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Project Management as a B2B Service in the automotive development process

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Abstract. The German automotive industry currently not only faces disruptions in the supply chain but also by new technologies and new competitors. In order to rise to these challenges, project management must be improved and partners along the supply chain must be integrated more tightly. Besides the adoption of more agile methods, another part in accomplishing this, is to provide an interorganizational project management service between all involved partners. In order to improve, we first have to understand the current implementation of project management services between the OEM and suppliers and examine what the different actors expect from these services. This working paper addresses this issue by conducting interviews with project management experts in the automotive industry.

Keywords: Project Management, B2B Services, Automotive, Digital industrial services

1 Introduction

The automotive industry is one of the central pillars of the German economy. However, this sector in particular is facing an upheaval [1]. One reason for this is highlighted in a recent Nikkei article [2] that describes that Tesla is about 6 years ahead as estimated by Japanese engineers. They came to this conclusion after disassembling a Tesla model and analyzing the components. Interestingly, this estimate was not based on a technological or knowledge advantage on the side of Tesla, but rather on the differences in development processes and supply chain integration. The automotive development process is traditionally structured very hierarchically with the OEM at the top and the suppliers below, separated into different tiers [3–5]. This development process is mostly structured using a Stage-Gate model [6]. One part in combating these problems is a more integrated project management [7], which can be considered as a service that is provided to partners in the supply chain [8]. Vargo and Clavier [9] propose, that project management services must shift from a production process perspective to a

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value co-creation perspective and that the classic customer and supplier relationship should be replaced by network of equal partners. In the Traditional Thinking the focus is on products and it is a one-dimensional and linear process. In contrast, Emergent Thinking aims at the value creation and uses systems thinking in a multi-disciplinary and dynamic process, while Service-ecosystems Thinking applies value-cocreation and sees actors as resource integrators. The research contribution of this paper is to determine the current state of project management as a service in the automotive development process and to see which stage it is in. With their article on the service-dominant (S-D) logic, Vargo and Lusch [10] changed the understanding on value determination and creation. Previously, a 'producer' was seen as value creator while the 'customer' took the role of the passive beneficiary that 'destroys' value [11]. Instead, the principle of S-D logic proposes that all involved social and economic actors, including the customer, are resource integrators [11, 12] and, therefore, value is jointly created by different stakeholders (actors) sharing their resources (co-creation)[13]. As Vargo and Lusch [11, 14] point out that value is always co-created and point away from the notion of a linear flow toward a complex system of diverse actors [10]. In collaborative networks, actors co-create value by providing the necessary resources and by agreeing on the value of the exchanges [11]. These relationships and interactions can differ, depending on whether the service is offered in a business-to-business (B2B) or a business-to-customer (B2C) setting. In B2B, the customer's buying decision is more determined by the functional aspects of the service, and the customer is not an individual, but rather a team, in which the user and the decision-maker can be separate stakeholders [15]. The complex B2B context in terms of technological and organizational diversity also requires the offerings to be customized for each customer, in some cases even to larger extends, making the distribution and implementation process more extensive and time-intensive [16, 17].

2 Methodology

The objective of the interviews is to investigate the current stage of the project management as a service in the automotive industry. Tab. 1 shows that until now, seventeen experts, who were involved in this area, were interviewed during thirteen semi-structured interviews to gather data [17, 18]. The interviews took place between August and October 2021 via Zoom. The questionnaire included the following sections: work experience, governance, resources and documentation, accessibility, control, trust, and pricing. The people interviewed were selected according to the basic rules of theoretical sampling by Glaser and Strauss [20], although it should be noted that this expert set is not yet complete due to the continuing research. Therefore, interviewees were selected based on their knowledge, work experience and position. Due to restrictions posed by one OEM, some participants could only be interviewed in a joint interview (shown in Table 1). Due to this, it is possible that individuals in this group may have been influenced by the presence or statements of their peers.

Table 1. details of expert interviews

Expert	Organization	Position	Experience	Duration
1	Academia	Researcher	31 years	0:32 h
2-6	OEM 1	project management (lead)	23 years	0:58 h
	OEM 1	software developer	3 years	
	OEM 1	project management (staff)	26 years	
	OEM 1	project management (staff)	20 years	
	OEM 1	project management (staff)	5 years	
7	OEM 1	project management (staff)	4 years	0:18 h
8	OEM 1	project management (lead)	9 years	0:19 h
9	OEM 2	project management (lead)	22 years	0:22 h
10	1st tier 1	project management (lead)	2 years	0:30 h
11	1st tier 1	project management (lead)	20 years	0:38 h
12	1st tier 1	project management (lead)	11 years	0:38 h
13	1st tier 2	project management (staff)	5 years	0:22 h
14	1st tier 3	project management (lead)	18 years	0:13 h
15	2nd tier 1	project management (lead)	15 years	0:24 h
16	2nd tier 2	project management (lead)	30 years	0:31 h
17	2nd tier 3	project management (staff)	6 years	0:30 h

The interviews were transcribed and analyzed in a three-step coding cycle following Glaser and Strauss [18, 19] which is a well-known methodology in many research studies [20]. Initially, open coding was conducted, and during coding, subsequent interviews and their data were cross-checked with previous data in accordance with the comparative method of Glaser and Strauss [18] and Strauss and Corbin [21]. After that, the codes were first consolidated and then adjusted until consensus, first between codes and then between groups. Tab. 2 shows a simplified coding-tree.

Table 2. example for simplified coding tree.

Transcription Data	Open Codes	Axial Codes	Selective Codes
"Through the end-to-end service, data quality can be ensured."	Ensuring the quality of the data	Face-to-face performance measurement	Measuring supplier performance via the service
"It is checked whether all requirements are fulfilled."	Verification of requirement fulfillment		
"A lot of data is statistically analysed in order to gain insights."	Statistical analysis of data	Measuring performance through data analysis	
"Through the schedules and milestones it is possible to evaluate suppliers in terms of performance."	Monitoring of compliance with schedules and milestones		

3 Results

When we view project management from a service perspective [8], our results show three roles of actors: OEM, supplier and, service provider. These roles are related to each other, as shown in Fig. 1. Most importantly, from a service-ecosystem perspective, it is not certain that all three roles remain separate. As one interviewee stated:

"The question is first of all who [...] can run this. But it is not automatically the strongest in the game, because otherwise [...] exclusively the OEM would have this role." – **academia**

It is conceivable, that the responsibilities of the service provider role can lie with the OEM, a 1st tier supplier with the appropriate digital expertise, or a third-party actor, such as a digital group specializing in software. In the case of latter, it is necessary to ensure value creation externally (as shown by the dashed line in Fig. 1). As of today, the OEM will most likely take the role of the service provider.

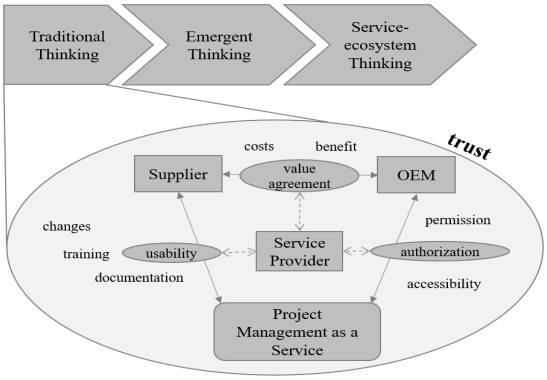

Figure 1. Current position of project management as a service in the automotive industry

A first major managerial task of the service provider is to ensure **value agreement** across all actors, i.e., the supplier and the OEM. Our results show varying expressions of motivation to use the service depending on the role, which makes the task on value agreement challenging. Typical benefits for both can be a common data pool, the guarantee that general conditions and regulations are complied with, and a common interface, which leads to common standardization (e.g., with regard to data formats). The main motivation, however, was the necessity to handle the increasing complexity of projects.

One interviewee stated: *"You can't really imagine doing without it. There is no other way to handle the complexity of the multi-dimensional project landscape [...]."* – **OEM 1** While the supplier remarks: *"I don't have a direct benefit, I have to. The added value is entirely with the customer."* – **1st tier 1**

Another critical task is the topic of ensuring **usability**, which consists mainly of providing a documentation of the project management service maintaining a change log and conducting related trainings. While OEMs are well positioned in these dimensions and, e.g., already have implemented a holistic documentation and offer trainings for

their employees, their partners are rather underdeveloped and need close guidance by the OEM. This observation is supported by both, the OEM and the supplier perspective:

"Our partners often create tickets or something and demand support from specialists [...] or detailed explanations [...] so there is a lot of help needed." – **OEM 1** *"[…] in the majority there are no information."* – **1st tier 1**

It is noticeable that some OEMs offer training courses for their services, but only for a fee. This is used to cross-finance various fields of activity.

"[…] and there are many who earn money with it. So, they do that extra, okay, I finance my […] service […] by training my suppliers." – **1st tier 1**

This undermines the trust of suppliers in the service. However, OEMs also put a great emphasis on **authorization** of employees, which is demonstrated by the fact that specific access rights are not granted to roles (such as the supplier's purchasing department), but rather to individual persons from these departments, who are checked individually.

"The colleagues from a subcontractor have an individual number. This number is a unique identification of a person and via this number […] they then have access." – **OEM 1** *"The registration process is very strict and it's a lot about data security and confidentiality."* – **1st tier 1**

4 Discussion

From our interviews so far, we can see that project management services are currently in the transition from Traditional Thinking to Emergent Thinking [9]. As seen in OEM 1s statement, they aim towards Value Creation and tighter integration as they face an ever more complex multi-dimensional project environment, the supplier's still view it as predefined process and see these services only as something they have to do but not receive any benefits[8]. Another critical part our interviewees mentioned was the topic of trust, while the OEM creates its trust with a high entrance barrier, the supplier side still struggles with the accessibility and in some cases is even used to monetize this service. In return the suppliers have almost no influence in changing the services.

5 Conclusion and Outlook

Our research shows that project management services in the automotive development process are still in the Traditional Thinking stages. Three main actors could be identified, which are OEM, supplier, and service provider. To enable trust and thus co-creation in the services, the topics of authorization, usability and value agreement must be further explored.

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