



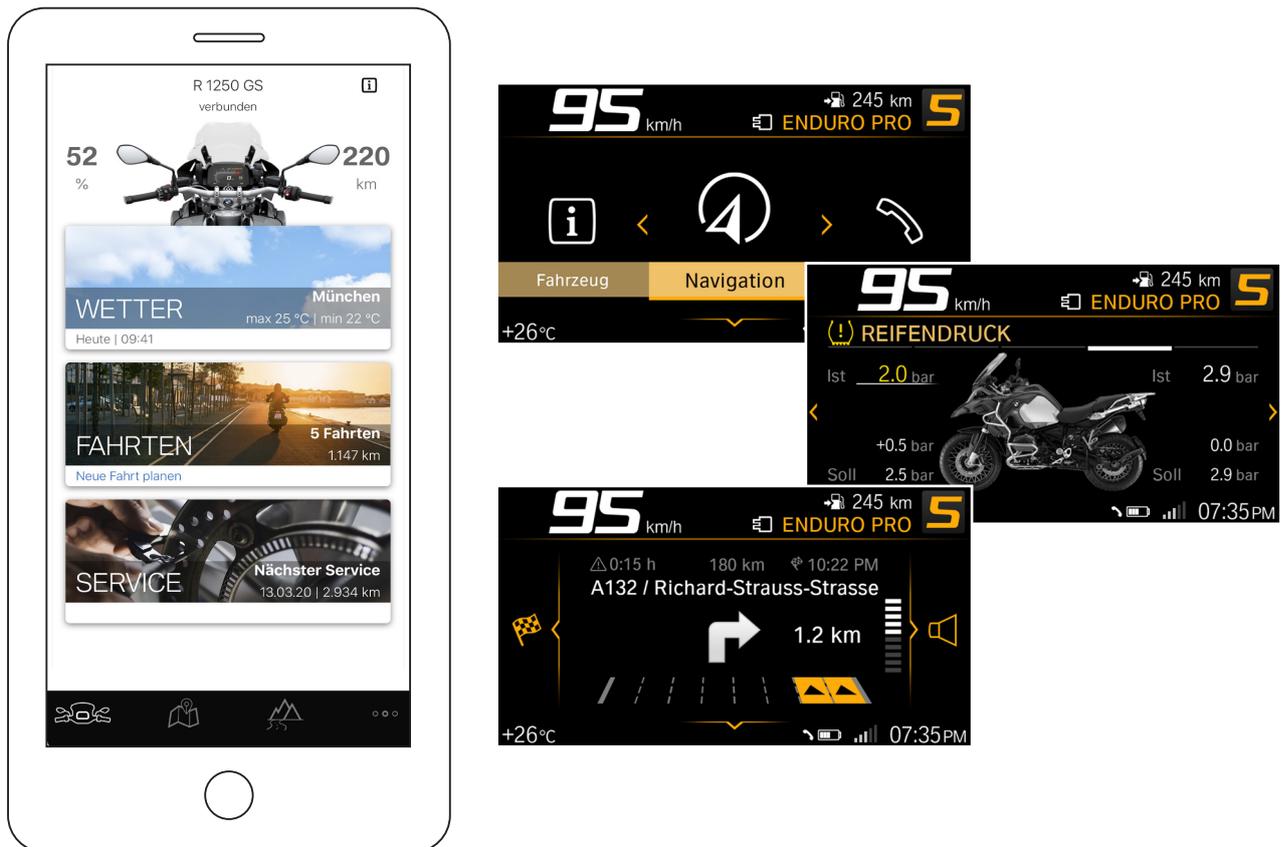
Testbirds

BMW Motorrad

End-to-End Testing of BMW Motorrad's Connected App

Testbirds Case Study

The BMW Motorrad Connected App opens a world of possibilities for its users when it comes to navigation, ride tracking and accessing vehicle data during and after a motorbike tour. The app connects to motorbikes via Bluetooth and shows the features on the motorcycle's TFT-Display. Throughout this process, interaction between the app and motorcycle hardware is the biggest consideration.



Optimal driving experience with the help of Crowdstesting

A key factor of developing a new version of the BMW Motorrad Connected App is widespread testing. To create and execute their testing process, BMW decided to partner with the Munich based software testing provider Testbirds. The joint goal was to test the app internationally with different smartphones and motorbike types. The compatibility between hardware and software as well as testing the interaction between external software and various software versions is particularly important.

During continuous development and improvement of this new version, app users need to be consulted on their opinions as well as search for functional bugs. By making use of the various remote and onsite testing opportunities Testbirds offers, the app can be tested during different development stages as well as from different perspectives. As a result, developers can immediately improve the functionality and user experience of the product. All of this should be executed with a focus on the customer's perspective and using their real devices.

“We can test our applications under lab conditions, with the help of our enthusiastic about motorcycles employees, but this is not enough. It doesn’t address the complexity of the entire customer experience. A variety of different smartphones, vehicle models and software versions creates technical limitations when it comes to testing quite quickly. Here, crowdtesting is a perfect opportunity to get maximal coverage coupled with authentic feedback.”

Jann Kirchhoff, who oversees ConnectedRide Digital Services & Apps at BMW Motorrad

Typical use cases tested under real conditions

The testers’ task was short and easy: They were asked to test the beta version of the new BMW Motorrad Connected App through typical use cases with their motorbikes. Through this, errors and functionality issues regarding handling and user experience can be found and all occurring bugs can be detected.

For example, one test consisted of ten use cases featuring different tasks. Use cases focused on typical features like general settings, the connection between smartphones and motorcycles using Bluetooth, navigation, retrieval of vehicle and tour data as well as exploring the app independently.

The test was an end-to-end test of the BMW Motorrad Connected App conducted by passionate BMW motorcyclists. The tests were run regularly under real world conditions. When executing parallel bug tests, the app was filled with simulated data to detect common errors and to run localisation tests on various smartphones. Just a few hours after designing the test, the first bugs were found and sent over to BMW. Results were delivered over a direct interface between Testbirds and the BMW Motorrad Connected developers’ JIRA-system. As a result, they were able to fix the bugs within their agile working environment.

“With the support of Testbirds and the members of their crowd of testers we were able to detect critical errors and bugs which we had never located within hours before launch.”, said Jann Kirchhoff about the test run. “We were also impressed by Testbirds’ flexibility and their ideas regarding tester recruitment.”

Broad Community Management secures test execution

Tester recruitment and community management were particularly challenging in this end-to-end test, since not the whole community of BMW motorbike drivers could be asked, because tests could only be conducted with special motorbikes with TFT-displays. When testing began, this special equipment was only available for a limited amount of BMW motorcycles. Therefore, Testbirds needed to find app users that had a motorbike with a TFT display and were at the same time willing to answer questions and provide feedback after their tour using the app. Furthermore, it was requested that exactly this tester community tests repeatedly and wants to participate actively in the development of the app.

“I’m elated how testers are participating in the motorbike community and how much fun they have improving the app of their favourite vehicle!”

Annemarie Müssig, Project Manager at Testbirds

The required testers were recruited by forming a close collaboration between BMW and Testbirds, following the bring your own crowd principle. Here the testing provider’s expertise was crucial: The crowd was reached via various online channels like relevant forums, Facebook groups and motorbike websites. BMW also assisted this project by including their own users who raised questions via certain channels such as technical customer support. Furthermore, the tester community was recruited at the edge of customer events.

Individual Test Setup in Cooperation with the Crowd

By using remote interviews, we were able to show app screens of the new version to the testers even before release. That way, we were able to gather additional input and suggestions for improvement. During these kinds of interviews, tests could be followed in real-time, allowing unfiltered insights into testers’ thoughts. By using parallel real-time communication with testers, targeted questions were raised, and direct feedback could be gathered.

The crowd was also involved in testing a special feature of the application. This feature allows drivers to import gpx-maps and plan their tours. Also, testers have been asked to plan their tours the same way they normally would and export them as a gpx-file afterwards. This gpx-data was then uploaded into the BMW Motorrad Connected App to deter

Project Centered Collaboration and Strategic Partnership

The partners coordinated with each other about the further approach in regular jour fixes, whereby Testbirds was able to flexibly adapt to the agile working method of BMW. We were able to ensure trustworthy support with clear roles and contact persons within the Testbirds project team by close collaboration between project, account and crowd management. That way, project and community management of Testbirds and BMW’s targets could be coordinated harmoniously.

For future collaboration, there are plans to further integrate Testbirds into the continuous development of the app. For example, it is planned to include very active users of the publicly released app as testers by inviting them actively inside the application.

“The long-term collaboration with Testbirds within a strategic partnership also includes integration into our agile development process.”, Jan Kirchhoff summarises. “Due to the testing with the Testbirds Crowd the community is directly contributing to a better customer experience and gets a say when it comes to deciding on the individual functionalities. At the same time Testbirds and BMW had the opportunity to get to know each other’s processes and structures, to establish a profound basis for a long-dated partnership.”

About Testbirds

Testbirds specialises in the testing of software such as apps, websites and Internet of Things applications by using innovative technologies and solutions. The testing provider investigates software for user-friendliness and functionality issues. With over 400,000 registered testers located in 193 countries, Testbirds is one of the world's leading crowd-testing providers. The company also utilises cloud based technologies to support customers in optimising their digital products. The combination of the two testing methods delivers a unique portfolio that takes the quality of software to the next level.

Testbirds was founded in 2011 by Philipp Benkler, Georg Hansbauer and Markus Steinhauser. Today, the company has over 100 employees. Other than its headquarter in Munich, there are now offices in Amsterdam, London and Stockholm, franchises in Hungary and Russia and sales partners in Italy and North America.

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