Chapter 20
The Impact of Digital Technologies on IT Sourcing Strategies in the German Automotive Industry

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ABSTRACT

For decades, the German automotive industry has benefitted from a process of IT-enabled transformation with the ongoing deployment of state-of-the-art IT. Despite the high relevance of IT for innovation and process efficiency, the industry has outsourced up to 80% of the IT budget to external IT providers as IT has generally not been seen as a core competence. In recent years, the phenomenon of digital transformation has emerged, along with the consequent disruptive impacts associated with digital technology deployment. One area of significance in the corporate environment is the current and potential impact of digital transformation on future IT sourcing strategies. Through an analysis of existing literature and a series of in-depth interviews with industry experts, the chapter examines how and why the German automotive industry is reviewing IT sourcing strategies in response to the anticipated implications of digital transformation. A change in the ratio between outsourcing and insourcing has a significant impact on in-house employment and third-party business operations.

INTRODUCTION

The transformative potential of IT has a long history in the German automotive industry, as the industry has been focusing on innovative information technologies for decades to support integrated, high-performance, business processes. This raises the question of the novelty of the phenomenon of digital transformation for this industry, and how digital transformation is different from IT-enabled transformation. The term digital transformation has a widely accepted interpretation. Gebayew et al. (2018) divide the term into "digital" and "transformation". They view "digital" as identical to "information technology" and claim

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that the term is generally used as a synonym for the rapid adoption and implementation of powerful information technologies, which are the drivers of digitalization. Some researchers, such as Vial (2019), concluded that digital technologies and IT represent the same thing and view digital transformation as an evolution of IT-enabled transformation. One of the main differences is that IT-enabled transformation is rather seen as a company-centric event, while the scale of digital transformation is larger, as it affects entire ecosystems extending beyond the traditional boundaries of the company or the industry. Hence, major impacts on IT sourcing are to be expected, as this function provides the industry with the necessary capabilities and resources for the deployment of digital technologies.

With digitalization, IT is not only a business-critical resource for corporate IT (mainstream business systems), but also a central component of cars, mobility services, digital business platforms and ecosystems. In the literature, IT sourcing has so far mostly been considered in the context of corporate IT. Now, however, it is appropriate to consider IT sourcing in a new light that encompasses the three technology fields: corporate (traditional enterprise) IT, product IT (including connected cars / car IT) and cloud-based platforms and ecosystems.

This chapter is divided into eight sections. Following this introduction, the next section briefly discusses relevant background on the German automotive industry. The following section reviews the relevant literature and sets three research objectives for the study. The following two sections then outline the conceptual framework and discuss the research methodology. The research findings are set out and discussed in the main section of the chapter, and some possible solutions and recommendations are put forward. In the concluding chapter, the main emergent themes are summarized and possible future areas for research are identified.

BACKGROUND ON THE GERMAN AUTOMOTIVE INDUSTRY

The German automotive industry consists of original equipment manufacturers (OEMs) and a three-tier supplier network. The term "OEM" is used synonymously with vehicle manufacturer in the automotive industry. The activities of automotive suppliers vary between the production of complete vehicle modules and systems (Tier 1), the production of individual components (Tier 2) and the production of standard parts and raw materials (Tier 3). The entire supplier network for the German automotive industry consists of around 3000 suppliers, of which around 500 are German automotive suppliers (Verband der Automobilindustrie [VDA], 2020). In Germany, suppliers generate the majority of the automotive industry's value added (production costs / added value created in the production process) - around 70 percent. The close integration of OEMs with suppliers from various industrial and service sectors, as well as the global network of production and distribution facilities, is considered unique worldwide (Bundeswirtschaftsministerium für Wirtschaft und Energie [BMWi], 2020).

As for many other industry sectors, the economic situation of the automotive industry in 2020 was seriously affected by the coronavirus pandemic. In spring 2020, the pandemic hit the industry hard. Global supply chains were disrupted, and by April manufacturing in Germany was largely at a standstill. Nearly 60 percent of the auto industry's workforce was on short-time work. Compared to 2019, total turnover in 2020 decreased by 13% to €378.2 billion. At €296.4 billion, more than three quarters of the total turnover is accounted for by OEMs. At €242.8 billion, around two-thirds of turnover is generated with foreign customers, demonstrating the industry's high dependence on exports (Table 1).