



Brand equity and the exacerbating factors of product innovation failure evaluations: A communication effect perspective

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ABSTRACT

When both high-equity and low-equity brands experience an innovation failure, does the high-equity brand fare better? This study investigates this question by exploring how consumers view and evaluate brands following an innovation failure. The researchers examine whether brand equity, preannouncement of the innovation, and word-of-mouth from an opinion leader exacerbate or alleviate the negative impact of the failure. Two experiments with a total of 816 subjects show that high-equity brands suffer less than low-equity brands from the adverse effects of innovation failures. However, innovation failures are more detrimental to high-equity brands that have preannounced the innovation and to low-equity brands that do not receive supportive word-of-mouth from an opinion leader after the failures occur.

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1. Introduction

Innovation and brand equity are two important dimensions that drive businesses today; innovation in particular is a primary determinant of brand equity (Staake et al., 2009). Although the research on explanations for innovation failures is plentiful (e.g., Guo, 2002; Matear et al., 2002; Rizova, 2006), few researchers have investigated the effect of innovation failures on consumers' evaluations of brands. For example, when a firm's innovation fails, consumers are likely to experience stress, irritation, annoyance, frustration, and sometimes even rage (McCull-Kennedy & Sparks, 2003; Smith & Bolton, 2002). Roehm and Brady (2007) suggest that "consumers' frustration is compounded by the high expectations attached to brands of strong stature" (p. 537). Frustration, annoyance, and anger with a firm influence how consumers evaluate the firm's innovations (Dube & Maute, 1996) and negatively affect customer satisfaction (Andreassen, 2000). The result may be a loss of customers, a negative impact on the firm's brand equity, and damage to the firm's valuable brand assets (Sparks & McCull-Kennedy, 2001).

This article investigates (1) the effect of brand equity on consumers' brand evaluations when a brand innovation fails and (2) the moderating effects of innovation preannouncement and an opinion leader's post-failure word-of-mouth (WOM) to determine the respective roles

of these two communication factors in mitigating or exacerbating the catastrophic influence of innovation failures. Preannouncing a new product is a fast and relatively inexpensive way of preparing target markets for a forthcoming innovation (Schatzel & Calantone, 2006). Although by some estimates more than 50% of new products are preannounced (Bayus et al., 2001), it is unknown to what degree preannouncements affect brand equity in the context of innovation failure. In addition, after an innovation fails, firms may try to seek out supportive WOM from opinion leaders to mitigate the damage (Maxham, 2001). Thus, both the preannouncement and the opinion leaders' WOM should affect consumers' post-failure evaluations.

This study contributes to the literature in the following ways. First, it sheds light on how consumers evaluate brands in the context of innovation failure, an important issue that has received limited theoretical attention and empirical assessment. Second, it uses theories on communication effects, expectation-disconfirmation, brand schema, the halo effect, and the buffering effect (Andreassen, 2000; Boulding et al., 1993; McDaniel, 1999) to provide insight into how firms' endogenous and exogenous communication in the form of preannouncements and WOM allay or aggravate failures of brands of different stature.

The remainder of this article is organized as follows. The researchers first describe the theoretical background in terms of communication effects and innovation failure. They then develop hypotheses and present the experimental designs, measures, and results. Finally, they discuss the results, the limitations of the study, and the implications of the findings for future research.

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2. Theoretical background

This study draws from prior research (Aaker, 1996; Yoo et al., 2000) to propose that marketing communications influence brand equity when a product innovation fails. Any marketing action (e.g., marketing communications) has a potential effect on brand equity because brand equity represents the accumulated impact of investment in the brand. In this context, *brand equity* is a set of assets linked to a brand that add value to or subtract value from an innovative product in its relationship with customers. More details about the association between marketing communications and brand equity appear in the following sections.

2.1. Communication effects

Communication plays an important role in brand equity both theoretically (Gray & Balmer, 1998) and empirically (Chaudhuri, 2002). van Riel (1995) identifies three types of communications: marketing, management, and organizational. The focus of the present research is on marketing communications. *Marketing communications* refers to “the function of communicating a service product to customers in the pre-entering stage and/or the stages of further experience” (Ma et al., 2002, p. 21). A major role of marketing communications is to disseminate information about new products in a way that reduces the uncertainty of quality associated with the launching (Narayanan & Manchanda, 2010). Marketing communications also help producers explain and recover from disadvantages in their new products. New product announcements and WOM are pivotal in modifying the effect of innovation failure.

Based on Eliashberg and Robertson (1988), this article defines a *new product preannouncement* as a formal, deliberate communication before a firm actually undertakes a particular new product development action, such as making changes in a product function or product line. Firms mostly use new product preannouncements as a strategic marketing tool (Su & Rao, 2010). Firms preannounce new products far in advance of actually introducing them (Koku et al., 1997). Therefore, new product preannouncements are a strategic tool associated with uncertainty for both firms and customers. Studies on new product preannouncements have focused on the timing (Büschken, 2000; Kohli, 1999; Lilly & Walters, 1997) and content (Popma, Waarts, & Wierenga, 2003) of preannouncements and the reasons for making them (Farrell & Saloner, 1986; Heil & Robertson, 1991); however, none have addressed their relationship with brand equity in the context of an innovation failure.

WOM refers to interpersonal communications among consumers concerning their personal experiences with and evaluations of a firm or a product (Richins, 1983). Such communications have a powerful influence on consumers' purchase behaviors, such as new product purchases (Duan, Gu & Whinston, 2005). Scholars have long recognized WOM as an important external source of information for new product purchases (Godes & Mayzlin, 2009).

As implementing a WOM campaign requires firms to identify effective disseminators of information, *opinion leaders*, the active users or influencers who interpret the meaning of media message content for others, play vital roles in the context of WOM in marketing communications (e.g., Bloch & Richins, 1983; Jacoby & Hoyer, 1981; Rogers, 2003). Opinion leaders are interested in particular product domains, expose themselves to mass media sources, and serve as trusted sources of advice for opinion seekers (Godes & Mayzlin, 2009).

A number of studies have examined the role of opinion leaders in such fields as value co-creation (e.g., Tynan et al., 2010), politics (e.g., Ozer, 2010) and Internet purchases (e.g., Cheema & Papatla, 2010). Yet research on the influence of opinion leaders on new product adoption seems to focus more on the role of opinion leaders in the innovation dissemination phase (e.g., Carter et al., 2001; Leonard-Barton, 1981, 1985) and on how opinion leaders publicize the initial success of an innovation (Webster, 1970) and less on how opinion leaders' post-failure WOM may help firms recover from the negative impact of the innovation failure on brand equity.

2.2. Product innovation failure

Existing research lacks a definition of product innovation failure. OECD (2005) defines *product innovation* as the introduction to the market of “a product whose technological characteristics or intended uses differ significantly from those of previously produced products” or “an existing product whose performance has been significantly enhanced or upgraded” (p. 32). Innovation failure can be due to shortcomings in the innovation itself, the user of the innovation, or the provider of the innovation (Marwa & Zairi, 2008); given the focus here on product innovation failure, deficiencies in the innovation itself is most applicable. In addition, considering the effect of new product announcements, which focus on a company's future products (Calantone & Schatzel, 2000), the researchers focus on specific product innovation failures instead of routine ones. The definition of *product innovation failure* used here thus becomes the failure of an innovation to meet consumers' expectations in terms of new product functions or new product performance.

3. Hypotheses

3.1. Brand equity and post-failure brand evaluations

From a product perspective, *brand equity* refers to the value a brand name brings to a product (Ailawadi et al., 2003). Brand equity reflects consumers' favorable, strong, and unique attitudes and associations with a branded product (Ailawadi et al., 2003; Keller, 2003). Brands that have higher brand equity also tend to have higher market shares and prices than competing brands (Batra & Homer, 2004).

Chandon et al. (2000) distinguish high-equity brands from low-equity brands. Compared with the latter, high-equity brands provide more brand benefits and value, have a higher perceived quality, and have a lower information cost and lower risk, all of which can increase brand evaluations. Evaluations of brand equity form in the minds of consumers as they experience and learn about the brand over time (Bridges et al., 2000).

According to the expectation–disconfirmation theory, the intensity and direction of the gap between expectation and perceived performance determine consumer satisfaction (Oliver & DeSarbo, 1988). An individual is likely to feel satisfied if the product performance meets (confirmation) or exceeds (positive disconfirmation) his or her expectations and dissatisfied if it falls below his or her expectations (negative disconfirmation). Thus, consumers who experience the failure of a high-equity brand will feel more upset than they would if the same had happened with a low-equity brand (Wood & Moreau, 2006). In addition, failures of high-equity brands lead to a more pronounced decline in consumers' brand evaluations after the failures occur (Brady et al., 2008).

However, Choi and Mattila (2008) argue that failures may not result in decreases in brand evaluations because of the brand schema effect of consumers' overall quality perceptions for the strong brands. Consumers use their prior expectations as reference points to evaluate a brand's current performance (Oliver, 1997), and they tend to rely more on overall perceptions of quality than on new information when the overall impression of the firm is positive (Bolton, 1998; Tax et al., 1998). When a firm has a stellar reputation, consumers easily disregard a single failure, thus minimizing the negative impact of the failure on the overall impression of the firm. The effect of a single poor performance on consumers' overall impressions of the quality of a firm thusly appears to be minor (Weiner, 2000).

Hess (2008) also suggests that brand equity acts as a kind of buffer to make consumers somewhat more forgiving of the strong brand's failure. As high brand equity helps to offset the negative fallout from an innovation failure (Sloot et al., 2005), and when such an incident does occur, consumers' evaluations of these brands remain relatively intact. Based on this argument, consumers' evaluations would change a little in the wake of the failure (Brady et al., 2008).

H1. Following an identical innovation failure, high-equity brands will have better post-failure brand evaluations than low-equity brands.

3.2. New product preannouncement

As discussed earlier, new product preannouncement is a form of marketing communication that focuses on a company's future products or vision (Calantone & Schatzel, 2000). New product preannouncements can familiarize potential customers with new product concepts and help shape their expectations (Lee & O'Connor, 2003; Mick & Fournier, 1998). The content of the preannouncement message is critical to easing customer anxiety about new technologies (Su & Rao, 2008).

However, according to the expectation–disconfirmation theory, when an innovation fails, consumers will be disappointed because their high expectations have not been met. In this case the effects of a preannouncement on brand equity can be detrimental. These negative effects will affect high-equity brands more than low-equity brands, because the former experience more risk to their credibility (Su & Rao, 2008). According to the brand schema and halo effect theories, consumers expect high-equity brands to be more capable than low-equity brands of achieving preannounced goals (Dawar & Pillutla, 2000; Elena & Jose, 2005; Mcdaniel, 1999). The failures will go against the brand schema and alienate consumers.

H2. In the event of a preannouncement (versus no preannouncement), post-failure brand evaluations will be worse for high- than for low-equity brands.

3.3. Opinion leaders' WOM

For individuals, the innovation decision process has five stages: recognition and understanding, attitude formation, evaluation and decision, testing and performing, and adoption and execution (Rogers, 2003). From attitude formation to evaluation and decision, individuals are subject to interpersonal influences. Opinion leaders in particular play a key role in these two stages (Rogers, 2003). The externality theory proposes that the behaviors of opinion leaders in providing followers or innovation agencies with information and suggestions show an obvious effect of exterior optimization (Banerjee, 1992). Opinion leaders use WOM, the intentional influencing of consumer-to-consumer communications by professional marketing techniques, to guide early marketing thoughts and practices (Sweeney et al., 2008). As a strong influence on product perceptions, WOM is able to change consumer judgments, value ratings, or purchasing behaviors (Maxham, 2001). Likewise, when an innovation failure occurs, consumers may evaluate the failure based on opinion leaders' WOM so that the opinion leaders' support helps to alleviate the damage. In this case, according to the buffering effect and brand schema theories, opinion leaders' WOM will buffer high-equity brands more so than low-equity brands, because consumers clinging to their positive impressions of high-equity brands will be more understanding and feel less alienated after receiving the WOM. In contrast, when neither strong nor weak brands receive WOM support, low-equity brands' post-failure evaluations will be affected more because of the lack of a brand equity advantage.

H3. Without (versus with) an opinion leader's WOM support, post-failure brand evaluations will be worse for low- than for high-equity brands.

4. Experiment 1: product innovation and brand equity

4.1. Design and sample

The purpose of Experiment 1 was to examine whether an innovation failure affects high-equity brands less than low-equity brands (H1) and whether there is an interaction between brand equity and

preannouncement (H2). The experiment used a 2 (brand equity: high/low) \times 2 (preannouncement: yes/no) between-subjects design and recruited a total of 298 subjects through postings on major online forums, chat rooms, and bulletin board systems in the researchers' country. The valid sample of 229 subjects represents a 76.8% response rate.

4.2. Pilot studies

The researchers conducted two pilot studies related to product innovativeness and brand equity. In the first pilot study they identified and obtained 25 new products that had appeared in media reports the previous year. They then conducted a focus group interview with seven college students and asked them to evaluate the degree of innovativeness of each new product. They reduced the set of 25 items to 16 as a result of the interview. Next 63 respondents answered questions on innovativeness adapted from Lee and O'Connor (2003). The Bluetooth virtual keyboard had the highest mean score on innovativeness ($M=4.77$, $SD=.57$) on a 7-point Likert scale (1 = strongly disagree, 7 = strongly agree) and thus became the product of focus in the main study. The aim of the second pilot study was to identify brands engaged in Bluetooth virtual keyboard innovations. Another focus group interview with seven different participants resulted in the identification of eight brands. A survey of 32 respondents on brand equity (Aaker, 1996; Keller, 1993) revealed that Sony ($M=4.46$, $SD=.62$) and MSI ($M=3.37$, $SD=.96$) represented the high- and low-equity brands, respectively. An independent sample t -test suggested that Sony and MSI differed significantly in terms of brand equity ($t=6.11$, $p<.0001$).

4.3. Procedure and measures

The experiment randomly assigned the respondents to one of the four scenarios that contained brand equity and preannouncement information. Participants read the first part of the scenario, which described the respective brand's Bluetooth virtual keyboard innovation and the failure of this innovation, and then answered brand equity questions adapted from Keller (1993) and Aaker (1996). All questions used a 7-point Likert scale (1 = strongly disagree, 7 = strongly agree; Cronbach's $\alpha=.80$). Next the respondents read the second part of scenario, which indicated whether the firm made an innovation preannouncement, and provided 3-item post-failure brand evaluations (Cronbach's $\alpha=.90$) on a 7-point semantic differential scale (positive/negative, good/bad, and favorable/unfavorable) modified from Yoo and MacInnis (2005). Finally, the researchers collected the respondents' answers to preannouncement manipulation check questions based on Lee and O'Connor (2003). Details of these scales are shown in Appendix A.

4.4. Results

4.4.1. Manipulation checks

The t -test for the manipulation check for brand equity (pre-failure; $t=6.00$, $p<.001$) indicated that Sony's brand equity ($M=5.53$, $SD=.69$) was rated significantly higher than MSI's brand equity ($M=5.00$, $SD=.64$). The researchers then used this pre-failure brand equity as a baseline assessment of brand evaluations for a covariate effect control in the subsequent analyses. The manipulation check for preannouncement ($t=2.66$, $p<.001$) also confirmed that the manipulation functioned as intended.

4.4.2. Post-failure brand evaluations

The results of a two-way analysis of covariance showed a significant main effect of brand equity on post-failure brand evaluations ($F=8.99$, $p<.01$). This finding suggests that the high-equity brand ($M=3.95$, $SD=1.01$) suffered less damage from the innovation

failure than the low-equity brand ($M = 3.53, SD = .72$), which supports the buffering effect prediction in H1.

The results also indicated a significant two-way interaction between brand equity and innovation preannouncement ($F = 2.99, p < .05$). As expected, the brand evaluations of the high-equity brand declined more sharply in the preannouncement ($M = 4.22$) than the no preannouncement ($M = 3.67$) condition than the evaluations of the low-equity brand ($M_{\text{preannouncement_yes}} = 3.55$ vs. $M_{\text{preannouncement_no}} = 3.49$, see Table 1). The planned contrast further validated this tendency ($F = 4.69, p < .05$). Fig. 1 shows that the high-equity brand suffers more damage to its brand reputation after an innovation failure when it makes a preannouncement. H2 was supported.

4.5. Discussion

The results of Experiment 1 indicate that in general high-equity brands suffer less than low-equity brands from the adverse effects of an innovation failure. This finding is in line with Choi and Mattila (2008), who find that consumers tend to easily discount the single failure of a high-equity brand because they are biased by their overall expectations of the quality of the brand. Consumers' overall impressions of a brand's quality may serve as a buffer against the negative effects caused by such a failure (Bolton, 1998).

The results of Experiment 1 also provide evidence to support the moderating role of a preannouncement in mitigating the brand equity effect on post-failure brand evaluations. The findings show that the negative influence of innovation failures affects consumers' evaluations of a high-equity brand more when the firm has made a preannouncement than when it has not. Conversely, a preannouncement has little effect on low-equity brands. This finding implies that when high-equity brands are unable to meet preannounced innovation goals, the failure to meet consumers' expectations will eventually negatively affect consumers' brand evaluations.

5. Experiment 2: the effect of an opinion leader's WOM

5.1. Design and sample

The purpose of Experiment 2 was to determine whether an opinion leader's supportive WOM moderates the effect of brand equity on post-failure brand evaluations (H3). The experiment adopted a 2 (brand equity: high/low) × 2 (opinion leader's supportive WOM: yes/no) between-subjects design. Following the same recruiting procedure as in Experiment 1, the researchers solicited a total of 816 subjects to participate in this experiment. The valid sample of 587 respondents represents a 71.9% return rate. The innovation failure context and the high- and low-equity brands were identical to those in Experiment 1.

5.2. Pilot study

The researchers conducted a pilot study to determine the stimuli for manipulating the opinion leader's WOM. In a survey, 32 respondents named Mr. Stan Shih (the founder and former chairman of the Acer

Table 1 Means and standard deviations of Experiment 1.

Brand equity	Post-failure brand evaluation		Preannouncement		
			Yes		No
Low-equity brand	M	3.53	M	3.49	3.55
	SD	.72	SD	.87	.49
	N	119	N	57	62
High-equity brand	M	3.95	M	3.67	4.22
	SD	1.01	SD	.94	.74
	N	110	N	56	54

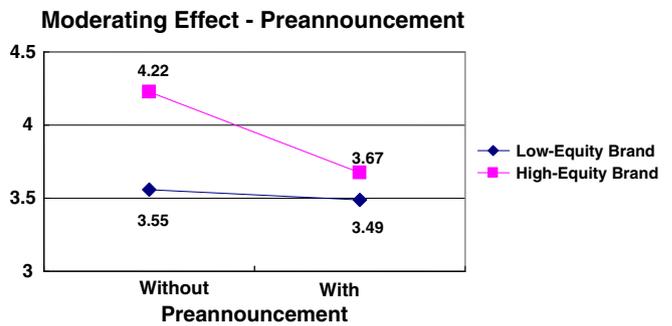


Fig. 1. Brand equity by preannouncement on post-failure brand evaluations.

Group and a retired business tycoon) as the most influential opinion leader in the field of personal computers and peripheral accessories. The researchers thus used Mr. Shih as the opinion leader of focus in this study.

5.3. Procedure and measures

The respondents received a random assignment to one of the four innovation failure scenarios with brand equity and WOM manipulations. The first part of the procedure was identical to Experiment 1 (i.e., measurement of the equity of the assigned brand followed by a description of the Bluetooth virtual keyboard innovation). Next the subjects read a description of the failure of the brand's new product and the opinion leader's supportive statement (WOM condition) or a neutral statement (no WOM condition). Finally, respondents completed the post-failure brand evaluations and the check items of the opinion leader's WOM on 7-point semantic differential scales. Cronbach's alphas for brand equity and the post-failure brand evaluations were .86 and .93, respectively. All scales are shown in Appendix A.

5.4. Results

5.4.1. Manipulation checks

Similar to Experiment 1, *t*-test for brand equity ($t = 7.23, p < .001$) indicated that the high-equity brand (Sony, $M = 5.56, SD = .80$) had significantly higher brand equity than the low-equity brand (MSI, $M = 5.11, SD = .70$). Also, respondents perceived the condition with the opinion leader's supportive WOM ($M = 5.05, SD = .91$) as significantly different from the condition without the supportive WOM ($M = 3.70, SD = 1.21; t = 15.27, p < .001$). These results indicate that all of the manipulations functioned appropriately.

5.4.2. Post-failure brand evaluations

The significant main effect of brand equity on post-failure brand evaluations was similar to that in Experiment 1 ($F = 23.21, p < .001$). The post-failure brand evaluations were higher for the high-equity brand ($M = 3.95, SD = 1.01$) than for the low-equity brand ($M = 3.53, SD = .72$). The results indicated a significant two-way interaction between brand equity and the opinion leader's WOM support ($F = 14.71, p < .001$; see Table 2 and Fig. 2). The high-equity brand that received the opinion leader's supportive WOM showed more positive post-failure brand evaluations ($M = 5.17$) than the low-equity brand with the same support ($M = 4.95$). When neither brand received the opinion leader's WOM, the low-equity brand's post-failure evaluations ($M = 3.30$) were much worse than those of the high-equity brand ($M = 4.10$) compared to support condition, all of which indicates a greater buffering effect for the high-equity brand. The planned contrast further validated this interaction ($F = 11.64, p < .001$), supporting H3.

5.5. Discussion

The results of Experiment 2 confirm that high-equity brands suffer less adverse effects from an innovation failure. This buffering tendency is more evident when the brands receive supportive communication messages from important outsiders who serve as opinion leaders in areas related to the firms' innovation. This support benefits not only well-established brands but also low-equity brands. Without opinion leaders' supportive communication, both high- and low-equity brands are vulnerable to the adverse effects of innovation failures, although low-equity brands that lack the brand halo seem to be more negatively affected.

6. Conclusions

The purpose of this study was to investigate whether brand equity mitigates the adverse effect of innovation failures and whether this adverse effect is moderated by innovation preannouncement and an opinion leader's WOM. These questions have been the subject of relatively little empirical assessment and thus are still unresolved (Roehm & Brady, 2007). Overall, the results show that high-equity brands suffer less damage from innovation failures when the moderating factors are not in effect. That is, high-equity brands use their cumulative brand assets and consumer impressions to create a halo effect against the consequences of innovation failures. This finding confirms Choi and Mattila's (2008) assertion that a strong brand reputation will bias consumers' post-failure evaluations but contradicts the claim of Niedrich et al. (2005) that consumers will be more upset when a prominent brand fails than when a weaker brand does. The present findings for the moderating effects discussed below may provide some useful explanations for this inconsistency.

Although high brand equity offers protection, the brand halo does not always glow in certain situations. For instance, consumers' likelihood of forgiving high-equity brands decreases significantly when the brands have preannounced innovations that end up failing. The gap between the brands' actual performances and the consumers' heightened expectations resulting from the innovation preannouncement increases consumers' disappointment and dissatisfaction with the high-equity brands. Roehm and Brady (2007) find a similar tendency, except that in high-equity brands they discover a single-deviation effect of negative disconfirmation against consumers' schema-based expectations. In the present study, when high-equity brands preannounce an innovation that subsequently fails, the brands face a double-deviation effect of consumers' negative disconfirmation against not only their schema-based expectations but also communication-based anticipations.

In addition, brands use public communications to portray their firms' competence and establish trusts and relationships with customers (Ledingham & Bruning, 1998). When an innovation fails, consumers might attribute this failure to firms' internal control issues that they perceive as less tolerable with reputable brands; this

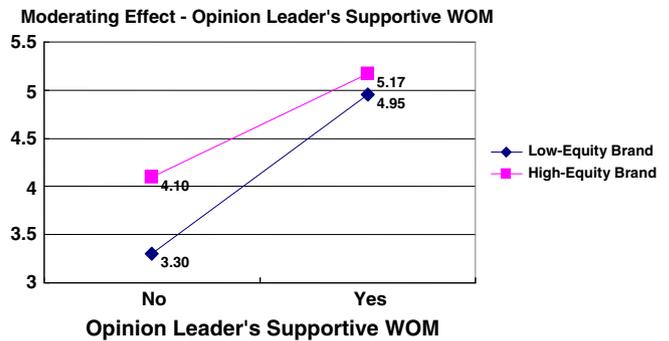


Fig. 2. Brand equity by opinion leader's WOM on post-failure brand evaluations.

attribution in turn results in more negative evaluations for high-equity brands (Yen et al., 2004).

The good news for high-equity brands is that when they are buttressed by opinion leaders' supportive WOM, consumers tend to demonstrate greater understanding and forgiveness in terms of accommodating the brands' innovation failures. Conversely, when high-equity brands fail to receive supportive WOM from an opinion leader, they have to cope with the aftermath of the innovation failure.

Finally, although innovation preannouncements result in relatively less harm to low-equity brands than high-equity brands, lack of opinion leaders' WOM is more detrimental to low-equity brands, as low-equity brands are not endowed with as much brand halo as high-equity brands are. This somewhat contrary finding is that gaining the support of opinion leaders can mitigate the effects of adverse situations as much for low-equity brands as for high-equity ones. Therefore, supportive WOM from opinion leaders can matter much more to low-equity brands.

6.1. Implications

Despite the vast amount of research on innovation (e.g., O'Connor & DeMartino, 2006; Staake et al., 2009), few studies review the impact of innovation failures on brand evaluations. The present study outlines the influence of innovation failures on brands of high and low equity and shows that the effects may vary under certain conditions. The findings provide some useful implications for managers and practitioners dealing with innovation failures. Because innovation projects demand a long-term commitment (O'Connor & DeMartino, 2006), managers must not only produce a remarkable innovation but also know how to respond when innovations fail. In most cases, high-equity brands can prevent and avoid the destructive effects of innovation failures. Holding all else constant, high-equity brands are safer than low-equity brands from poor consumer evaluations following an innovation failure (Choi & Mattila, 2008). Firms should thus make greater efforts to strengthen their brand equity. Moreover, estimates show that more than half of customer switching behaviors are due to failures of products or services or to firms' inadequate responses to these failures (Keaveney, 1995). Hence, communication (especially prudent preannouncements and supportive WOM from a strong opinion leader) is extremely important for diluting negative post-failure evaluations of brands. A well-executed WOM image repair communication offers a great opportunity for both high- and low-equity brands to turn a negative experience into a less harmful or even positive one (Ok et al., 2007).

Table 2
Means and standard deviations of Experiment 2.

Brand equity	Post-failure brand evaluation	Opinion leader's WOM support		
			Yes	No
Low-equity brand	<i>M</i>	4.15	<i>M</i> 4.95	3.30
	<i>SD</i>	1.27	<i>SD</i> .87	1.06
	<i>N</i>	301	<i>N</i> 154	147
High-equity brand	<i>M</i>	4.63	<i>M</i> 5.17	4.10
	<i>SD</i>	1.23	<i>SD</i> .95	1.24
	<i>N</i>	286	<i>N</i> 140	146

6.2. Limitations and future research

Like most studies, the present study is subject to certain limitations that provide opportunities for future research. First, the two experiments used an experimental design with artificial scenarios rather than real failure scenarios. Respondents might not have truly reacted to the innovation failures, unavailability, and losses as they would in the real world. However, researchers in similar studies have also used this role-playing method (e.g., Hess, 2008; Smith & Bolton, 2002; Weun et al., 2004). Moreover, this method may minimize the memory bias that is a common concern in studies of self-reports of service failures (Smith et al., 1999). Second, this study involved a specific type of product innovation (high-tech failure). Innovation of different degrees and types may attract different levels of consumer attention and response. Also, consumer involvement or engagement with different types of innovation may affect evaluations of innovation failures (Sawhney et al., 2005). Therefore, replicating this research using other types or degrees of innovation should help verify the applicability of the study's findings. Third, the severity of failure was held constant. The study did not examine any types of failure attribution, such as locus of control, stability, or controllability. Consumer attributions of stability and locus of control of firms' service innovation failures play a critical role in modifying brand evaluations (Liao & Cheng, 2011), and future research may examine the effects of these different moderators. Finally, although an opinion leader's supportive WOM effectively alleviated the devastating impact of the innovation failure on brand evaluations, the researchers examined this external influence in the post-failure stage only. Researchers still do not know how opinion leaders respond and make self-attributions when the innovations they are promoting ultimately fail or whether their pre-failure support of the brand's innovations jeopardizes their credibility in their social networks. Future studies can tap into these areas.

Appendix A. Measurement scales

Pre-failure brand evaluations

After reading the brand introduction, your attitude toward the brand is

- (1) Positive/negative
- (2) Good/bad
- (3) Favorable/unfavorable

Product innovativeness

- (1) The technology this product incorporates was new to you
- (2) The benefits this product offers were new to you
- (3) You perceived the product features as novel/unique
- (4) This product introduced many completely new features to the market
- (5) This product offers dramatic improvements to existing product features
- (6) The knowledge required to use this product was new to you
- (7) You needed to learn how to use this new product
- (8) You tended to resist adopting this new product
- (9) You needed to change their behavior in order to adopt this product

Brand evaluations after preannouncement

After reading the news about the preannouncement, your attitude toward the brand is

- (1) Positive/negative
- (2) Good/bad
- (3) Favorable/unfavorable

Brand evaluations after failure

After reading the news about the innovation failure, your attitude toward the brand is

- (1) Positive/negative
- (2) Good/bad
- (3) Favorable/unfavorable

Brand evaluations after opinion leader's WOM

After listening to the opinion leader's WOM, you consider the brand to be

- (1) Positive/negative
- (2) Good/bad
- (3) Favorable/unfavorable

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