

Chapter 7

An Open Innovation Lens on the Digital Transformation Frontiers

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ABSTRACT

The aim of the present study is to explore Digital Transformation frontiers using the lens of Open Innovation. By implementing bibliographic coupling method, the authors bring together segmental publications from different research fields and provide a comprehensive overview of the combined Open Innovation and Digital Transformation field's intellectual structure, revealing the different groups of thoughts, influential authors, and pressing topics. The research findings illustrate, the research area has polycentric composition with absence of overlaps between articles. Five main research groups are identified: Co-evolution of Digital Technologies and Open Innovation; Digital Peer-communities; Digital Ecosystems; Knowledge Management in the Open and Digital Era; and Open Innovation, Digital Technologies, and Businesses Performance. The current research contributes both Open Innovation and Digital Transformation fields by cross-exploring each phenomenon and revealing how Digital Transformation shapes the nature of innovation as a collaborative activity as part of an independent research area.

INTRODUCTION

In today's extremely dynamic environment characterized by the rapid technological progress, globalization, unlimited knowledge sharing, and collaborative innovation with the new active role of users, businesses have no alternative but to take into account this new realm in order to be sustainable and competitive in the long run. The fundamental transformation of business models and work practices toward open and collaborative mode brought by digital technologies is witnessed in all levels of economic activity

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(Eaton, 2015). Open Innovation (OI) of today goes far beyond licensing, spin-offs and traditional collaborative methods of OI coined by Chesbrough back in 2006 as innovation process that intentionally manages knowledge flows across organizational boundaries. It is recognized that modern mode of OI has become a new space for each level of the society to collaborate and co-innovate (Nieto et al., 2007; Cassiman et al., 2009; Cassiman et al., 2010; Lichtenthaler, 2011; Rayna et al., 2015; Cassiman et al., 2016). This transition has been thrust forward by a variety of factors, where among the most important are fast-developing ICT, digital technologies that made possible the valuable knowledge to be widely diffused and easily accessible (von Hippel, 2005; Barrett et al., 2012; Yoo, 2012; Fitzgerald et al., 2014; & Parviainen et al., 2017). Indeed, the coexistence of OI and digital transformation (DT) has fueled the emergence of the new perception of innovation in the digital era, which favors extensive networking and co-creative collaboration between a variety of stakeholders - from users (Baldwin et al., 2011; Afonso et al., 2012) to public sector, SMEs, industry incumbents (Curley et al., 2013; Skarzauskiene et al., 2016).

Most of prior OI reviews have offered *qualitative* attempts to assess and structure the current state of development of the field. More specifically, Gassmann (2006; 2010) revealed research streams and developed a situational approach and a comprehensive structure of OI management, taking into account various aspects from industry to firm level. Elmquist and colleagues (2009) deepened the research domain and identified new OI themes while rethinking the concept of OI, its strengths, and weaknesses, and proposing conceptual models. Lichtenthaler (2011) put his efforts on compiling existing view and future perspectives of OI, while West and Bogers (2014) changed the research focus moving towards business models, commercialization of OI. In contrast, a few reviews adopted a *quantitative* approach. In particular, Kovacs et al. (2015) represented both overviews of decade literature of OI domain and its research fronts; however, while focusing predominantly on the OI phenomenon, it neglected specific insights on DT dynamics making this “digital advent” gap more than evident. Van Oorschot et al. (2018) although provided a comprehensive picture of an innovation adoption field in their recent bibliometric review work, they investigated especially the adoption of open systems.

Although the latest research highlights that DT is an undeniable side of the future research topics on OI (Bogers et al. 2017; 2018), and co-evolution and co-influence effects are observed (Christensen et al., 2005; Ernkvist, 2015; Bogers et al., 2016), knowledge is still unstructured and unable to describe and understand the phenomenon and its outcomes for organizations. In the light of increasing interest, the extant scientific literature definitely requires an objective overview of the intellectual structure and well-articulated pressing research topics.

In this vein, this chapter has the goal to provide a comprehensive overview of the field’s intellectual structure while highlighting the different groups of thoughts among the combined OI and digital technologies studies, defining research fronts, and revealing influential authors and pressing topics. The authors adopt the bibliographic coupling method which is widely used in management research to recognize the shift from traditional research focus to current trends (Boyack et al., 2010; Vogel et al., 2013; Zupic et al., 2015), and used the Viewer software algorithm for the visualization of results (van Eck et al., 2009). The final sample consists of 45 articles published in top-journals between 2005 – 2018 period.

The present research contributes both to the OI and to DT research fields by identifying emerging research trends and elaborating on OI and DT co-evolution. The research puts the brick into the understanding of OI evolution through the lens of digital technologies development and their ubiquitous nature. The paper also contributes to the understanding of the DT process happening in conditions of knowledge sharing and OI boundaries. The results presented in this paper can be used for mapping future research agenda or for contributing to the identified research topics. Finally, the research can have managerial

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