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How communities support innovative activities: an exploration of assistance and sharing among end-users

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Abstract

This study contributes to our understanding of the innovation process by bringing attention to and investigating the process by which innovators outside of firms obtain innovation-related resources and assistance. This study is the first to explicitly examine how user-innovators gather the information and assistance they need to develop their ideas and how they share and diffuse the resulting innovations. Specifically, this exploratory study analyzes the context within which individuals who belong to voluntary special-interest communities develop sports-related consumer product innovations. We find that these individuals often prototype novel sports-related products and that they receive assistance in developing their innovations from fellow community members. We find that innovation-related information and assistance, as well as the innovations themselves, are freely shared within these communities. The nature of these voluntary communities, and the “institutional” structure supporting innovation and free sharing of innovations is likely to be of interest to innovation researchers and managers both within and beyond this product arena.

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1. Introduction

Academics and practitioners alike express interest in uncovering, explaining, and potentially manipulating the sources of innovation. Research has shown that many important industrial product and process innovations are developed within firms where the product is used, rather than by firms who manufacture the product for sale to others (von Hippel, 1988). Two recent studies focusing on innovation in sporting equipment document a parallel pattern in consumer products and bring attention to the fact that consumers also innovate.

These two studies show that many major innovations in sports equipment are made by end-users rather than firms (Shah, 2000) and that a large fraction of consumers do innovate in some way (Lüthje, 2000).

Much research has focused on the provision of resources in product development organizations (Brown and Eisenhardt, 1995); inter- and intra-firm product development-related communications (Allen, 1971, 1984; Ancona and Caldwell, 1992); and even on the emergence of informal “skunk works” within the formal organization. The finding that users may also innovate in consumer product fields raises the question as to whether and how individual end-users who innovate receive resources and support from others. We reason that end-user-innovators, like their counterparts in firms, are likely to require the assistance

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of others in developing their innovations. The innovations in consumer products studied by Shah were made by end-users who had no formal organizational structure or resources from which to draw; however there is evidence that they often received assistance from and worked closely with others with whom they practiced the sport. For this reason, we suspect that members of communities of sports enthusiasts might be the source of the needed support. In this study we explore this possibility.¹ This study is the first to explicitly examine how user-innovators who belong to voluntary special-interest communities gather the information and assistance they need to develop their ideas.

This study investigates the innovation-related activities of members of four communities of sports enthusiasts who report having developed a novel sporting equipment innovation. A summary of major findings follows. Without exception, the innovating community members we surveyed do not innovate in isolation or secrecy; they receive important advice and assistance from other community members. Assistance is provided to innovators for free and innovators generally share their innovations to the community for free—although the levels of free support and access diminish somewhat as competitive pressures grew higher. Monetary profit is not a key motivator for either innovators or those who assisted them; instead, survey respondents cite having fun and viewing the giving of innovation-related assistance to community members as a social norm as the strongest factors influencing their decision to assist innovators. Receiving assistance appears to be a necessary, but not sufficient input into creating an innovation that diffused widely.

We propose that the phenomenon we report upon—innovation by end-users within voluntary user-comm-

unities—is a general and widespread phenomenon worthy of further study. The context in which the user-innovators in consumer product fields studied here innovate may serve as the functional equivalent of the multi-person innovation project teams often organized by firms to develop novel products and processes. This setting also appears to be quite similar to the context in which open source software (OSS) is developed. In the OSS context, individual programmers create and improve software within multi-person “project” groups; in doing so they receive free assistance from others and freely share the product of their efforts.

In the following sections of this paper, we review the related literature (Section 2) and describe our research sample and methods (Section 3). Next, we report our findings with respect to the number of innovators in our sample, how they interact with their community, and the characteristics of their innovations (Section 4). Next we report upon our findings regarding how innovators find assistance, the skills of those who provide assistance, satisfaction with assistance received, and how receiving assistance affects innovation diffusion (Section 5). We then discuss the factors that appear to be motivating and regulating behaviors related to the exchange of information and assistance and the free-revealing of innovation (Section 6). Finally, we discuss the implications of our findings (Section 7).

2. Literature review

2.1. *The sources of innovation*

Empirical research into the “functional” sources of innovation for industrial products and processes has shown that the actual developers of many industrial products and processes, which are often later produced and sold by manufacturers, are users. Manufacturer-innovators expect to benefit from their innovations by selling them to others; user-innovators expect to benefit by direct use (Enos, 1962; Knight, 1963; Freeman, 1968; Shaw, 1985; von Hippel, 1988). Studies continue to uncover the prevalence and importance of user-innovations in industrial products (von Hippel, 1988; Riggs and von Hippel, 1994; Morrison et al., 2000; and others) and methods by which to “harness” this innovative ability (von Hippel, 1986; Herstatt and von Hippel, 1992; Morrison et al., 2000;

¹ We chose to study the innovation-related behaviors of sports enthusiasts within communities rather than individuals innovators (who may or may not belong to a community) in order to better understand the composition and structure of the community with which each innovator was involved. We are unable to comment on the relative fraction of user-innovators who are members of voluntary communities versus who do not belong to such communities or on the process by which innovators outside of communities assemble resources. In fact, it is highly likely that innovators who are not members of such communities exist and innovate very effectively either completely on their own or with the assistance of other individuals. A similar study could be conducted by sampling individual sports enthusiasts to resolve these issues.

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