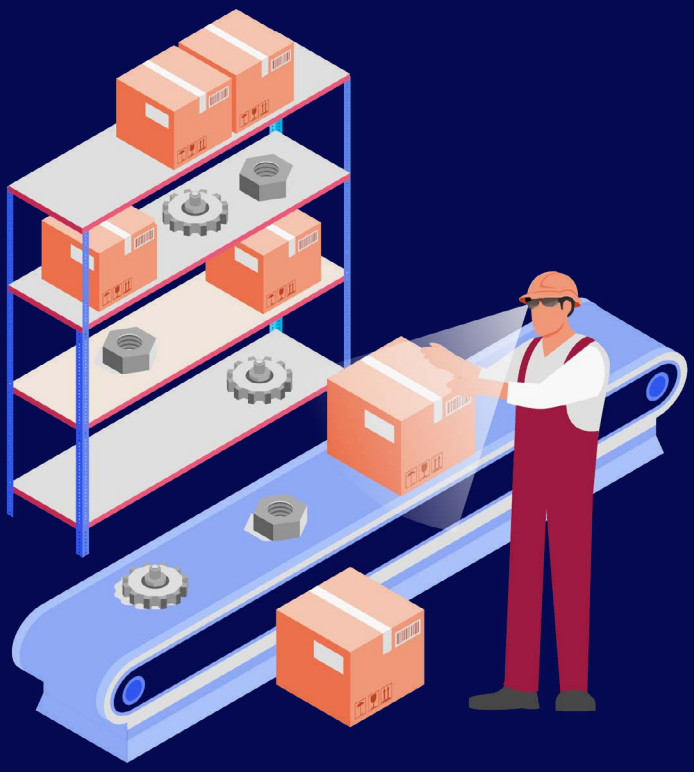
TeamViewer

10 of the most important questions to ask

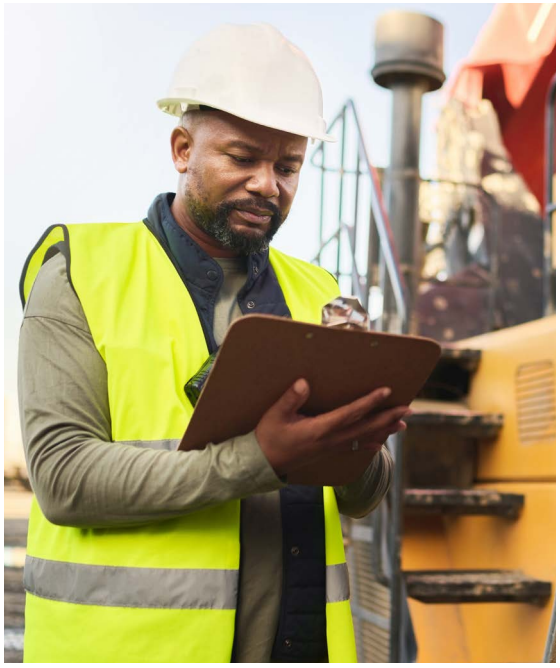
when introducing Augmented Reality in your enterprise

Augmented Reality (AR)

is a transformative technology that is revolutionizing the industrial sector. From manufacturing and logistics to maintenance and training, AR has the potential to enhance productivity, efficiency, and safety in countless industrial applications. As this technology continues to evolve and become more accessible, it is essential to understand its capabilities, limitations, and implications for businesses. This booklet aims to answer some of the most common questions about AR in an industrial context, providing a comprehensive guide for anyone interested in leveraging this technology to gain a competitive edge. So, let's dive in and answer some of the most frequently asked questions!



1. Which **challenges** do industrial AR solutions solve?



80% of the frontline workforce work away from their desks, solving problems in the real world using their hands. Currently, they require paper-based documentation or must go through poorly digitalized and fragmented processes. This is eating up a lot of time and resources and manual data input is error-prone and inefficient. **Modern digital tools** such as AR help speed up processes and create a fully connected workforce. In times of labor shortages, companies face costly recruiting, onboarding, and training activities. Also here, AR comes to the rescue, shortening training times and **creating a modern workplace,** keeping employees' satisfaction high, attrition low, and productivity at a constantly high level.

Did you know?

Differences between **AR**, **VR**, **MR** and **aR**

While **Augmented Reality (AR)** adds digital information to the real world in real time, **Virtual Reality (VR)** is a complete immersive experience that shuts out the physical world by creating a virtual environment. **Mixed Reality (MR)**, on the other hand, combines both the elements of AR and VR.

Although similar, **Assisted Reality (aR)** is a technology that enables an individual to see a screen without using their hands, directly within their field of view. This is different from augmented reality, where digital information is superimposed onto the physical environtment, but usually both are summarized under the umbrella term 'augmented reality' (AR).

2. Which **business benefits** can I expect by using industrial AR solutions?

Enterprises can unlock a wealth of benefits and gain a competitive edge when exploring the potential of industrial AR solutions for their business operations, making them future-proof. With the ability to superimpose digital information onto the real world and thereby support and guide frontline workers, the applications of industrial AR solutions are various:

Increase productivity

Enchance remote collaboration

Lower operational costs

Improve process and workplace safety

Upgrade customer service

Accelerate training and onboarding

Ease the sharing of expertise

Boost employee satisfaction

3. In what use cases do industrial AR solutions generate most **value?**

Industrial AR solutions realize their full potential in use cases that have a lot of complex and dynamic industrial, human-centered processes. Here, we find a lot of untapped potential regarding efficiency, accuracy, and safety that can be leveraged with AR. For example, **intralogistics** processes like manual order picking or sequencing become bullet-proof when supported with AR vision picking. In factories, AR solutions guide workers through complex **assembly** processes, providing visual instructions that reduce errors and improve quality. For **inspection**, AR enables technicians to identify issues more quickly and accurately, while integrated capabilities like taking pictures, or reporting comments enable documentation on the fly. And beyond that, the technology also enables **remote troubleshooting** via the "You see what I see"-principle across use cases. Furthermore, training becomes more immersive, improving upskilling and onboarding motions.

4. Is industrial AR suitable for my **business processes?**

If your process is human-centered and it is located along the industrial value chain, then the short answer is: **Yes!** With its many use cases, AR solutions can be adapted across industries and across different departments to digitalize and streamline processes. Read on to explore four core use cases in more depth.

How can AR technology boost efficiency within **logistic** processes?

As manual logistics processes still dominate in many companies, **AR solutions are tailored to digitalize these human-centered processes** and boost speed, while increasing accuracy at the same time. Here's how AR solutions running on smart glasses and other wearables can help:

- **Improve productivity and reduce** errors with hands-free operations
- Integrate into backend systems for **maximum efficiency.**
- **Visually train and guide** your frontline workforce for instant productivity gains

"Customers have been very happy about the **productivity gains** and are equally excited about using **innovative technology at their warehouses.**"

Markus Voss
CIO & COO, DHL Supply Chain

I want to digitize my **manufacturing** processes; how can I benefit through the AR solutions?

In the manufacturing and production industry, it is essential to minimize human error rates to ensure quality and avoid scrap production. **Industrial AR solutions** create immediate value by supporting a variety of processes like assembly, manufacturing, quality assurance, and training, all by simply guiding your workers with visual cues. Therefore, you will benefit by having:

- **Faster execution** with hands-free work.
- **Higher quality** by reduced errors and integrated quality assurance.
- **Better work experience** for your employees with faster initial training, fewer interruptions, and better ergonomics.

“The TeamViewer solution helps us to **increase quality** and **eliminate rework** to a large extent.”

Markus Reiner
production engineer for body and paint shop, AGCO

Is AR suitable to support **maintenance** technicians?

The main **challenge technicians are facing** are problems in the real world – and they usually need their hands to solve them. But they need to rely on additional information or tools throughout maintenance procedures. With guided diagnostics and troubleshooting, checklist reviews, as well as automatic documentation, an **ideal AR solution purposefully supports your technicians,** resulting in:

- **Efficient maintenance** through streamlined, digital processes
- **Clearly guided processes,** say goodbye to complex paper manuals.
- **Automatic documentation** and inspection reports created easily without additional steps.

"By integrating TeamViewer solutions and smart glasses into the assembly process, Airbus Helicopters has shortened the gearbox inspection time by **40%**."

Airbus Helicopters Inc
in Dallas, Texas

How does AR enable **remote support** to resolve issues more efficiently?

When something breaks, production downtimes and high costs can quickly accumulate. That's why service operations require prompt and effective action to minimize the impact of disruptions. **AR remote assistance** lets you solve problems faster and more efficiently with functions such as live video stream, annotation features, and extended functionalities like multi-user calls. AR remote assistance covers following use cases:

- **B2B customers:** Provide instant service and gain a competitive edge
- **Internal tech support:** Reduce downtime and boost
- **End users:** Offer an improved customer service experience.
- **Service partners:** Easily transfer the know-how from one organization to another

"This is a great example of how we are applying new technologies to help our technicians work **more efficiently**."

Claus Eberhartt
VP Aftersales at BMW of North America

5. What **functionalities** to look out for when choosing an industrial AR solution?

When choosing an industrial AR solution, there are several functionalities and capabilities to look out for that will help to add immediate operational value. Here are some of the key considerations:

- **Central Management Tool**
  A single location to manage devices, user accounts, and content is crucial to provide visibility and control of all operational activities.

- **Self-Service Workflow Tools**
  Self-service workflow tools are essential for enabling non-technical users to create and publish AR content quickly and efficiently, reducing the need for specialized technical skills.

- **Device Agnostic Approach**
  Compatibility with a wide range of devices, including smartphones, tablets, and smart glasses. It is important to ensure that the AR solution is accessible to a wide range of users and can be deployed on the devices of their choice, reducing the need for additional hardware investments and enabling maximum flexibility.

- **User-Friendly Interface**
  A user-friendly interface is critical for facilitating adoption and reducing the learning curve for the AR technology, helping to ensure that users can quickly and effectively leverage the new tools in daily operation.

- **A trusted partner**
  Choosing a provider with extensive experience in the field will enable you to leverage solutions built on years of productive use and a proven ROI.

6. Do we need to have in-house AR specialists to **implement AR solutions** in our company?

Ideally, no additional programming or knowledge should be required. To create workflows for AR wearables, self-service workflow authoring tools are easy to use. Even with **no programming knowledge,** everyone should be able to build workflows using simple drag & drop functionalities. For more complex solutions, e.g. when an integration into an existing backend system or data base is needed, a dedicated solution delivery organization on the provider's side is helpful. They accompany the project every step of the way, helping with scoping the use case, training key users, configuring the AR solution to your needs, and rolling the project out at large scale.

7. I do not really want to change my **existing processes** – can industrial AR still add value to my business?

The flexibility of industrial AR solutions is its main characteristic, making it the perfect fit to support existing processes, rather than changing them. With no or minimal change, industrial AR solutions **add direct value** by streamlining existing procedures. As AR solutions are highly configurable, they seamlessly adjust to existing structures. And: The high degree integrability of most industry-ready AR solutions is key when it comes to working with existing data, underlining the seamless integration into existing business operations.

8. What options do I have when it comes to **hardware**?

The solutions to look out for should integrate three classes of devices. Firstly, smart glasses, which allow for fully hands-free processes, projecting the highest performance improvements. Other wearables like wrist computers, also allow for a sharp increase in ergonomics, while AR usage on tablets and smart phones enable the usage of legacy devices. Overall, flexibility is key when choosing the right hardware, as every use case and every company has specific requirements that need to be met.

Did you know?

Hidden champions: **Smart Glasses**

Although devices such as tablets and mobile phones support AR technology, **smart glasses are possibly the most integral part of incorporating industrial AR technology on the shopfloor** due to their intuitive and ergonomic user experience. Smart glasses enable frontline workers to work fully hands-free and utilize all AR functions optimally as the information is displayed right in their field of view.

Choosing the perfect device

This guide will give you insights into four aspects that are relevant to help you choose the smart glasses model.

Case study: GlobalFoundries drives efficiency with vision picking

Challenges:

In a fast-growing industry like semiconductors, streamlined operations are crucial for GlobalFoundries to reliably serve their clients and partners like BMW, Qualcomm, and Siemens. To improve efficiency and accuracy in the picking process, the company sought to upgrade their heavily paper-based solution.

Solution:

GlobalFoundries sought to improve picking operations and found a solution in smart glasses and augmented reality (AR) with the TeamViewer Frontline platform and its vision picking solution xPick.

Benefits:

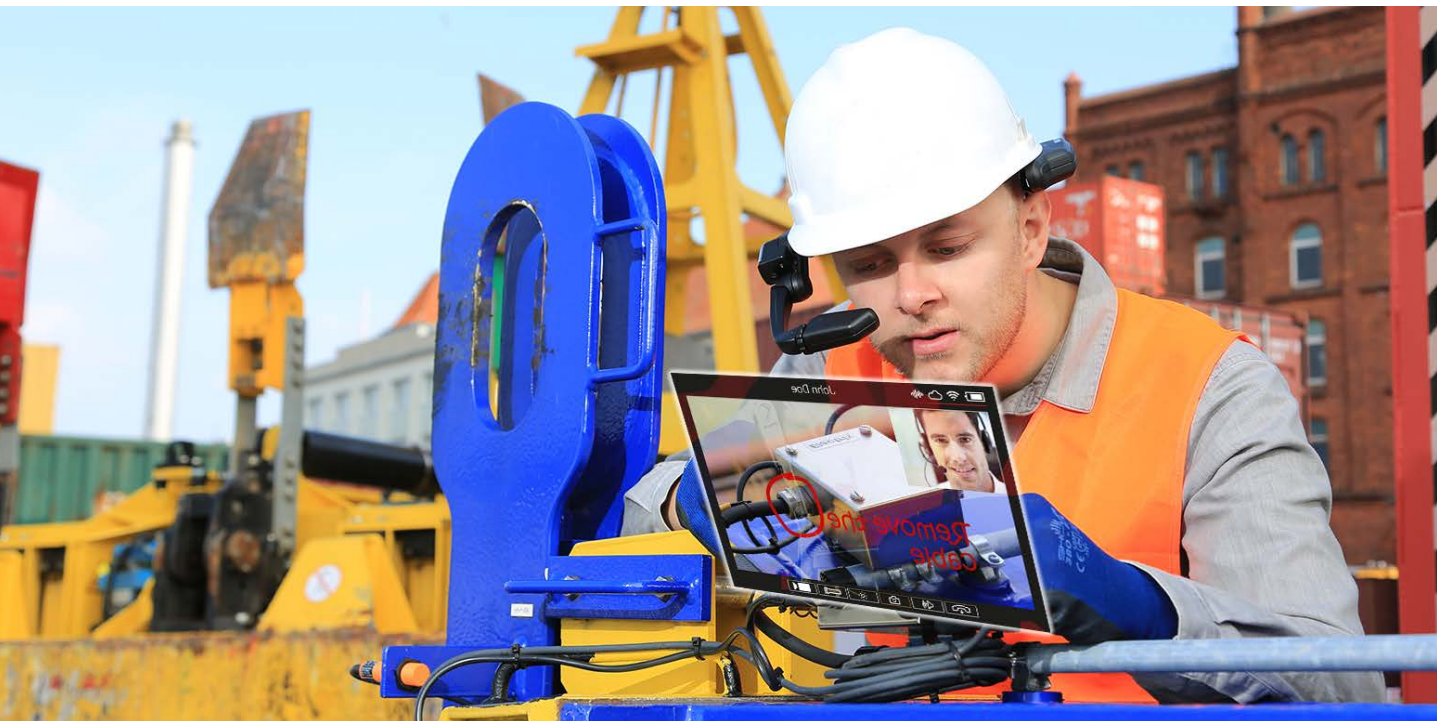
- **25%** time saving after only one month.
- **100,000** sheets of paper eliminated per year.
- **+33%** inventory accuracy as picking errors became virtually impossible.

9. I have a **diverse workforce** that is spread around the globe – what do I have to keep in mind?

For global enterprises, technology that allows ease of communication and collaboration is important to create a truly connected workforce – especially when your workforce is not bound to one location but operates in different countries or regions. This results in diverse enterprise teams with various backgrounds and qualification levels. Hence, the solutions to look out for should **support wide arrays of languages** and offer integrated translation options to ensure seamless connectivity and communication for frontline workers throughout their daily operations.

10. How do companies already **leverage** industrial AR solutions?

Companies across various industries have successfully integrated AR technology into their frontline workforce and achieve meaningful results. Examples range from **digitalizing manufacturing processes,** by using immersive technology to **slash training times** for quality assurance staff and **boost end-of-line quality** to increasing picking operations in intralogistics, or raising standards for the food industry, globally companies are using different AR solutions and benefit from them in everyday operation.
For example, NSF introduced AR solutions to a leading US-based QSR chain to support training for back and middle house activities with AR running on smart glasses, **reducing training costs by 65% and increasing employee satisfaction by 83%.** Or Ford with their See-What-I-See (SWIS) technical assistance via smart glasses offered by their Technical Assistance Center (TAC). The solution provides support to all Ford and Lincoln dealerships' technicians to reach TAC specialist easily in real-time, **reducing** vehicle downtime and diagnostic time while increasing customer satisfaction.



Most important question:

I believe my company will benefit significantly from the AR technology, so **where do I start**?

You are ready to take advantage of industrial AR technology? By starting your shopfloor digitalization journey with an industry-proven platform like **TeamViewer Frontline** you make sure to receive a full end-to-end service with dedicated and experienced AR expert teams that will assist you throughout the scoping and roll-out of the project, the installation process all the way to technical after-sales support.
Let's partner up and empower your frontline workforce.

The first step:

Talk to an AR expert today!

TeamViewer

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.

www.teamviewer.com/frontline

TeamViewer Germany GmbH
Bahnhofsplatz 2 73033 Göppingen Germany
+49 (0) 7161 60692 50

TeamViewer US Inc.
5741 Rio Vista Dr Clearwater, FL 33760 USA
+1 800 638 0253 (Toll-Free)

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