

Agile Innovation: The Complementarity of Design Thinking and Lean Startup

Ulrich Lichtenthaler, ISM International School of Management, Cologne, Germany

ABSTRACT

In light of digital transformation and a stronger application of artificial intelligence, many firms try to increase the agility of their innovation processes. In this regard, they particularly rely on design thinking or on the lean startup approach to reduce some of the deficits of established innovation processes, such as the stage-gate model. This conceptual article shows that merely focusing on design thinking and lean startup in isolation will not enable companies to fully leverage the benefits of agile innovation. Because of the complementarity of design thinking and lean startup, executives should simultaneously pursue these approaches in order to achieve results that are more than the sum of isolated design thinking or isolated lean startup initiatives. This complementarity derives from the specific benefits of design thinking in the front end of the innovation process combined with the particular benefits of lean startup in the back end.

KEYWORDS

Agility, Artificial Intelligence, Design Thinking, Digitalization, Digital Transformation, Entrepreneurship, Innovation, Leadership, Lean Startup

1. INTRODUCTION

Innovation is essential for achieving a competitive advantage in startups and established companies (Crossan and Apaydin, 2010; Foss and Saebi, 2018; Lichtenthaler, 2018b; Memon and Meyer, 2017; Zaiane and Ben-Moussa, 2018). From a strategic perspective, entrepreneurs and existing firms share the goal of gaining and sustaining a high level of competitiveness. For entrepreneurs, the focus may be on identifying a profitable business model, securing the first customers, establishing effective structures and managing growth (Branzei and Vertinsky, 2006; Galli, 2018b; Kaoud, 2017; Priem et al., 2012). For executives in established firms, the focus may be on continuously developing new solutions, satisfying existing customers, overcoming organizational barriers and fostering an internal entrepreneurial orientation in large organizations (Galli, 2018a; Krimpmann and Stühmeier, 2017; Lichtenthaler, 2018a; Swift, 2018; Wei et al., 2018). Despite this slightly different strategic emphasis, startups and established companies therefore share the need for proficiently managing their innovation processes (Ahuja et al., 2008; Jia et al., 2018).

In the past, many companies focused on establishing a systematic process for managing innovation (Cooper, 1994; Schindlholzer et al., 2011). Here, the stage-gate model has become one of the most

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popular frameworks (Cooper and Sommer, 2018; Sethi and Iqbal, 2008). In addition, many firms placed strong emphasis on long-term strategic planning, operational efficiency analyses and related approaches (Calantone et al., 2003; Grönlund et al., 2010). In recent years, many of these approaches have been criticized in light of a growing dynamism and uncertainty in the external environment of many industries (Denning, 2018; Doz and Kosonen, 2010). In particular, traditional approaches are considered to offer insufficient agility and flexibility under such conditions. To overcome the limitations of these traditional approaches, many firms have turned their attention to new approaches, which facilitate higher levels of agility, flexibility and customer orientation (Cooper and Sommer, 2018; Wilson and Doz, 2011).

In this regard, two approaches have become particularly popular in firms from many industries: design thinking and lean startup (Lewrick et al., 2018; Ries, 2011). These approaches are used by entrepreneurs and startups in order to generate promising ideas and concepts and to shorten the development cycles of their first products (Liedtka, 2015). In a similar vein, established companies strongly rely on these frameworks either as an alternative to their established innovation processes or as an adaptation of their existing processes (Tura et al. 2017). Overall, design thinking and lean startup may contribute to the agility of innovation processes. Although these approaches involve major managerial challenges, the experiences of many companies are quite favorable (Liedtka, 2015). In turn, these positive experiences further contribute to the growing popularity of the approaches.

Design thinking and lean startup have become particularly popular in light of the digital transformation of many companies and their growing use of artificial intelligence (Lewrick et al., 2018). These developments strongly contribute to shortening product lifecycles, which favor design thinking and lean startup methods. As a consequence, these approaches now also receive increasing attention in academic research (Harms, 2015; Liedtka, 2015). Despite the growing popularity of both approaches in practice, however, our understanding of the combination of design thinking and lean startup is very limited. In light of the relatively general characteristics of both frameworks, most prior works have considered either design thinking or lean startup. In contrast, prior research addressing the interplay of these two approaches is extremely limited to the best of our knowledge (Koen, 2015; Müller and Thoring, 2012). This limited attention is particularly surprising in light of the growing combination of both approaches in many firms (Müller and Thoring, 2012; Ries, 2011), pointing to a high relevance of potential interdependencies of design thinking and lean startup.

In this context, this paper provides several contributions. First, it is among the first works to address systematically the relationship and potential interactions of pursuing lean startup and design thinking approaches (Müller and Thoring, 2012). Second, examining the combination of these two approaches contributes to our understanding of the complementarity of distinct managerial approaches in strategy implementation (Lee et al., 2010). Third, this paper deepens our knowledge of design thinking by offering new insights why the benefits of design thinking may be limited under particular conditions (Liedtka, 2015). Fourth, the paper helps to understand in which contexts the benefits of lean startup are particularly pronounced (Ries, 2011). Fifth and finally, the paper sheds new light on suitable approaches to managing innovation in the context of digital transformation and artificial intelligence (Teece, 2018).

2. CONCEPTUAL BACKGROUND

2.1. Agile Innovation

Various paradigms in strategic management, e.g. the resource-based view (Barney, 1991; Wernerfelt, 1984) and the dynamic capabilities approach (Helfat et al., 2007; Teece et al., 1997), have underscored the role of innovation for firm performance. Recently, an innovation-based view has been developed, which focuses on different types of innovation for achieving a competitive advantage (Lichtenthaler, 2016b; Rodrigues-Alves, 2018). Moreover, this perspective highlights the need for a dynamic

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