

Technological Disruption as a Driving Force for Coopetition: The Case of the Self-Driving Car Industry

Rauno Rusko, University of Lapland, Rovaniemi, Finland

Lilli Alatalo, University of Lapland, Rovaniemi, Finland

Joel Hänninen, University of Lapland, Rovaniemi, Finland

Juho Riipi, University of Lapland, Rovaniemi, Finland

Ville Salmela, University of Lapland, Rovaniemi, Finland

Joel Vanha, University of Lapland, Rovaniemi, Finland

ABSTRACT

Coopetition is still a relatively new perspective and paradigm for considering relationships between networks, firms and organizations, and business units. The literature on coopetition focuses on developing several alternative perspectives of coopetition. Integrating theories on coopetition is an essential challenge for scholars of management and marketing. However, one possibility to challenge the contemporary field of coopetition is to introduce new topical themes of business and society and test their relationships with coopetition perspectives. The authors consider one technical disruption—self-driving cars—and its collaboration networks related to coopetition perspectives. Outcomes show the importance of lead users of this disruptive technology. Furthermore, coopetition, and especially competitive networks, seems to be an important strategy for developing new disruptive technologies according to the needs of markets.

KEYWORDS

Competitive Networks, Coopetition, Self-Driving Cars, Technological Disruption

1. INTRODUCTION

The coopetition research field has a multifaceted structure even without combining it with an all-inclusive theoretical approach (Bengtsson & Kock, 2000; Rusko, 2015; Bengtsson et al., 2016). The roots of the concept of coopetition are deep: According to Smith and Vogel (2010), the first documented use of coopetition as a concept appeared in 1913 (Smith & Vogel, 2010). Ever since the mid-1990s, coopetition has been an emerging trend in management studies, particularly concerning strategy and strategic alliances.

We assume that, instead of constructing one dominant theoretical coopetition framework, there is a need to develop coopetition discussions by challenging coopetition as a phenomenon in different topical contexts. Technological disruption is one of the most important drivers in national and international

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business life (Iansiti & Levien, 2004). Contemporary society and business environments have several technological disruptions (see Leydesdorff & Zhou, 2014; Vargo et al., 2015). Both technological disruption and cooptition are important features of businesses and organizations. However, there is a lack of papers that study various relationships between cooptition and technological disruption. This study focuses on the cooptition features of the disruptive technologies comparing the collaborative and competitive structures of three new industries. The main research question is, what kind of relationship does cooptition have with technological disruptions? If competitive features are involved with technological disruption, how does cooptition emerge in technological disruptions? In other words, is cooptition necessary, and in which forms, for large-scale technological disruptions? This paper studies these questions using the self-driving car industry as a case study example.

Lately, we have seen automotive manufacturers and ride-hailing service companies initiate strategic alliances and different forms of cooperation. Thus, our research on cooptition in the self-driving car industry can be seen as contemporary both in terms of the industry and in terms of the overall emerging cooptition paradigm.

In this text, we will concentrate on cooptition and technological disruption as it unfolds between automotive manufacturers and ride-hailing companies in the industry of self-driving cars. The trend of strategic alliance and cooperative actions between automakers and ride-hailing companies has been a fairly recent phenomenon, so, in this study, we have comprised our material largely from news articles and technology magazines' publications. Based on our analysis of these articles and publications, we have tried to construct a view of the competitive structures in self-driving car markets.

This study has the following structure: We start with a literature review, which introduces the concepts of technological disruption, cooptition, and radical innovation. For cooptition, we provide a theoretical background. Then we describe our research design, which contains information about empirical material and the introduction of the case. Next, we consider cooptition activities in the self-driving car industry. Our discussion section connects the two main concepts of the study—technological disruption and cooptition—based on the findings of the case study. Finally, we make concluding remarks regarding managerial implications and suggestions for further studies.

2. LITERATURE REVIEW

2.1. Technological Disruption

“Technological disruption,” or “disruptive technology,” was coined by Christensen (1997). Christensen separates new technology into two categories: sustaining and disruptive. Sustaining technology is based on incremental improvements to already established technology, whereas disruptive technology leans on radical innovations that have not yet proven to possess practical applications.

The literature on technological disruptions discusses sources of disruptive technology incoherently. Christensen (1997) and Slater and Narver (1998) see that firms are likely to miss radical or disruptive innovations if they pay close attention to requests from their customers. These potential innovations are, according to them, sustaining innovations rather than disruptive innovations. In contrast, Von Hippel (2006) claims that the role of lead users is essential in the birth of radical disruptions and radical innovations. He observes that some lead users develop innovations that are disruptive from the viewpoint of manufacturers, though lead users develop these products to serve their own needs and have no other aims (Von Hippel, 2006).

Technological disruption can be organization specific (Nagy et al., 2016) or all-inclusive. Contemporary society has witnessed several potential disruptive technologies, such as blockchain and cyber-physical systems (Swan, 2015). According to Swan (2015), blockchain, such as bitcoin, is a disruptive technological innovation with wide effects, though these effects can vary according to an organization's structure and other features. Furthermore, cybernetics in the forms of cyber-physical systems are an important contemporary disruptive technology (Giese et al., 2012). In fact, many

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