



CASE STUDY

Improve Testing Quality and Increase R&D Efficiency

Leading Electric Vehicle Company Builds Solid Automated Testing Foundation to Improve Quality and Accelerate R&D

Profile

An innovative and fast-growing electric vehicle (EV) manufacturer in China, NIO has launched two mass-produced models under the NIO brand: the ES8, a high-performance electric SUV, and the EP9, touted as the fastest electric car in the world. Also under development is the company's EVE model, which captures its vision of an autonomous concept car of the future.

Unlike its domestic competitors that started as traditional original equipment manufacturers (OEMs), NIO has been quick to adopt cutting-edge technologies to optimize its research and development (R&D) process. The world's leading automotive and technology leaders work across NIO's offices in London, Munich, San Jose, Shanghai, and eight other locations.

eggplant

Test Automation Software

'Automated testing is a positive trend in the automotive industry and Eggplant is a leading-edge, long-term solution for us,' said Rui Wang, Manager.



Seeking To Improve Testing Quality

For NIO, improving testing quality and increasing efficiency in the R&D process are top priorities. While QA teams were using Eggplant automation to test UI functions, many testers were spending about 40 percent of their time doing repetitive, manual regression testing. In some cases, testers needed to monitor the UI for hours, a tedious task that didn't help productivity or efficiency. NIO and its testers knew that automation would accelerate the regression testing process, improve test reliability, and free teams to focus on more strategic QA activities.

Realizing Integrated, Automated Testing with Eggplant

HiRain and NIO have been working together since 2015, and HiRain is an important partner for NIO in the field of testing. NIO explored two different options for automated testing: Eggplant Functional and a robotic arm and camera solution (offered and evaluated by HiRain).

"After evaluating the robotic arm and camera, we felt it was not stable or reliable enough to meet NIO's testing needs," explains Xiaocong JIANG, HMI application engineer, HiRain. "If an error occurred on the camera's position, all related test cases would need to be modified. This was not an issue for test automation with Eggplant."

In addition to low error rates, Eggplant Functional was more precise, as well as easy to implement, maintain, learn, and use for NIO's QA teams.

HiRain set up the test environment and delivered training on Eggplant's solution, and now works alongside Eggplant to provide 24/7 support and introduce new technology. NIO is using Eggplant to test the UI on its in-vehicle infotainment (IVI) system, as well as BUS data, audio, and Bluetooth functions, on the Android platform and with NVIDIA hardware. Eggplant provides open interfaces that facilitate compatibility with other subsystems and help QA teams realize truly integrated, automated testing.

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A Long Term Investment

For NIO, Eggplant is key to enabling the company's digital transformation. With help from HiRain, QA teams have used Eggplant Functional to build a solid foundation and process on which to optimize automated testing. Testers are saving significant time because they can now save and reuse test cases. And with the ability to spot issues earlier, teams are improving testing quality and development. NIO anticipates seeing Eggplant's solution continuing to evolve, and looks forward to the day when its teams can use Eggplant to call schedule functions through their test management platform via APIs.

"Automated testing is a positive trend in the automotive industry and Eggplant is a leading-edge, long-term solution for us," said Rui Wang, Manager, NIO. "As Eggplant's capabilities quickly evolve, we rely on HiRain to continue to provide us with strong, local support and guidance."

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