

# Leader Ambidexterity in Research Teams

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## INTRODUCTION

Universities are increasingly developing an awareness about their so-called third mission, in which a scientific-economic paradigm is present (Chang et al., 2009). The institutions realize the importance of transferring knowledge to industry and society, with the possibility of exploiting the knowledge generated inside universities. The ability to combine conflicting demands that require different activities at universities, such as research publication and research commercialization, is an important challenge that must be addressed to effectively transfer knowledge and technology from universities to society.

Universities as organizations promote the transfer of knowledge and technologies to different industries, providing an adequate institutional framework and structure to researchers. We recognize the importance of this structure and the difficulty at the organizational level to cope with tension that requires research and entrepreneurial orientations, but we focus this study on the factors that have an influence at the micro-level of a leader of a research team. Because the main units at universities that develop knowledge are the research teams (Bayona-Sáez et al., 2002), in this study we analyse the ambidexterity of a leader of a research team. Research teams and specifically their main researchers must deal with dualities that arise if they want their research to become commercialized.

The ambidexterity concept shows the importance of coping with this tension, as studied from organization learning literature (e.g., March, 1991), management and strategic literature (Ghemawat and Ricarti Costa, 1993), and innovation studies (e.g., Jansen et al., 2006; Smith and Tushman, 2005). Ambos et al. (2008) interpret the concept in the context of universities as the ability to simultaneously produce knowledge-focused research or scientific contributions and property-focused research or commercial contributions. Chang et al. (2016) define individual research ambidexterity as “the ability by which academic scientists can simultaneously achieve research publication and research commercialization at the individual level”. We analyse this concept in the case of the main researcher of a research team, who acts as the leader of the team.

The aim of the present research is to determine the antecedents that make it possible for the main researchers to successfully achieve both research and commercialization activities. First, the concept of ambidexterity is presented and then translated to the university context. Next, we review the ambidexterity literature to propose the antecedents that must be studied at the level of an individual leader of a research team. Then, we present the methodology and illustrate our framework with an analysis of two research teams at different Spanish universities that have achieved academic as well as commercial results. Finally, we present our results and derive our conclusions.

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## BACKGROUND

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### Ambidexterity

The literature on management, innovation, and organization has discussed the contradictions that managers must reconcile to be efficient and effective, to develop incremental and radical innovations, to focus on the short- and long-term, or to cope with variation and stability. March (1991) outlines these contradictory firm demands in the concepts of exploration and exploitation in organizational learning. Exploration refers to risk taking activities, variation in learning, experimentation, flexibility and discovering, while exploitation means refinement, efficiency, and learning by doing. His seminal paper on the necessity of balancing both activities has been highly studied, and the later concept of organizational ambidexterity reflects the organizational capability to achieve exploration as well as exploitation. The difficulty in achieving ambidexterity is the conflicting demands of exploration and exploitation. Exploration requires variance-increasing activities and distant search, whereas exploitation is rooted in variance-decreasing activities and local search (Smith and Tushman, 2005). The importance of the concepts ambidexterity, and exploration and exploitation has grown in the literature and has been applied in different areas, while a variety of definitions have proliferated as Gupta et al. (2006) recognized. For example, in distinguishing between exploration and exploitation, Baum et al. (2000) focus on the distance of knowledge and variation, thus providing closed definitions to March's original concepts (March, 1991) and to Smith and Tushman's (2005) explanations. Other authors centre their definitions on the differences in the innovative output achieved, such as Benner and Tushman (2002) or He and Wong (2004). After reviewing a variety of definitions, Li et al. (2008) propose a framework that integrates different perspectives to better understand these differences. The authors distinguish between the 'function domain' and 'knowledge distance domain'. Whereas in each step in the value chain the organization can create familiar knowledge (exploitation) or more unfamiliar knowledge (exploration) ('knowledge distance domain'), "the 'function domain' regards each function on the value chain as unique in its type of learning" (Li et al., 2008: 118). Considering science, technology and product market knowledge as a sequence in the value chain, the early stages correspond to exploration during which organizations search for new knowledge, while the last steps have more exploitative characteristics for applying that knowledge (Li et al., 2008). In this sense, the next section explains the consideration of exploration and exploitation in this study, which agrees with this conceptualization of differences in the 'function domain'.

Furthermore, the three major approaches identified within the literature at the organizational level to achieve ambidexterity are the temporal, structural, and contextual (Gibson and Birkinshaw, 2004; Tushman and O'Reilly, 1996). In the temporal view of ambidexterity, organizational resources are concentrated in exploration or exploitation at different times, since periods of exploitation are followed by periods of exploration. Structural ambidexterity is achieved by organizational mechanisms, formal structures and coordination mechanisms, by concentrating some units on exploration and others on exploitation and then coordinating the units (Tushman and O'Reilly, 1996). We follow the third approach, contextual ambidexterity because it applies to the individual level, on which this study is focused. Contextual ambidexterity means to simultaneously achieve exploration and exploitation by building systems in which individuals could develop ambidexterity and make their own judgements about dividing their time between the conflicting demands for alignment and adaptability (Gibson and Birkinshaw, 2004). In this sense, we concentrate on the individual level of ambidexterity.

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