Crowdsourcing of Idea Generation and Selection and New Product Performance

Abstract: This research-in-progress seeks to understand the effects of crowdsourcing idea generation and selection on new product performance. The extent of crowdsourcing is conceptualized in terms of openness in idea generation and selection; new product performance is measured in terms of product innovativeness and sales growth. Preliminary findings from an analysis of 50 products indicate that idea generation openness has a stronger effect on product innovativeness while idea selection openness has a stronger effect on sales growth.

Keywords: Crowdsourcing, new product development, product sales, latent growth modeling

1. Introduction

Innovation provides long-term competitive advantage and continues to be a top strategic priority among senior executives (Wagner, Taylor, Zablit, & Foo, 2014). Managing the knowledge-intensive, fuzzy front-end of new product development (NPD), which involves idea generation and idea selection, is a difficult challenge facing innovation managers. Firms have traditionally relied on an internal staff of research and development and marketing professionals to generate and select new product ideas. As the Internet user population expands and Web 2.0 technology flourishes, many are now turning to crowdsourcing for idea generation and selection (Bayus, 2013).

Crowdsourcing is the act of taking a task once performed by employees and outsourcing it to a large, undefined group of people external to the firm in the form of an open call (Howe, 2008). It allows external parties such as existing and potential customers to contribute to the development of new products. For instance, Dell’s IdeaStorm website gathers ideas for new computer products from the public and has received over 23,000 ideas since its launch; Amazon’s Kindle Scout publishing program asks readers to vote for their favorite excerpts from a selection of unreleased books to determine what get published; Lego’s Ideas website collects ideas for new brick sets and also tallies “supporters” for ideas to identify high-potential new products. There is a growing interest in crowdsourcing the fuzzy front-end activities because consumers presumably have first-hand knowledge about their needs and problems with existing products, and they are likely to have an interest in improving the products they use. Crowdsourcing also opens the door to a vast pool of new ideas and provides better access to consumer opinion compared to traditional market research.

Despite its trendy appeal and the potential benefits, many firms are finding that managing crowdsourcing is more complicated than it appears. For example, Kraft Foods Australia turned to the public to name its new cheese snack and the most voted name ended up being one that made fun of the very idea of crowdsourcing: iSnack 2.0. The name was initially adopted by Kraft but encountered widespread ridicule and Kraft later abandoned it. Instead, the company took a more closed approach, in which the public was asked to choose from a pool of six pre-selected names. Reports of such problems have raised managerial concerns about what to open up for crowdsourcing and how much the final decision should comply with the crowd. They point to a more central question of how the openness of idea crowdsourcing affects the performance of new products. Underlying the growing body of crowdsourcing research is the premise that opening up the NPD process to the crowd can improve the resultant product and its sales. Yet, there is still a lack of study on the performance impact of crowdsourcing. This study proposes that openness in idea generation and openness in idea selection have differential impacts on new product innovativeness and sales. The differential impacts capture the
distinct nature of idea generation and selection activities. Their effects are empirically assessed using archival and longitudinal data on products developed through crowdsourcing. In this paper, preliminary findings based on an analysis of 56 products are reported.

2. Conceptual Background
As mentioned earlier, idea generation and idea selection are knowledge-intensive activities in the fuzzy front-end of NPD. In traditional projects, idea generation is conducted by employees, who obtain information from representative users at or near the center of the targeted market and develop new product solutions based on the information (Lilien, Morrison, Searls, Sonnack, & Hippel, 2002). In contrast, crowdsourcing of idea generation involves collecting information on both needs and potential solutions from a “crowd” consisting of representative users, existing customers, potential customers, hobbyist, and any other interested parties. The expected benefit of opening up idea generation to the crowd is that a larger and more diverse crowd is likely to offer a myriad of new product ideas and increases the chance of finding innovative ideas. Accordingly, we conceptualize the openness of idea generation as the extent to which idea generation involves external participants with varying expertise.

The other activity of idea selection traditionally involves employees, who would evaluate the potential ideas and choose one that is superior and likely to succeed (Büyüközkan & Feyzioğlu, 2004). In crowdsourcing, external participants can view product ideas in writing, figures, and models and choose according to their personal preference (Soukhoroukova, Spann, & Skiera, 2012). The choices of the crowd are typically reflected as vote count or ranking of an idea, which can be taken into consideration when deciding the final idea to implement. Accordingly, the openness of idea selection can be conceptualized as the extent to which the judgment of external participants is accounted for in decision making. There is high idea selection openness if the final idea is supported by the majority of participants. In contrast, when a company chooses to implement an idea against the wish of the majority, it is essentially reverting to a more closed and internal approach in idea selection.

In this study, openness is conceptualized as a matter of degree rather than a binary, all-or-nothing, affair. For example, some idea generation activities may involve more diverse participants than others; in idea selection, firms may not comply with the majority and choose the second most-voted product idea instead of the first; firms may opt to open up idea generation but not idea selection to external participants. Conceptualizing openness in terms of a multidimensional continuum paves the way for a finer theoretical understanding of the impact of idea crowdsourcing.

This study seeks to examine the effects of opening up idea generation and selection on new product performance. Two important measures of NPD success are innovativeness (or newness) of the new product and product sales (Kleinschmidt & Cooper, 1991). We focus on sales growth, which can indicate how a product will perform longitudinally (Hultink and Robben 1995).

3. Research Model and Hypotheses
The research model is shown in Figure 1. We hypothesize that idea generation openness and idea selection openness have differential effects on product innovativeness and sales growth, as justified next.

![Figure 1. Research Model and Hypotheses](image-url)
ideas. Therefore, idea generation openness is likely to result in new products with a higher level of innovativeness, through enriching the pool of ideas generated. While innovative products tend to have better sales (Kleinschmidt & Cooper, 1991) and idea generation may therefore influence sales through product innovativeness, there is a lack of theoretical rationale for expecting that idea generation openness (i.e., variety of participants) directly affects sales. Therefore, while controlling for the established effect of product innovativeness → sales growth, we hypothesize that:

**H1: Idea generation openness has a stronger effect on product innovativeness than on sales growth.**

Product sales growth is likely to be affected by the attractiveness of the final new product developed. In crowdsourced idea selection, external participants choose and vote for the product idea that they hope would be realized and their choice can be seen as an indicator of the market attractiveness and desirability of an idea. New products developed based on the participants’ choice (i.e., higher level of idea selection openness) are likely to be in greater demand and therefore have better sales. In contrast, less popular product ideas are likely to generate less sales, which may be compounded by the dissatisfaction from crowdsourcing participants who believed that their opinions have been disregarded.

**H2: Idea selection openness has a stronger effect on product sales growth than on innovativeness.**

4. **Research Method and Preliminary Findings**

To test the hypotheses, data will be collected from more than 150 NPD projects. A preliminary study was conducted to test the research design. Idea generation openness was measured by the variety of participants’ educational background; idea selection openness was measured by the proportion of participants who had voted for a final product idea. A high proportion indicates that the final decision is made with respect to the opinion of external participants. Perceived product innovativeness was measured based on consumer reviews. To measure product sales growth, data on product sales over five months were collected.

Since product sales growth is a dependent variable of interest, latent growth modeling is necessary for analyzing the data. Our analysis of data collected in the preliminary study indicates support for both H1 and H2. The detailed statistical results will be reported at the conference.

The expected contribution of this study to research and practice is four-fold. First, we have identified the differential impacts of openness in idea generation and selection. This enriches our theoretical understanding of the effects of crowdsourcing. Second, openness is conceptualized as a multidimensional continuum, which better reflects the practice of crowdsourcing. Third, archival and longitudinal field data were used to assess the hypotheses, which is likely to produce more valid results. Fourth, the findings can offer practical suggestions on what to open and how much to open in idea crowdsourcing for firms aiming to develop high-quality and high-demand products.

**References**


