TeamViewer Frontline

Case Study

Quality Management at Audi

The automobile manufacturer in the transition of digitization

Audi

Initial Situation

In a modern workplace, information is everywhere – it transforms the way we communicate, create and work together. No matter where we work or what we do, the ubiquity of information has created a new work culture – one that is more open, global and collaborative.

However, the information that is everywhere does not seem to be where it is really needed. In all areas, data is needed in the right context in the right place. It is necessary that information is always accessible and exchangeable – across boundaries of time and place, between geographically and culturally diverse teams.

Augmented and Mixed Reality have the potential to change the way we work. By bringing information into our world where and when we need it most, these technologies make work more efficient and safer in today's world.

Many areas can benefit from the application of Augmented Reality. Especially in industry, work is being revolutionized as standardization, quality assurance, training and production processes can be greatly improved. The strong growth in the use of AR and the associated increase in the use of the technology show how important the use of such tools is.

In a Harvard Business Study, one-third of respondents said they saw great potential in Augmented Reality for optimizing and simplifying routine tasks. These can be made more time- and cost-efficient with the help of the new technology.

- Automotive Industry
- Training for Quality Assurance
- Productive Use

The Change in the Automotive Industry

The automotive industry is undergoing fundamental change – digitalisation, sustainability and electric mobility are the guiding principles of the future.

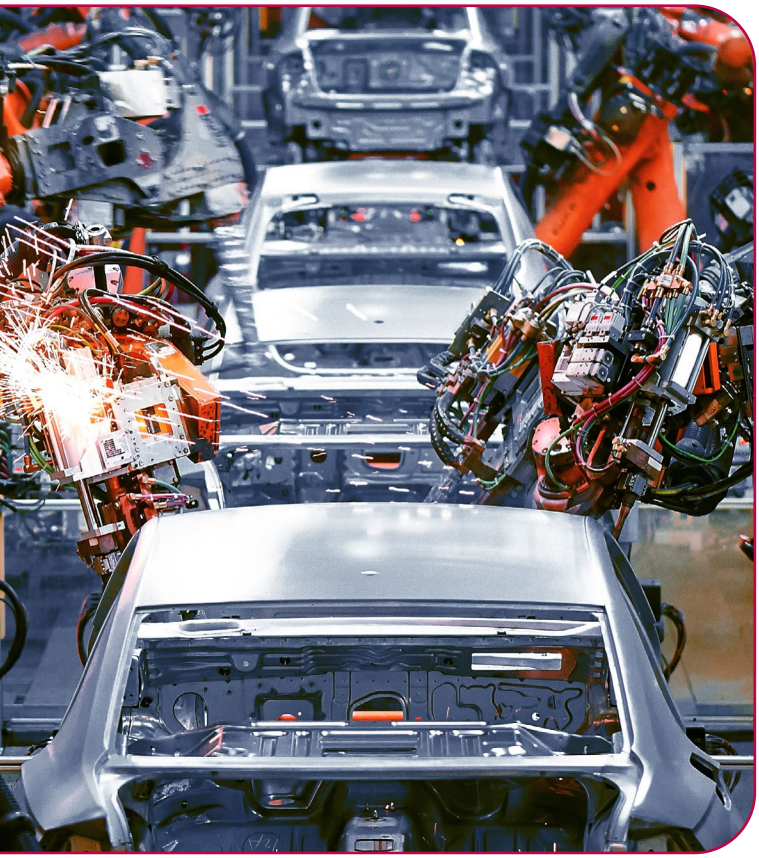
The car manufacturer Audi is at the forefront when it comes to new technologies for use in quality assurance.
The company focuses on new developments to meet tasks and requirements with a sustainable approach. In a joint project with TeamViewer (formerly VISCOPIC), Audi shows how valuable the use of Augmented Reality is in the automotive industry and which advantages it brings with it.

Quality Assurance at Audi

Many aspects have to be considered in quality assurance.

Specifications such as dimensional information, the condition of components or distances must always be available and must be able to be checked in the shortest time possible. Not an easy task when there are only a few minutes for the quality control of a car and when the process is additionally of utmost importance for the safety of a vehicle.

In order to keep all this data in mind for different vehicle types, a photographic memory would be required. Conventional paper documentation with the most important data is not really an option, as these are very complicated, and finding and reading out data takes up a lot of time.



This is where Augmented Reality offers an approach that counteracts the above mentioned challenges and increases the efficiency of processes in quality assurance.

Holograms, which can be seen on AR glasses, so-called head-mounted displays, can be used to display important information on test steps and processes in the user's field of vision. In the application used by Audi, the components to be tested are marked and the appropriate test dimensions are displayed so that careful and accurate testing is conducted and no test steps are omitted.

The carmaker truly benefits from the use of Augmented Reality. The application standardizes all test processes and systematics in all plants worldwide and makes them easier to understand and control. Thanks to the training of test procedures in the Augmented World, new testers can also be deployed quickly and productively.

But how can an app like this be implemented? With Frontline Spatial, the creation of AR content is not only possible even for non-professionals without programming knowledge – it is also very easy and quick.

Frontline Spatial

Frontline Spatial can be used to create Augmented Reality content for different end devices. The solution supports rapid prototyping of an AR app as well as the creation of scalable content. The generated work and instruction steps can be projected onto real objects. Thus, work processes in different areas can be simplified by enriching objects and infrastructures with information.

In the Windows application, different work steps and checklists can be created in the form of so-called “pins”, which are attached to a virtual object – such as a CAD model of a product. These can be enriched with information such as images, videos, sound, speech or 3D animations. AR glasses, like the Microsoft HoloLens for example, can be used to open the work steps saved as a file and project them onto the real environment. The pins are displayed at exactly the point on the product where they were previously placed on the virtual object.

With the help of Frontline Spatial, workflows for testing a vehicle at Audi can be simplified by displaying important information as holograms in the right places on the car. Contents such as component markings, dimensional information or documentation videos are always visible to the technician everywhere. At the Training Centres of Audi Quality Assurance, Augmented Reality is used for efficient and faultless training of new employees.

The learning phase can be greatly reduced, while the learning success is ensured. A further considerable advantage of the technology is the higher test quality and thus increased safety of the vehicles. With AR, work steps are carried out more accurately and less important details are forgotten or overlooked. The use of AR also creates an exciting experience for the employees, who can experience at first hand how Audi is supported by digitalisation in production.

Thanks to the Frontline Spatial Editor, AR inspection plans can be created completely without programming knowledge. Contents can be positioned and edited by simply placing pins on the virtual 3D vehicle. The test plan, which is visualized on the real vehicle via Microsoft HoloLens, can be created with just a few clicks and by drag and drop. This implementation by the Pins Editor is the key for a flexible use of the technology, which can be used regardless of the application, business area or location.

Audi and TeamViewer have taken a step into the future together and set new standards through innovation in quality assurance. The technologies around Augmented Reality are developing rapidly and are finding more and more fields of application, which results in increasing interest in Augmented Reality. The integration of AR has already led to significant progress in quality assurance at Audi.

Our goal is to simplify complexity with digital tools. Mixed Reality supports an interactive learning process without impairing the human senses. This facilitates the understanding of complex work processes and shows how digitalisation can support us.”

Peter Mück,
Head of Quality Assurance Innenmeisterbock

About TeamViewer

As a leading global technology company, TeamViewer offers a secure remote connectivity platform to access, control, manage, monitor, and support any device — across platforms — from anywhere.

With more than 600,000 customers, TeamViewer is free for private, non-commercial use and has been installed on more than 2.5 billion devices. TeamViewer continuously innovates in the fields of Remote Connectivity, Augmented Reality, Internet of Things, and Digital Customer Engagement, enabling companies from all industries to digitally transform their business-critical processes through seamless connectivity.

Founded in 2005, and headquartered in Göppingen, Germany, TeamViewer is a publicly held company with approximately 1,400 global employees. TeamViewer AG (TMV) is listed at Frankfurt Stock Exchange and belongs to the MDAX.

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