



CENTERIS 2012 - Conference on ENTERprise Information Systems / HCIST 2012 - International  
Conference on Health and Social Care Information Systems and Technologies

## Open business models and platform mediated networks: an application in the mobile industry

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### Abstract

Under the Open Innovation paradigm, this paper analyzes emerging models of governance in platform-mediated networks subject to winner-takes-all competition regimes. Our research contends that modularity, an important attribute in technological systems, plays a relevant role in competition dynamics. The study is focused on the mobile networks industry, a highly dynamic and technology intensive sector, ideally suited to conduct research on competition under strong network effects. Based on a case study of an important firm in this sector, the paper finds that proprietary technological platforms require a large set of external contributors to ensure sustainable rates of development and innovation. Our results also suggest that, contrary to established theory, firms may opt for proprietary platforms rather than shared governance models and, nonetheless, they are able to successfully compete against the established ones.

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*Keywords:* two-sided networks; technological platforms; modularity; mobile industry; competition dynamics

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## 1. Introduction

The economic globalization and the application of information and communication technologies offer firms the opportunity to develop new knowledge and increase the possibilities of accessing and spreading this knowledge through learning processes that generate new capabilities. This has generated a change in the economic paradigm that offers a new perspective of innovation [1]. In this sense, the concept of Open Innovation proposed initially by von Hippel and Henry Chesbrough refers to an emerging paradigm in which firms innovate relying on both internal and external firm resources [2-4].

De Jong et. al. [5] define Open Innovation as the purposed usage of internal and external flows of knowledge to accelerate internal innovation and expand markets for the external use of it. In this vein, the concept of Open Innovation departs from previous innovation modes in which oftentimes existing processes at the firm erect barriers to external knowledge thereby reducing absorptive capacity [6].

In this context, relevant research into innovation by users [3] concludes that users have played a prominent role in product development, not only in traditional industries such as textile or chemistry, but more recently in software or semiconductor industry. Moreover, there exists empirical evidence of the relationship between user's involvement in product development and market's acceptance [7]. User's willing to take part into product improvements or the development of new concepts, have important characteristics as far as companies are concerned: They are currently experiencing needs which shall be later requested by regular consumers while, usually they are also capable of providing solutions to their own needs thereby conducting innovations by themselves.

There exists abundant literature documenting how companies have engaged with this kind of users, termed Lead Users [8-11]. Prior researches have discussed the process of attracting, motivating and organizing users through communities that donate complementary goods and services [12-14].

According to recent developments in strategic management, firms competing in sectors which are technology intensive and face strong network effects often compete based on a common framework of technical standards or interoperable technologies [15]. The objective of this paper is to analyze how firms competing in the mobile telecommunication industry are adopting new organizational arrangements in which external parties play a critical role as an important factor to compete in markets subject to technological uncertainty and winner-takes-all dynamics. For this purpose, platform-mediated networks serve as the theoretical framework upon which to understand competition dynamics and organizational structures [15]. This body of knowledge is adequate in contexts where strong network effects and systemic technologies are significant, as is the case of mobile telecommunication services.

Based on a real case, we study the way Ericsson is adapting its own internal structures and technology to compete in contexts of markets characterized by network effects, winner-takes-all syndrome and technological uncertainty. Following an Open Mode of innovation, the company involves external users in the early stages of innovation processes in order to explore new solutions better adapted to users' preferences and expectations. This new mode of collaborations posits some challenges either technical, organizational or knowledge-management related among others.

The research approach adopted in this paper is of qualitative nature due to several reasons. Firstly, focusing on a specific case study provides a richer context to understand how firms and internal business units react to external stimuli. Secondly, the research case method constitutes a good approximation to the phenomenon analyzed, especially in exploratory researches, as this one [16],[17],[18]. The qualitative case study presented in subsequent sections is triangulated with quantitative data from other firms [19].

This paper contributes to the extant theory on platform-mediated networks considering additional factors that should be taken into account to establish stronger causal relationships between market dynamics and firms' organizational arrangements through a deep qualitative study of a firm in the mobile sector. More

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