Abstract

IS post-adoption behavior has received significant attention in prior studies. Evidence suggests that a set of factors entice individuals’ continuance usage toward an information technology product. However, traditional models of IT continuance usage generally do not account for product-level factors (e.g., brand influence) and mainly focus on predicting technology-level behavioral intention, and thus are not particularly helpful in explaining the continued use of IT brands in the consumer context. We try to understand why some customers of a well-developed brand would purchase the IT products launched by the brand in a different category, while others do not. This study attempts to enrich our understanding of brand continuance usage behavior by extending the boundary of IT continuance usage theories from an IT product to a focal brand and conceptualizing a model of IT consumers’ brand continuance adoption behavior in the brand extension context.

Keywords

IT Continuance Behavior, Expectation-Confirmation Theory, Brand Extension

Introduction

Companies often develop further business opportunities by using the leverage of their well-known brand names to launch new products in different categories through brand extension strategies. Brand extensions are now a commonplace growth strategy for many companies, particularly those in the information technology (IT) industry where the same branded products have high similarity and are frequently developed based on the same technology infrastructure, such as Lenovo and Samsung.

IT products are, in essence, technically complex and sophisticated. Using an IT product may be viewed as an acceptance behavior of IT utilized by the product in consumer settings. Examining variables related to general IT-level acceptance behavior, including initial adoption and post-adoption behavior, is one of the most mature streams of information systems (IS) research (Benbasat and Barki 2007, Venkatesh et al. 2007). There have been several theoretical models, primarily developed or adapted from psychological or sociological theories, such as the technology acceptance model (TAM) (Davis 1989). Extensive replication, application, and extensions/integrations of IS theoretical models expand our understanding of general IT adoption. However, our review of this body of work reveals that most studies only contribute to understanding why organizations/consumers tend to adopt one kind of emerging IT products (i.e., technology-level adoption behavior). Our extensive scanning of publications in IS journals and conference proceedings shows that prior studies mainly focus on understanding motivations underlying technology-level behavioral intention and did not go further to examine product-level control variables. Considering
general IT adoption theories, we believe that there is still a need for a systematic investigation and theorizing of the factors salient to a consumer’s choice context. In other words, what are the significant factors driving consumers’ intentions to choose a specific IT product or service among similar alternatives (e.g. Samsung vs HTC smartphones)? Understanding how and why a consumer makes a specific choice of an IT product or a service would be compelling for both academics and practitioners.

In this paper, we propose that IT product purchasing behavior involve two separable but complementary aspects including brand-related factors (e.g. brand attributes and brand experience) examined in the marketing and consumer behavior literature and general IT attributes reflected in the empirical IS research such as perceived usefulness in the technology acceptance model (TAM) (Davis 1989; Davis et al. 1989. These perspectives have been examined independently by marketing and IS researchers. As discussed above, the existing research on IS adoption has mainly focused on examining technology adoption behavior unrelated to specific consumer products (i.e. product-level). Consequently, integrating and examining the factors motivating users to purchase a particular IT product or service by integrating these two perspectives (i.e. brand-related and technology-related) may advance our understanding of the impact of these factors on IT product purchasing behavior and of their linkages to IS acceptance behavior.

We examine why some customers of a well-developed brand would purchase the IT products launched by the brand in a different category, while others do not. For instance, Lenovo launched first LTE Lenovo smartphone in 2014. Some Lenovo PC consumers were attracted to buy and upgrade their functional mobile phones while others refused to buy or chose other brands, e.g. Huawei. We propose that the acceptance of a new product in a different category with the same brand represents brand loyalty to some extent. This paper is one of the earliest to conceptualize and test a model of IS acceptance that takes into account brand and general IT acceptance factors. Our proposed model is based on expectation-confirmation theory (ECT) (Oliver 1980), which is further refined using relevant brand theories and prior IS acceptance research. We ask two research questions:

(1) What are the salient motivations underlying IT consumers’ intention to purchase IT products?

(2) How do these motivations influence consumers’ brand loyalty when an IT company extends its product line using a brand extension strategy?

**Theoretical Background and Conceptual Model**

Expectation-confirmation theory (ECT) is widely used in the marketing discipline to examine repurchase behavior and brand loyalty. The ECT model recognizes consumer behavior as three separate but closely related stages: purchase stage, disconfirmation/confirmation stage and response/feedback stage (i.e. complaining and repurchase). In the first stage, consumers usually have an initial expectation of a product or service prior to purchase. During a usage period, a cognitive comparison between anticipated performance and received performance is made to determine the extent to which their expectations are confirmed. The comparison provides the foundation of satisfaction formation. Finally, a positive response (e.g. (re)purchase and use) or negative response (e.g. complaining) is followed by consumers. The predictive ability of this theory has been examined over a wide range of research contexts (e.g. Oliver 1993; Spreng et al. 1996).
When a well-known IT company employs an effective brand extension strategy to launch new IT products in a different product category, we propose that consumers’ brand loyalty and continuance purchasing behavior of these new products be similar to IT continuance behavior. They both follow an initial usage experience and then to form satisfaction/dissatisfaction leading to final responses. As for IS acceptance and continuance usage behavior, the most cited research was Bhattacherjee (2001) who proposed a IS continuance model. However, the model was examined at the general IT level and further extensions are required to adapt it in the IT product purchase context as follows.

First, perceived usefulness is incorporated into a multidimensional construct, “brand attitudes”, as developed by Keller (1993), which refers to a consumer's overall evaluations of a brand, thereby leading to brand choice behavior. Brand attitudes can be related to beliefs about product-related attributes and non-product-related attributes. The former mainly refers to the ingredients necessary for performing the product/service function sought by consumers while the latter is defined as external aspects of the product/service (e.g. packing or delivery quality) that relate to its purchase or consumption. We propose that perceived usefulness be the most important belief about product-related attributes and it consistently influences consumers’ behavior across different stages of IT product usage (Bhattacherjee 2001; Davis et al. 1989). Beliefs about non-product-related attributes are captured by the proposed construct “perceived service quality”, which is salient to IT product post-consumption stages and continuance usage behavior as well. In this research, other non-product-related attributes, for instance, background design elements (Mandel and Johnson 2002) are ignored because they are mainly related to consumers' initial brand adoption behavior. The adaptation is consistent with prior ECT theories employing perceived performance as a post-consumption variable (Oliver 1981, 1993).

In the marketing literature, brand attitudes and brand expectation are two major antecedents of perceived performance based on Woodruff et al.’s (1983) brand satisfaction model. Following ECT theories, they proposed that confirmation/disconfirmation is determined through a cognitive comparison between perceived brand performance and experienced-based performance norms, thereby yielding satisfaction/dissatisfaction or affect. Perceived brand performance and performance norms represent a post-consumption variable and a pre-consumption variable respectively. They are both derived from prior product/brand experiences. Prior experiences with brands lead to three outputs: expectations about a focal brand, experience-based performance norms, and brand attitudes. Among the three variables, brand
attitudes and brand expectations constitute consumers’ perceptions of brand performance. For instance, in the automobile industry, purchasing a car is the result of an individual’s positive attitude toward the car’s brand performance and the individual’s attitude is determined based on the perceived attributes of the brand (Fishbein and Ajzen 2010). We propose that these beliefs on brand attributes influence consumers’ purchasing decisions on a given technology product. It is noted that Woodruff et al. (1983) developed the model in the initial brand adoption context and that brand experience is a broader construct including the focal brand (i.e., the one actually purchased and used) experiences and similar brand experiences. Such broad brand experience within a product class results in the possibility that different kinds of standards can be used to evaluate performance. As a result, these experience-based performance norms may differ significantly from focal brand expectations. Brand attitudes, as shown in Figure 3, is a single dimensional construct referring to a consumer’s affection or feeling toward the brand itself.

In contrast to initial brand acceptance studies, the proposed model focuses on the focal brand experience that is especially important for IS product purchasing behavior in the brand extension context. Behavioral loyalty toward a brand is likely to result from consumers’ positive brand experiences from the focal brand after initial use. The higher the positive experience from past usage behavior, the more the customers tend to continually use the brand (Koufaris 2002; Kim 2005; Flavian and Guinaliu 2006). Following Keller’s (1993) definition of brand attitudes, we extend the dimensions of brand attitudes to integrate post-consumption variables. In addition, any pre-consumption variables are captured within the confirmation and satisfaction constructs in the continuance usage context (Bhattacherjee 2001) and thus the construct brand attitudes, shown in Figure 4, is a post-consumption variable. Specifically, perceived usefulness and perceived service quality represent post-consumption (ex post) expectations from two different aspects. Prior studies developed the construct satisfaction to represent an affective state related to and resulting from a cognitive appraisal of the expectation performance discrepancy (confirmation) (Bhattacherjee, 2001). In this research, satisfaction mainly denotes consumers’ affective reactions following a purchase act or based on a series of prior experiences of a brand. Thus “brand satisfaction” is used in the proposed model. Such adaptations lead to H1, H2a, H2b, H3a, and H3b shown in Appendix A.

In line with ECT, consumers’ repurchase behavior of branded products is determined primarily by their satisfaction with the brand. In the brand continuance purchase context, repurchase behavior may be equivalent to brand loyalty (i.e. behavioral loyalty), although some previous studies suggested brand loyalty may include other aspects, e.g. attitudinal loyalty (Chaudhuri and Holbrook 2001). This leads to H4 shown in Appendix A.

Our aim is to examine factors influencing consumers’ brand loyalty when the focal IT brand launches new products through a brand extension strategy. Unlike prior continuance behavior studies focusing on individuals’ continuance usage of a product/service, as noted earlier, our research actually involve two different products across different stages. First, users build brand experiences through the usage of current products to form a satisfaction/dissatisfaction influencing subsequent continuance decisions with the brand. Consumers’ experience with a brand increases their first-hand information, knowledge of and familiarity with the brand and then forms the basis of future decisions e.g. confirmation (Brakus, Schmitt and Zhang 2008; Alba and Hutchinson 1987). Second, brand satisfaction influences consumers’ brand
behavioral loyalty when the brand uses a brand extension strategy (i.e. purchasing the new product launched by the brand in a different category). We argue that purchasing a new product in a different category is not determined entirely by brand-related factors e.g. brand satisfaction. It is impossible for an individual to spend money on useless products. In addition to brand-related factors, prior IS research has identified that hedonic and utilitarian motivations are two major factors that influence an individual’s acceptance and use of IT in the consumer context (Van der Heijden 2003, 2004; Moon and Kim 2001; Cheong and Park 2005). Hedonic motivation means that consumers expect to enjoy the fun or pleasure (Venkatesh et al. 2012) after purchasing and using an IT product (e.g. Wii). The root construct for hedonic motivation is perceived enjoyment (van der Heijden 2004; Thong et al. 2006). Utilization motivation is literally the desire of an individual to enhance the effectiveness of his/her related activities (e.g. job performance) through purchasing an IT product (e.g. smartphone). The upper part of the proposed model is related to past brand experience subsequently influencing brand-related repurchased behavior (i.e. brand loyalty in this case). These two complementary product (i.e. hedonic expectancy on new product and utilitarian expectancy on new product) constructs are used to capture an individual’s motivations behind purchasing an IT product in general and such motivations are not related to any specific brand. In other words, consumers first have a strong need to buy a product owing to these two motivations and further make a specific choice among different alternatives (i.e. brands) according to prior brand experience. We propose that consumers follow the above psychological process when a well-known IT company develops new products in a different category with the same brand (i.e. brand extension). This leads to H5 and H6 shown in Appendix A.

Bhattacherjee (2001) suggested that users’ IS continuance intention is positively associated with their perceived usefulness of IS use. In this research, perceived usefulness is related to the IT products that consumers are using while purchasing intention is directly related to a new IT product. Thus, the suggested relationship (i.e. H4 shown in Figure 2) is not applied to this research.

Research Methodology

Our target populations are current users of communication, consumer electronics, and computer (3C) products in China, Vietnam and the US. For instance, the smartphone represents a multi-functional mobile phone handset integrating the features of a touchscreen computer, personal digital assistant (PDA), and so on. Thus, the smartphone may be viewed as a complicated IT application device enabling users to check flight schedules, book tickets, and play games. In a consumer context, the purchase of 3C products is typically a voluntary decision. Another reason for using 3C products as our research target is its agile feature and strong brand awareness. Consumers face a wide choice of brands. Most of these brands adopt a brand extension strategy, e.g. Samsung, Sony, Lenovo Apple and Google. An individual may accumulate a rudimentary level of brand satisfaction involving, at the least, recognition of a brand name through his/her prior brand experiences with the brand’s products. For most constructs in the
research model, Likert-type scale items were adapted from existing measures (see Appendix B). A survey instrument will be administered to all users of an IT brand. The IT brand will be carefully reviewed and identified from a number of brands based on two criteria: (1) the IT brand uses a direct brand extension strategy; and (2) the brand will launch one or more new products with the same brand in different categories in the near future.

Conclusion

Although IS adoption research in this area has been abundant, few studies have begun to specifically focus on product-level factors. By examining 3C consumers’ continuance purchase behavior toward new products introduced by brand extension strategies, theoretically, this study may help extend the literature of general IS adoption research to a relatively new area by developing a model of IT product purchase behavior in the brand extension context. In addition, we expect to provide a complementary perspective to current IS theoretical models for a better understanding of IS continuance behavior in the consumer context. Practically, this study may help brand owners and developers understand what factors induce individuals to continue purchasing their new products and gain important insights into how to develop effective brand extension strategies.

Acknowledgements

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REFERENCES


APPENDIX A: HYPOTHESIS TESTING

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Description</th>
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<tbody>
<tr>
<td>H1</td>
<td>Consumers’ extent of confirmation is positively associated with satisfaction with the focal brand</td>
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<tr>
<td>H2a</td>
<td>Consumers’ perceived usefulness is positively associated with satisfaction with the focal brand</td>
</tr>
<tr>
<td>H2b</td>
<td>Consumers’ perceived service quality is positively associated with satisfaction with the focal brand</td>
</tr>
<tr>
<td>H3a</td>
<td>Consumers’ extent of confirmation is positively associated with perceived usefulness</td>
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H3b. Consumers’ extent of confirmation is positively associated with perceived service quality
H4. Consumers’ level of satisfaction with the brand is positively associated with their continuance intention to purchase the new product launched by the brand
H5. Utilitarian expectancy of using a new IT product is positively associated with consumers’ continuance intention to purchase the new product launched by the brand
H6. Hedonic expectancy of using a new IT product is positively associated with consumers’ continuance intention to purchase the new product launched by the brand

APPENDIX B MEASUREMENT ITEMS FOR KEY CONSTRUCTS

<table>
<thead>
<tr>
<th>Items</th>
<th>Construct Items</th>
<th>Sources</th>
</tr>
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</table>
| **Brand satisfaction** | (Strongly Disagree/Agree ) (1-7 scale)  
1 I am very happy with this brand  
2 I am generally satisfied with taking advantage of the products and services of this brand.  
3 I am very satisfied with the product and services provided by this brand  
4 I made the right decision when I decided to use this brand  
5 This brand does a good job of satisfying my needs  | Sahina et al., 2011; Ha and Perks, 2005; Heitmann et al. 2007; Garbarino and Johnson 1999 |
| **Confirmation** | (Strongly Disagree/Agree ) (1-7 scale)  
1 My experience with using the branded products was better than what I expected.  
2 The service level provided by the brand was better than what I expected.  
3 Overall, most of my expectations from using the brand were confirmed. | Bhattacherjee 2001; Venkatesh and Goyal 2010 |
| **Service quality** | (Strongly Disagree/Agree ) (1-7 scale)  
1 I find that the brand provides superior service  
2 I felt that the brand offers excellent service  
3 I would say that the brand offers excellent service | Brady and Cronin Jr 2001; Zeithaml 1988 |
| **Perceived usefulness** | (Strongly Disagree/Agree ) (1-7 scale)  
1 I find the branded products useful in my daily activities  
2 Using the branded products enables me to accomplish tasks more quickly  
3 Using the branded products increases my productivity | Davis 1989; Davis et al. 1989 |
<table>
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<tr>
<th>Hedonic expectancy</th>
<th>(Strongly Disagree/Agree) (1-7 scale)</th>
<th>Davis 1989; Venkatesh 1999; Venkatesh and Brown 2001</th>
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<tbody>
<tr>
<td>1. I expect that using the new product launched by the brand would be enjoyable.</td>
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<td></td>
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<tr>
<td>2. I expect that using the new product launched by the brand would be pleasant.</td>
<td></td>
<td></td>
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<tr>
<td>3. I expect that using the new product launched by the brand would be fun.</td>
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<thead>
<tr>
<th>Utilitarian expectancy</th>
<th>(Strongly Disagree/Agree) (1-7 scale)</th>
<th>Venkatesh and Brown 2001; Venkatesh and Goyal 2010</th>
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<tbody>
<tr>
<td>1. I expect that purchasing the new product launched by the brand would be useful in my daily activities</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. I expect that purchasing the new product launched by the brand would enable me to accomplish tasks more quickly</td>
<td></td>
<td></td>
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<tr>
<td>3. I expect that purchasing the new product launched by the brand would increase my productivity</td>
<td></td>
<td></td>
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<tr>
<td>4. I expect that purchasing the new product launched by the brand will improve my job performance</td>
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<tr>
<th>Purchasing intention</th>
<th>(Strongly Disagree/Agree) (1-7 scale)</th>
<th>Bhattacherjee, 2001; Venkatesh and Goyal, 2010</th>
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<tbody>
<tr>
<td>1. I intend to continue buying the new product launched by the brand</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. I predict I would continue buying the new product launched by the brand</td>
<td></td>
<td></td>
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<tr>
<td>3. I plan to continue buying the new product launched by the brand</td>
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