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Evaluation

#645

UX Enabling Tech Series: Companion Apps

Today, an increasing number of OEMs are equipping their latest models with innovative new technologies and connectivity features that work to elevate the user experience and extend it beyond the vehicle. For luxury and mass-market vehicles alike, the way that these features and systems are implemented and deployed plays a crucial role in enabling and delivering a satisfactory user experience.

In recent years, through to today, vehicle companion apps have increasingly been embraced by luxury and mass-market OEMs looking to integrate this experience more deeply into consumer's digital life. Available for modern smartphones, these apps extend the user experience beyond the vehicle, with many offering remote control of key vehicle functions and some facilitating new experiences altogether.

Representing one entry in a new two-part report series, this report will see our usability experts perform a further UX deep dive into the companion apps offered alongside the models reviewed in our 635 Vehicle Evaluation Series. For these apps, it highlights the experiences offered on smartphones while understanding how they interact with connected vehicle features. New for 2024, the series will more broadly provide insight into the implementation, differentiation, and key USPs of contemporary companion apps as well as the latest hands-off driving systems.

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In-car HMI UX Evaluation & Benchmarking - 635

SBD Automotive's UX Team evaluates the infotainment user experience of over 40 vehicles.

COVERAGE



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Key questions answered

- > What are the technical and functional differences in the implementation of the selected features across the reviewed vehicles?
- > Does the UX of the companion app and digital cabin work together to provide a seamless experience?
- > What connected and non-connected services are enabled by each companion app?
- > How does each OEM enable remote tasks and ensure that the app provides daily relevance for the vehicle owner?

This research supports



Product Planners



Marketing



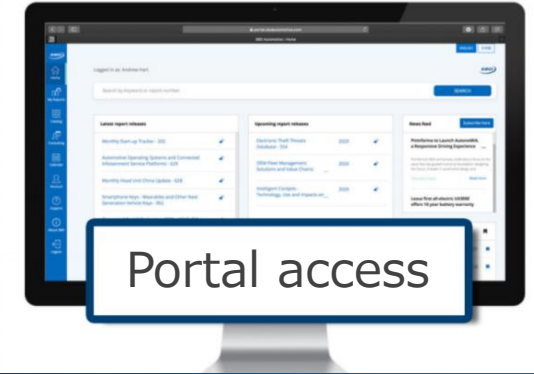
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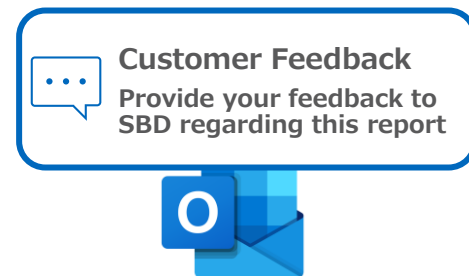
2024

UX Enabling Tech Series: Companion Apps

645

645a – UX Enabling Tech Series – Companion Apps

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Introduction



Introduction

Today, an increasing number of OEMs are equipping their latest models with innovative new technologies and connectivity features that work to elevate the user experience and extend it beyond the vehicle. For luxury and mass-market vehicles alike, the way that these features and systems are implemented and deployed plays a crucial role in enabling and delivering a satisfactory user experience. Smartphone apps have been in use for almost 15 years, however, in this time, the feature set has only increased in minor increments. EVs have increased the benefits of apps, adding use cases such as charging and expanded preconditioning, but with a move towards software defined vehicles, AI and incorporation of diverse ecosystems, companion app development in the next five years is expected to accelerate.

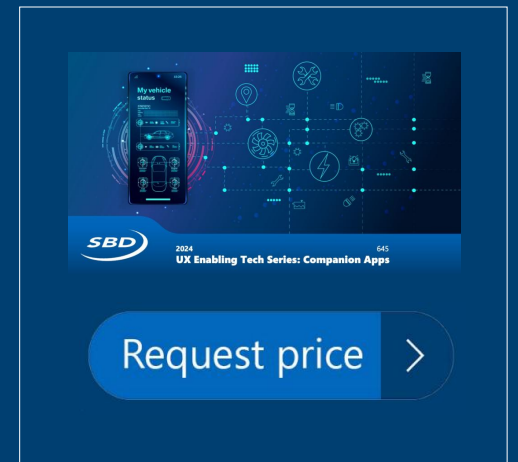
SBD's 645a – Companion Apps represents one entry in a new multi-part report series. This report takes a deep dive into the features, functionality and user experience of the leading smartphone companion apps in Europe, the US and China. Our usability experts consider good and poor examples and trends, and also the future, exploring how apps are likely to evolve in the coming five years, helping to deliver **five key business outcomes of smartphone companion apps for automakers**:



Section	Content
Bird's Eye View	An overview of the key topics that correlate with smartphone companion apps
Executive Summary	High-level overview of features, functionality and trends along with key recommendations for future app implementations
The Basics	Describes UX principles, feature categories and their value to the customer, and outlines companion apps use cases
Usability Analysis	Defines 18 pain points in current app implementations, divided between three topic areas: feature set, user experience and communication
Feature Analysis	Provides insights into notable features in companion apps SBD has evaluated in recent years, grouped into nine categories
Best Practices	Five case studies of current trends and expected future trends
Future Outlook	This section investigates how apps are likely to evolve in future and includes interviews with five companion app development companies
Next Steps	Can SBD help you with any unanswered questions?



Example slides from the report





Use cases of companion apps

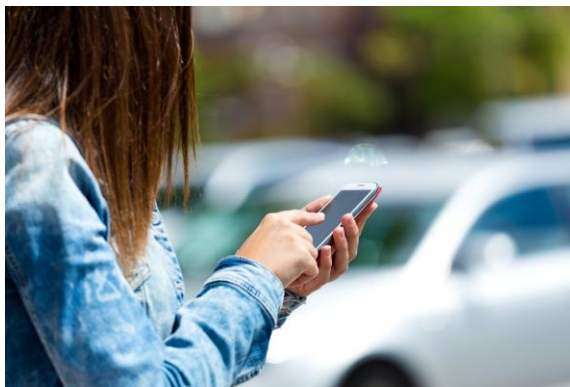
Apps define the way consumers use their devices. The definition has broadened over the years to include many more features or functions offered by portable devices, including cars. In order to offer consumers the functionality they have become accustomed to in the consumer electronics world, automotive OEMs and other developers offer apps for the car, or which can be used in the car. Companion apps are amongst those and cover a wide range of functions reaching from pre-journey use cases to buying additional services. Not included in the scope of those apps are journey use cases.

Companion apps can be divided into 4 groups to distinguish the different use cases within the ownership experience (with examples below):

4 € Buy

Apps aimed at facilitating the purchasing process, from vehicle's choice to options for financing, insurance, and offers

- OEM website
- Explore & compare models
- Finance options/Quotes
- Current offers
- Book a test drive



3 Wrench Smart Maintenance

Apps improving the customer experience by facilitating vehicles' servicing operations

- Dealer locator
- Schedule a service
- Service Reminder
- Servicing history
- Find parts & accessories

1 Car Pre-Journey

Apps developed for all the activities happening before a journey that concern a remote interaction with the vehicle

- Destination send-to-car
- Find my car
- Remote monitoring
- Remote EV charging
- Smartphone key

2 Car Post-Journey

Apps aiding the driver in different post-journey actions, such as parking, locking the vehicle, and reporting driving behavior

- Door lock/unlock
- Driving behavior analysis
- Remote Parking
- Parking reminder
- Smartphone key

Automakers are developing companion apps, with mixed success

Some EV interfaces are not consistent, for instance between the companion app and the in-vehicle interface. This is because development is being performed at different times, potentially by different teams. Some companion apps features are only compatible with certain models in specific regions. Drivers are likely to be critical of the app's design and functionality.

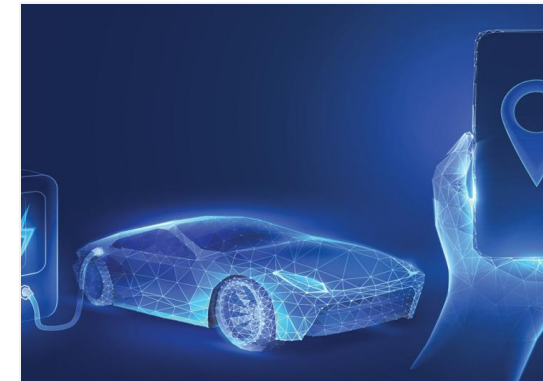
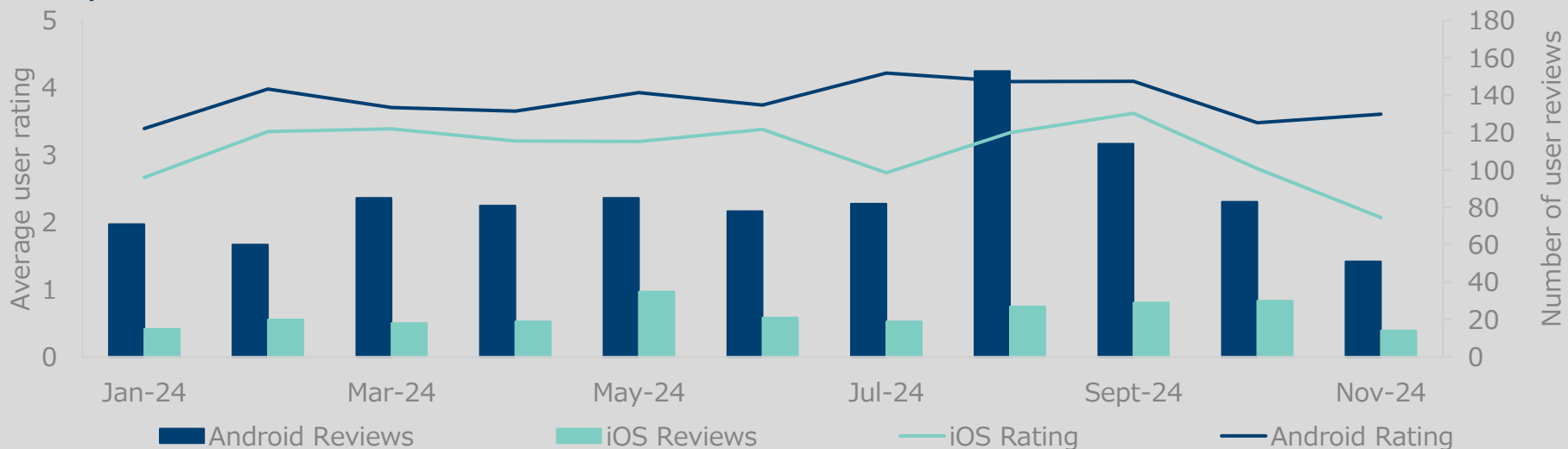


MyBMW app has charging features, trip planning features and has been regularly updated in 2024. In some areas, there is a lack of consistency with in-vehicle interfaces.

Overview

- BMW users can adjust charging schedule based on time of the day and day of the week using the myBMW app, however, this is solely an app feature.
- A common concern among BMW users was that the app does not show DC charging speed while using a high-speed charger, followed by constant issue with scheduled charge being reset or forgotten by the app.

2024 App ratings for MyBMW app



EV Apps & Digital Consumer Experience Guide

The EV Apps & Digital Consumer Experience Guide provides a detailed breakdown of how automakers are offering EV apps and a digital consumer experience through five key steps.

[Learn more](#)



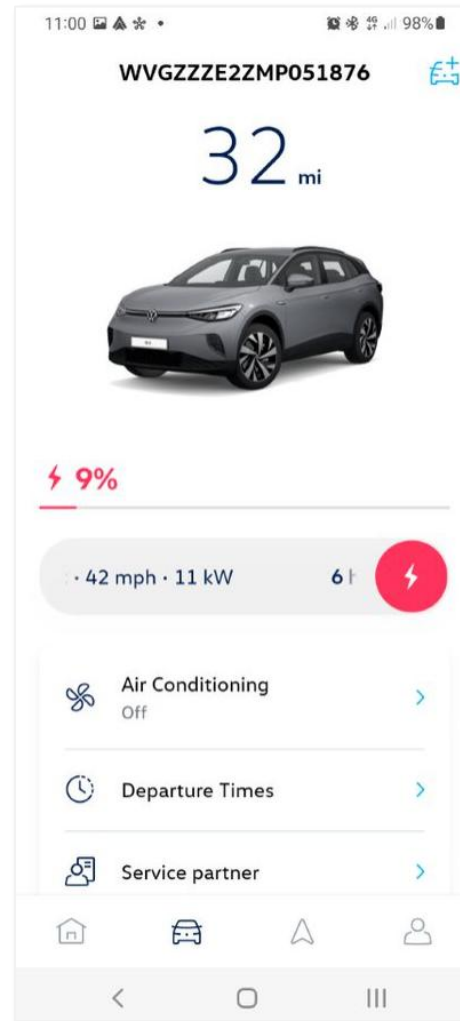
1. Lack of useful functionality

OEM smartphone apps have existed for almost 15 years, however, in that time, the core expected functionality set has not significantly changed, so it is surprising even today, to find apps that are missing core functionality.

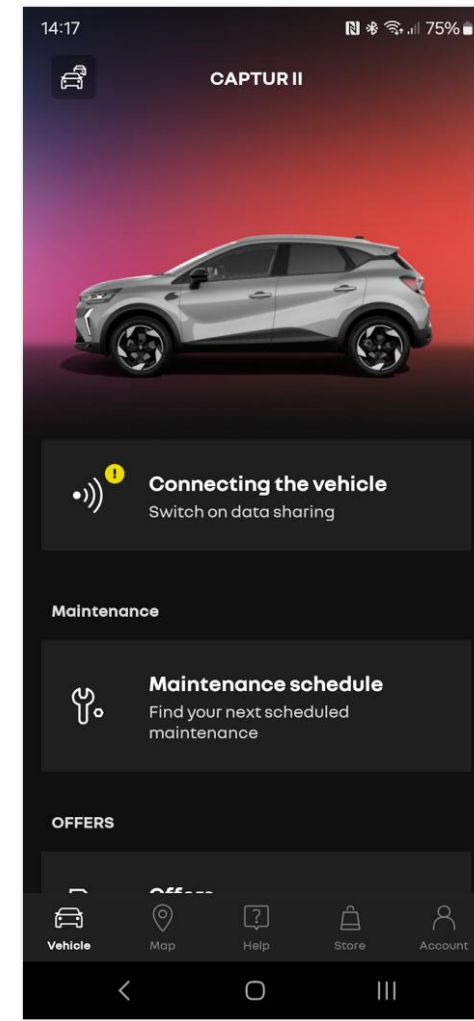
- This functionality includes vehicle status and location, door lock and unlock, charge scheduling and remote preconditioning, however several apps are missing one or even several of these functions.
- A good historical example was VW's WeConnect.ID app which launched with minimal functionality to allow monitoring of the car, although this was later integrated along with the ICE version of WeConnect into the 'Volkswagen' app which now caters for all Volkswagen connected vehicles.
- Renault's MyRenault app has recently proved extremely problematic with users reporting many core functions missing, such as locking, unlocking, window and door status, although these issues are more a case of unreliability than design.

SBD recommendations

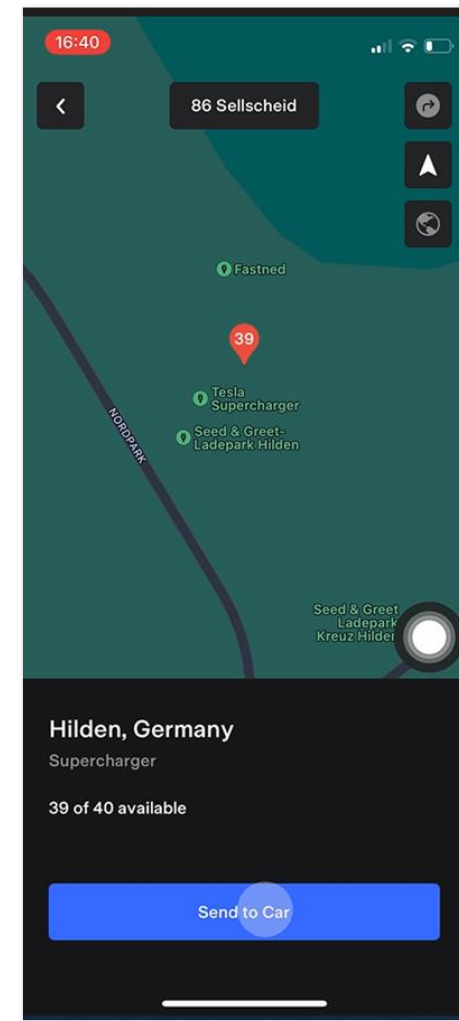
- Ensure the app provides at least all core functionality expected by users. Consider that now apps are becoming hygiene features, users may well have expectations from using competitor apps.
- When launching a car, consider delaying the launch of the app if the feature set at launch is significantly limited. Additionally, do not launch or upgrade the app if the release is significantly buggy and restricts functionality.
- Include as much useful functionality as possible, however, do not bloat the app with less/non- useful functionality.



VW: Legacy ID app had extremely limited levels of functionality



Renault: My Renault app is well designed, but stability issues are limiting functionality



Tesla: User can only search and filter for Tesla chargers. No information from other providers are included via app



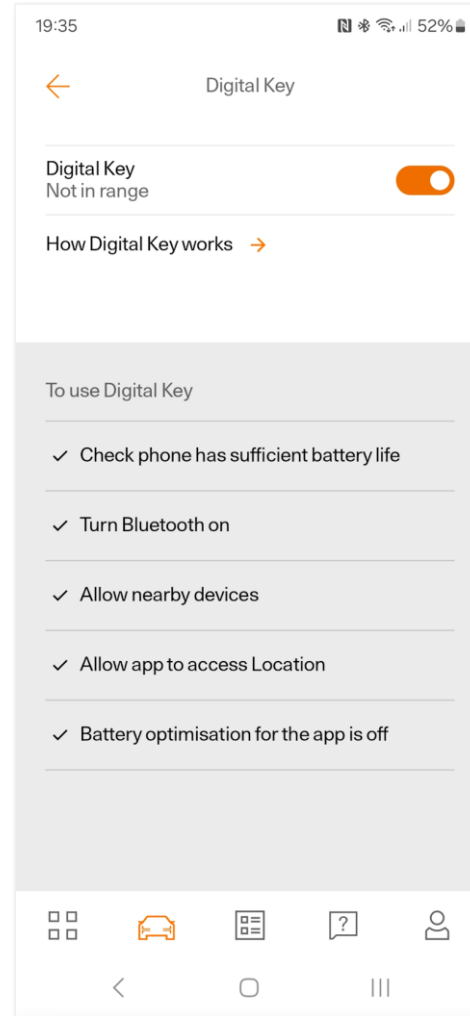
18. Problematic Phone as Key (PaK) operation

Taking the step from using tried-and-trusted keyfob technology, to relying solely on a smartphone to unlock and start a vehicle is significant, and can be too much for some owners.

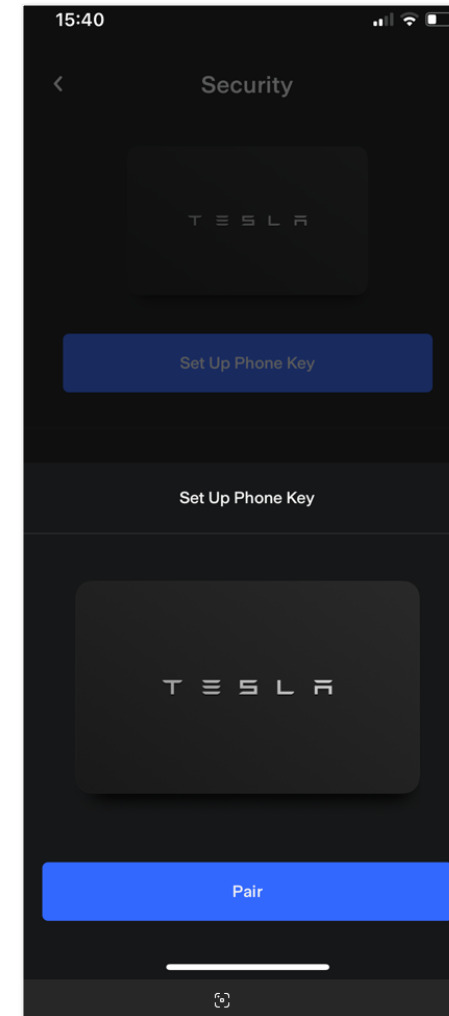
- Polestar's PaK implementation relies on BLE and is quite unreliable and unsupportive. Reliability appears to vary depending on smartphone model (and possibly individual cars) but occasionally it won't work until e.g. the smartphone app has been opened. Additionally, it's slightly slower to unlock the car than using conventional keyless entry (due to latency).
- If the user attempts to open the car with Bluetooth disabled on the phone, it simply won't work. No prompts or tips are available, which would be easy to implement (e.g. if user opens app with PaK enabled and Bluetooth disabled, show notification).
- Some Tesla owners experience similar issues with PaK, sometimes having to toggle Bluetooth off and on before it will work, Ford owners report unreliability with their PaK implementation as well.
- AITO's PaK works effectively on Android but fails almost every time on iOS.

SBD recommendations

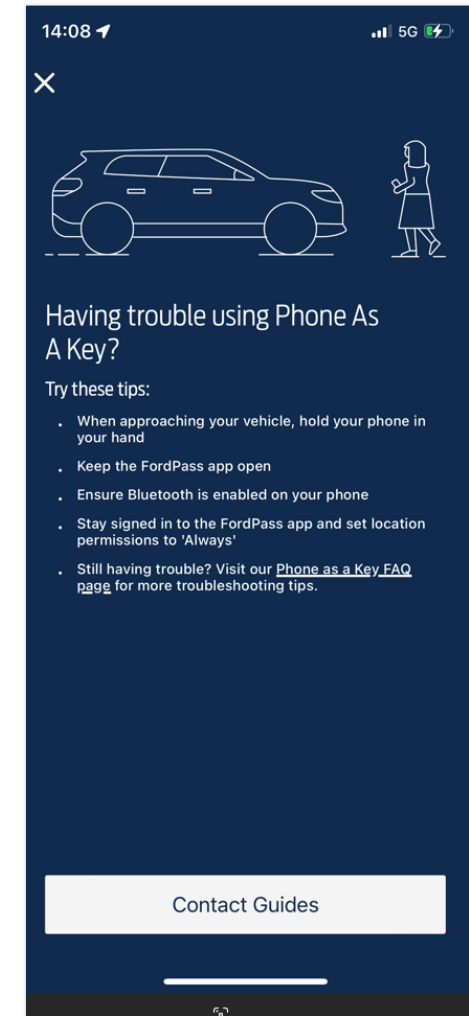
- For PaK to be trusted by users, it must provide the same level of reliability as a keyfob.
- The implementation must provide a high level of end-to-end security to protect the user from all common attacks.
- Ideally the implementation should provide sufficient technology to operate with the mobile device's battery flat, e.g. NFC (although only a minority of devices allow NFC operation with a flat battery). Additional smart device (e.g. smartwatch) operation may provide a sufficient backup.



Polestar: main digital key page. Functionality is slightly intermittent.



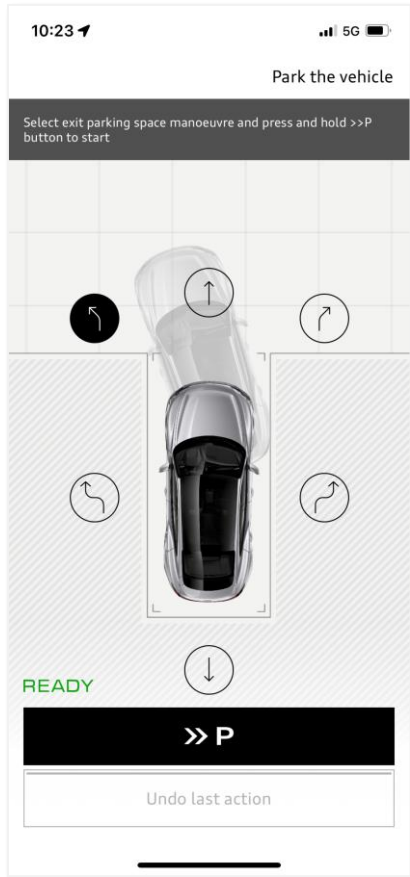
Tesla: Some users have to toggle Bluetooth on and off to get PaK work properly.



Ford: A permanently open app and Bluetooth connectivity issues spoil the PaK experience.

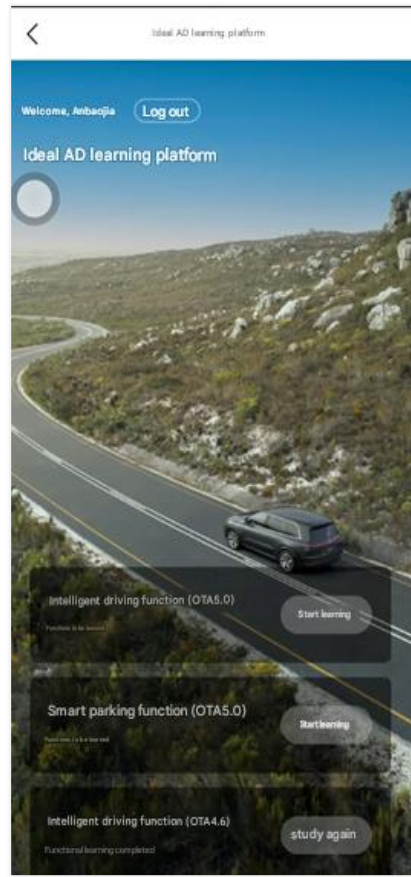


ADAS



Audi Park Assist Plus

- Exiting parking spot
- Entering parking spot
- Vehicle can detect obstacles and stop
- Vehicle can go back to its initial position if required



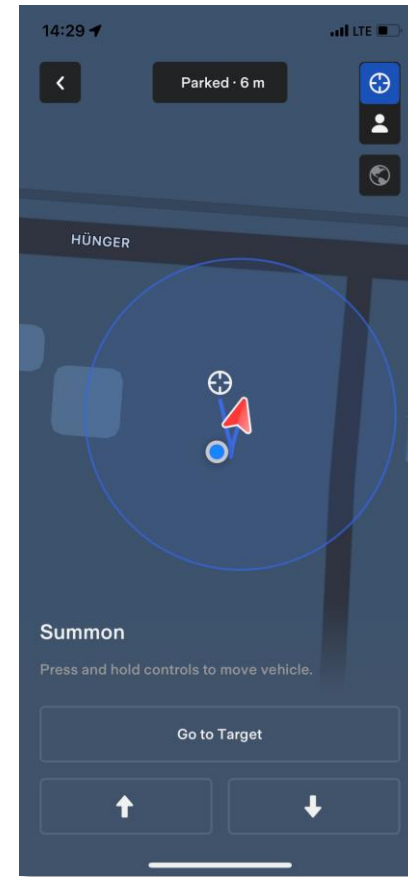
LI Auto ADAS Learning

- An ADAS learning center is integrated in the app
- For each feature, the user is informed about the required time for the module
- Videos support the feature training



AITO valet parking

- The first time a vehicle enters a parking area, it uses its sensors to create a detailed 3D map
- Users select parking spots via the app for autonomous vehicle navigation



Tesla smart summon

- The vehicle can drive autonomously for a short distance
- The user needs to be nearby and supervise the car



NIO ADAS scoring

- App rates users' driving behaviour on ADAS-related areas like hands-off braking detection
- Users scoring >70 can use NOP+ on all available roads, lower scores limited to selected roads



Wearables becoming part of the OEM ecosystem

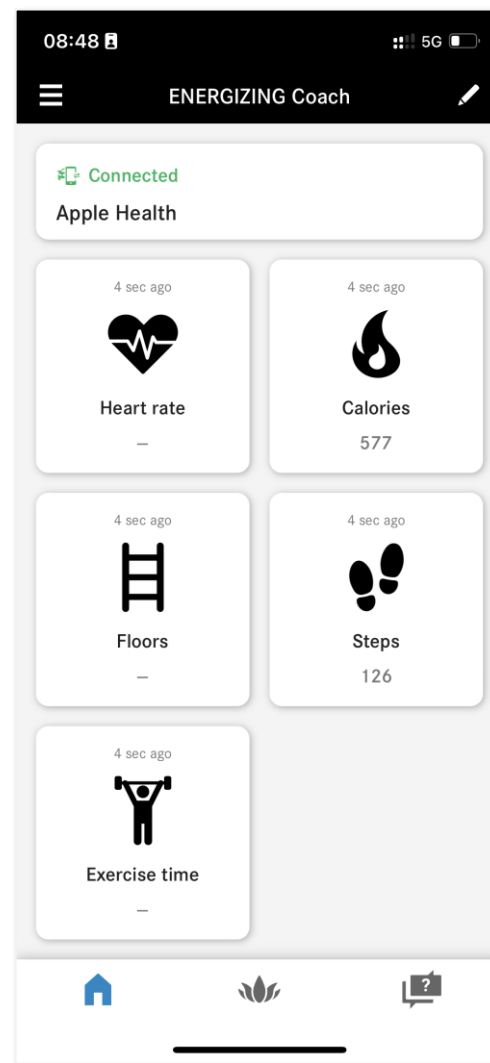
While smartphones have been daily companions for almost 20 years, an increasing number of smart wearables are entering the market, such as watches, glasses, rings, AR headsets, clothing, earbuds, helmets and patches. Although smartphones will likely remain the preferred companion for years to come, other smart devices bring benefits and can expand the ecosystem and provide a more seamless experience.

Premium OEMs in particular often offer additional smartwatch applications. While they are usually not as feature-rich as their smartphone counterparts, they are designed to be more streamlined and focused on quick interactions.

A major benefit of smart wearables is their ability to collect live health data, which can be used to influence certain vehicle systems and make the journey safer, more personalized, and enjoyable. In future, vehicles will be able to adjust safety settings, such as making the lane-keep assist more sensitive or increasing the headway, based on the driver's stress and attention levels.

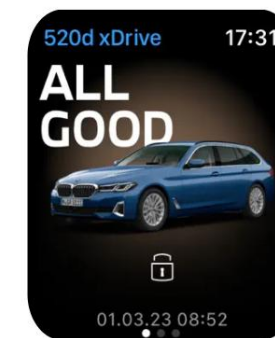
Some OEMs, one example being Mercedes-Benz, have already started integrating wearables into their app and car ecosystem. Users are able to connect the vehicle with the Apple and Garmin ecosystems and allow the transfer of data such as heart rate, sleep time, stress level, and heart rate variability. As part of the ENERGIZING COACH this data can be combined with vehicle data such as driving time, and duration. Based on all this information, the system can now make automatic adjustments such as changing the temperature, activating seat massage, changing ambient lighting, and, if available, changing the fragrance in the cabin, with the aim of improving the driver's health and wellbeing. Via a companion app, the user can also see live health data and manage system settings.

In the near future, SBD expects the trend of smartwatch companion apps to continue, for more seamless interactions (e.g., as car keys and for last-mile navigation) and health data from wearables to provide a more personalized experience, improve the driver's wellbeing, and reduce stress while driving. Looking further ahead, smart glasses and AR headsets have the potential for deeper integration into the OEM's ecosystem. A few examples are providing virtual test drives and configuration before purchase, more interactive manuals, and even AR navigation while driving.

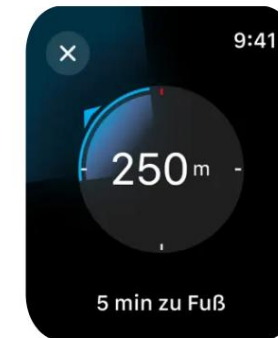


Mercedes-Benz user can see health data within their app

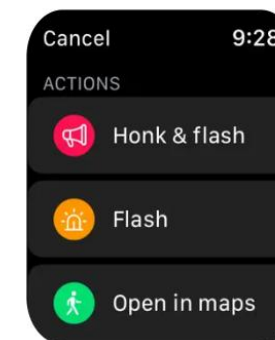
Smartwatch Apps



BMW



Mercedes-Benz



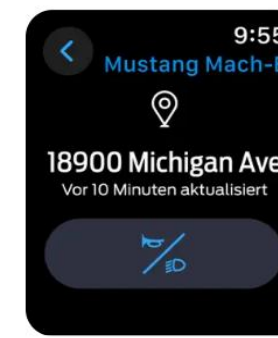
Volvo



Porsche



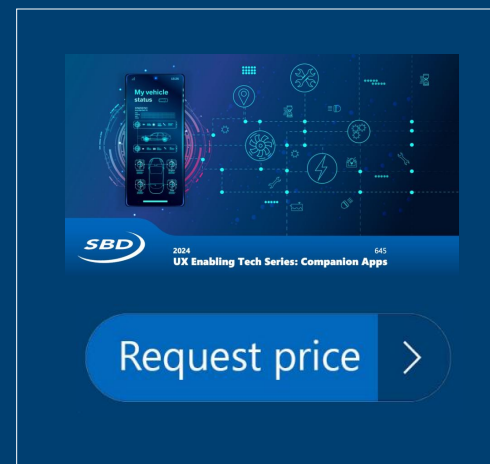
Tesla



Ford



Request the price





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