Should Firms Pay for Online Brand Communities: Using Lead User Theory in Analyzing Two Contrasting Cases*

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Abstract

Despite the importance and benefits of Online Brand Communities, there is little discussion in the literature about whether it is necessary for a firm to *financially* sponsor its online brand community. By incorporating brand trust, brand knowledge, and reciprocal behavior into Lead User Theory, this paper studies what influences consumers' participation potentials in new product development. Two online survey instruments are employed, and data is collected from two matchable well-known IT companies for two types of online brand communities: Company-initiated and Consumer-initiated. Two separate parallel Structural Equation Modeling analyses are conducted to test these two matchable samples and assess the research model. Our findings suggest that firms may not need to pay to sponsor their online brand communities. We infer our conclusion about company-sponsored communities from our findings that brand trust and brand knowledge play different roles for company-initiated and consumer-initiated online brand communities. Brand knowledge directly impacts consumers' participation potentials in consumer-initiated online brand communities, but only indirectly impacts through brand trust in company-initiated online brand communities.

Keywords: Online Brand Community, Brand Trust, Brand Knowledge, Product Innovation, Structural Equation Modeling, Lead User Theory

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1. Introduction

In the Internet era, global enterprises, especially those with decentralized business structures and geographically diverse operations, are facing a rapidly changing environment. These organizations use electronic knowledge-sharing networks to leverage expertise within the organization, reduce the costs associated with solving reoccurring problems, stimulate innovation, and learn from mistakes [1-3]. This use of knowledge-sharing networks, in turn, is leading firms to host virtual consumer environments [4] to attract customers' attentions and promote their involvements in product development and product support activities. One of the most commonly used types of virtual customer environments is an online community, a collection of consumers over an Internet platform [5]. Online communities engage in collective action [4] and connect organizations with their customers, employees, and business partners [6, 7]. Online communities are also sources of product innovations and customer support [8, 9]. They are capable of serving as platforms for deriving new business models [10]; providing the public with useful information [11, 12] and emotional support [13]; creating sites for political and social discussion [14]; and facilitating social networks [15, 16].

Microsoft's online brand community (i.e., "Microsoft Community") uses the support provided by its "expert" customers in its online forums to preserve the level of product support services, and to collect valuable product improvement and development ideas [17]. Additionally, the Italian motorcycle company Ducati uses the technical knowledge of its customers to generate new ideas for its next-generation products through its online forum, called "Ducati Tech Cafè"[1] [10]. Despite the importance and benefits of the online community, there is still little discussion in the

[1] it is now called Ducati.ms - The Ultimate Ducati Forum, https://www.ducati.ms/

literature about whether it is necessary for a firm to *financially* sponsor its online brand community. Jang, Olfman, Ko, Koh and Kim [18] classify online communities into two major categories of communities: consumer-initiated and company-initiated. In both types of online communities, firms use consumer participation to assist with product development. The present study focuses on these two types of online brand communities and is designed to answer the following research questions:

1. Is it necessary for a firm to invest money in sponsoring an online brand community?
2. Is a company-initiated or a consumer-initiated online brand community more successful at fostering brand trust?
3. Is a company-initiated or consumer-initiated online brand community more successful at accessing consumer ideas for product feedbacks and innovations (brand knowledge)?

2. Literature Review

2.1. Online Community, Brand Community, and Online Brand Community

Online communities are created by individual choices, reflecting the availability of the Internet and the human desire for connectedness, knowledge, and information [18]. They exist at the organization level for profit-making purposes (e.g. Microsoft Community, IT Resource Center of Hewlett Packard), as well as at the individual user level (e.g. Ducati Tech Cafè, BlackBerry Community Forum). Individuals create their own communities of interest for noncommercial purposes [19]. Members of online communities with common interests get together virtually and agree upon the benefits (e.g., rewards, self-gratification, reputation, etc.) of their actions [20]. When community members get together based on a structured set of social relations among admirers of a brand, it forms a brand community, which is a specialized, non-geographically bound community [21-24].

Brand communities influence members' perceptions and actions [25], increase members' knowledge [26], and offer the brand makers opportunities to interact and collaborate with customers

[27]. Furthermore, brand communities form a network of relationships among consumers [28, 29] and create values between consumers of the brand and companies that create the brand [30]. When brand communities are formed through computer-mediated social spaces, they naturally become Online Brand Communities [21, 31]. There are several classifications of online brand communities (e.g. Henri and Pudelko [32], Kozinets [33], and Porter [34]). In general, they can be grouped into two main types based on their initiation and sponsorship: consumer-initiated online brand communities and company-initiated online brand communities [18].

Both company-initiated and consumer-initiated online brand communities have their advantages and disadvantages. For company-initiated online brand communities, it is relatively easy to access detailed information about products and their usage. However, it may also discourage consumers' participations due to privacy concerns [35]. Thus, unfavorable opinions from customers may not be available in the forum discussions or may be removed because the posts of the forum site are controlled and maintained by the brand company. For instance, Apple Support Communities provide the most comprehensive and detailed information about current and historical Apple products. However, few negative comments and rumors about current and future Apple products are accessible to public consumers but might be available to developers after filtering. This is mainly due to Apples' protection of its technical secrecy and safeguard of its reputation. Consequently, the weaknesses of products or unsatisfied experiences of customers are less likely to appear on the company-initiated than in the consumer-initiated online brand community.

On the contrary, consumer-initiated communities provide not only useful information, valuable experiences, but also strengths and weaknesses of products without screening or appealing to other consumers to purchase. For example, iFixit, a consumer-initiated online brand community tears down new products to provide relatively detailed specifications for a limited number of IT products. For those newly released IT products (e.g. iPad, iPhone), iFixit will organize its participants to wait in line to catch the first sales of new products. Then, its engineers will tear them

down to reveal their IT specifications and post the information on its forum. iFixit.com is a consumer-initiated online brand community that can detect and disseminate both positive and negative information about branded products more fairly than company-initiated communities do.

This study focuses on how those two types of online brand communities assist the development of a firm's new product innovations. The IT industry has successfully leveraged the shared knowledge of consumers through online brand communities (e.g. Microsoft Community, IT Resource Center of Hewlett Packard, BlackBerry Community Forum[2], Apple Support Communities, Android Open Source Project, etc.).

2.2. Online Brand Communities, Brand Knowledge, and Brand Trust

A brand is a name, term, sign, symbol, design, or a combination of them used to identify the goods and services of sellers and to differentiate them from their competitors [28]. Online brand communities center on their respective brands and provide services/support to the respective online communities virtually clustered around the brands. A strong and reputable brand enables customers to identify and evaluate the quality of its products, and makes it easier for consumers to develop attitudes and expectations[36]. A trustworthy brand can also reduce the perceived risks of purchase [28] and lead to consumers' confidence and trust in the brand. Prominent brands even facilitate customers' knowledge accumulation regarding the brand by advertising and word of mouth [37]. Accordingly, these consumer behaviors regarding the brand in the physical world can be easily extended to the online brand community.

A large body of literature has explored how brands interact with online brand communities. The majority of studies discuss how consumers' engagement in online brand communities can increase brand trust and brand knowledge [38-42], while others explore how brand knowledge and brand trust can strengthen customers' engagement with online brand communities[43-45]. Only a

[2] Most consumers today use iPhones or Samsung phones. BlackBerry phones are still being used for special secure purposes. The BlackBerry user community is still active. https://www.cnn.com/2020/08/20/tech/blackberry-2021-5g-phone/index.html

few have discussed the role of the sponsorship of an online brand community. Martínez-López et. al. find that sponsors' control of an online brand community will increase sponsors' opportunism and eventually lead to less trust and engagement of participants in the online brand community [46]. But, little is known that whether or not it is necessary to financially sponsor an online brand community, especially when the brand company (i.e. sponsor) can gain valuable feedback on product improvement and innovation from the customers through the online brand community.

2.3. Online Brand Communities and Product Innovation

Customers' interests and their acquired knowledge accumulated through the actual use of products make them excellent external resources for product innovation [47]. Strategic management literature and quality management literature have identified three roles for customers as resource, co-creator, and user [48-51]. New idea generation and product conceptualization roles of customers as resources have been well explored in the literature [52-55].

The customer as a co-creator can collaborate on various product design and development activities, including product architectural design and choice evaluation, product feature prioritization, specification of product interface requirements, and development process priorities and metrics establishment [4]. For example, Microsoft and SAP often utilize their customer representatives as members of their product development teams [56]. Similarly, to make design choices, Cisco relies on customers as members of product development teams [57].

Customers as users can create two valuable outcomes, product testing and product support [4]. For instance, it is not uncommon in the software industry for firms to use their customers in beta product testing (e.g., iOS Beta release by Apple Inc.), enabling those firms to reduce their investments in internal product testing units [58]. Additionally, customers often acquire significant knowledge and expertise in various aspects of product usage. This knowledge serves as the basis for providing product support for peer users [59].

Due to these promising features in the value creations of product innovation, firms are proactively seeking and forming these groups of "valuable customers" [18]. Fortunately, such innovative customers can often be found in both company-initiated and consumer-initiated online brand communities [33, 60-63]. Therefore, online brand communities can be considered a particularly valuable source of product innovations because their members are experienced with the brand's products, and can both contribute to generating new ideas and support each other in solving problems [64].

3. Research Model and Hypotheses

A large body of literature studies how customers participate in online brand communities by employing, for example, social exchange theory and commitment theory [65, 66]. We combine Lead User Theory, introduced by Von Hippel [67], and reciprocal behavior to explain how company employees or forum leaders can promote consumers' innovation participations. Employees of company-initiated online brand communities are paid for answering consumers' questions and seeking their feedback regarding product improvement. Similarly, unpaid forum leaders of consumer-initiated online brand communities are knowledgeable community members who are "elected" to elicit the same information. As Lead User Theory outlines, paid employees and unpaid forum leaders emerge as lead users in their respective online brand communities. Technology firms, in particular, call on lead users to assume more active roles as they generate new product ideas in the process of finding "solutions" [55]. As paid employees or unpaid forum leaders help consumers resolve their issues, their assistance may open an auspicious dialogue between the "lead users" and consumers of the products. Moreover, online brand community members (i.e., consumers), who perceive that their community is providing valuable and timely information and is trying to keep a strong relationship with them, will reciprocate such efforts by providing valuable feedback about their user experiences, criticism about how to improve product quality, and ideas about how to

develop new or derivative products [68].

The strong involvement of lead users, regardless of whether they are officially designated and paid by the provider (employees), or are self-proclaimed proprietors (unpaid forum leaders) of a community, establishes a solid reciprocal relationship between employees'/forum leaders' responses and consumers' involvements in innovations. Such involvement leads to a higher level of participation in product innovations. Therefore, Lead User Theory with reciprocal behavior by consumers leads us to propose the following first set of hypotheses,

H1a: Paid Employees' responses in company-initiated online brand communities have significantly positive impacts on consumers' participation potentials in product innovations.

H1b: Unpaid Forum Leaders' responses in consumer-initiated online brand communities have significantly positive impacts on consumers' participation potentials in product innovations.

It is not difficult to understand that the core of an online brand community is about that particular brand. Consumers' knowledge of that brand may affect their involvement in the dialogs about the branded product. Brand knowledge deals with a consumer's knowledge about a certain brand or a certain product of a brand [28]. Consumers with more knowledge of the focused brand will have more potential creativity to generate new product ideas and provide more relevant and useful feedback about the branded products. Manifested in the discussions in the online brand communities, knowledgeable consumers express more about their user experiences and criticisms of the products and may propose more solutions and improvement suggestions. These may be valuable and vital for new generations of the products.

As evidence, Füller [69] shows that knowledgeable consumers have stronger tendencies to engage in product innovation discussions in online brand communities than less knowledgeable consumers do. The more members of a community believe that their knowledge is valuable and useful, the more willing they are to share it with others [64]. For instance, Constant, Sproull and Kiesler [70] find that members of an online community with higher levels of expertise are more

likely to give useful technical advice to others. Wasko and Faraj [71] and Wasko and Faraj [12] find that people who believe their expertise is inadequate are less likely to share their views. Therefore, we argue that brand knowledge will increase consumers' participation potential in product innovations in both company-initiated and consumer-initiated online brand communities.

H2a: Brand knowledge has a significantly positive impact on consumers' participation potentials in product innovations for company-initiated online brand communities.

H2b: Brand knowledge has a significantly positive impact on consumers' participation potentials in product innovations for consumer-initiated online brand communities.

Chaudhuri and Holbrook [72] define brand trust as the average consumer's willingness to rely on the brand to perform company-claimed functions. When a company-claimed function is not obvious or there is concern that the company either has more information it is not revealing or is withholding information, brand trust plays a critical role in decreasing the uncertainty and lack of information [42]. Hence, brand trust could increase consumers' good feelings towards relying on online brand communities. Such an increase in brand trust might indirectly promote consumer participation potentials in online brand forums. Meanwhile, better information about a brand may reduce uncertainty and improve brand trust. Chaudhuri and Holbrook [72] argue that brand trust strongly influences a customer's attitude about the brand and repurchase intention. According to Ajzen [73]'s Theory of Planned Behavior, a higher intention to repurchase will lead to more actual purchases. More purchases will eventually increase the number of consumers who use those branded products frequently and provide feedback and novel ideas to online brand communities.

Furthermore, a large body of brand literature argues that brand trust is one of the main antecedents of brand loyalty [24, 74-77]. Brand trust leads to stronger loyalty as trust creates highly valued exchange relationships [78, 79]. Accordingly, when customers trust the brand and value their relationship with it, they are more likely both to appreciate the brand and to participate in innovation discussions in the online brand communities, and to share their knowledge with one another.

Therefore, since the brand trust literature does not distinguish between company-initiated and consumer-initiated online brand communities, we propose the following hypotheses.

H3a: Brand trust has a significantly positive impact on consumers' participation potentials in product innovations for company-initiated online brand communities.

H3b: Brand trust has a significantly positive impact on consumers' participation potentials in product innovations for consumer-initiated online brand communities.

Additionally, brand knowledge captures customer interest in and customer experience with the brand [80]. This greater interest, in turn, suggests that knowledgeable consumers will be more engaged with the brand, as they feel more familiar with and closer to the brand [64]. We call this engagement brand trust, which we interpret as customers' reliance on the brand, enhanced by increased brand knowledge. Therefore, in line with brand literature, we argue that brand knowledge will facilitate consumers' trust in the brand.

H4a: Brand knowledge has a significantly positive impact on brand trust for company-initiated online brand communities.

H4b: Brand knowledge has a significantly positive impact on brand trust for consumer-initiated online brand communities.

Drawing from Lead User Theory and the hypotheses developed above, we propose the following model (Figure 1) with four constructs. Consumers' Participation Potential in Product Innovation (affect-based) refers to the willingness of customers to involve in product (including services) innovation discussions on online brand communities. Paid Employees' Responses (in the company-initiated online brand community) and unpaid Leaders' Responses (in the consumer-initiated online brand community) refer to employees' or forum leaders' involvement evaluated from consumers' perspectives. Brand Trust refers to the extent to which consumers in the online brand community trust that particular brand. Brand Knowledge refers to the consumer's level of knowledge about that particular brand in the online brand community.

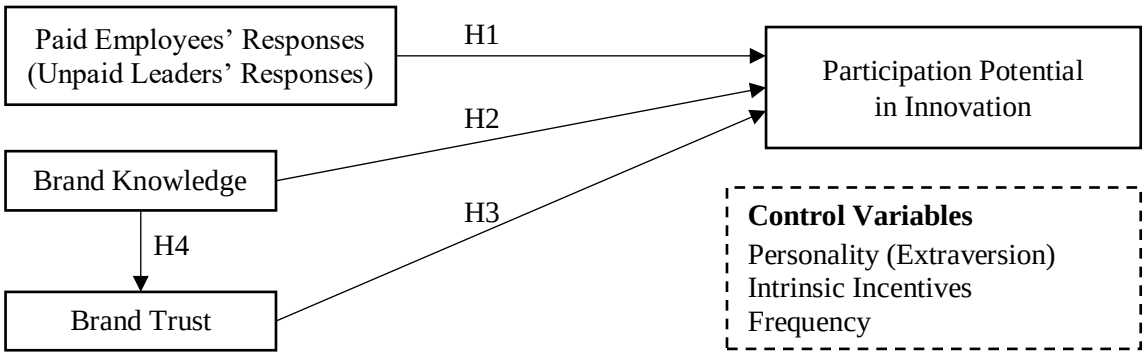

Figure 1 Conceptual Model

4. Research Methodology

4.1. Sample Background and Sample Frame

We employ an online survey instrument for this study and data were collected in 2009. As mentioned earlier, we want to explore how paid Employees' (unpaid Forum Leaders') Responses affect consumers' Participation Potential in Product Innovation discussions in both company-initiated and consumer-initiated online brand communities. We focus on the IT Resource Center of Hewlett Packard (ITRC HP) (www.itrc.hp.com) [3] and the BlackBerry Community Forum (BB Forum) (www.blackberryforums.com) for this study to form two matchable samples. We recognize that the specific products discussed are probably no longer in use, but both brands still have active online brand communities, and the data yields interesting results with important implications. Moreover, they were then two typical and well-known global online brand communities in the same industry (i.e, IT sector). ITRC HP was categorized as a software support professional group company-initiated online brand community. The BB Forum was and still is a social-spaces-based special interest group consumer-initiated online brand community [34].

ITRC HP supported peer-to-peer virtual interaction among professionals and other community members. The forum was officially the main knowledge database for customers with Hewlett Packard as the main financial sponsor. The forum's main function was to present HP

[3] It is now merged into HP Support Center, https://support.hp.com/us-en

customers with all the information they needed to know and played a major role in supporting customer care services. It contained all the important trouble-shooting types of information technology. The ITRC HP contemporarily had over 40,000 active members with registered members of around 850,000. The majority of members around the world lived in North America, Europe, and India. HP employees were hired to respond to customer inquiries and the online brand community provided customers with a platform to share knowledge with one another. Consumers constantly interacted and exchanged their user experiences with both other consumers and HP employees. HP employees could gather information from consumers and forward feedback to HP's R&D departments for improving product development.

Unlike the ITRC HP online brand community, BlackBerry did not and still does not financially support the BlackBerry forum. The design of the forum is created for BlackBerry users who are interested in talking about BlackBerry products. Most members of the BlackBerry online brand community live in the U.S and Canada, although there are members in other major countries. There were over 160,000 active and about 400,000 registered members at the time the data were collected. The HP and BB forums have slightly different communication structures. BlackBerry does not appoint or pay forum leaders. The forum leaders directly involve themselves in forum discussions and are active members of the forum in addition to managing and sustaining the online brand community.

4.2. Item Development

Almost all constructs are measured reflectively using multiple items on a five-point-Likert scale, ranging from "strongly disagree" to "strongly agree." All survey scales used in this study are either adapted or synthesized from the existing literature. We further refine some to fit the specific characteristics of our research. "Participation Potential in Innovation (affect-based)" is adapted from Füller, Matzler and Hoppe [64] with three items. "Brand Knowledge" is measured with three items and adopted from Algesheimer, Dholakia and Herrmann [80]. "Brand Trust" is adapted from

Chaudhuri and Holbrook [72] using four items. "Employees'/Leaders' Responses" are measured using four items which are synthesized and developed from Nambisan and Baron [17], Habibi, Laroche and Richard [39], and Luo, Zhang, Hu and Wang [81]. For control variables, "Personality (extraversion)" also uses two items from Füller, Matzler and Hoppe [64]. "Intrinsic Incentives" are measured using four items which are synthesized and derived from Nambisan and Baron [17], Baldus, Voorhees and Calantone [82], and Wasko and Faraj [83]. A single indicator item measures "Frequency" based on its definition.

Discussions with one management professor, one MIS professor, and one marketing professor led us to refine the scales of "Employees'/Leaders' Responses" and "Intrinsic Incentives." Interactions among several graduate students and HP senior employees/BB senior forum leaders helped us further modify the survey questions. We had to delete or reword a few items to fit our research context, which we present in Appendix A.

4.3. Control Variables

In our conceptual model, we include personality, intrinsic incentives, and frequency of visiting the online brand community as control variables. First, members who have an extroverted personality tend to participate more in the innovation discussions than those members who have an introverted personality [84, 85]. Hence, we want to control for consumers' personalities at the same level, which is extraversion in our study. Second, rewards have a long history, having been widely used for cultivating interest and increasing motivation and performance [86]. Rewards can be tangible, such as money, gold stars, medals and awards, or intangible, including praise from peers [87]. In our study settings, especially the consumer-initiated settings, rewards are more likely to be intangible; hence, we control for intrinsic incentives for both consumer-initiated and company-initiated online brand communities. Finally, members who visit the online brand community more frequently are more likely to participate in product innovation discussions than those members who rarely browse the sites. Therefore, we control for the frequency of visiting the online brand

community as well.

4.4. Data Collection and Descriptive Statistics

We test the proposed model (Figure 1) using items developed in Appendix A. Two separate web-based questionnaires were distributed by a third-party survey company (surveymonkey.com). Initially, we contacted a few representative employees of ITRC HP and asked them to randomly send out 1000 invitations to HP brand community members via their online forum websites. Eventually, we got 90 useable responses, which yields a 9% response rate. Meanwhile, we contacted the representative forum leaders of the BB Forum and asked them to randomly send out 1000 invitations to the online brand community members of BlackBerry. We offered a small monetary reward to motivate responses, as suggested by those forum leaders. We received 130 complete survey responses, a 13% response rate. The entire survey, including demographic questions[4], took about 15 minutes to complete. Similar surveys (e.g. Ke and Zhang [88]) found response rates comparable to ours.

We acknowledge that the sample size is not large. Hair Jr, Hult, Ringle and Sarstedt [89] refers to the 10-times rule as "10 times the largest number of structural paths directed at a particular construct in the structural model." Participation Potential in Innovation is the largest construct in our model (Figure 1) which has six paths pointed. By the 10-times rule, 60 is the acceptable minimum sample size. Similarly, our power analysis indicates the minimum sample size is 55, when two-tailed, medium effect size, α=0.05, and power=0.8 are used [90].

The demographic and descriptive statistics of both HP and BB participants surveyed show that the majority of users are between 26 and 55 years old living in non-rural areas, and over 50 percent of them have either 2-year or 4-year college degrees. Almost all participants of both online brand communities have more than six years of internet experience. When compared with ITRC HP, the BB Forum has more English primary-language users due to their residency in the USA. ITRC

[4] The non-effect of collected demographic variables in the research model is considered in Section 5.4.

HP has more non-English speaking European participants who are considered as western. In 2009, when the data were collected, the major users of ITRC HP owned HP computers and scientific calculators, but users of BB Forum owned BlackBerry smartphones. Given the different populations of respondents and products used, it is unlikely participants would receive both ITRC HP and BB forum survey questionnaires from our study. Nevertheless, they would answer two sets of questions particularly tailored for either HP or BlackBerry (see Appendix A). In Table 1 below, Mann-Whitney U-tests for differences in demographic variables between the forum respondents reveal that HP and BB respondents differ significantly by gender, language, location, and education. In addition, their survey responses differ significantly across a number of dimensions (see Appendix B). Thus, it is appropriate to consider the respondents as drawn from two distinct populations.

Table 1 Mann-Whitney U-test for Demographics[5]

Variables	Company	Mean Rank	Sum of Ranks	Mann-Whitney U	Wilcoxon W	Z	Asymp. Sig. (2-tailed)
Age	HP	113.76	9328.5	4488.5	12616.5	-1.812	0.07
	BB	99.34	12616.5				
Gender	HP	111.9	9176	4641	12769	-2.401	0.016
	BB	100.54	12769				
Primary Language	HP	82.96	6803	3400	6803	-6.209	<.001
	BB	119.94	15352				
Location	HP	131.26	10763	3136	11392	-5.743	<.001
	BB	89	11392				
Education	HP	115.83	9266	4214	12470	-2.245	0.025
	BB	97.42	12470				
Residency Area	HP	106.27	8608	5081	13337	-0.266	0.79
	BB	104.2	13337				
Internet Experience	HP	103.62	8289.5	5049.5	8289.5	-0.576	0.565
	BB	105.05	13446.5				

Any survey study has to be concerned with "non-response bias." We test the nonresponse bias with the method suggested by Armstrong and Overton [91], comparing the Chi-square of the response from the first quarter of the respondents with the Chi-square of the fourth quarter responses. We find no significant difference, suggesting that non-response bias is not an issue in our study. In addition, only using one kind of method of collecting data raises the concern of Common Method

[5] The highlighted areas are the P-values which are less than 0.05.

Variance (CMV). We conduct Harman's one-factor test [92] and the results for both HP and BB forums are 30.448% and 31.591%, respectively, which are less than the threshold (50%). Additionally, Kock and Lynn [93] and Kock [94] developed a CMV test based on the Variance Inflation Factor (VIF)[6]. We first delete all the paths between constructs and then create a dummy construct measured by gender (can be any other items). The inner VIF values for each original construct are obtained and none of them for both HP and BB is greater than the threshold (3.3). These two tests indicate that common method bias is not an issue in our study.

5. Data Analysis and Results

Two separate parallel Structural Equation Modeling (SEM) analyses are conducted to assess the research model. We employ the Partial Least Squares (Smart-PLS 3.0) method for its robustness. In comparison with covariance-based SEM such as LISREL, PLS does not require a large sample size or normally distributed multivariate data [95]. As recommended by Anderson and Gerbing [96], we analyze the data in two steps. First, we assess the validity of the research constructs using a separate estimation of the measurement model by confirmatory factor analyses. Second, we test the research model, employing simultaneous estimation of the measurement and structural models.

5.1. Measurement Model

We assess the measurement scales for both construct reliability and validity. Tables 2 and 3 present reliabilities, correlations, and the Average Variance Extracted (AVE) for each construct. Construct reliability is examined by Cronbach's alpha and Composite Reliability. Cronbach's alphas and Composite Reliabilities for both HP (Table 2) and BB (Table 3) datasets are all greater than the recommended benchmark value of 0.70 [97, 98]. In addition, confirmatory factor analysis shows that the loadings of all measurement items of variables (the shaded values in Tables 5 and 6) are higher

[6] It is not feasible to conduct Common Latent Factor test because SEM-PLS is variance-based and does not accommodate random errors.

than the recommended benchmark of 0.7 [99].

To establish construct validity, we examine both discriminant and convergent validation. To evaluate discriminant validity, Fornell and Larcker [98] suggest that the square root of the AVE for each construct should exceed the correlations between itself and all the other constructs. In Tables 2 and 3, all diagonal numbers are greater than the corresponding off-diagonal ones. Furthermore, Heterotrait-Monotrait (HTMT) values are far below the reference of 0.85 [100, 101] in Table 4 for both HP and BB, further indicating satisfactory discriminant validity for all the constructs. In addition, on the construct it measures, factor loadings should load higher than on other constructs [102]. Tables 5 and 6 demonstrate that the indicators' loadings on their measured construct are higher than all of their cross-loadings with other constructs.

Convergent validity is confirmed by looking at the AVE ($AVE = \Sigma\lambda_i^2/n$), i.e. the proportion of the variance not due to measurement error [98]. Tables 2 and 3 indicate that all the AVE values for both HP and BB datasets are greater than the recommended threshold value of 0.50 [98]. Additionally, for each construct, the Composite Reliability value is also greater than the AVE value, providing another evidence of good convergent validity.

Table 2 Internal Consistency and Discriminant Validity of Constructs for HP

Construct	Cronbach's Alpha	Composite Reliability	AVE	BK	BT	ER	Freq	II	PP	PE
Brand Knowledge	0.86	0.91	0.78	0.88						
Brand Trust	0.86	0.90	0.70	0.32	0.84					
Employees' Responses	0.85	0.90	0.69	0.29	0.39	0.83				
Frequency	N/A[7]	N/A	N/A	-0.05	-0.03	0.19	N/A			
Intrinsic Incentives	0.84	0.89	0.68	0.35	0.34	0.30	-0.06	0.82		
Participation Potential	0.92	0.95	0.87	0.18	0.47	0.25	0.05	0.33	0.93	
Personality (Extraversion)	0.74	0.87	0.77	0.26	0.38	0.21	0.08	0.17	0.27	0.88

Table 3 Internal Consistency and Discriminant Validity of Constructs for BB

Construct	Cronbach's Alpha	Composite Reliability	AVE	BK	BT	LR	Freq	II	PP	PE

[7] "N/A" single-item constructs.

Brand Knowledge	0.89	0.93	0.82	0.91						
Brand Trust	0.85	0.90	0.70	0.39	0.83					
Leaders' Responses	0.89	0.92	0.74	0.26	0.32	0.86				
Frequency	N/A	N/A	N/A	0.21	-0.03	0.14	N/A			
Intrinsic Incentives	0.84	0.89	0.67	0.33	0.27	0.24	0.03	0.82		
Participation Potential	0.89	0.93	0.82	0.42	0.42	0.38	-0.02	0.30	0.91	
Personality (Extraversion)	0.71	0.86	0.76	0.25	0.35	0.27	-0.02	0.33	0.47	0.87

Table 4 Heterotrait–Monotrait ratios (HTMT)

	Brand Knowledge		**Brand Trust**		**Employees' /Leaders' Responses**		**Frequency**		**Intrinsic Incentives**		**Participation Potential in Innovation**	
	HP	*BB*	*HP*	*BB*	*HP*	*BB*	*HP*	*BB*	*HP*	*BB*	*HP*	*BB*
BT	0.37	0.44										
ER/LR	0.35	0.30	0.46	0.36								
Freq	0.06	0.23	0.08	0.10	0.21	0.16						
II	0.40	0.37	0.37	0.33	0.35	0.28	0.06	0.07				
PP	0.20	0.47	0.52	0.48	0.27	0.42	0.06	0.03	0.36	0.32		
PE	0.31	0.28	0.43	0.46	0.33	0.32	0.11	0.04	0.20	0.42	0.28	0.53

Table 5 Cross Loading of Measurement Items to Latent Variables for HP

	Brand Knowledge	**Brand Trust**	**Employees' Responses**	**Frequency**	**Intrinsic Incentives**	**Participation Potential**	**Personality (Extraversion)**
BK1	0.87	0.28	0.24	-0.06	0.33	0.12	0.16
BK2	0.88	0.30	0.25	-0.06	0.31	0.15	0.25
BK3	0.90	0.27	0.27	-0.02	0.30	0.21	0.28
BT1	0.23	0.84	0.42	-0.05	0.27	0.29	0.35
BT2	0.33	0.81	0.33	0.07	0.30	0.44	0.31
BT3	0.25	0.84	0.28	-0.05	0.25	0.39	0.26
BT4	0.24	0.85	0.29	-0.07	0.31	0.44	0.35
ER1	0.28	0.38	0.86	0.22	0.21	0.16	0.26
ER2	0.18	0.35	0.87	0.09	0.22	0.22	0.22
ER3	0.22	0.26	0.80	0.16	0.21	0.24	0.24
ER4	0.30	0.31	0.80	0.17	0.37	0.18	0.20
Freq	-0.05	-0.03	0.19	1.00	-0.06	0.05	0.08
II1	0.21	0.17	0.15	0.00	0.66[8]	0.15	0.13
II2	0.39	0.38	0.24	-0.02	0.90	0.31	0.19
II3	0.35	0.33	0.30	-0.09	0.90	0.34	0.11
II4	0.15	0.17	0.28	-0.07	0.81	0.22	0.15
PP1	0.11	0.43	0.23	0.09	0.26	0.91	0.23
PP2	0.16	0.37	0.23	0.03	0.34	0.92	0.22
PP3	0.23	0.51	0.23	0.03	0.32	0.96	0.31

[8] This loading is less than but very close to 0.70 for HP forum and is greater than 0.70 for BB Forum; therefore, item II1 was retained in the following analyses.

PE1	0.18	0.22	0.20	0.11	0.10	0.11	0.77
PE2	0.26	0.39	0.27	0.06	0.18	0.30	0.97

Table 6 Cross Loading of Measurement Items to Latent Variables for BB

	Brand Knowledge	**Brand Trust**	**Leaders' Responses**	**Frequency**	**Intrinsic Incentives**	**Participation Potential**	**Personality (Extraversion)**
BK1	0.91	0.40	0.28	0.17	0.27	0.41	0.20
BK2	0.91	0.31	0.21	0.24	0.33	0.37	0.26
BK3	0.90	0.34	0.22	0.17	0.29	0.37	0.22
BT1	0.24	0.87	0.29	-0.08	0.25	0.41	0.42
BT2	0.40	0.74	0.28	0.10	0.30	0.31	0.28
BT3	0.27	0.87	0.23	-0.11	0.18	0.39	0.26
BT4	0.37	0.85	0.25	-0.01	0.16	0.30	0.21
LR1	0.26	0.27	0.81	0.17	0.19	0.26	0.16
LR2	0.21	0.20	0.88	0.18	0.20	0.30	0.25
LR3	0.16	0.28	0.89	0.06	0.29	0.34	0.23
LR4	0.28	0.33	0.86	0.11	0.16	0.38	0.28
Freq	0.21	-0.03	0.14	1.00	0.03	-0.02	-0.02
II1	0.20	0.26	0.23	-0.04	0.75	0.13	0.27
II2	0.28	0.20	0.23	0.08	0.87	0.29	0.36
II3	0.31	0.20	0.13	0.06	0.83	0.20	0.24
II4	0.26	0.26	0.19	-0.03	0.82	0.28	0.22
PP1	0.39	0.36	0.38	-0.07	0.30	0.90	0.39
PP2	0.40	0.46	0.35	0.01	0.27	0.92	0.47
PP3	0.35	0.33	0.30	-0.01	0.24	0.91	0.41
PE1	0.10	0.32	0.16	0.03	0.26	0.25	0.78
PE2	0.28	0.31	0.28	-0.04	0.32	0.50	0.95

We consider collinearity among items by computing VIF, which evaluates the degree to which a variable can be explained by other variables [103]. The maximum acceptable cut-off value is 10 according to Neter, Kutner, Nachtsheim and Wasserman [104]. Our VIF values ranged from 1.070 to 1.406 for the ITRC HP dataset, and from 1.086 to 1.363 for the BB Forum dataset. All the VIF values were far below the recommended value, which confirmed that collinearity was not a concern in our study.

5.2. Structural Model and Hypotheses Testing

Unlike covariance-based SEM estimation methods such as maximum-likelihood (ML) structural equation modeling, PLS does not provide global measures of model fit [105]. Where ML-SEM estimation techniques focus on maximizing model fit to the observed covariance matrix, PLS focuses on maximizing the variance explained for all the endogenous constructs in the research model. Rather than model fit, PLS models are evaluated based on the significance of hypothesized

relationships and the variance explained in each endogenous construct, which is assessed using the R^2 value, and should be interpreted in a manner similar to that used in multiple regression analysis.

To determine the significance of a coefficient, we estimate its standard error by using a bootstrapping method [89]. We choose to bootstrap with 5,000 samples, with a "no sign change" option. This option is used because it results in the most conservative outcomes; if coefficients are significant under the "no sign change" option, they must be significant when alternative options are used [89]. Table 7 and Figure 2 summarize the results of the structural model that is analyzed with Smart-PLS 3.0. Table 7 also reports the R-square values. For the ITRC HP dataset, the model explains 10.19% of the variation in brand trust and 27.14% of the variation in participation potential in product innovation. For the BB dataset, the model explains even more variation in brand trust (R-squared = 15.19) and participation potential in product innovation (R-squared=38.55). In the present study, we focus on the dependent variable, participation potential in product innovation. Our R-squared values for participation potential in product innovation are much higher than the recommended threshold of 0.20 [106], indicating a satisfactory explanatory power for the overall model.

Table 7 Summary of the Results Including Effect Size

	ITRC HP						*BB Forum*					
Constructs	**Brand Trust (R^2 = 10.19%)**			**Participation Potential (R^2 = 27.14%)**			**Brand Trust (R^2 = 15.19%)**			**Participation Potential (R^2 = 38.55%)**		
	β (S.E.)	t-value	f^2	β (S.E.)	t-value	f^2	β (S.E.)	t-value	f^2	β (S.E.)	t-value	f^2
Brand Knowledge	0.319 (0.080)	3.966 ***	0.113	*Direct Effect* -0.035 (0.108)	0.321	0.001	0.390 (0.103)	3.782 ***	0.179	*Direct Effect* 0.247 (0.073)	3.391 ***	0.074
				Indirect Effect 0.121 (0.045)	2.714 **					*Indirect Effect* 0.060 (0.036)	1.685	
Brand Trust				0.380 (0.100)	3.791 ***	0.141				0.154 (0.075)	2.062 *	0.028

Employees' (Leaders') Responses				0.011 (0.098)	0.112	0.000				0.190 (0.090)	2.118*	0.048
Frequency				0.063 (0.098)	0.639	0.005				-0.093 (0.059)	1.584	0.013
Intrinsic Incentives				0.195 (0.126)	1.547	0.042				0.037 (0.081)	0.459	0.002
Personality (Extraversion)				0.098 (0.093)	1.057	0.011				0.284 (0.081)	3.506***	0.104

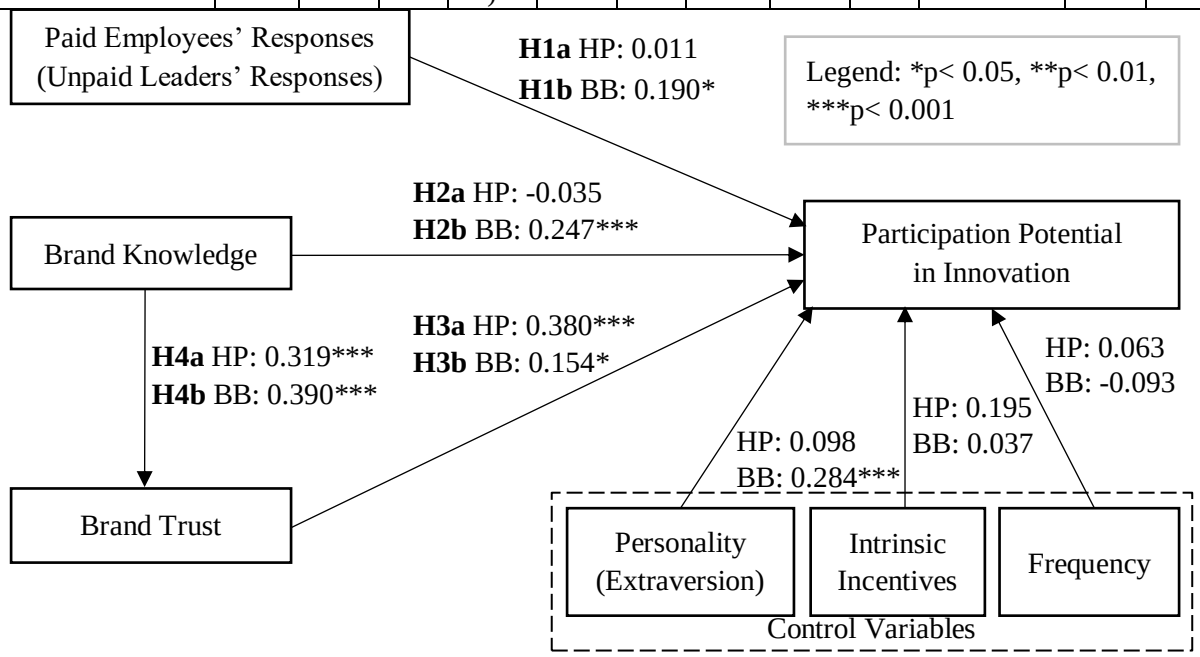

Figure 2 Empirical Model

Results (Table 7 and Figure 2) from the research model and the data analysis support Hypothesis 1b, but do not support Hypothesis 1a. The results show a significant path from forum leaders' responses to participation potential for BB Forum with $\beta = 0.190$ ($p < 0.05$), but a non-significant association with participation potential for ITRC HP. This suggests that consumer-initiated online brand communities tend to highly engage in the discussion of product innovation, but company-initiated ones do not. Similarly, we find a positive and significant path from brand knowledge to participation potential only for the BB Forum, with $\beta = 0.247$ ($p < 0.001$), but not for ITRC HP. The results also support Hypothesis 2b, but not 2a. Brand knowledge works in BB Forum

but not in the ITRC HP community. By inference, this result suggests that brand knowledge has a significantly positive influence on users' participation for innovation in consumer-initiated online brand communities, but not in company-initiated ones. The spontaneous engagement with the brand without financial incentive between users and consumer-initiated online brand communities may contribute to this effect. This finding is also supported by Liao, Dong and Guo [107]'s article stating that the knowledge contribution in consumer-hosted virtual brand communities is stronger than in firm-hosted ones.

Other results do support Hypotheses 3a, 3b, 4a, and 4b. Turning to Hypotheses 3a and 3b, for both the ITRC HP forum and the BB forum, brand trust has a significantly positive effect on participation potential in innovation; $\beta = 0.380$ ($p < 0.001$) and $\beta = 0.154$ ($p < 0.05$), respectively. Finally, considering both the ITRC HP forum and the BB forum, brand knowledge has a significantly positive effect on brand trust, with $\beta = 0.319$ ($p < 0.001$) and $\beta = 0.390$ ($p < 0.001$), respectively. This finding is consistent with existent brand literature (e.g. Füller et al. (2008)).

The effect size (f^2) of brand knowledge to brand trust is 0.113 and 0.179 for the ITRC HP forum and BB forum, respectively. It means brand knowledge has a small effect on the brand trust for company-initiated but a medium effect for the consumer-initiated online brand communities even though both of them are significant [90]. Brand trust has small effect size on participation potential for both HP ($f^2 = 0.141$) and BB ($f^2 = 0.028$). Brand knowledge ($f^2 = 0.074$) and leaders' responses ($f^2 = 0.048$) also have a small effect size on participation potential for the BB forum only. Moreover, the Stone-Geisser Q^2 of brand trust and participation potential in innovation for BB are 0.092 and 0.293, respectively. For HP, they are 0.066 and 0.198, respectively. All of them are greater than 0 indicating the model satisfies the predictive validity [108].

5.3. Post Hoc Mediation Analysis

Table 7 shows that the direct effect of brand knowledge is only significant for the BB forum but its indirect effect is significant for the ITRC HP forum. To further investigate such mediating

effects, the Sobel test is conducted. The Sobel statistics for brand knowledge → brand trust → participation potential in innovation are 1.8050 for BB and 2.7509 for HP with p-values as 0.0710 and 0.0059, respectively. This confirms that brand trust significantly and fully mediates the relationship between brand knowledge and participation potential for the ITRC HP forum. For the BB forum, brand trust has a partial but insignificant mediation effect.

5.4. Post Hoc Control Analysis for Demographic Characteristics

The demographic-variable analysis in Table 1 indicates that gender, language, location, and education are significantly different between the ITRC HP and the BB forum. To rule out the potential possibility that our findings displayed in Figure 2 may be the result of differences in demographic characteristics between those two online brand communities, we add Gender, Language, Location, and Education as additional control variables in the following post hoc control analysis. Table 8 below suggests that none of those four demographic variables is significant for either HP or BlackBerry. In addition, these demographic variables appear to have no significant impacts on our main independent variables (i.e., Leaders' Responses, Brand Knowledge, and Brand Trust). Hence, this post hoc data analysis suggests that our research findings are not due to the demographic differences between the ITRC HP and the BB forum.

Table 8 Post Hoc Analysis for Controlling Significant Demographic Characteristics

Path Analysis β (S.E.)	*ITRC HP*		*BB Forum*	
	post hoc	original	post hoc	original
Brand Knowledge → Brand Trust	0.319 (0.081) ***	0.319 (0.080) ***	0.39 (0.104) ***	0.390 (0.103) ***
Brand Knowledge → Participation Potential	-0.012 (0.116)	-0.035 (0.11)	0.247 (0.078) ***	0.247 (0.073) ***
Brand Trust → Participation Potential	0.366 (0.107) ***	0.380 (0.100) ***	0.153 (0.079) *	0.154 (0.075) *
Employees' (Leaders') Responses → Participation	0.027	0.011	0.198 (0.087)	0.190

Potential	(0.109)	(0.098)	*	(0.090) *
Frequency → Participation Potential	0.055 (0.103)	0.063 (0.098)	-0.082 (0.058)	-0.093 (0.059)
Intrinsic Incentives → Participation Potential	0.185 (0.137)	0.195 (0.126)	0.053 (0.081)	0.037 (0.081)
Personality → Participation Potential	0.095 (0.104)	0.098 (0.093)	0.293 (0.082) ***	0.284 (0.081) ***
Language → Participation Potential	0.070 (0.148)		0.037 (0.06)	
Education → Participation Potential	0.081 (0.097)		-0.140 (0.09)	
Gender → Participation Potential	-0.050 (0.13)		-0.003 (0.068)	
Location → Participation Potential	0.154 (0.14)		0.016 (0.081)	

6. Discussions

6.1. Conclusions

An online brand community is one kind of virtual community formed through the Internet that has dramatically changed the way people communicate, share their knowledge, express their ideas, and promote mutual help. A virtual community overcomes the restrictions of distance and time zones, helps gather people together, and provides a platform for discussions. An online brand community is an online community formed by people with similar interests, in this case for discussing the characteristics of certain brands. Consumers who use the actual products and experience the real services have the first say about the branded products. Although not all comments and feedback from customers will be positive (there are many complaints), the brand makers can still learn from those customers to improve the existing products as well as create new conceptual ideas.

As user experience has become more and more critical to companies' survival and competitiveness, many companies have initiated their own online brand communities to support customer service and listen to customers' voices, especially innovative discussions about their

products. However, not all companies like to display those negative or even hostile criticisms in their online brand communities. Consumers have also initiated their own online brand communities, allowing "free speech" about how to improve those products.

In the present study, we focus on how paid employees of companies supporting company-initiated online brand communities compare to unpaid forum leaders of consumer-initiated online brand communities in the ways they influence the participation potentials of consumers in product innovation discussions. We also study the impacts of brand trust and brand knowledge of consumers on their participation potential to join in the innovation dialogs in both types of online brand communities. We collect survey data from two globally well-known IT companies forming a set of matchable samples for two types of online brand communities. Our empirical findings for these two online brand communities suggest that paid employees' involvement in company-initiated online brand communities may not have a significant impact on consumers' participation potentials in product innovation. Instead, unpaid forum leaders of consumer-initiated online brand communities could significantly increase the participation potentials of customers in discussions about product innovation. This is a very interesting finding. It advises us that paid employees may not be as successful as voluntary unpaid forum leaders in evoking consumers' participation potentials in product innovation. Additionally, when companies over-participate in customer interaction in online brand communities, it could reduce consumer sentiment and motivation to contribute knowledge [109]. This result strongly suggests that firms may not need to pay their online brand community forum leaders to gather feedback and innovative ideas from customers. Firms could save money and still achieve the same goal by using data mining to analyze the postings in consumer-initiated online brand communities.

In addition, we find that brand knowledge has a significantly positive and direct impact on customers' participation potential in the consumer-initiated online brand community we study, but not in the company-initiated online brand community. Instead, brand knowledge works through

brand trust in the company-initiated online brand communities to increase customers' innovation potentials. This indicates that consumers trust unpaid BB forum leaders to give them useful knowledge, but need to build trust in paid HP company leaders (i.e., employees). By inference, firms may need to increase consumers' brand trust and retain those knowledgeable consumers contributing back to their online brand communities by using the insights from a consumer-initiated online brand community, namely that consumers trust unpaid forum leaders over paid employees.

6.2. Contributions and Implications

By incorporating reciprocal-behavior effect into Lead User Theory, this study seeks to understand how employees'/leaders' responses affect consumers' participation potentials in product innovation. Our analysis indicates members' responses (including paid employees' and unpaid forum leaders'), brand knowledge, and brand trust are the major factors influencing consumers' participation potentials in innovation. This finding is supported by our satisfactory R-square value (27.14% for HP and 38.55% for BB). Additionally, this study adds another empirical work to the Information Systems literature exploring online brand communities in the IT industry. Most importantly, this study contributes to a better understanding how brand knowledge and brand trust promote consumers' participation potentials in innovation, and how this understanding can be an advantage for IT firms.

Why would a firm *financially* sponsor an online brand community? Paid employees may do a poor job of evoking customers' participation potentials in product innovation when compared with unpaid forum leaders. Our findings suggest that firms may not necessarily need to pay to sponsor their online brand communities. However, it is still possible that firms need to have their own online brand communities to build up brand reputations, gain brand trust, deal with after-sale support, handle customers' complaints, etc. Therefore, the newer practice for those brand companies is to nest their online brand communities within their official websites. For instance, Apple Inc.'s online brand community is located under the webpage of "Support" from its official website. The Apple IT

department controls and maintains it centrally. It provides a platform for Apple product consumers to help each other. Apple only provides limited help from its employees through its AppleCare services and takes full advantage of those passionate fans (analogous to unpaid forum leaders) to spontaneously answer questions, lead discussions, and express their critical ideas for product improvements and refreshing. This type of hybrid online brand community is becoming more and more popular and effective as firms recognize the important roles of unpaid forum leaders in product innovation discussions.

On the other hand, an approach different from the company-initiated hybrid online brand community (e.g., Apple Support) has been gradually emerging. For example, the "MIUI forum" is a Chinese consumer-initiated online brand community. It was established by Android users, as Android is an open-sourced smart-device operating system. "MIUI" is a highly customized, iOS-like smart-device Operating System (OS) based on Android kernels. Through the work of both forum leaders and MIUI consumers, MIUI OS improves the response times and user interfaces learned from iOS, and retains most the good features of Android OS, like open communication and USB drive functions. Later, a Chinese IT company name "Xiaomi" purchased this consumer-initiated online brand community and manufactured its smart devices with MIUI OS. The company Xiaomi preserved the MIUI forum for a period of time and upgraded its name to "Xiaomi Forum," as the company has grown much larger and more diverse than before. This type of consumer-initiated hybrid online brand community has been quite successful, since it better leverages the product innovations generated by consumers without paying the unnecessary labor fees. Furthermore, as the company operates its official website, the old consumer-initiated online brand community can just simply nest itself under the official website, similar to a company-initiated hybrid online brand community. This mechanism should not considerably increase the company's budget, but could relieve the pressure on unpaid forum leaders to maintain the website.

Lastly, the results for Brand Trust suggest that brand trust could significantly increase the

potential for consumers' participation in product innovation discussions in both types of online brand communities. Brand knowledge also increases brand trust in both types of online brand communities, which is consistent with the extant brand literature (e.g., Algesheimer, Dholakia and Herrmann [80] and Füller, Matzler and Hoppe [64]). These two additional findings indicate that both the paid company employees and the unpaid forum leaders as knowledgeable users can help to increase consumers' brand trust and encourage their sharing of innovative product ideas. Thus, the company is advised to enhance its customers' brand trust to increase reliance on knowledgeable lead users (i.e., paid employees or unpaid forum leaders) contributing back to its online brand community to elicit product innovation ideas from consumers.

6.3. Limitations and Future Study

The first limitation of this study is that we only consider one sample for each type of online brand community. Second, we do not consider other factors (e.g. product quality, consumers' preference, the size of online brand community, etc.) that can affect consumers' participation potentials in innovation, beyond the constructs detailed in Figure 1. Third, we measure consumers' participation potentials (affect-based) in innovation based on members' subjective responses. Due to the lack of direct control of the online forums, it was more practical for us to gather subjects' affect-based answers about innovation rather than direct number counts of their posted innovative discussions. However, this strategy may also lead to an imperfect measurement of participation potential because of the self-reporting characteristic of survey methodology. Fourth, we do not control for the possibility that a subject might participate in both HP and BlackBerry surveys, although the tested demographic and response differences suggest such overlap is unlikely. Finally, we focus on active consumers, who are likely to be extroverts and more responsive to our survey. This may lead to selection biases, as inactive members do not tend to participate in forum discussions as much as active ones.

In order to increase the external validity of our results, future research may sample more

examples of each type of online brand community. Future researchers may also collect more comprehensive data, including forum archive data, to better measure consumers' participation potentials in innovation. Additionally, as those hybrid online brand communities are becoming more and more popular, researchers may compare the current study with the new emerging types of online brand communities to better advise companies. Lastly, future studies may consider constructing an econometric model to test the proposed relationships with more objective web archive data.

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Appendix A: Measurement Items

ITRC HP Specific Measurement Items		
Participation Potential in Innovation (affect-based)		Dealing with innovations (on new *HP products*) on the internet is …
	PP1	--Inspiring
	PP2	--Pleasurable
	PP3	--Exciting
Employees' Responses		When communicating with one of *HP employees*...
	ER1	--I usually have my questions answered
	ER2	--They seem very concerned with my problem
	ER3	--I always believe what they say
	ER4	--They seem very knowledgeable
Brand Knowledge	BK1	In comparison with others, I know a lot about *HP products*
	BK2	My friends see me as an expert on *HP products*
	BK3	I have a lot of experience with *HP products*
Brand Trust	BT1	If I buy an *HP product* I have trust in the brand
	BT2	I rely on *HP brand* only
	BT3	*HP* is an honest brand
	BT4	*HP* is a secure brand
Intrinsic Incentives	II1	*Post-count* mechanism stimulates me to participate more on this forum
	II2	If I am listed in one of the *high post-count* status level, I will feel proud of myself
	II3	If I am listed in one of the *high post-count* status level, I will feel accepted or approved in the community
	II4	Having a *high post-count* status level helps many people know me and my expertise

BlackBerry Forum Specific Measurement Items		
Participation Potential in Innovation (affect-based)		Dealing with innovations (on new *BlackBerry products*) on the internet is …
	PP1	--Inspiring
	PP2	--Pleasurable
	PP3	--Exciting
Leaders' Responses		When communicating with one of *BlackBerry employees*...
	LR1	--I usually have my questions answered
	LR2	--They seem very concerned with my problem
	LR3	--I always believe what they say
	LR4	--They seem very knowledgeable
Brand Knowledge	BK1	In comparison with others, I know a lot about *BlackBerry products*
	BK2	My friends see me as an expert on *BlackBerry products*
	BK3	I have a lot of experience with *BlackBerry products*
Brand Trust	BT1	If I buy a *BlackBerry product* I have trust in the brand
	BT2	I rely on *BlackBerry brand* only
	BT3	*BlackBerry* is an honest brand
	BT4	*BlackBerry* is a secure brand
Intrinsic Incentives	II1	*Point-based* mechanism stimulates me to participate more on this forum
	II2	If I am listed in one of the *top members* status level, I will feel proud of myself
	II3	If I am listed in one of the *top members* status level, I will feel accepted or approved in the community
	II4	Being in *top members* list status level helps many people know me and my expertise

Common Measurement Items		
Personality (extraversion)	PE1	I see myself as someone who is very communicative and likes talking to others
	PE2	I see myself as someone who is enthusiastic
Frequency	Freq	How often do you visit this forum

Appendix B: Mann-Whitney U-test for Survey Responses

Variables	Company	Mean Rank	Sum of Ranks	Mann-Whitney U	Wilcoxon W	Z	Asymp. Sig. (2-tailed)
Frequency	HP	117.63	10586.5	5118.5	13503.5	-1.734	0.083
	BB	104.68	13503.5				
Intrinsic Incentives 1	HP	134.21	12079	3716	12231	-4.763	<.001
	BB	94.08	12231				
Intrinsic Incentives 2	HP	147.42	13267.5	2527.5	11042.5	-7.369	<.001
	BB	84.94	11042.5				
Intrinsic Incentives 3	HP	135.62	12206	3589	12104	-5.032	<.001
	BB	93.11	12104				
Intrinsic Incentives 4	HP	127.18	11446.5	4348.5	12863.5	-3.406	<.001
	BB	98.95	12863.5				
Brand Trust 1	HP	88.63	7977	3882	7977	-4.696	<.001
	BB	125.64	16333				
Brand Trust 2	HP	88.51	7965.5	3870.5	7965.5	-4.401	<.001
	BB	125.73	16344.5				
Brand Trust 3	HP	89.22	8029.5	3934.5	8029.5	-4.414	<.001
	BB	125.23	16280.5				
Brand Trust 4	HP	86.75	7807.5	3712.5	7807.5	-5.061	<.001
	BB	126.94	16502.5				
Brand knowledge 1	HP	104.69	9422	5327	9422	-1.227	0.22
	BB	114.52	14888				
Brand knowledge 2	HP	104.79	9431.5	5336.5	9431.5	-1.172	0.241
	BB	114.45	14878.5				
Brand knowledge 3	HP	114.93	10344	5451	13966	-0.934	0.35
	BB	107.43	13966				
Participation Potential 1	HP	102.83	9255	5160	9255	-1.613	0.107
	BB	115.81	15055				
Participation Potential 2	HP	94.22	8479.5	4384.5	8479.5	-3.499	<.001
	BB	121.77	15830.5				
Participation Potential 3	HP	93.43	8409	4314	8409	-3.59	<.001
	BB	122.32	15901				
Employees'/Leaders' Responses 1	HP	92.28	7013.5	4087.5	7013.5	-2.085	0.037
	BB	109.31	14101.5				
Employees'/Leaders' Responses 2	HP	89.15	6864.5	3861.5	6864.5	-2.811	0.005
	BB	112.07	14456.5				
Employees'/Leaders' Responses 3	HP	90.47	6966.5	3963.5	6966.5	-2.586	0.01
	BB	111.28	14354.5				
Employees'/Leaders' Responses 4	HP	83.7	6361	3435	6361	-3.781	<.001
	BB	114.37	14754				
Personality (extraversion) 1	HP	111.51	9255.5	4937.5	13322.5	-1.076	0.282
	BB	103.28	13322.5				
Personality (extraversion) 2	HP	107.25	8901.5	5291.5	13676.5	-0.157	0.876
	BB	106.02	13676.5				

Note: The highlighted areas are the P-values which are less than 0.05.

Should Firms Pay for Online Brand Communities: Using Lead User Theory in Analyzing Two Contrasting Cases

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Should Firms Pay for Online Brand Communities: Using Lead User Theory in Analyzing Two Contrasting Cases

Highlights

- Firms may not need to financially sponsor their online brand communities
- Unpaid forum leaders increase consumers' participation for product innovation
- Brand knowledge increases consumers' participation through brand trust
- Brand knowledge directly increases participation in consumer-initiated communities
- Brand knowledge only works through brand trust in company-initiated communities

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