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## A typology of creative consumers in living labs

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### ABSTRACT

This study explores user innovation in living labs that build on the co-creation of value with users in real-life environments. It focuses on the link between the role mechanisms of user innovators and the innovation outcome. The study introduces a framework based on four types of creative consumers to analyze user roles in 26 living labs in Finland, South Africa, Spain, and Sweden. It contributes to the literature on user innovation by revealing how the role mechanisms affect innovation in living labs. Although users adopt given roles, resulting in incremental innovation, proactive user innovators foster the birth of radical innovation.

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## 1. Introduction

Traditionally, innovation activity has been seen as part of the internal affairs of a firm, and users have been seldom given a significant role in the process (cf. Rothwell, 1977; Bogers et al., 2010). A major shift toward an alternate view was initiated in the late 1970s, when von Hippel (1976) addressed the importance of users, resulting in the popular stream of research on lead users as the source of key information, and promoting the perspective of users as innovators. A recent theoretical review on user innovators by Bogers et al. (2010) revealed that many questions still remain unanswered. In particular, the different roles users can have and their fit of these roles with the research, development, and innovation (RDI) processes of companies are poorly understood. Similarly, Berthon et al. (2007) call for more research on understanding users and their roles in innovation within user communities.

Previous research has identified various roles, of individuals and project groups in companies, which are critical for the success of innovation (cf. Gemünden et al., 2007). Individuals crucial to innovation have been labeled in a variety of ways, including champions (Schon, 1963; Howell and Higgins, 1990; Howell et al., 2005), gatekeepers (Allen, 1977; Tushman and Katz, 1980), and promoters (Gemünden et al., 2007). The devil's advocates are those introducing reasons why an idea may not work (Meyer, 2000). Innovation success and failure are typically attributed to single individuals within the organization, which suggests internal innovator roles, indicating that external parties are not involved. However, Edvardsson et al. (2010) note that integrating users as externals in the innovation process is becoming increasingly important in many industries.

Several scholars (e.g., Bergvall-Kåreborn and Ståhlbröst, 2009) call for more research on living labs, which are the latest platforms for open and user innovation. Living labs are characterized by collaboration between users and other stakeholders in real-life environments. The benefits of an open innovation approach include cost savings (von Hippel, 2007), improved

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user value (Almirall and Casadesus-Masanell, 2010), and better innovation performance (Chiaroni et al., 2010) in product and service development. Consequently, Nyström et al. (2014) emphasize the need for knowledge of different roles and role patterns that participants can adopt in living labs, because such understanding can contribute to the construction, utilization, and orchestration of living labs. Consequently, Leminen et al. (2014) underline the need for further understanding of a specific hyperactive user type, creative consumers, in the contexts of living labs.

Because of the lack of a universally accepted definition for living labs (cf. Bergvall-Kåreborn and Ståhlbröst, 2009; Almirall and Wareham, 2011), the concept presently covers a variety of innovation activities. Bergvall-Kåreborn and Ståhlbröst (2009) view living labs as an environment, a methodology, or a system (see also Følstad, 2008a; Dutilleul et al., 2010; Dell'Era and Landoni, 2014). Conversely, Schuurman et al. (2011) consider living labs as experimentation platforms where users are studied in their everyday habitat; e.g., creating mobile TV innovations in people's homes. Following Westerlund and Leminen (2011), this study defines living labs as physical and virtual regions or interaction spaces, in which stakeholders form public–private–people partnerships (4Ps) of companies, public agencies, universities, users, and other stakeholders, all collaborating for to create, prototype, validate, and test products, services, systems, and technologies in real-life contexts.

To understand users in living labs, we focus on users as innovators and, consequently, study their role mechanisms. In particular, we focus on the roles that users adopt or create for the purpose of joint innovation. We address creative consumers by acknowledging user roles identified by Leminen et al. (2014). Drawing on prior research on innovator roles (e.g., Berthon et al., 2007, 2011; Lettl, 2007; Bogers et al., 2010), our position is that the user innovator's role influences innovation and its outcome. Also, we map the innovation outcome in terms of innovation novelty (radical or incremental) in each studied living lab to link user innovator roles with innovation outcomes. Our focus is not on the process of becoming a user innovator nor is it on the interaction between innovator users. Rather, we focus on the link between the user's role mechanism and the innovation outcome. Thus, the study has two objectives: (1) to identify various user innovator roles in living labs and (2) to link user innovator roles and innovation outcomes in living labs.

The article builds on an extensive data set from 26 living labs, which has so far resulted in understanding of living labs as open innovation networks (Leminen et al., 2012), participation and coordination approaches in living labs (Leminen, 2013), the type of users in living labs (Leminen et al., 2014), the impact of organizational actor roles on innovation (Nyström et al., 2014), and the effect of network structure on innovation (Leminen et al., forthcoming). The present study makes a contribution to the literature on user innovation by identifying four diverse types of creative consumer and linking their role-taking and role-making processes with innovation outcomes in living labs. First, we review literature on user innovators and living labs to create a conceptual framework based on four types of creative consumers in living labs. Thereafter, we describe our research methodology and provide empirical findings on user innovators' roles in living labs with a focus on the two diverse role mechanisms and their link to innovation outcomes. Finally, we review our key findings and discuss the managerial challenges of user innovation in living labs.

## 2. Living labs as the context for innovation

Living labs, characterized by openness and user involvement, provide an emerging approach to user innovation (Pascau and van Lieshout, 2009; Almirall et al., 2012; Leminen et al., 2012). Previous research discusses living labs as a method of innovation (Herzog et al., 2007; Følstad, 2008b; Dell'Era and Landoni, 2014), a set of open innovation tools (Almirall and Wareham, 2008; Kviselius et al., 2009), experimentation platforms (Schuurman et al., 2011), and a type of open innovation networks (Leminen et al., 2012; Romero and Molina, 2012). The living labs approach assumes that firms must consider ideas stemming from external sources for the development and commercialization of innovation (Gassmann, 2006; Almirall and Casadesus-Masanell, 2010). The approach stresses the central role of the user in the research, development, and innovation (RDI) process, because users are active participators (Schuurman et al., 2011) that develop new functions for technologies, solve unanticipated problems, and demand innovative solutions (Moors et al., 2008).

In living labs, users shape the innovation in their own real-life environments, whereas traditionally, the insights of users are captured and interpreted by experts (Almirall and Wareham, 2009). Nevertheless, prior research says little about how innovation actually occurs in open innovation network constellations such as living labs, where users play a significant role. In addition, the literature lacks knowledge of how user innovators are exploited and integrated into RDI processes. In general, the RDI process in a user innovation context is highly dependent on the actions and pro-activeness of individuals that come from outside the firm's boundaries. We can further anticipate that user innovation and its outcomes depend strongly on users' roles in the RDI process. Previous research links user innovator roles mainly to organizational tasks, i.e. to innovation processes taking place inside the firm, but the openness brings about new inter-actor tasks that take place between the organizations and individuals participating in open innovation.

## 3. User roles and innovation outcomes

Baldwin et al. (2006) point out that user innovation begins when one or more users recognize a new set of design possibilities, which they call a "design space", and begin to explore it. Users with similar interests and needs tend to form their own communities in which members assist each other and reveal their own innovations (Franke and Shah, 2003). Later on, one or several communities of user innovators will coalesce and eventually exchange innovation-related information. Lüthje et al. (2005) state that user innovators almost always utilize "local" information, which they define as information in

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