

Challenges in the Development of Mobile Online Services in the Automotive Industry - A Case Study

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Abstract:

Automotive companies need to develop new innovations fast in order to stay ahead of their competitors. New sensor technologies and the connection between cars and smartphones open the development of different services, like the analysis of driving behavior. These services are called mobile online services and are a growing field in the automotive sector. We want to understand the challenges that slow down the development of mobile online services in automotive companies. Therefore, we conducted a case study with an interview study in a project that develops services to manage vehicle fleets. Our results show that the company considers mobile online services rather as a by-product and is still focused on the manufacturing of cars.

This summary refers to the paper *Challenges in the Development of Mobile Online Services in the Automotive Industry - A Case Study* [Pr21]. This paper was published as full research paper in the proceedings of the Joint International Conference on Software and System Processes and International Conference on Global Software Engineering 2021.

Keywords: Automotive Industry; Mobile Online Services; Agile Development; Case Study

1 Introduction

Most aspects of cars are steered by software and more and more sensors are integrated into today's cars. This enables the development of helpful services, e.g. for maintenance. These services are called mobile online services and define more and more the real value of a car. Automotive companies are under much pressure to develop fast, new innovative features with a high quality. Further, to follow new technologies and customer demands, automotive companies have to be flexible. However, automotive companies are often slow, have a rigid structure, and are reluctant to change. To understand the challenges of automotive companies when they develop mobile online services, we conducted a case study at Volkswagen

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Commercial Vehicles (VWN). The project team we describe in our publication creates a fleet management system for medium-sized companies. The system enables companies to easily connect, maintain, and monitor the vehicles of their fleet. We conducted interviews with six members of the project team.

2 Results

The development of mobile online services depends strongly on the needs of their users. Design-driven approaches help to create applications that are aligned with users' needs. However, our results show that the project has difficulties applying a more design-driven approach. Often the problems and the domain of the users are insufficiently understood. A lack of staff exacerbates the situation further because the employees cannot focus on one problem and do not have the time to get a deeper understanding. Next to a development aligned with users' needs, the project wants a fast development but the development is often deferred. The discussion of the requirements takes a lot of time and a lot of different parties have to be aligned. Further, the dealings with the projects of the surrounding systems frequently interrupt the development. Also, an unclear distribution of tasks and responsibilities let the project struggle.

3 Conclusion

Automotive companies have to consider the development of mobile online services and the manufacturing of cars more as one entity. At the moment both are mostly separated and the development of these services only follows the manufacturing process. This leads to services that represent more the technological possibilities of the car, but not what the users really need. Automotive companies should invest more time in the comprehension of what their customers really need and which services they require. Consequently, the development of mobile online services and the manufacturing of cars should go hand in hand.

4 Data Availability

Due to the privacy concerns of our interviewees and the company's internal regulations, we can not make the interview transcripts publicly available.

Bibliography

- [Pr21] Prenner, Nils; Klünder, Jil; Nolting, Michael; Sniehotta, Oliver; Schneider, Kurt: Challenges in the Development of Mobile Online Services in the Automotive Industry - A Case Study. In: 2021 IEEE/ACM Joint 15th International Conference on Software and System Processes (ICSSP) and 16th ACM/IEEE International Conference on Global Software Engineering (ICGSE). pp. 22–32, 2021.