Chapter 14
Digital Technology Deployment in the German Automotive Industry:
A New Framework for Sustainable Project Management

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ABSTRACT

Mobility is a central element of the new networked world, and customers expect highly integrated features in their vehicles and want to be able to use services or features at any time in a highly integrated manner. As a result, the entire automotive industry is facing a major change process, both technological as well as in its own core business processes and functions. This chapter examines the impact of this transition on the conduct and sustainability of IT projects in the German automotive industry. Information distilled from in-depth interviews with industry practitioners reveals how project management methods, tools, and culture have to evolve, as value chains in the industry are re-evaluated and re-defined. The chapter puts forward a framework for the interaction of project management methods and digital technologies to achieve sustainable project processes and outcomes. It is hoped this may act as a building block for future research in this field to advance the transitioning of the industry and its inherent IT projects to a more sustainable future.

INTRODUCTION

In the automotive industry, a major change can be observed: more and more processes are being digi-

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tized and automated by using software solutions, and even new business models are being implemented through digitization. It is understood that future revenue can only be generated by investing in digitization. Additionally, sustainability is of increasing importance in the automotive industry, driven primarily by the growing awareness of environment and sustainability in society at large and the associated increased consumer interest in sustainable products (KPMG Automotive Institute, 2020). In particular, this affects company departments responsible for developing products, and new services and features, at the original equipment manufacturers (OEMs) of the automotive industry. It also impacts the sales and marketing functions, which have to develop concepts for distributing digital goods and services as rapidly and as economically as possible.

To cope with these rapid changes and fast development cycles, inter- and intra- company IT projects have increased in number and scope in the German automotive industry in recent years (Roth & Heiman, 2020). The involved departments have to collaborate closely with each other (internally) and with experts worldwide (externally), even in the early conception stage of new features and functionalities, by linking their approaches and having a holistic end-to-end view of the issues involved. This can be achieved by providing and establishing one value creation process across the company, without boundaries from, for example, the vehicle to IT, to sales/commerce platforms, or to content providers.

As the German automotive industry is characterized by traditional structures, large corporations have emerged, such as the VW Group. Consequently, generating the broadest possible synergies at group level is another source of complexity in this context. High level networking in international interdisciplinary projects requires completely new collaboration models, with diverse requirements for daily work and cooperation, as well as for a rapid and effective exchange of information. However, these requirements often encounter traditional and embedded structures and hierarchies that are not always easy to overcome.

The aim of this chapter is to establish an understanding how IT projects in the German automotive industry have been implemented in recent years, examine how they are now changing, and assess the significance of digital technologies and sustainability in this change dynamic. The chapter consists of five sections. The following section examines the current situation of the automotive industry in Germany, providing general background and assessing relevant literature on project management, sustainability and digital technology. This section concludes by setting out three research questions and developing a provisional conceptual framework for the primary research. Then, an outline of the research methodology is provided and a further section covers the main findings and discusses emergent themes. The final section provides a summary of the chapter and discusses relevant key issues for the future.

RELEVANT LITERATURE

Recent Change in the German Automotive Industry

The German automotive industry recorded total sales of around 436 billion euros in 2019 (Statistisches Bundesamt, 2020), which represents around a fifth of the total industrial sales in Germany. This industry is one of the top-performing businesses in Germany (Bormann et al., 2018) and also plays an important role in the European market. In 2018, almost half of the EU automotive industry's value creation came from Germany (Eurostat, 2020) and more than 30% of the cars built in the EU in 2018 were produced in Germany. This illustrates the enormous importance of the automotive industry for the German economy. At the same time, this industry is actually facing fundamental changes that are threatening this lead position.