



Holographic meetings: How 3D conferencing can enable business

Is 3D holographic conferencing really a viable business proposition, or is it still firmly confined to Star Trek's holodeck? We take a look at the latest 3D conferencing technologies, their limitations and their benefits...



» In 2014, Indian Prime Minister, Narendra Modi, delivered a series of holographic campaign speeches across his country, simultaneously reaching over 100 sites. More recently, we saw New Zealand's Prime Minister, Jacinda Ardern, give the opening address of 2018's [Techweek](#) technology festival in the form of a hologram.

Yet this technology has still not reached the workplace. Stuart Cupit, co-founder and director of technology innovation agency [Inition](#), explains that 3D holography has been the conferencing Holy Grail for a long time, and although we're now beginning to see examples of the technology, there's still a way to go before we can expect holographic meetings to be the norm.

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A range of technologies and techniques are being developed to create holographic conferencing systems including the ['Pepper's Ghost'](#) technique, which projects 2D video onto glass, and augmented reality (AR) systems, which allow users to view 3D, live representations of each other via headsets. However, one of today's most compelling offerings is based on light field displays.

What are the latest advancements in 3D holographic tech?

[Telehuman 2](#), developed by [Queen's University](#), Canada, 'teleports' live, 3D images of an individual using a multi-projection array with 45 projectors and a capture system fitted with three depth cameras. This allows multiple participants to see the hologram in 3D, without the need for glasses.

"You can walk around this image as if the person was there. We're bringing actual holograms to life," enthuses Dr Roel Vertegaal, Professor of Human-Computer Interaction at the university's

School of Computing. "Light field displays are making this a reality – they capture not just pixels, but also the angle of a light ray. The second [enabler] are depth cameras that can image around a person."

Another researcher, this time in the US, has been focusing on developing volumetric images rather than holograms. These are 3D images that float in the air, allowing you to walk around and view them from any angle.

The man behind the project at Brigham Young University (BYU), Daniel Smalley, says the easiest way to understand what they are doing is to think of the images they create as 3D-printed objects.

"This display is like a 3D printer for light. You're actually printing an object in space with these little particles," the electrical and computer engineering professor and holography expert recently told [BYU News](#).

» What's holding back 3D holographic conferencing?

Exciting advancements are underway and it is already possible for businesses to hold holographic meetings using AR, but 3D holographic conferencing technology needs to mature before it can truly go mainstream.

"Holographic meetings using AR tech can be done now, but we're not quite there yet," says Cupit.

Even so, we cannot ignore the fact that immersive experiences, like holographic conferencing, provide more engaging ways for employees to interact.

A recent [Gartner report](#) noted that CIOs should be leveraging technologies such as virtual assistants (VAs), immersive experiences and robots to create cost effective and engaging user experiences in the future. In addition, it said that these technologies will "challenge CIO's preconception of a digital workplace being confined to a physical office, as virtual offices and telecommuting will become more viable".

Is 3D holographic tech worth investing in?

One of the main advantages of 3D holographic conferencing is it be regarded an enabler for businesses – helping companies to improve communication channels while saving time and money – and their carbon footprint. For example, as all non-verbal communication is preserved, there's a much smaller need for employees to travel for meetings where direct communication is key.

"Face-to-face interaction transfers an immense amount of non-verbal information," notes Vertegaal. "This information is lost in online tools, promoting poor online behaviours. Users miss the gestures, facial expressions, and eye contact that bring nuance, emotional connotation and ultimately empathy to a conversation. [We're able to] inject the missing elements into long-distance conversations with a realism that cannot be achieved with a Skype or Facetime video chat."



It also helps productivity, as Olga Cooper, PR and marketing director at holographic projection company [MDH Hologram](#) points out. Those that cannot get into the physical office can still take part in meetings, plus employees can speak with many more clients virtually than they would if they had to travel between offices.

"Having this technology saves a lot of time in travelling, as well as opening many doors for people who are not able to travel due to health issues or other restrictions. We're able to wash away the boundaries and connect people from remote locations. In addition, we can double, and sometimes triple, the amount of places one salesman can visit in a day."

Cuprit adds that this technology is also great for collaboration and shouldn't just be considered for meeting scenarios. "Ideally users would be able to spend time together and work together, rather than arranging a conference call and then going their separate ways."

There is little doubt that 3D holographic conferencing technology is still evolving, but usable products are already out there, if your pockets are deep enough. The benefits cannot be overlooked and, as associated costs come down, experts are convinced we'll see uptake surge in the not too distant future.

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