

Big data for an excellent driving experience

From idea to go live in six weeks: T-Systems analyzes anonymized driving data for Automotive OEM in China.

“With the analytics solution, our client is raising the driver experience of his customers to a new level and is gaining valuable insights for the development of future vehicle generations.”

Xu Zhao, Account Manager, T-Systems China

Connected vehicles are extremely popular. This is especially true for the Chinese market. Connectivity is one of the outstanding purchase criteria for around two thirds of car buyers there. In particular, the providers of luxury car brands have established the network connection of their vehicles as part of the product strategy in order to offer their customers the highest level of driving quality and driver experience. Connectivity is one of the central pillars in the design of modern cars. On the one hand, it enables software updates and new customer services to be rolled out to cars. On the other hand, it enables the acquisition of vehicle data that can be used for the development of new vehicle generations or for improved service based on predictive maintenance. For Automotive OEMs (Original Equipment Manufacturer), the Chinese market is strategically important. In 2019 more than 21 million vehicles were sold on the biggest and most innovative automotive market in the world. One of the Automotive OEMs in the Chinese market decided to initiate a project that would help the company better understand the user behavior of its drivers. The results should be included in the development of new models and the car manufacturer specified a tight time frame for the development of this new service: six weeks from the end of March to the middle of May – during the global coronavirus pandemic.

At a glance

- Data-driven product development for connected cars
- New services, operational insights for new vehicles
- Big data analysis
- Realization within six weeks

Reference in detail

The challenge

Connected car – that doesn't just mean connectivity. It is also big data: operating sensors in the cars continuously record and store operating data. Every day, immense amounts of data from various sources and in different formats are generated in the backend. For the respective OEM this connected vehicle backend is operated by T-Systems in a private cloud in China. The evaluation of this data is of great interest for the brand in order to offer its customers excellent service (including new in-car offers), increased driving safety and an excellent driver experience. However, the evaluation of data from various sources is a field with its very own specific challenges. This not only includes the preparation of the data, but also the ability to provide actionable business insights based on the analyses. The advantages for all sides speak for themselves. The Chinese OEM therefore decided to initiate a project that would help the company better understand the user behavior of its drivers. For example, the habits when charging electric cars, driving behavior or usage of the onboard services should be analyzed. The results should be included in the development of new models for example, but also deliver innovations for active vehicles. The customer specified a tight time frame for the development of this new service: six weeks from the end of March to the middle of May – during the global coronavirus pandemic.

The solution

Since T-Systems not only operates the connected car backend, but also has great big data expertise, the OEM commissioned the IT service provider to develop the analytics solution. The extensive infrastructure resources for modeling the solution and machine learning come from the Huawei Cloud. Within a few days, T-Systems established an agile team and delivered the solution for the department as a web service by the end of April. The business department units can access the service via browser. The six-week project during the coronavirus pandemic included a final two-week user acceptance test. First, the T-Systems team extracted the relevant data from the connected vehicle backend in T-Systems' private cloud. The data was largely structured and also had a similar data format. Nevertheless, the data records had to be cleaned up prior to transfer (via rvs, the computer system from T-Systems) to the public cloud. The team led by project manager Xiaojie Weng transferred the cleaned data sets to the Huawei Cloud in order to use the capacities there for the rapid development of the analysis service. Among other things, the Hadoop PaaS provided in the public cloud was used by the team. The team also set up the web frontend, which the OEM's employees can use to access the anonymous data analysis via a web browser.

Customer benefits

With the rollout of the solution, the automotive manufacturer can now optimally use the functionality of its connected cars to better understand its customers. New services can be rolled out based on the anonymous insights. For example, the OEM can offer specific services for cost-optimized e-charging or improve coverage with charging stations. However, it may also be possible to improve the service in the future through predictive maintenance. Drivers can trigger service requests directly from the vehicle; in the future, push messages from the workshops will also be possible. At the same time, the information from the active operation of the cars offers a variety of impulses for the further development of future car generations with optimized functionality and greater reliability. At the same time, the optimized driving experience is a clear differentiator for the car manufacturer on the Chinese market. The company is establishing itself even more as a highly innovative car maker by providing its users with the latest functions and services. At the same time, the brand meets the expectations of its users for the highest quality standards.

Additional advantages:

- Unique driver experience for drivers
- Engineers get unique insights into the operational phase
- Use of the analyzes for continuous product optimization

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