THE SYMBOLIC MEANING EFFECT ON SMARTPHONE REPURCHASE: A COMPARISON OF ANDROID AND IOS

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Abstract

With Android and iOS as the dominating operation systems, the growth of one player's influence in the market translates into the loss of its opponent's market share. In the marketing discipline, expectation confirmation theory is used to study how a consumer's satisfaction influences his/her willingness to repurchase the product. Scholars extended the theory and developed a post-acceptance model of information system continuance and applied the model to consumers' continuance with information technological products. This paper will analyse consumers' repurchase with Android and iOS-based smartphones. More, satisfied customers may still be switching to competitor's product/service. This study therefore explores possible moderators between user satisfaction and repurchase.

Keywords: Smartphone, Expectation-confirmation theory, Post-acceptance model of IS continuance, symbolic consumption, Repurchase

1　INSTRUCTION

1.1　Background and research questions

According to Internet Data Corporation, demand of smartphone in the global market continued to go upward strongly in Q3 2014 (IDC 2014). With constant evolution, smartphone is now portable, light-weighted, user-friendly, equipped with tailored-made operating system as well as touchscreen. Smartphone has become indispensable in daily life.

Currently, consumers are offered a wide variety of choices of smartphones as there are numerous brands on the market. The result of this competition is a variety of different handset operating systems (OS), which is now divided into two main groups, Android and iOS. The open-sourced Android is adopted by several brands of smartphones, including hTC, Samsung, while smartphone equipped with iOS is exclusively provided by Apple (IDC 2012). Industrial reports indicate that the current smartphone market is under a duopoly of Android and iOS, and this tug of war is not going to change in the near future (Fingas 2012). The development of tailored OS and hardware of smartphone, as well as the top-notch technology necessary for quality products, requires a huge amount of monetary and human resources, a cost that must be recovered by the continuous usage of customers.

Although it is necessary to investigate consumers' choices of smartphones, the fact that there are numerous brands on the market makes the investigation relatively difficult. Therefore, a study based on handset OS can simplify factors to be analyzed, understand the continuous behaviors of customers and the fluctuation of market shares claimed by the two main OS camps. In addition, customers with high satisfaction might still shift to products manufactured by competing enterprises (Jones & Sasser 1995). This research will investigate possible moderators, such as variety seeking, involvement, and competition between manufacturers (Seiders et al. 2005), in the relationship between consumers' satisfaction and repurchase. The research aims to answer the following questions:

- What is the relationship between users' satisfaction for a specific operating system of smartphone and their repurchase intention after its initial acceptance?

- Will users of iOS, considered a stronger brand with symbolic meaning, show higher satisfaction and continuance intention than users of Android?

1.2　Research objective

The research aims at understanding the influence of post-purchase evaluation on users' repurchase intention. The research developed a model based on the post-acceptance model of IS continuance which was corrected from the expectation-confirmation theory, in combine with perceived symbolic meaning to explore users' repurchase intention. Empirical data on Android and iOS were clustered, and then simultaneous and multiple confidence intervals were compared and analyzed by structural equation modeling, so as to understand users' repurchase intention. The results of this research can be used to predict users' behaviors and the development of telecommunication market in the future, and serve as a reference for mobile phone manufacturers in the design of mobile phones, as well as telecommunication operators in the provision of services.

2　LITERATURE REVIEW

2.1　Post-acceptance model of IS continuance

2.1.1　Expectation-confirmation theory

Expectation-confirmation theory (ECT) was an extension of the cognitive model of satisfaction in the field of marketing proposed by Oliver (1980). ECT has been used to explain the relationship between customer satisfaction and repurchase behaviors (e.g. repurchase or complain) (Oliver 1993;

Anderson & Sullivan 1993; Bhattacherjee 2001; Lin et al. 2005; Terzis et al. 2013).

The concept of satisfaction was first proposed by Locke (1976) for its existence in a work environment, as "a pleasurable or positive emotional state resulting from the appraisal of one's job or job experiences." Oliver (1981) extended the definition to the field of consuming, stating that "satisfaction…is described as the summary psychological state resulting when the emotion surrounding disconfirmed expectations is coupled with the consumer's prior feelings about the consumption experience." These two definitions emphasized on the psychological state influenced by or resulted from the differences between customers' pre-purchase expectation and perceived performance. ECT coined the comparison between pre-purchase expectation and post-purchase perceived performance as "confirmation." A positive confirmation is made when the expectation is lower than the perceived performance. On the contrary, a negative confirmation is made when the expectation is higher than the perceived performance of the good or service. The degree of confirmation would further influence users' satisfaction and continuance intention in the end (Oliver 1980).

2.1.2   *Post-acceptance model of IS continuance*

Bhattacherjee (2001) posits that information technology (IT) continuance is similar to that of users' repurchase behaviors. To predict and explain IT continuance, he extended ECT and fit it into the context of IT usage, thus proposed a post-acceptance model of IS continuance. The concepts that were extended are as the following: 1) Bhattacherjee emphasizes on post-acceptance (continuance), because the influence of pre-acceptance is included in the perceived usefulness and satisfaction; 2) "Expectation" proposed by ECT is pre-consumption. It is very vague and difficult to measure when users are using a service or technology for the first time. In addition, expectation changes with time and using experiences. Therefore, the post-acceptance model of IT continuance emphasizes on post-consumption instead of pre-consumption expectation; 3) "Expectation" in the model is represented by perceived usefulness, adopted from TAM (Davis 1989). Perceive usefulness is defined as users' perception of the usefulness of IT for their work or life, which is in line with the "expectation" in ECT.

The results of Bhattacherjee's research indicated that satisfaction and perceived usefulness would affect users' online banking service continuance intention, with satisfaction being a more accurate factor for prediction. After Bhattacherjee, scholars using post-acceptance model of IS continuance as the theoretical basis to explain various behaviors of IS continuance were able to replicate the theory (Hsu et al. 2008; Lin et al. 2005; Hong et al. 2006). Therefore, it is appropriate to apply the post-acceptance model of IS continuance to this research as smartphone represents the integral achievement of all contemporary advanced technology.

2.2   **Technology Post-adoption**

Post-adoption can be viewed as a kind of continuance, repurchase, or even switch (Bhattacherjee 2001; Hou et al. 2011). In the past, research on technology adoption mainly focus on pre-adoption, adoption in the initial phase of the IT products life cycle (Davis 1989; Hsu & Lu 2004; Hou et al. 2010). However, the IT success depends much largely on users' post-adoption than initial adoption (Hou et al. 2011). If users rarely or inefficiently use an IT after the initial adoption, it would be a tremendous waste of the investment designated to this technology. Given the fact that the development of many IT requires a huge amount of monetary and human resources, this investment must be recovered by the continuation of usage. The post-acceptance model of IS continuance focuses on post-adoption.

The post-acceptance model of IS continuance which is extended from ECT and applied in the context of IT usage (Bhattacherjee 2001). Post-acceptance model of IS continuance has been adopted by researchers when investigating IT continuous. Shiau & Luo (2013) combined ECT with TAM, and incorporated friendship and involvement, to explain the continuance with blogs. The results

showed that continuous usage of blogs is positively and significantly influence by satisfaction, but not affected by PU. Hsu (2008) induced factors that influence the continuance with blogs and proposed a theory model that could be applied to the context of blogging by combining ECT with features of blogs, TAM, and theories on the success of information technology. The research found that degree of confirmation, perceived features in blog usage and perceived features in blog website have a positive and significant influence on users' satisfaction, which has a positive and significant influence on the continuance usage of blogs.

2.3   Symbolic consumption

The symbolic consumption theory suggests that people consume not simply for utility purposes; they also care for the symbolic meanings products convey (George 2004). When a product is associated with some social meaning and a person shows that he/she owns or uses this product, he/she can send a message on his/her identities to others. The brand and style of a product may convey symbolic meanings that the possessor can send to others. Previous studies have also shown that visual aspects of avatars affect social interaction in a virtual world (Kim & Park 2011). Buying specific smartphone can help users send symbolic messages to others, and help them express themselves and interact with others in their social circle.

Consumers send symbolic meanings to others for self-presentation (Goffman 1959). Social actors engage in the goal-directed activity of controlling information to influence the impressions formed by an audience regarding oneself (Schlenker & Wowra 2003). Consumers self-present by displaying signs, symbols, brands, and practices to communicate their desired impression, when they select automobiles, smartphone, and soon, in their everyday lives (Fennis & Pruyn 2007; Schau & Gilly 2003). People must have a common understanding of the meaning of a symbol; therefore, the message can be sent effectively (Belk et al. 1982). Companies need to endow their product with meanings and build a common understanding among people via their marketing campaigns or advertisements to attach symbolic value to their products.

People acquire and display possessions as tangible symbols of identity, but they may not be able to present the ideal values that they aspire to because they cannot maintain them in real life. This study argued that iOS based smartphone give consumers greater freedom to express their identities through association with limitless symbols, rather than ownership or proximity.

3   HYPOTHESIS

This research proposes a research model as shown in Figure 1. Perceived usefulness, confirmation and perceived symbolic meaning are antecedents that, in accordance with post-acceptance model proposed by Bhattacherjee (2001), induce satisfaction, and eventually influence repurchase intention. The following paragraphs will discuss reasons to select the said concepts and their positions in the model.
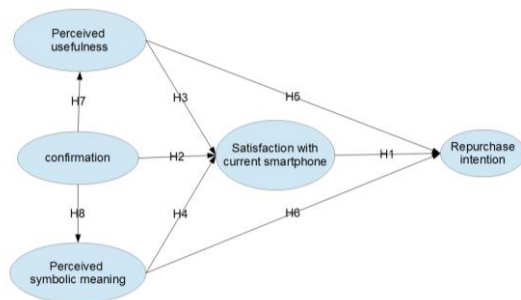

Figure 1.   The research model

The definition of satisfaction by Oliver (1981) was as "the summary psychological state resulting when the emotion surrounding disconfirmed expectations is coupled with the consumer's prior feeling about the consumption experience." Previous studies showed that consumers with high degree of satisfaction would also maintain a high degree of loyalty to service providers (Crosby and Stephens 1987). Most research incline to support that the degree of satisfaction perceived by an individual consumer positively influences his/her repurchase (continuance) intention (Ahn et al. 2007; Liu et al. 2005; Kim et al. 2006; Zhang et al. 2009). As smartphone is also an IT product, when consumers are satisfied with their current smartphone, they tend to buy the new one with same operation system (repurchase). Therefore, this research proposed the following hypothesis:

H1: Satisfaction with current smartphone will positively influence the repurchase intention.

Confirmation, defined by Oliver (1980) as "degree of confirmation = post-use perceived performance – pre-use expectation," could be either positive or negative. Therefore, confirmation is an antecedent to satisfaction and they are positively related. ECT determines consumer satisfaction by two concepts: expectation and confirmation. Expectation provides a benchmark. Confirmation is positively related to information technology satisfaction, given that it implies the benefits brought to the users by applying a specific technology. If the confirmation is negative, it means that the IT failed to achieve the pre-use expectation. As illustrated in the literature, when an individual has a positive confirmation after using an IT, his/her satisfaction will grow as well (Bhattacherjee 2001; Lin et al. 2005; Terzis et al 2013). The same result was discovered by Hsu (2008) when investigating continuance intention of blog users. Therefore, the research proposes the following hypothesis:

H2: The higher the degree of confirmation, the higher the smartphone satisfaction.

By extending the perceived usefulness coined in ECT (Davis 1989), the usefulness of smartphones could be defined as the degree of improvement garnered by using smartphone on job performance or in daily activities. Relevant research showed that the higher the perceived usefulness of information technology, the higher the consumer satisfaction (Kim & Moon 2001; Liu et al. 2005; Hong et al. 2006; Shang et al. 2005). Apps on information needed in daily life, such as weather report, news, could be installed on a smartphone, making it much more than a telecommunication device. It could even partly replace personal computer to handle some operations needed on one's job, and be used in bits and pieces of time, such as the time during commuting. If an individual perceived a smartphone as being highly useful, he or she would have a positive smartphone satisfaction. Therefore, the research proposes the following hypothesis:

H3: The higher the perceived usefulness, the higher the smartphone satisfaction.

The symbolic consumption theory suggests that people consume not simply for utility purposes; they also care for the symbolic meanings products convey (George 2004; Levy 1959). When a product is associated with some social meaning and a person shows that he/she owns or uses this product, he/she can send a message on his/her identities to others. The brand and style of a product may convey symbolic meanings that the possessor can send to others. Previous studies have also shown that visual aspects of avatars affect social interaction in a virtual world (Kim & Park 2011; Shang et al. 2012). Buying specific smartphone can help users send symbolic messages to others, and help them express themselves and interact with others in their social circle. Therefore, increase the satisfaction with the smartphone. The research proposes the following hypothesis:

H4: The higher the perceived symbolic meaning, the higher the smartphone satisfaction.

Symbolic consumption creates both social and emotional value. Social value means that consumption can help people interact with others (Holbrook 2006; Sheth et al. 1991). The social class a person belongs to and the social role he/she plays affect his/her consumption. The consumer buys things that are appropriate for his/her identity so others can easily recognize who he/she is by observing what he/she bought. For example, conspicuous consumption is a way to show others that the

person belongs to a leisure class that can waste money and time (Trigg 2001; Veblen 1899/1994). The consumer, however, can also buy things that can show the images he/she desires to satisfy his/her self-presentation motivation. Therefore, we therefore propose the following hypothesis:

H5: Perceived symbolic meaning positively influences consumers' satisfaction.

H6: Perceived symbolic meaning positively influences consumers' repurchase intention

Bhattacherjee (2001) believes that as users are not familiar with a specific information technology at the initial phase, they would have a lower perceived usefulness and are not certain about what to expect from the technology. After a trial period, if users found that their initial perceived usefulness is an inaccurate underestimation of the perceived usefulness later, they would adjust their expectation to a higher standard. Cognitive dissonance theory also proposes that if users felt a disconfirmation between their pre-use perceived usefulness and post-use experience, they would feel a cognitive dissonance. As a result, rational users would remedy their perceived usefulness to conform with the real state (Festinger 1957). Thus according to disconfirmation, the degree of confirmation reinforces users' perceived usefulness. The same is true with users' perceived symbolic message (Shang et al. 2012; Hsu et al. 2008). Therefore, the research proposes the following hypothesis:

H7: The degree of post-use confirmation is positively related to perceived usefulness

H8: The degree of post-use confirmation is positively related to perceived symbolic meaning

4 RESEARCH METHOD

4.1 Instrument development

A survey instrument was developed according to past research. Questionnaire items were modified slightly from the previous studies to fit our specific research context. There are 5 constructs with a total of 21 items. All the questionnaire items are listed in Appendix A. Except the two sections of the questionnaire used to collect data about player experience and demographic background, all items were measured using either a 7-point Likert scale or a 7-point semantic differential scale.

There scale used for perceived symbolic meaning was adopted from Shang's et al. (2012) scale. Satisfaction was measured using five items from Oliver and Swan's scale (Oliver & Swan 1989). Perceived usefulness was adopted from Davis scale (Davis 1985). The confirmation was measured using the three-item scale proposed by Bhattacherjee (2001). The need for variety (NV) was rated based on the system proposed by Hou et al. (2011). Finally, repurchase intentions (RI) was measured using Rezaei & Ghodsi method (2014).

The questionnaire was first reviewed by two professors in marketing and information management to validate it for the specific context. The questionnaire will administrate by a consumer panel, which is a research institute retaining a group of consumers in specific sectors, and these consumers are used as respondents to answer research questionnaires relating to marketing research. We hire a consumer panel because consumer panels generally have access to registered consumers who are willing to participate in surveys. They hold participates of various profiles (e.g., students, works and housewives), thus making the sample more representative. The consumer panel database system will random-selected respondent to send the invitation message with the URL to the online survey.

5 EXPECT RESULTS

The purpose of present study was to apply and extend the post-acceptance model of IS continuance to explain the users' repurchase intentions in the smartphone, especially focus between Android and iOS. Around 300 respondents will be collected from Taiwan, an IT developing well country. Structural equation modeling will be used to verify the research hypotheses and relations

between certain concepts (Ringle et al. 2014). The results of this research can be used to predict users' behaviors and the development of telecommunication market in the future, and serve as a reference for mobile phone manufacturers in the design of mobile phones, as well as telecommunication operators in the provision of services.

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Appendix A. Survey Instrument

** Please mail to author d93725009@ntu.edu.tw for request survey instrument.