Chapter 4
Grounded Theory in Practices of Technology Management

ABSTRACT

The present study explores the application of grounded theory (GT) methodology in various aspects of technology management (TM) including technology commercialization, adoption, and transfer. These processes, resulting from the actions of different actors and organizations, are recognized as key factors in promoting innovative capabilities in organizations. In order to facilitate the successful implementation of TM measures, specific mechanisms need to be designed, the first of which is to identify the drivers and obstacles. As one of the most common methods in the field of management research for qualitative theory building instead of quantitative hypothesis validation, GT's application in this regard is to analyze the drivers and barriers and develop a conceptual model relevant to each function. This chapter discusses the GT application in theory building in the field of TM research.

INTRODUCTION

Today, the total number of products being launched is increasing, while at the same time the time for new products to come to market has been reduced in many industries. These changes are driven by the ever-increasing customer demand and competitive pressure in today's markets. Under such circumstances, companies can maintain their advantage and continue to optimize their operational processes to balance product innovation and

process. According to Siemens (2009), effective technology management (TM) requires supporting the strategic needs of the company which are mapped to the marketplace requirements. TM is a set of concepts, skills, techniques and practices that help in decision-making and implementation in the technology development and use by firms, aimed at succeeding in innovation and increasing firm's competitiveness. According to Kropsu-Vehkapera et al., (2009), creating synergy among all the factors (i.e. research, development, planning, engineering, machines, software, production, and communication) to make them work together in the most efficient way to produce profit for the company in the long-term is the ultimate goal of TM. TM covers all aspects of organizing technology knowledge, technology forecasting, technology development, technology commercialization and technology usage through the technology life-cycle.

Because of their complexity, TM studies need an in-depth understanding of different domains, and therefore, a qualitative research approach is an appropriate approach for this study. To conduct qualitative research, the researcher observes and collects data through interviewing, taking notes, and interpreting the phenomena in their actual dimensions. The opportunity to deepen research is one of the main advantages of a qualitative research approach. According to the literature review, qualitative research significantly facilitates research in new areas. Furthermore, the qualitative research might be a suitable research approach because of the (a) uncertainty about the concepts, factors and phases under consideration, (b) the need for interpretation of factors and phases, (c) the need for understanding the nature and complexity of the phenomenon under consideration, and (d) the need for understanding the interaction of key factors and phases (Basias and Pollalis, 2018).

According to Glaser and Strauss (1967), as a powerful research method, through their grounding in empirical observations, GT seeks to develop a new understanding of the patterns of relationships among social actors in the real environment, and to develop the theory and explanation of these interactions in the natural environment (Corbin and Strauss, 2008). Also, as it allows the researcher to delve deep into the lived experience and incidents of the management world, it is especially useful in discovering rich insights from social interactions and developing context-based, process-oriented descriptions and explanations of complex managerial processes in a specific real-life setting. As key issues in TM, such as complex decision-making processes and interactions in relationships and social networks require often deep analysis of the empirical data from a real-life setting, the characteristics

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