

# Mixed Reality: Helping manufacturers develop transformative customer solutions



# Technology is rapidly changing how manufacturers innovate

Big data, automation, Internet of Things, 3D printing, and robotics are all technological touchpoints where many manufacturing organizations are seeing dramatic changes.

The manufacturing industry is being transformed by mixed reality, which is the merging of real and virtual worlds where people can interact with both physical and digital objects or environments in real time. Some of the benefits are cost reduction, faster time to market and focus on innovation. Immersive, Windows 10 Mixed Reality technologies and devices such as **Microsoft HoloLens** offer manufacturing organizations opportunities to overcome key challenges and drive innovation.

However, knowing how and when to use mixed reality can be a challenge: that's where Microsoft's Worldwide Mixed Reality Studios can help, by helping create dynamic solutions that enable real digital transformation to solve manufacturing challenges.

# Transform daily manufacturing tasks

Technological advancements in mixed reality can help manufacturing organizations to re-imagine ways to overcome what have long been common challenges in the industry, including:



Workers on the manufacturing floor and field service technicians need their **hands free** to interact with equipment while they reference manuals or other data



**Training employees** how to operate or maintain large, expensive equipment like airplane engines can be costly & inefficient



Field service technicians who need input from **remote experts** struggle to describe problems and get feedback on repairs



**Errors** in blueprints or CAD files can be **difficult to see**, expensive to correct, and cause significant project delays





# Top business priorities and HoloLens scenarios

## TOP PRIORITIES AND HOLOLENS SCENARIOS

### Sales growth



Sales,  
Marketing



**DIGITAL SHOWROOMS  
IMMERSIVE EXPERIENCES**

- Personalize immersive buying experiences
- Get product to your customer (home, mall)
- Innovate brand experience

### Operational (supply chain) efficiency



Collaboration,  
Training



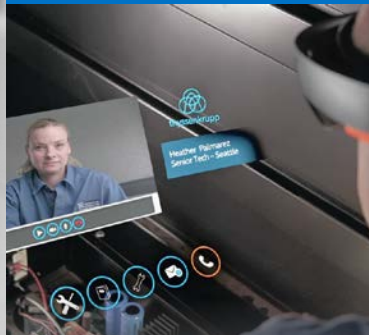
**COLLABORATIVE TRAINING**

- Training in mixed reality enables you to delve inside the subjects and learn in real-world scenarios
- Enables new ways of training and teaching

### Cost reduction



Production,  
Service after sales



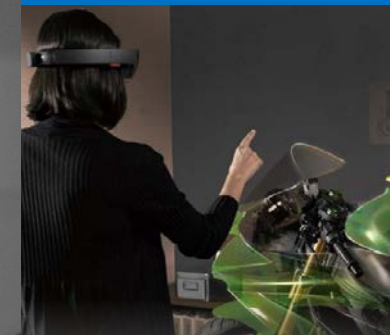
**MAINTENANCE &  
SERVICE SUPPORT**

- Have the right expert without travel (cost, time, customer satisfaction)
- Hands-free and holographic experience on real objects

### Customer centricity, Focus on innovation



Design,  
Education



**3D IN 3D  
(LESS PHYSICS)**

- Faster time to market
- New revenue streams

# HoloLens: a new way to see manufacturing



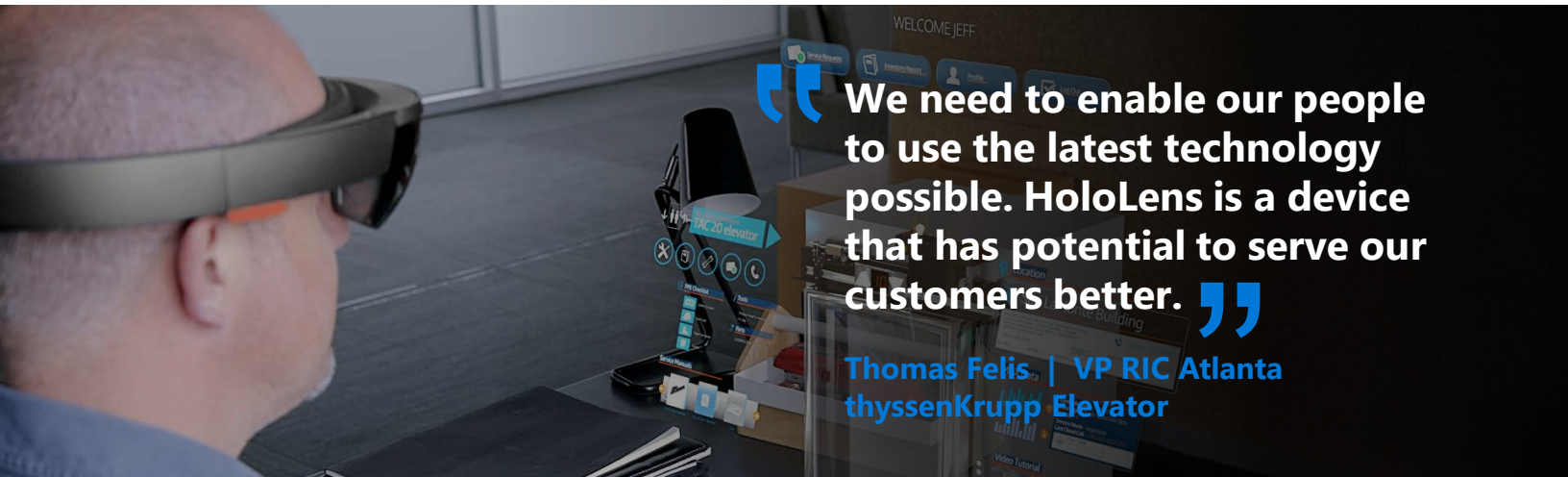
**Microsoft HoloLens** is the first fully self-contained holographic computer that redefines personal computing and empowers manufacturing companies in new ways. With HoloLens, users wear see-through lenses that preserve their peripheral vision and enable them to place holograms on objects in the real world.

Unlike virtual reality, which immerses users completely in a simulated world, **mixed reality** enables users to mix virtual and physical reality by enabling holograms in the virtual world to look and sound like they're part of the physical world.

The mixed-reality nature of HoloLens lets users move freely and interact with holograms, people, and other tools, but maybe even more importantly, it enables them to have a **shared experience**, interacting with the same data at the same time.

The potential for HoloLens to transform manufacturing is tremendous and relevant to numerous manufacturing applications. Organizations can be left wondering how the technology applies to their business. That's where **Mixed Reality Studios** come in.

# Microsoft Services can guide impactful change for manufacturing



**Worldwide Mixed Reality Studios (WWMRS)** boast creative teams with experienced developers, artists, creative directors, and project managers who work together with manufacturing organizations to create HoloLens solutions that enable digital transformation to solve business challenges.

Some of the top priorities identified by leading CXOs in the manufacturing industry are centered around growth, customer centricity, operational efficiency, cost reduction, and a focus on innovation. WWMRS helps customers take a pragmatic approach to consider how they could use the technology in the day-to-day reality of their business.

“HoloLens is the first device of its kind that can solve real-world enterprise problems,” explains John O’Brien, Principal Program Manager for WWMRS. “What we do is help customers both understand the breadth of possibilities and find an immediately impactful business case to prove the viability of the technology and help the sponsor get a quick win inside their organization.”

# Microsoft Services can guide impactful change for manufacturing

Continued

Manufacturing customers interested in developing HoloLens solutions can begin their journey with the **WWMRS Mixed Reality Digital Transformation Experience Program**. This phased program gives customers an opportunity to talk with highly experienced business professionals, 3D app developers, visual artists, and UI specialists about their vision and to develop feature prototypes to help demonstrate the value of HoloLens to their organizations.

"We not only have a highly experienced team building 3D apps, we have the support of the Microsoft platform team, including Azure, so customers are really getting the full breadth of Microsoft's knowledge and experience," says Ben Brooks, Program Manager for WWMRS. "The **Mixed Reality Digital Transformation Experience Program** also provides an immersive experience for developers from customer organizations to enable them to extend the HoloLens technology on their own as they continue to uncover opportunities."

"Our ultimate goal is to enhance the state of HoloLens development in the world and help our customers be good at it," says O'Brien. "If we want HoloLens to be adopted widely and provide all the benefits for customers that we believe it can, we need people besides ourselves to be good at it."

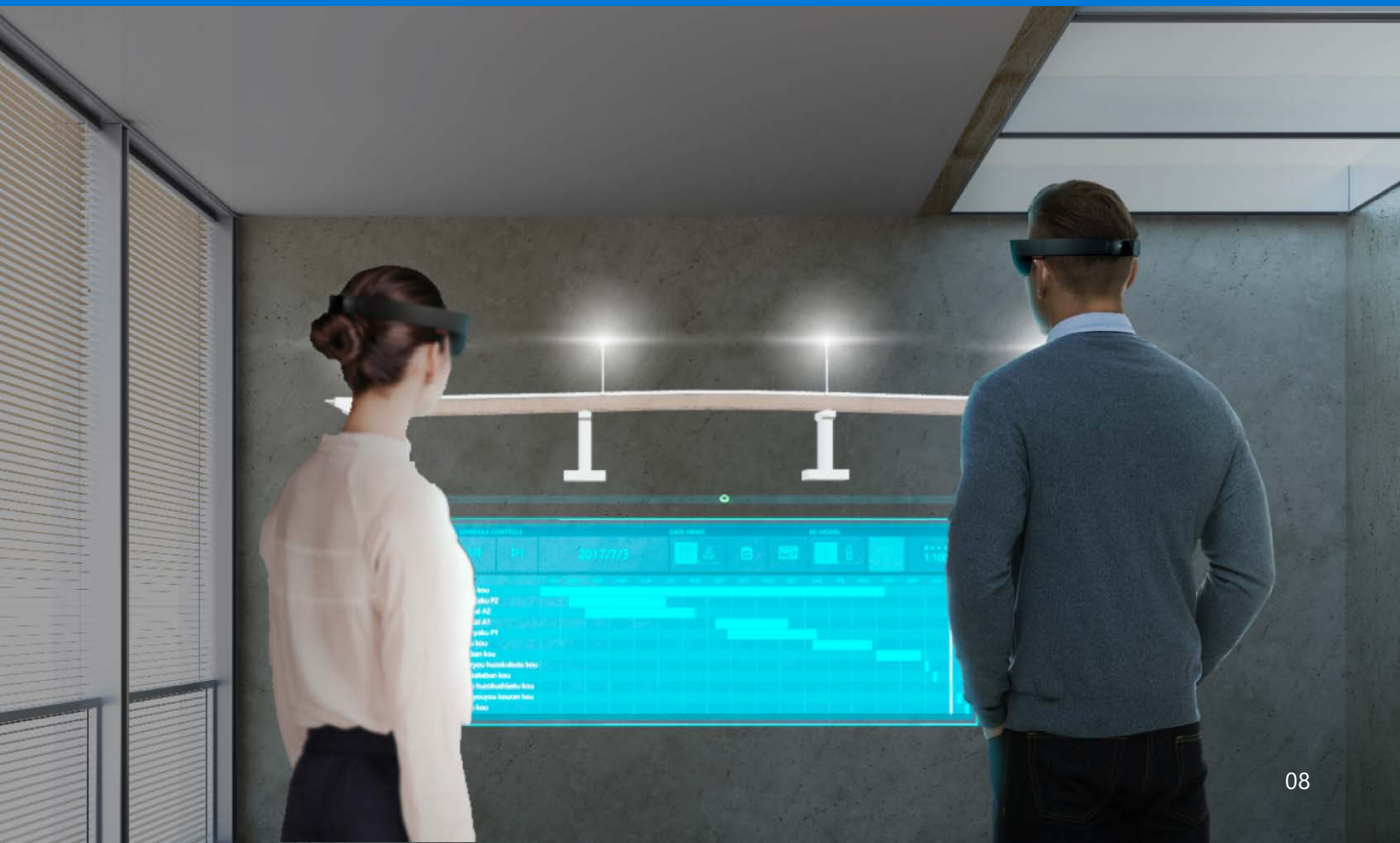


# Customers use HoloLens to develop game-changing manufacturing solutions

Our Mixed Reality Studios experts have worked with manufacturing customers worldwide to help them define their vision and develop solutions that are helping them transform the way they do business.



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Oyanagi Construction Inc.







thyssenkrupp

**thyssenKrupp**, most known for building elevators, also builds custom chair lifts for individual homes. The company's field technicians travel to customer homes to measure staircases for a custom fit. thyssenKrupp started to wonder if it could use HoloLens to measure stairs and create custom diagrams faster to help improve the customer experience.

Now field technicians can use a HoloLens app with a digital measuring device to capture measurements, which are transported to the customer database and accounting systems in real time and then forwarded to the manufacturing site immediately to start production.

This helps thyssenKrupp build chair lifts almost four times faster than it could previously. Field techs can also show customers a diagram of their custom solution so they understand how it will look in their home.





**Boeing** saw the potential to use HoloLens and 3D mapping technology to fight wildfires. The company's Insitu division, which manufactures unmanned aerial vehicles (UAVs), uses Microsoft HoloLens to convert INEXA Control's 2D maps into an accurate 3D map of hazardous areas. The maps track the location of firefighters and their vehicles, and enables fire chiefs managing the scene to make decisions regarding resources and firefighting strategies based on real-time data.

This helps to keep fire crews safe in quickly changing conditions and provides the opportunity to develop real-time evacuation plans for communities in danger.



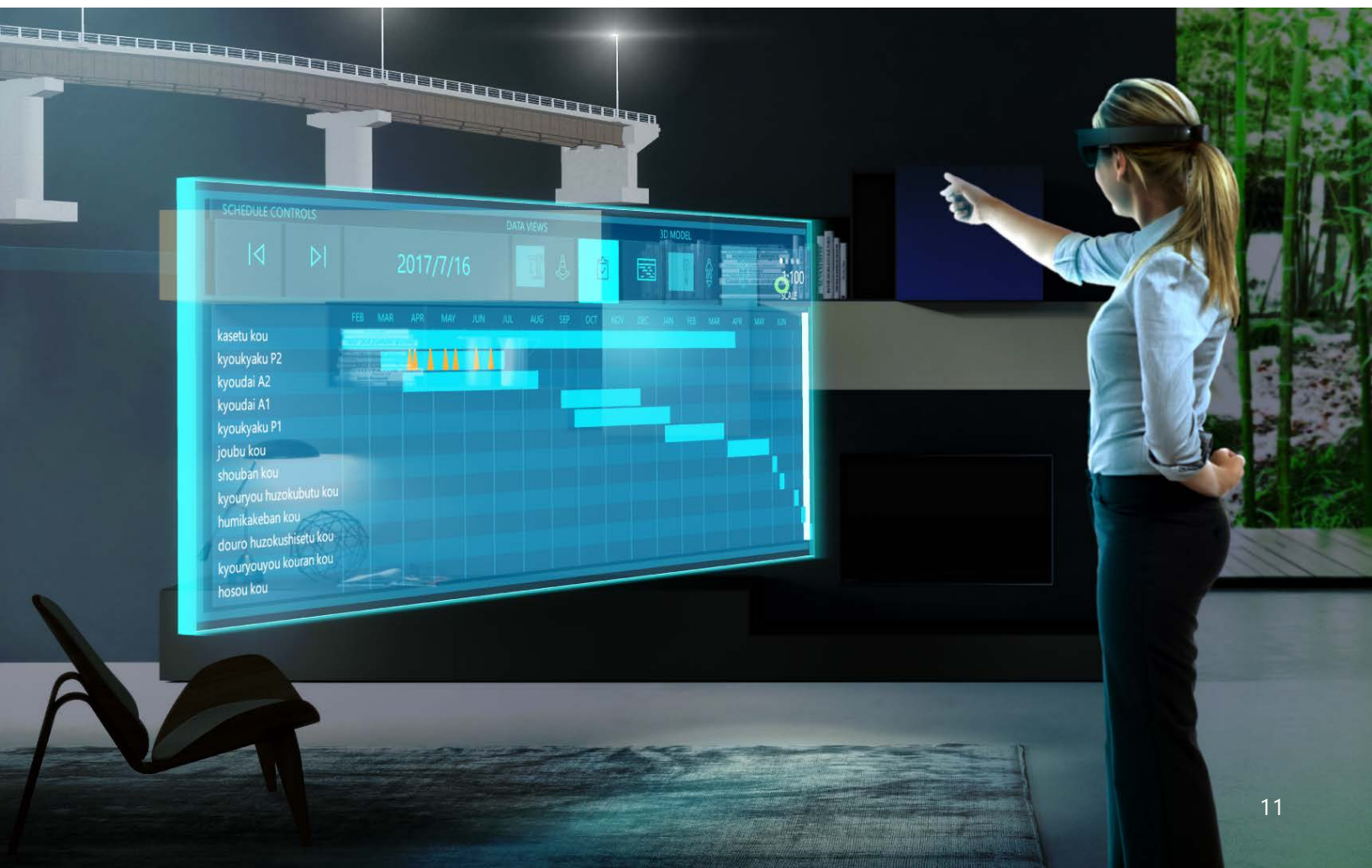


# 小柳建設株式会社

## Oyanagi Construction Inc.

Based in Japan, **Oyanagi Construction** is developing functions for sharing construction site drawings projected onto HoloLens as 3D graphics, which enable architects, inspectors, or other personnel to virtually insert themselves into and experience a site on a life-size scale.

This helps simulate the deployment of construction equipment and workers from the design stage, as well as help project managers monitor construction sites and share information between geographically separated personnel.





# Innovating together

## Mixed Reality Digital Transformation Experience Program

### What we do

The Mixed Reality Digital Transformation Experience Program takes you on a journey to identify the right application and business use case for mixed reality, while designing an end-to-end customized path for your solution.

### How we do it

We study your business to understand your specific business strategies and needs. We identify your business use cases and engineer and design your top mixed reality scenarios. Finally, we help you develop a proof of concept for your mixed reality application.

### Your benefits

When you work with Microsoft, you get access to Microsoft mixed reality specialists and the Worldwide Mixed Reality Studios. By working with us, you will receive real-time knowledge transfer.

HOLOLENS STRATEGY & PLANNING WORKSHOP	PROTOTYPE	PILOT	BUILD & DEPLOY
Imagine the art of the possible and design your mixed reality experience, aligning it with your business objectives to unlock innovation	Design & engineer your top scenario prototype to show and experience possibilities	Enable a small user group to use proposed solution as we define a path to production	Implement solution in a production environment to light up user experiences and Devices

The **Mixed Reality Digital Transformation Experience Program** is designed to enable customers to bring internal or partner resources on this journey to ensure long term success. The resources are embedded as part of the development team and process to equip them to take it forward on their own or to continue to work with the studios team.



# Why use the Worldwide Mixed Reality Studios?

Direct access to and close collaboration with product engineering

Decades of R&D in 3D design

Phased approach to get your mixed reality application to production quickly

Cross-functional teams work with you throughout the project lifecycle to develop your mixed reality solution



**Contact your Account Representative to accelerate your digital transformation with a mixed reality solution.**

**Explore more about HoloLens:**  
<https://www.microsoft.com/en-us/hololens>

Microsoft Services empowers organizations to accelerate the value imagined and realized from their digital experiences.

# Imagine. Realize. Experience.

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