



Contents lists available at ScienceDirect

Journal of Business Research



Branding strategies for high-technology products: The effects of consumer and product innovativeness[☆]

Yann Truong^a, Richard R. Klink^{b,*}, Geoff Simmons^c, Amir Grinstein^{d,e}, Mark Palmer^c

^a Burgundy School of Business, 29 Rue Sabin, 21000 Dijon, France

^b Sellinger School of Management, Loyola University Maryland, 4501 North Charles Street, Baltimore, MD 21210, USA

^c Queen's University Management School, Queen's University Belfast, Riddel Hall, Stranmillis Road, Northern Ireland BT9 5EE, UK

^d Faculty of Economics and Business Administration, VU University Amsterdam, De Boelelaan 1105, 1081 HV Amsterdam, The Netherlands

^e D'Amore-McKim School of Business, Northeastern University, Boston, USA

ARTICLE INFO

Article history:

Received 16 June 2015

Received in revised form 15 July 2016

Accepted 16 July 2016

Available online xxx

Keywords:

Innovation

Branding

Consumer innovativeness

Product innovativeness

High-technology products

ABSTRACT

Choice of an appropriate branding strategy is a critical determinant of new product success. Prior work on fast-moving-consumer-goods (FMCG) prescribes that new products carry new (vs. existing) brand names to appeal to earlier adopters - a critical target for new products. However, such a prescription may not be prudent for high-technology (HT) products, as they often involve considerably more consumer perceived risk than FMCG. By drawing on Dowling and Staelin's (1994) framework of perceived-risk handling, we propose that both earlier and later adopters will favor existing brands to cope with the elevated risk associated with an innovative HT product. Two studies - one conducted in an experimental setting and the other in a field setting - support the proposition that both earlier and later adopters respond more favorably to existing (vs. new) brands on innovative HT products.

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1. Introduction

The brand name is an important driver of new product success (Cooper, 1994). When naming a new product, companies often choose to either create a new brand name or take an existing one from another product—that is, develop a brand or line extension (e.g., Apple TV or Heineken Light beer). Some of the advantages of using existing brand names are that they incur lower marketing and brand development costs for the new products (Smith & Park, 1992). However, if consumers perceive inconsistency between the existing name and a new product, they may react unfavorably toward the new product, as well as the brand and its existing products (Aaker & Keller, 1990; Loken & Roeder, 1993).

Extending a brand name to new products has been a widely popular growth strategy for companies in the past few decades despite the risks (Ambler & Styles, 1997; Riley, Pina, & Bravo, 2013). According to a Research International study, >80% of new product launches involve use of an existing name (Les Échos, 2004). Other studies indicate that the

choice of an existing name for a new product is as high as 95% (Ogiba, 1988; Somji, 2000).

Perhaps driving the popularity of extending brand names is the belief that consumers respond more favorably to established brands, as brand familiarity helps reduce uncertainty in new product purchases (Klink & Athaide, 2010; Smith & Park, 1992). Klink and Athaide (2010), however, find that this preference is not uniform across consumers. Rather, consumer innovativeness, or the propensity to adopt earlier than later (Rogers, 2003), influences one's preference for existing brand names. Specifically, while the mass market may prefer existing brands, highly innovative consumers evaluate products carrying new brand names more favorably than brand extensions. This finding may reflect earlier adopters' greater tolerance of and perhaps even preference for risk (Rogers, 2003).

Importantly, Klink and Athaide (2010) conduct their study with fast-moving consumer goods (FMCG) (e.g., mouthwash, chewing gum, candy bar). New FMCG products typically carry relatively little perceived risk for consumers, such as (1) the risk related to purchasing a specific product in a given category and (2) the risk inherent to purchasing any product in the category (Dowling & Staelin, 1994). Regarding product-specific risk, new FMCG products usually involve less innovation, often *modifying* an existing product feature such as fewer calories, newer flavor, more recyclable packaging, and so forth. More innovative products often introduce *new* features that likely carry more uncertainty for consumers. With respect to category-specific risk, companies

[☆] This research was supported in part by the FJ DeFrancis Scholar Fund through the Sellinger School of Business and Management at Loyola University Maryland.

* Corresponding author.

E-mail addresses: yann.truong@escdijon.eu (Y. Truong), rklink@loyola.edu (R.R. Klink), g.simmons@qub.ac.uk (G. Simmons), GrAmir@som.bgu.ac.il (A. Grinstein), m.palmer@qub.ac.uk (M. Palmer).

often introduce new FMCG products in mature product categories. Mature product categories involve less risk for consumers than earlier stages of the life cycle, as their familiarity with, knowledge of, and experience with a product category likely increase over time.

Innovations in FMCG categories typically carry lower perceived risk, but the same cannot be said of innovations in high-technology (HT) categories. Indeed, a hallmark characteristic of HT industries is uncertainty (Moriarty & Kosnik, 1989). Uncertainty characterizes both the HT innovation (e.g., will the new product function as promised) and the HT market (e.g., how quickly will market needs change). With respect to the innovation, the greater uncertainty could arise from new product features, particularly for more innovative products. For example, both bloggers and consumers were initially skeptical about the curved screen of the new Galaxy S6 Edge at the 2015 World Mobile Congress, mainly because they were unsure about the technical reliability of the curved technology and the long-term touch experience. This initial skepticism is inherent to these kinds of innovative features because new technologies tend to suffer from a liability of newness; they do not have a history of past performance. As a consequence, consumers are more uncertain about the potential flaws involved in such an immature technology, which are often corrected only in later versions.

Furthermore, highly innovative products may create new categories in which consumer familiarity, knowledge, and experience is limited, thus elevating perceived risk. The level of perceived risk that accompanies more innovative products could even reach a point at which even earlier adopters are adversely affected. That is, the perceived risk of a new product purchase may exceed the individual's acceptable level of risk (Dowling & Staelin, 1994). In such situations, both earlier and later adopters may seek out existing brands to help cope with the innovation's uncertainty.

The purpose of this research is to understand how consumers respond to alternative branding strategies for HT products. In particular, this research examines whether earlier adopters (i.e., individuals with high levels of consumer innovativeness) continue to favor new brands for HT products. The expectation is that for more innovative HT products, earlier adopters reverse their preferences and favor existing brands. Accurately gauging the response of earlier adopters is critical because they often represent the main target market for a new product introduction (Mahajan & Muller, 1998). Even when they are not the primary target, understanding their response is crucial because they influence later adopters. By determining the response of earlier adopters, this research helps inform brand-naming decisions for HT innovations.

In terms of theoretical contributions, this article extends theory developed and tested on FMCG products to HT products. This research includes Dowling and Staelin's (1994) constructs of product category-specific risk, product-specific risk, and consumers' level of acceptable risk to help reconcile theories on consumer innovativeness and branding, which can offer opposing prescriptions. On the one hand, the literature on consumer innovativeness suggests using new brand names on new products to appeal to innovators' "desire for the rash, daring, and the risky" (Rogers, 2003, p. 282), as prescribed by Klink and Athaide (2010). On the other hand, branding theory advocates using established brand names to reduce the perceived risk of a new product purchase. Because branding can be more important for HT products than for packaged goods (Mohr, Sengupta, & Slater, 2010) and the rate of technological innovation introduced in the marketplace is likely to accelerate, advancing theory at the intersection of branding and HT products is important.

The article's organization is as follows: Section 2 presents the theoretical background, which is rooted in Dowling and Staelin's (1994) framework for risk handling, and proposes hypotheses. Section 3 describes the research methods employed, which include an experimental study and a field study. Following the presentation of results, Section 4 discusses managerial implications, acknowledges limitations, and provides directions for future research.

2. Theoretical background

The Dowling and Staelin (1994) framework identifies perceived risk in new product purchases as comprising both category-specific risk and product-specific risk. Consumers deal with unacceptable levels of risk by engaging in risk-reducing strategies (e.g., seeking a known brand). The need to engage in such strategies is a function of one's level of acceptable risk or risk tolerance. Individuals with higher levels of consumer innovativeness have higher thresholds for perceived risk and thus are less likely to engage in risk reduction strategies (i.e., rely less on known brands and perhaps exhibit relatively more favorable responses to new brands). The Dowling and Staelin model is compatible with the conflict theory model of decision making (Janis & Mann, 1977), the information-processing paradigm of consumer choice (Bettman, 1979), and economically based search models (Stigler, 1961).

2.1. Consumer perceived risk and risk reduction strategies

Perceived risk reflects consumers' perceptions of the uncertainty and adverse consequences of transactions (Bauer, 1960). This risk is common to new product purchase and can include financial risk, performance risk, psychological risk, time risk, physical risk, and social risk (Brooker, 1984; Jacoby & Kaplan, 1972). As mentioned, perceived risk comprises both category- and product-specific risk, which is analogous to Bettman's (1979) "inherent risk" and "handled risk." Category-specific risk is the perceived risk in purchasing any product in a given product category. For example, a purchase in the mountain bike category is likely to carry more risk than a purchase in the bottled water category. Product-specific risk is associated with the particular product being considered in the product category. To illustrate, purchasing a mountain bike without a warranty is likely to carry more risk than purchasing a mountain bike with a warranty.

To help cope with perceived risk, consumers engage in risk reduction strategies. Roselius (1971) identifies 11 methods of risk reduction. Namely, consumers try to reduce risk by relying on endorsements, brand loyalty, brand image/familiarity, private testing, store image, free samples, money-back guarantees, government testing, additional shopping, buying the most expensive product, and word of mouth. Roselius finds that a well-known brand is one of the most favored risk reduction strategies consumers employ. A well-known brand provides an implied promise that outcomes resulting from a new product purchase will be consistent with what consumers have historically associated with the brand (Erdem & Swait, 1998; Wernerfelt, 1988). With respect to brand extensions, consumers can draw on their experiences with and knowledge about other products affiliated with the brand to make inferences about what their experiences may be like with the new product.

Even if consumers do not have extensive experience with the brand, an existing brand can still reduce perceived risk. By extending an established name to a new product, the brand acts as "collateral" for the quality of the new product (Wernerfelt, 1988). Given a high-quality brand, consumers may reason that a company will not risk its prior investment by placing the brand name on a product of lower quality (DeVecchio & Smith, 2005; Smith & Park, 1992). Accordingly, a new product with a new brand name will likely carry more uncertainty and risk than a brand extension, assuming a fit between the brand and the new product. The extent to which consumers need to rely on a familiar brand as a risk reduction strategy depends on their innovativeness.

2.2. Level of acceptable risk and consumer innovativeness

Prior research considers consumer innovativeness a generalized individual personality trait (Midgley & Dowling, 1993; Rogers, 2003). However, Hirunyawipada and Paswan (2006) contend that the predictability of a global innovativeness trait is elevated when incorporating domain-specific innovativeness—that is, individuals' predisposition

toward a product category and their tendency to acquire product innovations or related information within a specific domain (Goldsmith & Hofacker, 1991). This tendency arises from the interaction between a more innate level of consumer innovativeness and a focused interest in a product category (Midgley & Dowling, 1978; Roehrich, 2004; Roehrich, Valette-Florence, & Ferrandi, 2002).

One of the primary characteristics that determine whether individuals adopt early or late is their level of risk tolerance. The salient trait that distinguishes consumer innovators (i.e., adopters with the highest level of innovativeness) from later adopters is their venturesomeness, or their comfort with taking risk (Rogers, 2003). According to Dowling and Staelin (1994), the need to engage in a risk reduction strategy is a function of one's acceptable level of risk. Thus, because of their lower level of acceptable risk, individuals with lower levels of consumer innovativeness need to cope with perceived risk by favoring known brand names on new products. In contrast, consumers with higher levels of innovativeness are less likely to engage in risk reduction strategies. Instead, their venturesomeness or risk-seeking propensity may lead them to favor new brands. As mentioned, Klink and Athaide (2010) find that while later adopters favor known brands, earlier adopters favor new brand names on FMCG products. In short, because of their greater tolerance for risk, earlier adopters may not need to rely on known brand names in new product purchases.

2.3. Product-category risk and HT products

In general, FMCGs are low-involvement purchases for consumers (Helmig, Huber, & Leeftang, 2007), but such may not be the case with HT innovations. With FMCG purchases, consumers typically do not search extensively for information about brands, evaluate their characteristics, or make time-consuming decisions on which brand to buy (Kotler & Armstrong, 2016). The lack of uncertainty usually entails less alternative evaluation and thus an inability to identify key differences between leading FMCG brands (McWilliam, 1997; Silayoi & Speece, 2004). However, HT products may involve features that are complex and prone to rapid change with a shorter product life cycle (Temporal & Lee, 2000; Winkler, 1999; Zajas & Crowley, 1995). Consumers may require greater technical savvy in evaluation (Tripath & Lei, 2009). The inherent uncertainty can lead to negative emotions of anxiety and fear and lead to avoidance of the innovation (Castaño, Suján, Kacker, & Suján, 2008; Mick & Fournier, 1998). In short, category-specific risk is typically greater for HT products than FMCG products.

2.4. Product-specific risk and product innovativeness

Product-specific risk varies across HT products. For example, an iPhone 5 owner will likely encounter less functional, symbolic, and financial risk in purchasing a new iPhone 6 than purchasing a new wearable technology product such as Google Glass. Accordingly, an examination of the alternate branding strategies for HT products will account for different levels of product innovativeness (Chandy, Prabhu, & Antia, 2003; Wu, Balasubramanian, & Mahajan, 2004). Less innovative products require less change in use behavior of consumers (Chandy & Tellis, 2000; Gourville, 2006). Such innovations are “incremental,” as they are adaptations of or ongoing improvements to products or technologies within a working paradigm (Fang, 2008; Han, Kim, & Srivastava, 1998). In contrast, more innovative products can be “radical” in nature (i.e., discontinuous, generational, or breakthrough) and often contain a substantially new technology (Govindarajan & Kopalle, 2006). In short, greater levels of product innovativeness result in more uncertainty for consumers (Hoeffler, 2003).

Klink and Athaide (2010) find that the effect of consumer innovativeness on new product evaluation of FMCG products is greater for new than existing brand names. In essence, consumer innovativeness decreases the need to rely on a known brand. Furthermore, they find that for earlier adopters, new brands become not only a more viable

option but also the preferred option for naming FMCG products. The following hypothesis extends these findings from FMCG to HT products:

H1. The effect of consumer innovativeness on new product evaluation is greater for HT products carrying new than existing brand names.

As discussed, innovative HT products carry more perceived risk than FMCG products. Accordingly, innovative HT products are more likely to surpass the acceptable level of perceived risk, even for earlier adopters. In short, new brands will no longer become relatively more appealing for innovative HT products, even as consumer innovativeness increases. Stated formally:

H2. For more innovative HT products, the effect of consumer innovativeness on new product evaluation is not greater for new than existing brand names.

Furthermore, highly innovative individuals will likely engage in risk reduction strategies with innovative HT products, by favoring known brands. Stated formally:

H3. Highly innovative individuals will evaluate more innovative HT products more favorably with existing than new brand names.

3. Methodology

3.1. Study 1: experimental study

Study 1 was a controlled online experiment involving HT innovations carrying either an established brand name or a new brand name. The HT innovations were new smartphones that were less innovative (termed “incremental”) and more innovative (termed “radical”) in nature.

3.1.1. Procedure

From an international panel of >60,000 consumers, a quota random sampling process selected 520 participants residing in the United Kingdom. Selected participants were over 25 years of age and had a gender split of 70% male and 30% female. The study was a 2 (new/established brand name) × 2 (incremental/radical innovation) between-subjects online experiment. Participants were randomly assigned to one of the four conditions. Participants were shown a one-page description of a new smartphone, which varied in terms of product innovativeness. The characteristics were defined with the help of a group of 11 marketing managers working for a large mobile technology company. The experts recommended Samsung for the established brand name and “Beepo” for the fictitious new brand name. The incremental innovation consisted of slight to moderate improvements in CPU, screen resolution, disk space, battery life, and media capabilities on one of the highest-performing mobile smartphones. The radical innovation consisted of new technologies that were substantially improved over existing ones, including an ultrathin 3-D screen, quad-core CPU, ×4 disk space, ×3 battery life, and advanced gaming and software capabilities. The radical innovation used non-existent technologies that experts considered disruptive. All four conditions used the same illustration to avoid bias from product design (see Appendix A).

3.1.2. Measures

Four scales borrowed from Goldsmith and Hofacker (1991) and Goldsmith, d'Hauteville, and Flynn (1998) measured consumer innovativeness. The domain of interest was mobile phones, and accordingly participants were primed with their experience with these products. Using 7-point disagree/agree scales, the items were “Overall, I'm interested in the latest technology in mobile phones”; “I often visit the mobile phone department of a store”; “I like to purchase mobile phones before others do”; and “If I needed to buy a mobile phone, I would buy

the latest one available.” Cronbach's alpha for consumer innovativeness was 0.87.

New product evaluation was measured by assessing overall attitude toward the product (Ajzen & Fishbein, 1980). The measure consisted of four items using 7-point disagree/agree anchors: “Overall, this product is interesting”; “I would like to try this product”; “I would probably take a look at this product in a store”; and “Overall, I like this product.” Cronbach's alpha for new product evaluation was 0.92.

To validate that smartphone descriptions varied in product innovativeness, a separate sample of 100 individuals rated product innovativeness on a 7-point Likert scale ranging from “not innovative” to “extremely innovative.” The mean scores for the incremental versus radical innovations were significantly different ($M_{\text{incremental}} = 1.95$ vs. $M_{\text{radical}} = 6.42$, $p < 0.01$). The same item served as a manipulation check in the questionnaire.

3.1.3. Manipulation checks

The established brand name was more familiar to participants than the new brand name ($M_{\text{new}} = 1.69$ vs. $M_{\text{est}} = 6.70$, $p < 0.01$). In terms of product innovativeness, participants perceived the radical innovation as more innovative than the incremental innovation ($M_{\text{incremental}} = 1.92$ vs. $M_{\text{radical}} = 6.31$, $p < 0.01$). In addition, a two-item measure of perceived technical risk (“I may need some help when first using this product” and “I'm not sure I can make this product work”) served as a second check for the difference between the radical and incremental smartphones. The manipulation check for perceived technical risk revealed that participants considered the radical version significantly riskier than the incremental version ($M_{\text{incremental(est/new)}} = 4.46\text{--}4.50$ vs. $M_{\text{radical(est/new)}} = 4.70\text{--}4.75$, $p < 0.05$).

3.1.4. Results

Analysis of variance confirmed that the four conditions did not differ statistically in consumer innovativeness ($M_{\text{inc,estab}} = 4.24$ vs. $M_{\text{inc,new}} = 4.23$ vs. $M_{\text{rad,estab}} = 4.46$ vs. $M_{\text{rad,new}} = 4.26$, $F = 0.63$, $p > 0.10$). Consumer innovativeness was mean-centered (Aiken & West, 1991), and a series of multiple regression analyses were performed (see Table 1). Brand name was coded such that -1 equals new brand and $+1$ equals established brand. Innovation type was coded such that -1 equals incremental and $+1$ equals radical.

Model 1 regressed new product evaluation on consumer innovativeness. As expected, the simple effect of consumer innovativeness is significant ($\beta = 0.533$, $p < 0.001$). To test H2, Model 2 regressed new product evaluation on consumer innovativeness, brand name, and their interaction. As expected, the consumer innovativeness \times brand name interaction is significant and in the predicted direction ($\beta = -0.053$, $p < 0.05$). The positive effect of using an existing brand name on new product evaluations for HT products decreases as consumer innovativeness increases. Thus, H1 is supported.

To test H2, Model 3 reran Model 2 but included only radical smartphones. As expected, the consumer innovativeness \times brand name interaction is not significant ($\beta = 0.015$, $p > 0.10$), indicating that the effect of consumer innovativeness on new product evaluation is not greater for new brand names on more innovative HT products. To provide greater insight, Model 4 included all the simple effects and interaction terms. The three-way interaction of consumer innovativeness, brand name, and innovation type is significantly positive ($\beta = 0.072$, $p < 0.01$). Given the coding scheme, this result indicates that the positive effect of using an existing brand name on a more innovative HT product increases as consumer innovativeness increases. Thus, H2 is supported. Fig. 1 graphically depicts the three-way interaction.

A spotlight analysis provided further insight into the interaction term (Spiller, Fitzsimons, Lynch, & McClelland, 2013); specifically, regressions tested (1) the incremental smartphone only and (2) the radical smartphone only, at the level of one standard deviation above the mean of consumer innovativeness. For the incremental smartphone, the existing brand name had a significant, negative effect on product evaluations for highly innovative participants ($\beta = -0.382$, $z = -2.24$, $p < 0.05$). This significant difference indicates that these individuals evaluated the incremental smartphone more favorably with a new than an existing brand name. This finding is consistent with that of Klink and Athaide (2010), who find that highly innovative individuals favor new brand names on new products.

For the radical smartphone, the established brand name had a significant, positive effect on product evaluation for highly innovative participants ($\beta = 0.311$, $z = 1.75$, $p < 0.05$). This significant difference indicates that earlier adopters evaluated the radical smartphone more favorably when the phone carried an existing than a new brand name. This finding runs counter to prior work that finds that highly innovative consumers prefer new brand names on FMCG products. Thus, H3 is supported.

The new product evaluation scores for participants who were above one standard deviation on consumer innovativeness were also examined. This top 16% approximates the combination of Rogers's (2003) innovators and early adopters categories. This combination of categories represents a critical subset of adopters for HT products (Moore, 2004). As expected, this group of highly innovative individuals evaluated the radical smartphone more favorably when the phone carried an established than a new brand name ($M_{\text{new}} = 5.92$, $M_{\text{established}} = 6.85$, $p < 0.01$), in further support of H3.

3.2. Study 2: field study

To shed light on the external validity of Study 1's findings, Study 2 uses online field data to examine actual consumer responses to the alternate branding strategies for HT innovations in the marketplace.

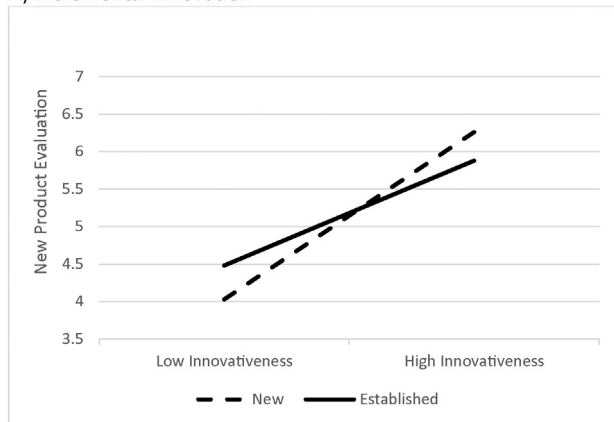
Table 1
Study 1: Multiple regression analyses.

Independent Variables	Model 1 (n = 520)	Model 2 (n = 520)	Model 3 Radical products only (n = 260)	Model 4 (n = 520)
Consumer innovativeness	0.533***	0.535***	0.489***	0.523***
Brand name		0.099*	0.181**	0.096*
Innovation type				0.184***
Consumer innovativeness \times brand name		-0.053*	0.015	-0.062*
Consumer innovativeness \times innovation type				-0.039
Brand name \times innovation type				0.085*
Consumer innovativeness \times brand name \times innovation type				0.078**
Constant	3.083***	3.092***	3.472***	3.137***
Adjusted R ²	0.42	0.43	0.44	0.46
F-score	385.00***	133.20***	68.81***	65.31***

Dependent variable = new product evaluation.

* $p < 0.05$.
** $p < 0.01$.
*** $p < 0.001$.

A) Incremental innovation



B) Radical innovation

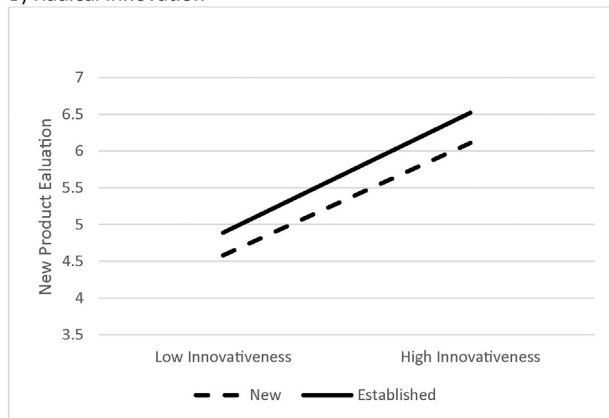


Fig. 1. Study 1: The effect of brand name strategy on new product evaluation for incremental and radical innovations accounting for consumer innovativeness (three-way interaction). A: Incremental innovation. B: Radical innovation.

3.2.1. Procedure

Data on two HT product categories (notebook computers and mobile phones) were collected from two prominent HT product online discussion forums (cnet.com and tomshardware.com) in 2010. For notebooks, the selected latest models were from an established brand (Sony Vaio FW) and a less established brand (MSI X-series). Both models involved incremental improvements (i.e., higher processing power, more storage and memory, and newer design). Sony is a well-known, global brand, while MSI is a lesser-known, Taiwan-based component manufacturer that began manufacturing notebooks approximately six years ago and only recently entered the U.S. market.

For mobile phones, the selected latest smartphone models were from an established brand (Samsung Galaxy S2) and a lesser-known brand (HTC One). According to the prominent forums and bloggers, both smartphones bring relatively novel or radical changes (i.e., revolutionary user interface, substantial increase in processing power, introduction of a large market for applications, and a considerably larger touch screen). Samsung smartphones have been on the global market for >10 years, while HTC is a less familiar Taiwan-based company, having launched its first successful high-end smartphone more recently (2009). The two brands were pre-tested on a representative sample of 100 consumers in the United Kingdom to ensure that the consumers perceived Sony and Samsung as well-established brands and MSI ($M_{\text{Sony}} = 6.52$ vs. $M_{\text{MSI}} = 1.89$, $p < 0.01$) and HTC ($M_{\text{Samsung}} = 6.65$ vs. $M_{\text{HTC}} = 2.76$, $p < 0.01$) as less-established brands.

Earlier adopters (those with high levels of consumer innovativeness) tend to have more social participation and offer more opinion

leadership than later adopters (Gatignon & Robertson, 1985; Rogers, 2003). The measure of consumer innovativeness borrows closely from Goldsmith and Hofacker (1991), who report a correlation of 0.80 between their measure of innovativeness and a seven-item measure of opinion leadership. Accordingly, the number of posts made to the entire discussion forums served as a proxy for consumer innovativeness. Such a proxy is also consistent with widely accepted conceptualizations of diffusion and consumer innovativeness founded on interpersonal communication processes (e.g., Midgley & Dowling, 1978; Rogers & Shoemaker, 1971). Given the large number of posts on the forums, individuals with >800 posts were labeled as “more innovative individuals,” and those with fewer than 100 posts were labeled as “less innovative individuals.” The analysis used only posts in the product review sections because such posts better represent opinion leadership than posts made to other areas of the forums (e.g., sections devoted to technical assistance).

3.2.2. Analysis

In total, 2600 posts supplied by 393 individuals were downloaded from the two online discussion forums; the total number of posts made by each group was approximately equal. Given the classification scheme described previously, the two subgroups comprised 69 highly innovative and 118 less innovative individuals. Sentiment analysis software called SPSS Text Analytics helped detect the impressions of participants by extracting terms and qualifiers, which were further automatically categorized into positive and negative. SPSS Text Analytics uses Natural Language Processing technologies to perform statistical analysis on textual content. The software enabled identification of how favorably an audience perceives an item (e.g., a brand or product) by capturing and classifying the terms and qualifiers contained in free texts into positive and negative according to sophisticated dictionaries. After the automatic classification, the software was configured to adapt the codification process to the context of the study by classifying neutral or unknown terms into positive or negative terms. For example, the word “cool” was classified as a positive term.

3.2.3. Results

The forum comments about the target HT product innovations from both more innovative and less innovative individuals were analyzed. For the less innovative products (notebooks), the results reveal that more innovative individuals were more favorable toward MSI than Sony (71% vs. 41% positive terms; $z = 5.700$, $p < 0.01$, two-tailed), whereas less innovative individuals responded more favorably to Sony than MSI (62% vs. 50% positive terms; $z = 2.072$, $p < 0.05$, two-tailed). In contrast, for the more innovative product (smartphone), the results indicate that Samsung elicited more favorable terms than HTC for more innovative individuals (75% vs. 50% positive terms, $p < 0.01$) and less innovative individuals (65% vs. 55% positive terms, $p < 0.05$). For each group of individuals (i.e., 69 highly innovative vs. 118 less innovative individuals), the software's clustering tool grouped terms for both product categories. The results show that more innovative individuals focused on technical characteristics of the HT product, whereas less innovative individuals focused on the cost–benefit ratio. Examples of terms in the “technical characteristics” cluster are “screen size,” “battery life,” “processing power,” “case materials,” “screen brand,” “model version,” and “chipset.” Examples of terms in the “cost–benefit” cluster are “price,” “cheap,” “convenient,” “user-friendly,” “cost,” “beautiful,” and “easy.”

The results of Study 2 provide initial support from the marketplace that individuals with relatively lower levels of innovativeness respond more favorably to established brands than relatively newer brands. In the study, highly innovative individuals responded more favorably to the newer brand but only for the incremental innovation. For the more radical innovation, they responded more positively to established brands than newer brands. In short, these results corroborate the findings of Study 1.

4. Discussion

4.1. Managerial implications

Selecting an appropriate brand name is a critical factor to new product success. To date, scant research explains whether the new product should carry a new brand name or take an existing one from another product (or set of products). Klink and Athaide (2010) find that consumer response to the alternate branding strategies depends on the individual's level of consumer innovativeness. Specifically, unlike later adopters, earlier adopters favor new brand names on new FMCG products. However, these findings may not generalize to HT products. Indeed, a widely held belief is that marketing HT products is substantially different than marketing products in other categories (e.g., Moriarty & Kosnik, 1989). One of the hallmark characteristics that differentiate products in HT categories from other categories, including FMCG, is uncertainty. This greater level of uncertainty leads both earlier and later adopters to favor established brand names on more innovative HT products. Study 1, an experimental setting, finds that, contrary to Klink and Athaide's (2010) study, the effect of consumer innovativeness on new product evaluation is not greater for new than existing brand names on more innovative HT products. Furthermore, highly innovative consumers evaluated more innovative HT products more favorably when such products carried an existing than a new brand name. Study 2, a field setting, used netnography to corroborate these findings. Specifically, highly innovative individuals evaluated an incremental HT innovation more favorably with a new than an established brand, while they evaluated more radical HT innovations more favorably with an established than a new brand name.

One contribution of this work is to help practicing managers choose an effective branding strategy for HT innovations. Perhaps more important, this research helps draw attention to a much needed area of research—that is, branding and HT products. Brand extensions have been a guiding strategy of companies in the past few decades, but a preponderance of prior studies examine packaged goods. Nevertheless, while packaged goods may be the “industry that ‘wrote the book’ on building strong brands” (Mohr et al., 2010, p. 408), branding may be more important for HT products than for packaged goods. Indeed, the study results indicate that using a strong brand is more critical for HT products than for FMCGs, as an established brand is better able to garner acceptance of a more innovative new product.

An important implication of this work is that strong brands may be worth more than previously thought. Given that prior research suggests that earlier adopters favor new brand names on new products, the results suggest that established brands are necessary to help earlier adopters adopt more radical innovations. Thus, valuation models of brand equity should account for the added value that an established brand can bestow on radical innovations.

This research adds to extant theory on branding strategy and diffusion by including key elements of Dowling and Staelin's (1994) framework of perceived risk (i.e., product category-specific risk, product-specific risk, and consumers' level of acceptable risk). As mentioned previously, well-known theories on branding and diffusion offer opposing prescriptions for naming a new product. The literature on diffusion and consumer innovativeness purports naming new products with new brand names to better appeal to the venturesomeness of innovators. Conversely, a basic tenet of branding theory is that known brands help facilitate acceptance of new products by reducing perceived risk. By accounting for category-specific risk, product-specific risk, and acceptable risk, this research offers a more nuanced understanding of how innovators respond to a given innovation.

4.2. Limitations and directions for future research

The results should be interpreted in light of the limitations of the studies. The most notable limitation is that the level of consumer

innovativeness of participants in both studies may be skewed higher than the population to adopt. With respect to Study 1, online respondents tend to be more technologically savvy than participants in other research settings (e.g., mall intercepts). Regarding Study 2, even the participants designated as “less innovative individuals” are still conducting a level of innovativeness or opinion leadership that would likely not be present with later adopters in the marketplace. However, consumer innovativeness is a continuous variable that varies across members of the social system (marketplace). Indeed, Rogers (2003) considers the designation of adopter categories based on consumer innovativeness a “convenience” in describing members of a system. Accordingly, the hypotheses are constructed around this conceptualization of consumer innovativeness.

Another limitation is that Study 2 did not directly measure consumer innovativeness; instead, the study used a proxy of innovative behavior—namely, opinion leadership manifested in blog posts to technology forums. Future research might assess branding preferences for HT products by examining actual purchase or adoption behavior. Furthermore, future research should investigate additional branding strategies (the present research examined only two brand naming strategies—i.e., new vs. existing brand names) that companies employ, such as combining an existing name with a new name (e.g., Microsoft Surface).

Beyond consumer innovativeness, future research could identify additional boundary conditions or moderators to the branding strategy–consumer response relationship. For example, consumers rely more heavily on brands to evaluate services (vs. goods) because of intangibility, and thus a strong brand is more critical for radical innovations involving HT services than HT products. In addition, strong brands might possess certain associations (e.g., perceived risk, innovativeness) that make the brand more or less appealing to certain adopter groups. Finally, given the increasing presence of social media, future research on branding strategy should take advantage of this research domain in general and more specifically by replicating Study 2 with additional brands, products, and product categories.

Appendix A

Study 1: Product illustration.



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