive effect on the continuance intention. In terms of operating systems, it is found that the users may exhibit noticeable differences in post adoption behavior. This study can be an important practical/academic reference to provide important hints to strengthen the relationship between the service providers and their customers.

1. Introduction

Juniper Research has announced their top ten predictions for 2011 in the mobile and wireless field, mostly driven by the consumer smartphone boom. The smartphone is one of the fastest-growing segments in telecommunications worldwide. Likewise, in Korea, the total number of smartphones sold has exceeded 30 million as of March 2013. Nearly 60% of the mobile telephony market is represented by smartphones. The total figure is currently expected to reach over 70 million by the end of 2013. The entire mobile market in Korea tends to heavily invest in the newest smartphones and there is fierce competition among the three mobile operators.

As smartphone penetration increases each year, service quality has become a serious concern for the service providers. It is not hard to find user complaints regarding call quality for some budget smartphones and wireless network services. Furthermore, faced with a surging consumer demand for cheaper price plans for both data and voice, impending regulation by the public sector will be a major concern to mobile operators. Korean operators thus face a nervous period where they are attempting to manage consumer complaints regarding the service quality of smartphones against costs. Consequently, it is important for the operators to enhance the smartphone user's satisfaction and intentions to keep using the service

(continuance intention) and diverse previous studies on user's behavior have defined and demonstrated the continuance intention is an important factor to encourage the users to keep using the service (Davis, 1989; Venkatesh et al., 2003; Lee et al., 2005).

The smartphone is much closer to becoming a nearly ubiquitous environment, and it has an enormous potential for on-demand access to content anytime and anywhere access to anything. It is expected that the interactive medium of the smartphone may allow for various interactions that would benefit both businesses and consumers. The issue of interactivity appears to play an important role in building customer relationships, and it offers practical views on interactive advertising and marketing communications practice in computer-mediated environments (Wu, 1999, 2005). Following the previous researches on interactivity, some researchers accepted the concept of interactivity to develop the concept of multi-dimensional interactivity (Kiousis, 1999, 2002; McMillan and Hwang, 2002; Yang et al., 2008), but little work has been performed to explore the relationship between multiple interactivities, which affect continuance intention in using new interactive media such as smartphones.

Also, there are interesting academic and practical debates on the Operating Systems (OS) of smartphones. The iPhone in conjunction with Apple's app store not only is causing quite a stir for Korean operators but is also redefining business models across the chain from production to consumption for the entire mobile industry. Smartphones have a different ecosystem that emphasizes openness as a shared value network, not downward flow, as in case of existing feature phones. The wireless delivery of applications and content depends on the mobile platform. Also, various smart devices adopting the Android OS by Google are increasingly extremely rapidly. Within these dynamic smartphone ecosystems including smartphone manufacturers, portal or OS vendors, app developers, and network service providers, there are tremendous competitions beyond the wireless operator-oriented walled garden. Accordingly, this study attempts to understand customer satisfaction and the continuance intention of smartphone users in terms of their mobile operating systems.

The purpose of this paper is thus to examine precisely which factors may be essential in forming satisfaction and continuance intention based on the concept of interactivity with a user-centered perspective. The remainder of this paper is organized as follows. The next section provides the theoretical background for smartphones and their attributes and for interactivity. The next section develops related hypotheses and presents the theoretical framework for this study, which is followed by a discussion of the method and measures of the survey in this study. Both the measurement model and the research model are then empirically tested based on evidence from Korea's smartphone users. The results and implications are discussed, and finally limitations and directions for future research are indicated.

2. Theoretical background

2.1. Smartphone characteristics

An important factor distinguishing smartphones from existing feature phones (contemporary basic phones without advanced computing ability and internet connectivity) is that a smartphone allows the user to install and run more advanced applications with PDA-like (and even computer-like) features, all through a fast wireless web connection. The increase in the smartphone's market penetration is generating an initial demand for mobile applications ('apps'), and app stores are very much a smartphone phenomenon.

As mentioned earlier, smartphones are dramatically reshaping competition in the mobile industry. The wireless delivery of applications and content is dependent on what platform the smartphone uses. Currently, a number of users may consider a smartphone not for the network it runs on or for what functions are built in but for the types of applications that will run on it. Thus, the formerly separate mobile telecommunications service industry architecture and their constituent firms are being forced into direct competition in the emerging mobile operating system race, looking at value capture and customer lock-in strategies.

Scholars and management consultants have identified platform control as a key feature for business success in the ICT industries. Recent studies have noticed that a platform is the outcome of a set of business behaviors and relationships between actors in an ecosystem. Following those studies, a platform can be characterized as having high levels of interdependence between actors (Gawer and Cusumano, 2002; Gawer, 2009). A wireless provider with established clear market dominance can still decide what operating systems and what phone models to sell, but platform leadership strategies have been degraded to the service providers in the emerging ecosystem.

There are primarily two types of smartphone platforms: an open versus a closed platform. The iPhone platform is closed, and the entire ecosystem is controlled by one company, Apple. However, Android offers developers the ability to build relatively free and innovative applications with an open development platform. In other words, Android platform can be described to give a greater role to the developers, while the iPhone platform seems to be interested in the high-end market and the high-loyalty participants (Kim and Chang, 2011).

This study attempts to understand the smartphone ecosystem in Korea, which is largely represented by two major platform, Android and iOS. With the ongoing influx of new convergence technologies, many studies have focused on understanding user adoption behaviors based on various theoretical discussions such as the diffusion of innovation theory, the users and gratification theory, and the value-based adoption theory. Likewise, a number of studies have been performed primarily in the area of finding determinants for acceptance and for the adoption of innovative smartphones in Korea (Park and Chen,