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Information Technology Usage Transfer in Online Context: A Brand Extension Perspective

1. Introduction

After gaining success in one market, online firms often continue to launch new products to capture new markets. As one means to avoid the high failure risk of new product introduction, these online firms try to take advantage of consumers' recognition of previously introduced brand to facilitate new market entrance. For example, Google, after having great success in the search engine market, launched mailbox and instant messenger service. After the success in web portal, Yahoo launched online instant messenger services. Table 1 gives more examples of online brand extension. An underlying assumption for these online service providers is that consumers' usage behavior can be transferred if new products share the same brand with existing products. This poses two interesting problems for those services providers: how consumers' acceptance of one information technology product transfers to another information technology product with the same brand, and what are the main factors that influence the acceptance of new extended product in online environment?

Table 1 Examples of Online Brand Extension

Online Brand	Original Product Category	Extension Products Category
Google	Search Engines	Mailbox, Instant Messenger
Yahoo	Portal	Instant Messenger, Search Engines
Amazon	B2C	Blog, Credit Card
YouTube	Video Sharing	Blog
MySpace	Online Community	Instant Messenger
QQ	Instant Messenger	Portal, Online Community, Online Games
Baidu	Search Engines	Online Community, Portal, C2C
Taobao	C2C	Instant Messenger, Search Engines

The brand nature of technology products has been generally ignored in previous technology acceptance studies, especially in the online environment. A brand is a name and/or symbol such as a logo, trademark, or package design that uniquely identifies products or services of a seller, and differentiates them from those of its competitors [1]. The widespread acceptance of the Internet and electronic commerce has given rise to popular IT brand names such as eBay, Google and Yahoo. Pure internet firms such as Google, E-Bay, Yahoo and Amazon.com have made themselves to the top 100 global brands as reported by Interbrand [11]. Brand is a precious asset to these firms, because consumers' experience of the established product, which provides consumers with relevant information about the new product, could help to reduce the uncertainties and perceived risk associated with the new one. Therefore, when an information technology is not only a technology but also a product, and when technology users are consumers at the same time, the brand of technology product could be a salient determinant for the technology acceptance.

Brand extension is the "use of established brand names to enter new product categories or class" [31]. Brand extension has been a subject of increasing interest and scholarly investigation by marketing researchers for over a decade. Hitherto, little research has been directed towards the understanding of brand extension in the online context. Kling and Smith [33] have warned about the limitation in current research on consumer attitude toward the brand extensions, stating that "in this area, concerns about external validity have taken a back seat to those about internal validity" [33]. Most past studies fail to take into account important background factors which might have a significant impact on the generalizability of prior findings. This research responds to Kling and Smith's call in the online environment.

Besides regarding technology as a product with a brand extension effect, studying usage transfer behavior of IT products is also interesting from perspective of information systems (IS) research whereby usage transfer behavior between different systems has not been explored before. However, the notion of system usage has played a central role in IS research since the 1970s [10, 14]. Many researchers have studied antecedents to usage [19, 43]. Over time, the field has progressed toward a general model of these antecedents [45]. Unfortunately, most research has examined technology usage behavior of different products in isolation. Although researchers have examined the relationships of system usage between different times [32, 44] and between different tasks [3, 47], empirical research on the relationship of usage between different systems is scarce. A notable exception is Ye et al.'s [48] study on post-adoption switching behavior. Little research to date has scrutinized usage transfer behavior between different systems from the brand extension perspective. We believe an empirical study of usage transfer behavior from the brand extension perspective complements the current understanding.

The remainder of the paper proceeds as follows. The next section introduces the theoretical background and hypothesis. We draw on categorization theory as our main theoretical underpinning to explain IT product extension effect. The third section describes the research methodology used to empirically test the research model. The fourth section presents the results of data analysis. The paper closes with discussions of findings, limitations, directions for future research and implications for research and practice.

2. Theoretical Background and Research Hypothesis

2.1 Categorization Theory

Categorization theory suggests that attitudes towards brand extensions or extended products can be formed in at least two ways [2, 13]. In one, an attitude is “computed” from specific attributes of the extension. The extension evaluation is a function of inferred brand beliefs and their evaluative importance. Such a process has been termed “analytical”, “piecemeal”, or “computational”. A different group of models relies on categorization processes to describe attitude formation. If a new instance (e.g., a brand extension) is defined as belonging to a previously defined category (e.g., a brand), the attitude associated with that category can be transferred to the new instance [13]. Therefore, the extension evaluation is a function of some overall attitude toward the parent brand.

Fisker and Pavelchak [21] proposed a two-step process for evaluation. The first step involves an attempt to match the new object with a current category. If categorization is successful (i.e., if there is a match), categorization processes are evoked. The traits associated with the category as applied to the new object and the evaluation process is complete. If there is a poor match between the object and category knowledge, piecemeal processes are evoked and attitude is computed through a weighted combination of attributes. Smith et al. [38] also proposed a two-step model for judging whether a concept or object is a member of a category. In the first step, one tries to match the features of the category with the features of the object. When there is a clear match or a clear mismatch, the categorization process is complete. When some features match and some do not match, piecemeal processes is necessary. During the second stage, a more careful comparison of defining features of the category is made to determine whether the object is a member of the category. Therefore, piecemeal

processes and categorization processes should not be assumed to be mutually exclusive, and can be incorporated in Fisker and Pavelchak [21] and Smith et al. [38]'s model.

2.2 Research Hypothesis

The parent brand is the existing established brand name which has been used by owners to facilitate entering the new product category. Before the appearance of the brand extension in a given product category, consumers already possessed established attitude toward the parent brand. Brand attitude is based on certain attributes such as durability, incidence of defects, serviceability, features, or performance. It may also contain affect that is not reflected in the measured attributes. Researchers building multi-attribute models of consumer preference have included in a general component of attitude toward the brand that is not explained by the brand attribute values [39]. The overall brand attitude may be stored and retrieved in memory separately from the underlying attribute information.

When the new extension is launched, consumers evaluate it on the basis of their attitude toward the parent brand. The impact of attitudes toward parent brand on the attitude toward the proposed subsequent extension should be positive. If the brand is associated with favorable attitudes, the extension should benefit; if it is associated with unfavorable attitudes, the extension should be harmed.

The hypothesis is:

H1: More favorable attitudes toward the parent brand are associated with more favorable attitudes toward the extension.

Brands and product categories are conceptualized as cognitive categories in consumer memory [13]. A brand extension in a new product category is viewed as a new instance that can be more or less

similar to the brand and its existing products. If consumers perceive a fit between the original and extension product, the new extension will be more easily matched with the original category, categorization processes will be evoked. Therefore, with category-based processing, they would transfer perceptions to the new brand extensions. When the fit is low, the consumers may question the ability of the firm to supply the extension products and the match between the specific image of the parent brand and extension product [18, 36]. If the fit is incongruous, the extension may be regarded as humorous or ridiculous. Hence, we can hypothesize follows:

H2: The perceived fit between the two involved products has a directed positive association with the attitude toward the extension.

Hyper linkage is a core feature of the technology of the Internet. The WWW allows vendors to easily associate one online service with another by sending hyper links. This kind of interaction is one of the key distinguishing features between marketing communication on the Internet and traditional mass media [25]. Although the presentation of links utilized on the Internet may vary widely, many online products vendors are always trying to use the hyper links to promote new extended products. Hyper linkages between services A and B may cause the consumers to perceive a positive A-B relation because a link may provide a salient cue that can be used to infer that the two online services interact. If consumers perceive a high level tie between the original and extension product, these two products will be perceived as constituting a coherent unit in which the members are bonded together [40, 41]. Therefore, the new extension will be more easily matched with the current category, categorization processes will be evoked. Therefore, with category-based processing, they would transfer perceptions to the new brand extensions. When the perceived tie is low, the consumers may

question the likelihood for the online firms to recommend the new extension. This leads to:

H3: The perceived tie between the two involved product classes has a directed positive association with the attitude toward the extension.

The overall brand attitude may be stored and retrieved in memory separately from the underlying attribute information. The attitude toward the parent can influence perceived fit and perceived tie through retrieval in memory. When the attitude toward the parent brand is high, consumers may expect the firms have more skill and capability in launching new services. The perceived fit and perceived tie will be higher. When the attitude toward the parent brand is low, consumers may question the ability of the firm in launching the extension services. Therefore, the perceived fit and perceived tie will be lower.

H4: The attitude toward parent brand has a positive association with the perceived fit.

H5: The attitude toward parent brand has a positive association with the perceived tie.

Attitude has been theorized and validated in TAM-based studies as an important predictor of IS usage behavior [19, 30, 42]. According to the theory of reasoned action (TPB), behavior is a direct function of behavioral intention and that behavioral intention is formed by one's attitude which reflects feelings of favorableness towards performing a behavior [4]. This leads to the following hypothesis:

H6: The attitude toward extension is positively associated with the usage behavior toward the extension.

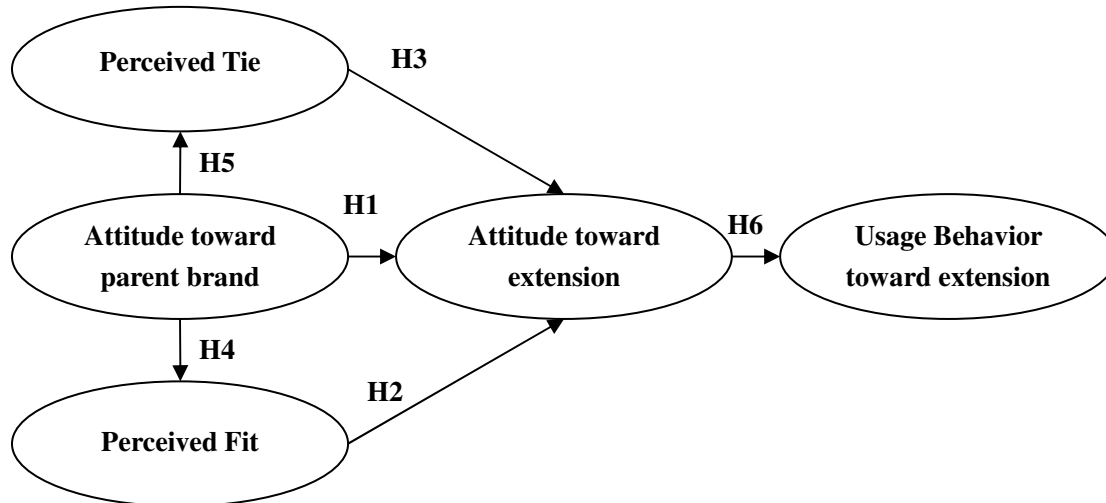


Figure 1 Research Model

3. Research Design

On the methodological side, experimental studies have largely dominated scientific inquiry on brand extensions [18]. Eagly [20] warns that “if investigators look to only the most obviously relevant research, not only do they miss many potentially useful theoretical ideas, but also they allow their theories to be seriously limited by the constraints of their research paradigms, which often allow only certain processes to be manifest. Theory encapsulated within an experimental paradigm is thus limited in scope.” Therefore, we selected real brand extensions introduced in recent years.

“Baidu”, one search engine product, was formally launched in June, 2000, and has maintained its dominance in the China search engine market since the early 2000s, despite the existence of alternatives including Google and Yahoo [16]. After establishing brand names, Baidu made use of established brand names to launch new products. In 2002, Baidu introduced a news portal. In December 2003, Baidu launched the virtual community services. There are several reasons why we

consider Baidu virtual community and online news as the targets for our investigation. The first reason is that internet competition seems to be “winner takes all”. Winners can often monopolize the market like Microsoft. Baidu has become the most famous search engines provider in China. Will brand extension of baidu leads to monopolize other markets? Second, Baidu launched the virtual community and online news services nearly three or five years after the introducing of search engines. This ensures the temporal order that Baidu virtual community and online news are brand extensions. Third, virtual community and online news are the crucial and commonly used applications in the Internet age. This ensures the availability of respondents and high relevance of our study to both practitioners and end users. Fourth, individuals’ use of virtual community and online news are usually volitional. This ensures that there is no influence due to organizational mandate that could confound the effects of user perceptions.

3.1 Instrument Development

Theoretical constructs were operationalized using validated items from prior research. Minor changes in the wordings were made so as to fit them into the current investigation context of virtual community and online news. Attitude is conceptualized in terms of the consumer’s perception of the overall quality of the brand. The perceived quality construct has received considerable attention in the marketing literature [2, 27]. Zeithaml [49] defines perceived quality as a global assessment of a consumer’s judgment about the superiority or excellence of a product. The measures of attitude toward parent brand and attitude toward brand extensions were from Aaker and Keller [2] and Volckner and Satter [46]. Perceived fit were assessed using measures from Bottomley and Doyle [12] and Volckner and Satter [46]. For measuring perceived business tie, we used the construct from

Steward [40, 41]. Behavior toward extension is conceptualized in terms of the consumer's usage behavior toward the extension. Usage behavior was assessed using measures from Kim and Malhotra [32]. All survey items are included in Appendix.

Operationalization of the model variables

Attitude toward the parent brand Source: Aaker and Keller (1990); Volckner and Sattler (2006)

1. The perceived overall quality of the parent brand.
2. The likelihood of trying the original product assuming a usage behavior was planned in the product class.

Attitude toward the extension Source: Aaker and Keller (1990); Volckner and Sattler (2006)

1. The perceived overall quality of the extension.
2. The likelihood of trying the extension assuming a purchase was planned in the product class.

Perceived Fit Source: Bottomley and Doyle (1996); Volckner and Sattler (2006)

1. Global similarity between the parent brand and the extension product.
2. Would the people, facilities, and skills used in making the original product be helpful if the online service provider were to supply the extension product?
3. Extent to which parent-brand-specific associations are relevant in the extension category.

Perceived Tie Source: Steward (2006); Steward (2003)

1. Existing main product is not connected to newly launched products. (Reverse coded)
2. Existing main product is not likely to recommend new launched products to individuals. (Reverse coded)
3. Existing main product and new launched product have a business relationship with one another.

Behavior toward the extension

Source: Kim and Malhotra (2005)

On average, how frequently have you used this search engines over the past month?

- 1: less than once a month; 2: once a month; 3: a few times a month;
- 4: once a week; 5: a few times a week; 6: about once a day;
- 7: several times a day;

On average, how much time do you spend a week using this search engines over the past month?

- 1: less than 10 minutes; 2: 10 to 30 minutes; 3: 30minutes to less than one hour;
- 4: one hour to two hours; 5: two to three hours; 6: more than three hours;