



Case Study

Driving Forward Excellence with Android-based Automotive Infotainment System





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Abstract

Consumer experiences with personal electronics are shaping expectations for in-vehicle infotainment (IVI) systems, putting automotive manufacturers under the pressure to create not only safe and visually attractive but also smart vehicles. Car occupants expect to be entertained, able to access information from a variety of sources, or even partly control the automobile performance just through a few touches. Building such a complex system, hence, is truly the acid test for auto manufacturers.

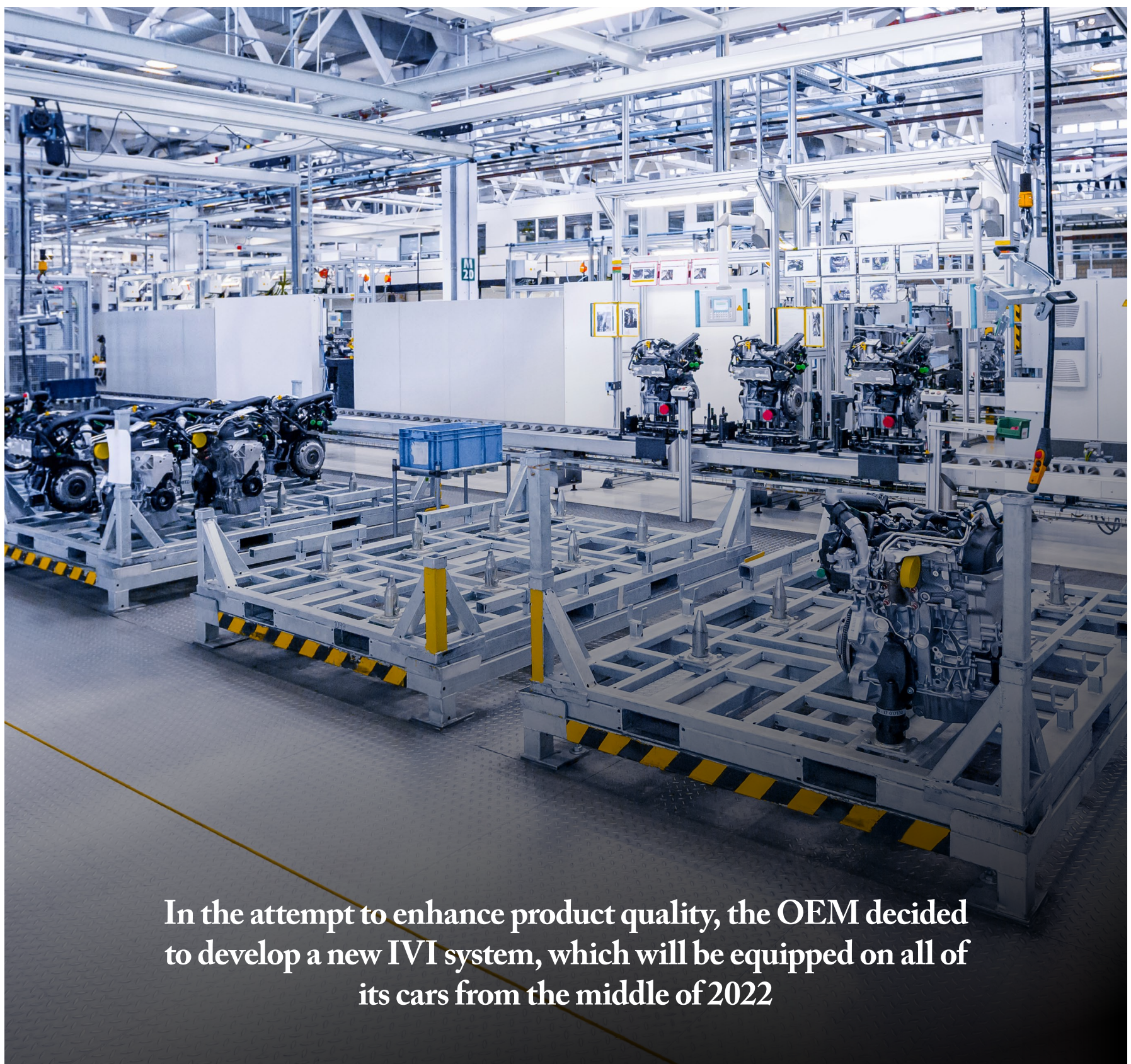
Android is currently among one of the most commonly deployed platforms in IVI systems development, as it supports majority of the features and functions required for automotive use. By inheriting the best features of Android smartphones and being a part of Android ecosystem, this platform offers a speedy and reliable approach for OEMs.

This case study illustrates how FPT successfully developed an Android-based IVI system for a major carmaker, thereby enabling the OEM to deliver seamless and distinguished in-car experience for drivers and passengers.



The Client

Our customer is **a global giant with more than 100-year history in automobile manufacturing industry**. The company produces a variety of cars and has always been one of the largest automakers in the world over the last decade. It is especially well-known for numerous revolutionary designs and car security technologies. In the attempt to enhance product quality, the OEM decided to develop a new IVI system, which will be equipped on all of its cars from the middle of 2022.



The Implementation

Since this is a huge project, FPT has joined hands with another multinational company headquartered in Korea to build the Android Software Platform, consisting of building framework and applications. **Our tasks included analysing business and technical requirements, creating design description and specification, developing, testing.**

The system offers a wide variety of functionality, from multimedia, connectivity, navigation to widget management, system setting, home app, etc. FPT team is responsible for developing the HMI and other components in framework and BSP layer, such as radio, connected services, vehicle HAL.

The IVI system is developed based on Android Q (10.0) with Android Automotive Framework, a specialized platform built by Google for automotive domain. The modern framework equipped with the latest technologies enables all components to work seamlessly. MVVM is chosen as the approach to build applications, as this architecture offers well-defined components, is easy to use, maintain, redesign and testable. **The overall app design is simple, yet still visually stunning and highly informative, allowing the user to quickly locate and understand information on the screen.** Our developers also thoroughly test the infotainment system with a large set of test cases to ensure optimal performance, especially features that contribute to safety.



The Impacts

The project was successfully delivered after 20 months and completely conducted in one of FPT's Offshore Development Centers, strictly following security standards of the customer. The system has met all requirements from client, enabling the giant to deliver fresh and excellent in-car experience for consumers. Though the official product will only be launched in 2022, FPT's participation in the project has brought certain initial advantages for the OEM in the future competition:

- **Our agile and collaborative working model allows faster time to market compared to traditional methods.** Which might have taken up to three years for an automobile maker to develop now can be designed in less than two years.
- **FPT's expertise in Android and automotive industry, along with global presence and large pool of talents brings significant cost efficiency for the OEM.** We not only apply the best practices in software development, but also offer multiple options to reduce project implementation costs.



The results delivered by FPT have been acknowledged by all parties involved in the projects, including the automaker – our client and the multinational company partnering with us. After this project, the Korea-based firm, one of FPT's long-time customers since we were founded, has also decided to deepen the close relationship with additional critical works in the following years. Three organizations look forward to work together to further improve in-vehicle user experience through innovative technologies. As in-vehicle infotainment system is currently a fast-evolving and critical segment of the modern automotive industry, a feature-rich and reliable system could be a game changer for many OEMs. To drive forward excellence, a competent partner with proven records like FPT would be a strategic choice.



FPT Software is part of FPT Corporation, a technology and IT services provider headquartered in Vietnam with nearly US\$1.2 billion in revenue and 28,000 employees. Being a pioneer in digital transformation, the company delivers world-class services in Smart factory, Digital platforms, RPA, AI, IoT, Mobility, Cloud, Managed Services, Testing, more. FPT Software has served over 700 customers worldwide, 83 of which are Fortune 500 companies in the industries of Aerospace & Aviation, Automotive, Banking and Finance, Communications, Media and Services, Logistics & Transportation, Utilities, Consumer Packaged Goods, Healthcare, Manufacturing, Public sector, Technology and so on.

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