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User-generated versus designer-generated products: A performance assessment at Muji

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ABSTRACT

In recent years, more and more consumer goods firms have started to tap into the creative potential of their user communities to fuel their new product development pipelines. Although many have hailed this paradigm shift as a highly promising development for firms, hardly any research has systematically compared the actual market performance of user-generated products with designer-generated ones. We fill this void by presenting a unique data set gathered from the Japanese consumer goods brand Muji, which has drawn on both sources of ideas in parallel in recent years. We demonstrate that user-generated products, which are found to generally contain higher novelty, outperformed their designer-generated counterparts on key market performance metrics. Specifically, in the first year after introduction, sales revenues from user-generated products were three times higher and gross margins were four times greater than those of designer-generated products. These effects also increased over time: after three years, the aggregate sales revenues of user-generated products were, on average, 1.25 billion yen (approximately 16 million dollars) higher, or five times greater, than the sales of designer-generated products. The corresponding average margin was an impressive 619 million yen (approximately 8 million dollars) higher, or six times greater, than the margin for designer-generated products. Finally, user-generated products were more likely to survive the three-year observation period than designer-generated products (i.e., were still on the market three years after introduction). These findings clearly favor the paradigm shift identified in marketing research and appeal to managers considering the integration of user ideas into the process of new product development. We discuss our study's limitations and identify important avenues for future research.

1. Introduction

For decades (if not for much longer), professional marketers, designers, and engineers rather than consumers or users have been the dominant agents in the development of new consumer products. Although it has always been imperative to listen to customers to discern emerging market trends and unmet consumer needs, design professionals employed by firms (or their subcontractors) are usually responsible for translating the resulting opportunities into new product ideas and market offerings (Cooper, 2001; Crawford & Di Benedetto, 2000; Ulrich & Eppinger, 1995; Urban & Hauser, 1993). Until very recently, firms did not consider user involvement in the process of generating ideas for new product development (NPD) to be particularly promising. For example, as Schulze and Hoegl (2008, p. 1744) note, "relying on the method of asking buyers to describe potential future products, big leaps to novel product ideas are generally not likely." One of the key assumptions underlying this dominant idea generation paradigm is that a firm's professionals, unlike customers or users, have the requisite expertise to invent new and useful product concepts (e.g., Amabile, 1998; Weisberg, 1993). A firm's professionals "have acquired skills and capabilities that allow them to perform most design tasks more effectively and at a higher level of quality" (Ulrich, 2007, Chapter 3, 5ff) and they "often have a significant advantage […] over consumers, in terms of their knowledge, training, and experience" (Moreau & Herd, 2010, p. 807).

However, research on the sources of innovation (Von Hippel, 1988) has long challenged this fundamental assumption and the related, widely held view that users are of little value to firms in providing ideas to solve their unmet consumer problems (as opposed to merely pointing out such problems to firms in the first place). In particular, this line of research has found that many major and minor innovations across various industries were originally developed by users rather than professionals in firms (cf. Von Hippel, 2005). In their seminal work,

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Lilien, Morrison, Searls, Sonnack, and von Hippel (2002) provide further evidence that active user involvement in idea generation might benefit a firm's NPD efforts, at least in industrial markets. Specifically, Lilien et al. (2002) compare the potential value of several new industrial product concepts jointly developed by 3 M personnel and selected lead users to those developed by more conventional means (i.e., internal developers only). They found that the former outperformed the latter on key innovation indicators that were assessed by 3 M managers (e.g., the product concept's novelty compared to the competition or its potential to create an entire new product family). Furthermore, they found that the sales forecasts for concepts developed by lead users were eight times higher than those of internally developed ideas.

One might plausibly argue that working with knowledgeable industrial users is one thing, while working with potential end consumers is another. However, in various consumer goods domains as well, users are frequently found to innovate for themselves, and many of their innovations are commercially attractive (Franke, von Hippel, & Schreier, 2006). For example, a recent survey of a representative sample of UK consumers revealed that six percent, or nearly three million consumers, innovated in the domain of household products. Similar national user innovation statistics have been reported for other countries, including the US (5%, or almost 12 million consumers) and Japan (4%, or almost 4 million consumers) (Von Hippel, Ogawa, & de Jong, 2011).

Thus, user innovation has come of age as many consumer goods firms are challenging the traditional paradigm and experimenting with new ways to more actively integrate users into the idea generation process. In extreme cases, firms like Threadless no longer employ designers but rely exclusively on their user communities to generate new products (Ogawa & Piller, 2006). Many established firms and brands, such as LEGO, Dell, and Muji, have followed suit and now complement their in-house efforts with public idea contests known as "crowdsourcing" initiatives, where idea generation is outsourced to a potentially large, unknown population (the crowd) in the form of an open call (Bayus, 2010; Howe, 2008; Surowiecki, 2004). Thus, crowdsourcing relies on a self-selection process among users who are willing and able to respond to widely broadcast idea generation competitions (Jeppesen & Lakhani, 2010; Piller & Walcher, 2006; Poetz & Schreier, 2012).

Conceptually, the key insight is that some (but, of course, not all) ideas generated by these self-selected users might outperform the ones generated by firm designers (Poetz & Schreier, 2012; Schreier, Fuchs, & Dahl, 2012). Users may have a competitive edge in idea generation over designers through their experience as consumers. Leading-edge users, in particular, may have tried to solve consumption problems themselves, and their ideas may be commercially attractive because they foreshadow what other consumers will demand in the future (cf. Von Hippel, 2005). The respective user population that might be activated via crowdsourcing is also naturally much larger and more diverse compared to the team of designers employed by a given firm; a firm's user community may comprise thousands of talented users from highly diverse backgrounds. It follows that the generation of more (and more diverse) ideas increases the odds of generating a few truly exceptional ones (e.g., Gross, 1972; Schreier et al., 2012; Surowiecki, 2004; Terwiesch & Ulrich, 2009).

Empirically, researchers have recently begun to address important questions like what motivates users to participate (e.g., Hertel, Niedner, & Herrmann, 2003), how idea contests should be organized (e.g., Boudreau, Lacetera, & Lakhani, 2011), how user ideas can be screened effectively (e.g., Toubia & Flores, 2007), or how consumers perceive user-driven firms (e.g., Fuchs & Schreier, 2011). In a recent study, for example, Schreier et al. (2012) find that consumers associate user-driven firms with higher innovation abilities, that is, they perceive such firms as being better able to generate innovative new products. In a series of experimental studies, they further find that this innovation inference prompts consumers to demand one and the same set of products more strongly. This finding is especially interesting because objective product properties were kept constant between experimental conditions.

From an NPD perspective, however, the important question is not if the design mode affects *consumer perceptions* of innovation ability, but rather if it affects the *objective* quality of new product ideas actually generated. This question has recently been addressed by Poetz and Schreier (2012), who compared the quality of ideas for new baby products generated by a firm's designers to those generated by users in a public idea contest. Ideas from both sources were judged by company executives (who were blind to the source of ideas), and the key finding was that user ideas were characterized by higher novelty and higher customer benefit, but also by lower feasibility.

Although these findings are promising, it has yet to be explored whether the best of these user ideas, if realized, would eventually perform better on the market. There are several reasons that make this extrapolation non-obvious. First and foremost, it should be noted that in most cases firms still have to translate user ideas into marketable products; a process that demands much effort and involves many decisions that may or may not lead to ultimate market success. More specifically, lower feasibility scores of user ideas point to the possibility that the related promise might never be realized. Second, and on a related note, it could be that high innovativeness and low feasibility eventually boost development and production costs and thereby reduce any potential margin. Third, it is always an empirical question how well *managers' perceptions of ideas* match *consumer reactions to new products* once they reach the shelves. Even if this match is strikingly high (i.e., no judgment and translation errors are involved), it remains unclear how a certain increment in innovativeness (e.g., 10%) will translate into incremental market performance (e.g., X% more sales). Finally, it is worth noting that firms can only market a very limited number of new products at a given point in time. As such, what matters is not the entire distribution and the average idea quality, but rather the extreme values: the very best ideas available (e.g., Fleming, 2007; Singh & Fleming, 2010). It remains unclear whether the very best ideas from both sources would differ to such an extent that one could observe managerially meaningful differences in the ultimate consumer reactions.

Against this backdrop, it is surprising that a systematic, empirical market performance assessment of user- vs. designer-generated consumer products is still missing in the literature, despite the broad and growing interest in this topical phenomenon. This is most likely due to the difficulty of obtaining reliable quantitative market data from real-world practice. Such research is important because the market performance of user-driven initiatives will guide marketers in deciding whether to follow the paradigm shift and involve users in generating new product ideas. Drawing on a unique data set gathered from the Japanese consumer goods brand Muji, we address this important gap in the literature. In short, our study reveals that user-generated products systematically outperform designer-generated ones in terms of important outcome variables, including actual sales revenues. Most importantly, we see our study as "initial evidence" in favor of user-generated products and as a contribution to a more critical reflection on the dominant NPD paradigm. As such, this paper makes a second contribution in its conceptual discussion of the generalizability of our findings.

2. Study method

2.1. New product development at Muji

Muji began experimenting with idea contests ten years ago; thus, it is a forerunner among firms that market user-generated products on a broad scale. Muji has also recently marketed a number of user-generated products alongside products generated by the firm's designers, which allows us to empirically assess the performance of the two approaches. In addition to granting us access to sensitive