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Which ideas are more likely to be implemented in online user innovation communities? An empirical analysis

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ABSTRACT

Online user innovation communities are increasingly being deployed by firms to garner innovation ideas from customers or users. However, very few ideas from such communities are successful in getting selected for implementation by the host firm. Given the limited understanding of the phenomenon, this study examines the determinants of firms' implementation of customers' ideas from user innovation communities. Drawing on theories of message persuasion and cognitive overload, we develop a conceptual model to explain how the likelihood of idea implementation is affected by the characteristics of its contributor as well as the characteristics of a submitted idea and its presentation. Specifically, we study the effects of the contributor's prior participation and prior implementation rate, as well as the idea's popularity, length, and supporting evidence on the idea's implementation likelihood. Our model is validated through logistic regression on a secondary dataset of 19,964 user ideas collected from two large user innovation websites, Salesforce.com IdeaExchange and Dell IdeaStorm. The results show significant impacts of these characteristics on idea implementation likelihood and also reveal important differences in their effects for hybrid (i.e., Dell IdeaStorm) versus professional (i.e., Salesforce.com IdeaExchange) user innovation communities.

1. Introduction

Innovation is a critical activity for sustaining firms' competitiveness in the market [7]. As a result, firms continue to invest in the development of new products, services, and processes. However, managers are concerned about how to encourage innovation while reducing its costs and risks. An approach to mitigate the risks and cost of innovation is to involve customers or users in the process [65,70]. For instance, in a study conducted at 3 M, innovations from users were found to generate more sales than traditional market research techniques [39]. By involving customers in the process of innovating, firms may benefit from lower development costs and enhanced customer acceptance of the innovations [64]. To formalize this approach, online user innovation communities are increasingly being deployed by firms to source for users' innovation ideas and preferences. As examples, Salesforce.com, Dell, and Starbucks have been pioneers in launching user innovation communities. By implementing ideas from its users, Dell introduced new options for its personal computers, such as installing Linux as an operating system [13]. Salesforce.com enhanced its customer relationship management (CRM) software by building new features adopted from its user innovation community, such as a mobile platform CRM. Starbucks introduced the customer idea of splash sticks poked into a hole on the top of its to-go cups to prevent the beverage from spilling out.[1]

Despite the potential value of sourcing innovation ideas from users, companies face challenges in setting up these communities, assessing a large number of submitted ideas, and obtaining valuable ideas from them [57]. Many firms do not have clear criteria to assess the submitted ideas and suffer from a lack of manpower and systematic processes to evaluate them [13,57]. At the same time, users also face challenges in getting their ideas implemented by host firms after investing their time and intellectual capital to generate them. With the typically low percentage of user ideas that are chosen for implementation,[2] users would want to know how they could improve the likelihood of their ideas being selected. With prior research on online user innovation communities mainly focusing on identifying users' motivations for contributing ideas [4,23,24,35,37,38], there is limited study of the factors that influence firms' implementation of user ideas. Among the few studies in this area, Di Gangi and Wasko [14] employed the diffusion of innovations (DOI) theory to examine how the inherent characteristics of user ideas affect their implementation in Dell IdeaStorm. However,

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[1] http://blogs.starbucks.com/blogs/customer/archive/2008/04/09/splash-sticks.aspx.
[2] Dell indicates about 2.8% of user ideas are implemented, http://www.ideastorm.com/.

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they found that idea characteristics such as relative advantage and compatibility were difficult for firms to predict and therefore did not influence idea implementation. Focusing on idea contributors, Bayus [4] and Huang et al. [29] used a learning perspective to explore how users' idea contribution behavior and their implementation rate change over time, rather than examining the implementation likelihood of individual ideas. Further, most prior studies used data from a single user innovation website, e.g., Dell IdeaStorm [4,14,29]. This could limit the generalizability of their findings, as the differences across communities, e.g., [7], are not considered. Overall, our review indicates a lack of understanding of the factors influencing the implementation likelihood of an idea, and that too across different user innovation communities.

The practical and theoretical issues mentioned above motivate us to holistically (by including both idea and contributor characteristics) examine the antecedents of idea implementation likelihood in user innovation communities by employing alternative theories that could explain the phenomenon. In reality, a user innovation community is typically characterized by low review capacity of the firm, i.e., there is insufficient manpower to review the numerous user ideas in detail when a large number of ideas are submitted every day [11,57]. In such a context, we propose that user ideas will be selected for implementation if they are persuasive and, at the same time, their presentation does not cognitively overload readers (i.e., both firm's reviewers and other community members). Accordingly, we develop a model based on theories of persuasion [46,49–51] and cognitive overload [32] to explain the likelihood of user idea implementation. Through the model, we aim to answer three fundamental questions: (1) What *user/contributor characteristics* influence the implementation likelihood of their ideas by firms? (2) What *characteristics of the idea and its presentation* influence their implementation likelihood by firms? and (3) How do the *effects of idea presentation characteristics differ across the type* of user innovation community (i.e., *professional* communities with corporate members vs. *hybrid* communities with both corporate and individual members)? The model is tested with secondary data on 19,964 user ideas collected from two large user innovation communities, Salesforce.com IdeaExchange (a professional community) and Dell IdeaStorm (a hybrid community).

In terms of theoretical contributions, this study is novel in (1) examining the factors leading to the implementation of user ideas based on persuasion and cognitive overload perspectives, (2) considering both contributor and idea (including presentation) factors as antecedents, and (3) comparing the differential effects of idea presentation factors across two types of user innovation communities. Further, by answering the above questions, this study suggests a number of practical implications for management. *For firms* that are aiming to launch online user innovation communities, our findings from these successful communities can provide guidelines on what kind of user ideas are being implemented, how to filter ideas and assess them, especially when there are a large number of ideas and limited resources or capacity to process them. It can also help firms to identify the contributors who may potentially submit valuable ideas and respond to their ideas quickly in order to incentivize them. Based on our findings about the characteristics of implemented ideas and their presentation, online user innovation communities can provide their members with guidelines on how to position and present their ideas. *For users*, adopting these guidelines could help them draw more attention to their ideas from firms' reviewers and other members, than those contributors not following the guidelines. Last, based on the differences in effects of idea presentation characteristics found across the two types of user innovation communities, the guidelines for idea presentation could be modified for each type of community.

2. Conceptual background

We first review the related studies on user innovation communities to indicate the gap in the literature that our study seeks to address. We then introduce the message persuasion perspective that helps us to identify contributor, idea, and presentation factors that make the idea posting persuasive. We subsequently apply cognitive overload concepts to explain the relation between idea's presentation characteristics and its implementation likelihood.

2.1. User innovation communities

Innovation is a process wherein firms transform ideas into new or improved products, services, or processes [3]. While in the past innovation ideas were thought to originate from organizations alone, it is now clear that users can play a key role in innovation [8,65]. Prior research on user innovation has focused on two related issues, the motivations of users to innovate [21–24,36–38,58,62] and how to support and engage users as innovators [16,37]. Various ways have been employed to engage customers/users for innovation, such as providing them with toolkits to create their own innovations [66], talking to lead users during the innovation process [39], providing virtual customer environments [45], running online contests [69], and establishing brand communities for contribution of user innovation ideas [23]. Here, we focus on user innovation communities that are increasingly receiving attention from researchers and practitioners as a means of garnering customer ideas [68].

Members of user innovation communities are valuable sources of innovation because of their passion, experience, and cooperation in knowledge generation [23]. Nonetheless, little research has been conducted to understand the factors that influence the implementation of user ideas in such communities. Of the limited studies on this topic, Di Gangi and Wasko [14] used DOI theory to examine the determinants of idea implementation by analyzing 21 ideas submitted to Dell IdeaStorm. They found that the idea characteristics of relative advantage and compatibility did not influence idea implementation and suggested that this is because these characteristics were difficult for firms to predict. Rather, idea age and complexity were found to affect idea implementation, while idea popularity did not. However, the study sample was small and some results were obtained by examining few, e.g., 2 ideas. In another study in the same community, Bayus [4] focused on idea contributors, rather than ideas. He found that past success of the contributor is negatively related, while diversity of their past commenting activity is positively related to their idea implementation likelihood. Finally, Huang et al. [29] also examined idea contributors in Dell IdeaStorm and observed that they learn how to come up with high-potential ideas over time through participation and peer voting on ideas. Contributors of low-potential ideas eventually become inactive, while contributors of high-potential ideas remain active, which somewhat contradicts the results from Bayus [4] that there is a negative effect of prior success on idea implementation. As per Huang et al. [29], over time, the average potential of generated ideas increases, while the number of ideas contributed decreases. While these studies have enhanced our understanding of the phenomenon, we identified several gaps in the prior literature based on our review.

First, the prior empirical studies implicitly assume that the idea submissions are fully assessed by the firm's reviewers. However, this overlooks the limited firm resources as well as "bounded rationality" [61] of reviewers. Firms' review capacity in user innovation communities is typically low as a large number of ideas are submitted every day with insufficient manpower to process them in detail [11,57]. For example, it is estimated that it cost "approximately $500 and took four hours of staff and management time to process each idea" even in a conventional suggestion system within a firm [52]. As a user innovation community usually covers a fairly wide range of ideas from a diverse set of contributors, the reviewers from the firm are unlikely to be familiar with all the idea topics. The difficulty of processing many ideas was also mentioned by a Dell IdeaStorm user: "Now they have more people working on the site but the duplicates and backlog of work to catch up on is causing the delay in response to continue" [15]. With the large number of ideas typically posted, reviewers (and other community members) look for fast