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Design Thinking in the Automotive Industry

Creativity and Innovation

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ABSTRACT

Purpose: The purpose of this study is to explore the application of Design Thinking in the automotive industry in order to explain which factors influence the innovativeness of Design Thinking teams.

Motivation / theoretical framework: Seeking for innovation leadership, automotive manufacturers apply Design Thinking to enhance their competitiveness. Design Thinking is a multidisciplinary team-based methodology that adopts design principles to business management. Design Thinking teams produce innovative outcomes by working together in stimulating environments. In the literature and practice, however, it is not clear, what constitutes the relationship between the application of Design Thinking and team's innovativeness.

Design / methodology / approach: A grounded theory and template analysis approach is used to answer the research question. 15 semi-structured interviews with employees of a car manufacturer deliver practical insights about which factors and in which direction they influence the link. In sum, 14 Design Thinking projects were examined. By a differentiation of highly and less innovative projects, the study provides findings about how the factors differ in these clusters.

Findings: A full conceptual model explains influencing factors on a macro, meso and micro level. On a macro level, the organizational environment is a relevant factor for team's innovativeness. In detail, organizational encouragement, supervisory encouragement, freedom and challenging work enhance innovative team outcomes. In contrary, organizational impediments weakens the project's success. With regard to pressure and resources an inverted u-shaped relationship is found. Examining the meso level, team climate, team collaboration and leadership are relevant factors for team's innovativeness. Among all factors, the data analysis reveals that team climate is the most important factor. Moreover, team collaboration includes the positive factors interaction and intra-organizational network as well as the negative factor discrepancy. Transformational leadership is a beneficial leadership style whereas transactional and laissez-faire are described to be detrimental to Design Thinking team's success. At the micro level, intrinsic motivation supports whereas extrinsic motivation reduces team's innovativeness. The data analysis revealed that

supervisory encouragement and freedom were only applicable to highly innovative projects. In contrast, in less innovative projects discrepancy and laissez-faire leadership decreased the innovative capability of the Design Thinking teams.

Theoretical / practical contribution: The literature focuses on elements of Design Thinking and how organizations profit from its application. However, literature about influencing factors of Design Thinking team's innovativeness is rare. This study elaborates on this gap. Furthermore, the findings show which factors are especially relevant aiming at radical innovation including a comparison of Design Thinking and other innovation teams (such as R&D and NPD teams). In practice, this study provides managers and decision-makers of multinationals with practical recommendations about how to improve the implementation of Design Thinking.

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Coming together is the beginning.

Keeping together is progress. Working together is success.

— Henry Ford

1 MOTIVATION

Companies have to introduce innovative products and services in order to stay competitive in a rapidly changing environment (Anderson et al. 2014). However, many organizations struggle to survive (Furukawa 2013; Mas-Verdú et al. 2015). Products that were known to be state-of-the-art become suddenly obsolete by technologies developed by agile startups (Miller & Keoleian 2015). Especially, the automotive industry faces rapid changes in market needs, policies and technologies (Pinkse et al. 2014; Pilkington & Dyerson 2004). New competitors, e.g. Tesla Motors and Google, enter the market and traditional car manufacturers have to react accordingly. As a result, the automotive industry is highly competitive in innovation leadership (Rese et al. 2015). Innovativeness is a critical factor for long-term success in competitive global marketplaces (West & Altink 1996; Allen et al. 2015; van der Panne et al. 2003).

It takes years until new ideas reach series-production readiness in the automotive industry (Zapata & Nieuwenhuis 2010). M. Meyer, Global Head of Automotive at KPMG, emphasizes that “although the automotive industry is undergoing unprecedented change, the relatively long development cycles [of car technologies] mean that some of these new advances may take as much as 5-10 years to evolve” (KPMG 2014). In addition, one major challenge for the industry is the rapidly changing needs of its customers. The automotive industry has to adapt to the fact that customers are digital natives with different expectations than today’s customers.

In order to tackle these challenges car producers have to find a way how they can stay competitive (Ili et al. 2010). Thus, a shifting trend towards a promising innovation strategy can be recognized: The application of Design Thinking in the automotive industry.