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The development of a user network as a way to re-launch an unwanted product

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Abstract

A common situation in product development is that of product failure and the need for re-launch. This paper presents findings regarding how one firm successfully re-launched a product through the ex-post development of a user network. The producer, Biacore, had to re-launch its biosensor product or lose a €50 million investment. The firm identified and interacted with multiple potential lead-users in order to generate new use applications. The firm benefited from the successful development of a set of new applications, innovative users, and sales. As sales of the product increased, Biacore created marketing channels as diffusion mechanisms for the encouragement of direct and indirect user-to-user interaction. These were a way to spread the costs of user support when the firm standardised how it interacted with users. Some follower-users were able to benefit from lead-users who became lead teachers; other follower-users became non-users of the product. This paper illustrates three main roles for the firm in developing a user network: creating lead-users, organising directed applications development and facilitating user-to-user interaction.

Keywords: User innovation; Networks; Product development; Interaction

1. Introduction

It is commonly estimated that 35–80% of all product development endeavours are failures (Tidd et al., 2005). Many studies have investigated product success and failure (e.g. Cooper and Kleinschmidt, 1991, 1993b; Rothwell et al., 1974). In particular, Cooper (1975: 319) noted: "The most important general reason for product failure was that anticipated sales never materialized", often due to a lack of understanding of customer requirements. The outcome is that a producer firm is left with a product that nobody wants – or at least that nobody wants in the way that its applications have been defined to date. In other words, the producer has an unclear understanding of the possible uses for a new product. In this paper, we will discuss one possible way for a firm to re-launch a product: the development of a user network.

It is well established that users have a central role in the innovation process, both individually and in networks (e.g. Shaw, 1985; Håkansson and Waluszewski, 2002, 2007; von Hippel, 1988). In user-dominated innovation patterns, the user is the source of new product ideas for the firm; such user-driven product development processes can be more successful than non-user driven innovation (von Hippel, 1978, 2005). What these studies underline is how a product is developed in interaction with a user at the user's setting. Of particular

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importance are lead-users, or users that perceive key benefits from an innovation and that are more likely to innovate and to experience a need for an innovation ahead of the general market (von Hippel, 1986). Recent studies emphasize that lead-users are often connected with other innovative users in networks[1] (e.g. Franke and Shah, 2003). They interact with other lead-users in obtaining advice and assistance. Networks of users can influence the design, development, and diffusion of an innovation, e.g., as in the case of open source software (OSS). Lead-users have an important role in the diffusion of an innovation (Urban and von Hippel, 1988), by freely revealing not only the innovation itself but also the knowledge of how to use it. User networks may consist only of users or they may have a role for the producer, for example in commercialising products (von Hippel, 2007).

von Hippel (2007) calls for further studies of the creation, development, and maintenance of user networks, and of the role for producers within them. It would be interesting to research how a firm might develop a user network as a way of creating new applications for an unwanted product. This is one possible response to initial product failure. In the case study reported in this paper, the producer (Biacore) launched a new biosensor, an instrument developed for the characterisation of molecular interaction. The identified application was unwanted by the targeted customers, however. Biacore had to re-launch the product by identifying new customers and applications or else face the loss of a €50 million investment.

In this case, the firm embarked on an effort to develop a network of users. Potential lead-users were identified who could teach the producer about possible useful applications of the product. Biacore was neither commercialising proven user-developed innovations, nor harnessing lead-users in providing solution spaces for the development of existing products. Rather, the organisation had to re-launch a product without fixed applications, and users defined different and new-to-the-firm uses. The producer was aware that it was by no means clear how this might be achieved. Hence, the first research question addressed by this paper is this: *how can a firm create an ex-post network of users in order to re-launch a product?*

[1] Von Hippel (2007: 2) defines a user network as "user nodes interconnected by information transfer links which may involve face-to-face, electronic or any other form of communication. User networks can exist within the boundaries of a membership group but need not. User innovation networks also may, but need not, incorporate the qualities of user "communities" for participants . . .".

Some years after the re-launch, high marketing costs forced the firm to develop a new way of interacting with a growing customer base. New users were required to develop an understanding of the biosensor through indirect interaction mechanisms, such as a publications database. This way of interacting with customers was based on the assumption that there were follower-users in place who would use the tool for previously developed applications. Yet, it is not automatic that follower-users exist, especially when users have different goals, research problems, and use contexts. As such, the second research question to be addressed by the paper is this: how can a firm facilitate direct and indirect user interaction so that *lead-users act as lead teachers in generating follower-users?*

The rest of the paper is divided into three sections. In the next section, we provide an overview of the relevant literature. Afterwards, the Biacore case is discussed. In the final section, the case is compared with the current literature. The discussion of the main findings of the paper highlights three roles for a firm in developing a user network: creating lead-users, organising directed applications development, and facilitating user-user interaction.

2. Literature review

As mentioned above, one central explanation for product failure is a producer's lack of understanding of users' needs (Rothwell et al., 1974; Cooper, 1975). The guidelines for successful new product development (hereafter, NPD) require a firm to obtain accurate information about users' needs and to incorporate this into the NPD process; concept testing is one example of this (e.g. Cooper and Kleinschmidt, 1993b). The differentiation and positioning of the product must be clear and must relate to users' needs (e.g. Crawford, 1977; Cooper, 1994; Cooper and Kleinschmidt, 1995). However, this assumes that users are able to articulate their needs clearly and that their needs will not change (Rosenberg, 1982; von Hippel, 1986). An alternative approach is to involve users in advance of commercialisation, or to encourage users to take a more interactive role by 'feeding in' customer information at the various stages of the innovation process (e.g. Rothwell et al., 1974; Hart et al., 1999; Rosen et al., 1998). Thus, users may become involved in the process of co-developing of products (Neale and Corkindale, 1998).

In user-dominated innovation patterns, the user – in particular the lead-user – is the source of innovation for the firm (von Hippel, 1977, 1978; von Hippel and