

AS224425

# Augmented Reality and Reality Capturing: The Coming Age of Radical Design Collaboration

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## Learning Objectives

- Discover the concepts and implications of using 3D reality capture and augmented reality technology
- Learn how augmented reality telepresence can enable a radical new way of design collaboration
- Learn how this concept will have a big impact on AEC firms' abilities to deliver more projects, faster, in less time
- Learn how to prepare BIM models for AR

## Description

Modern communication lets people to talk to each other almost anywhere at any time. But using audio and video conferencing is very different than face-to-face communication. In this talk, we will show how we can use augmented reality (AR), reality capturing, and Autodesk technologies to create new types of connected design collaboration experiences that overcome limitations of traditional technology. We will share how to turn intelligent models with 3ds Max software into immersive experiences. We will show how 3D capture technology lets 3D models of people be captured and transmitted to different locations. When combined with AR displays such as Microsoft HoloLens, these technologies let users see, hear, and interact with remote participants in 3D as if they were actually present in the same physical space, and at the same time collaborate with 3D design models. This enables engineers to collaborate over distance, provides a deeper understanding of the design, and enables better-informed decisions in less time.

## Speaker – Marc Slegers

A Senior Solution Architect from Autodesk Consulting with extensive experience in automating customers design and make processes which enables them to do more, better, with less negative impact on the world. Has expert knowledge of applying world-class consulting services for large enterprise customers to maximize their return of investment in disruptive technologies. Has extensive experience of working on international projects in many industry sectors in more than 30 countries across Europe, Middle East, Africa, Asia, Australia and North America.

## Will Augmented Reality and Reality Capture Replace Phone Calls?

At the time the hardware cost over a million dollars and the communications bill for the few days the link was open was tens of thousands of dollars. Now, twenty years later, VR conferencing is becoming more commonplace. Companies such as High Fidelity, Sansar and Facebook are all developing collaborative VR spaces. Altspace VR regularly has over 30,000 monthly active users of its shared VR platform, and collaborative VR applications like Rec Room and Big Screen are growing in popularity.

One of the big attractions of using VR for conferencing is that it allows people to use some of the same communication cues they use in face to face settings. Not only can they speak to one another, but users have virtual bodies that allow them to turn to face each other, shake hands, and make a rich range of non-verbal communication gestures. Finally they can interact with virtual environment around them, such as pointing to and talking about objects in the space, or playing games together. Rec Room players can play table tennis, while people in Facebook Spaces can sketch together in 3D. This means that there can be a much higher degree of Social Presence than in traditional audio or video conferencing.

### Collaborative Augmented Reality—The Next Telephone?

To Make This Science Fiction Fact...



VR conferencing has a lot of potential, and companies are investing ten's of millions of dollars into collaborative VR platforms. However, Augmented Reality conferencing may have even more impact, because of it's connection back to the real world.

The benefits of using Augmented Reality for remote collaboration include:

- Bringing collaboration to a new level
- Enhancing visual clues and unlocking creativity
- Fostering communication and reducing rework

- Exciting users to work with digital tools
- Enabling direct communication through a shared experience

Perhaps the biggest benefit is that AR conferencing is typically focused on sharing the view of a user's workspace with a remote collaborator, not their face as in traditional videoconferencing. For many real world tasks, such as design review it's more important to see what the person is working on rather than their face when you're talking to them. Using this capability, there are a large number of domains where AR conferencing could be applied, from being used for remote expertise assistance in industry, to providing medical support in the premium selling, and enhancing shared 3D coordination, among others.

The current limitations of Augmented Reality

- Geometry complexity
- Limited field of view
- Graphic power / graphic card
- Requires a reliable internet connection
- Outdoor use