Next Level German Engineering

27/02/2018 Technology meets tradition - how the digital transformation at Porsche looks like, explains Anja Hendel, Director of Porsche Digital Lab Berlin.

Last Thursday, I and many great colleagues in Stuttgart held a workshop on “Digital transformation at Porsche” for representatives of the media from the whole of Germany. It was exciting to experience how Porsche gave an insight into the future by means of various examples from the entire company, while remaining true to the values of 70 years of sports car tradition.

Our medium-term aim is to generate a double-digit percentage of sales through digital services. However, digitalisation and the application of new technologies are not just an end in themselves. Wherever added value can be created for our customers or employees, and wherever processes can be optimised, we will employ digital technologies. Three examples:

1. Porsche is the very first car manufacturer to introduce blockchain to cars

Blockchain is a decentralised protocol for data transactions between business partners. It also forms the basis of the well-known cryptocurrencies Bitcoin and Ethereum. Every change is recorded in chronologically arranged data blocks, making it transparent and tamper-proof. Porsche is the first ever automobile manufacturer to implement and successfully test blockchain in a car.

Services based upon blockchain are quick and very secure. The car becomes part of the blockchain, making a direct offline connection possible—that is, without diversion through a server. Taking 1.6 seconds, the process of opening and closing the car via an app is up to six times faster than before. In addition, efficient cryptographic encryption takes place.

This process ensures that all activities are documented in the blockchain in a way that prevents them from being modified, and can be viewed using an app. For example, access authorisations can be distributed digitally and securely and can be monitored by the vehicle owner at any time. Access also works remotely.

Moreover, the technology enables the assignment of temporary access authorisations for the vehicle—securely and efficiently. A protected connection to vehicle data and functionalities can be established using blockchain. At the same time, it protects all communication between participants. Third-party providers can be integrated without the need for additional hardware, simply by using “smart contracts”.

2. Porsche uses augmented and virtual reality for customers and employees

Augmented and virtual reality have opened up completely new perspectives for sales at Porsche—both for customers and the after sales area. While customers have the opportunity to explore the world of Porsche in even more depth and, most importantly, interactively, these futuristic technologies are helping service staff in Porsche's workshops to get to grips with complex technical issues more easily.

The “Mission E Augmented Reality”, created during collaboration with Google, is particularly exciting for customers. This connection between the physical and digital worlds allows enthusiasts to get a sneak peek at the future of Porsche. The Mission E, Zuffenhausen's first purely electric sports car, will be launched at the end of 2019. At brand pop-up stores or trade fairs, fans can already view interior and exterior details—either of the Mission E concept study itself or a scaled model—using an app and augmented reality.

3. Porsche has developed an eye for mistakes using artificial intelligence

Artificial intelligence recognises noises and vibrations and uses deviations from normal behaviour to interpret machine errors.

In collaboration with the start-up iNDTact, the Porsche Digital Lab in Berlin has developed a system that recognises problems based upon anomalies in vibrations and reports them accordingly. This innovative solution utilises the vibrations that are generated by every moving system and every machine. They are as unique as a human fingerprint, which is why artificial intelligence can detect even the smallest anomalies.

Predictive maintenance is a core component of Industry 4.0. It involves servicing machines and systems proactively in order to minimise downtime. Unlike preventive maintenance, service intervals are not defined in advance but are determined and optimised using technology. Predictive maintenance therefore has many advantages over preventive or reactive approaches to maintenance. Total system failures can be reduced by continuously monitoring a machine's current status. The entire story can be found on our Medium blog here.

MEDIA ENQUIRIES

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