



THE IMPACTS OF HOLOGRAPHIC TECHNOLOGY ON DESIGN

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Figure 1. Microsoft HoloLens in Use

New Technology, New Ideas

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So What is a Hologram?

It is easy to think of holograms imaginatively as they have appeared in countless films across Hollywood. In reality, we will not be able to have holographic meetings with each other for awhile, but the early stage of this technology is on its way. There tends to be confusion when discussing holography because of the fanatical “sci-fi” connotation attached to it. Massachusetts Institute of Technology explains: “Holography denotes the techniques and tools of capturing and “replaying” the three-dimensional light information that reflects from illuminated objects” (web.mit.edu, “Holography”). This is a very scientific and broad label. When taking a look at consumer-driven holograms, Mary Branscombe of techradar.com clarifies, “What you see isn’t a holograph or a hologram; it’s a projection - but it’s being projected onto holographically printed lenses... that turn the projection into the 3D image you see” (techradar.com, “Hands On”). This describes Microsoft’s HoloLens, which is essentially an advanced form of augmented reality.

Inside the Hologram

HoloLens is worn and used in the form of a headset that consists of 4 major components: (Figure 1) a camera¹, a computer², the lenses³ and a vent⁴. The camera interprets depth of field and ranges nearly 120 degrees, allowing for more realistic projections. The computer has central, graphic and hologram

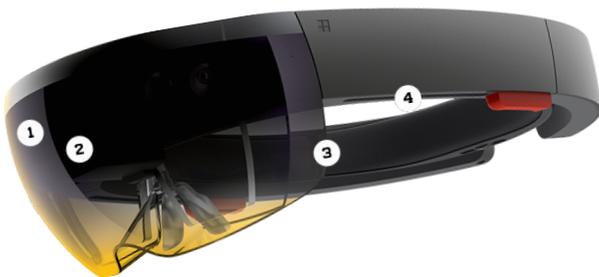


Figure 2. “HoloLens” Headset Parts

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Figure 3. Typical Computer Workspace

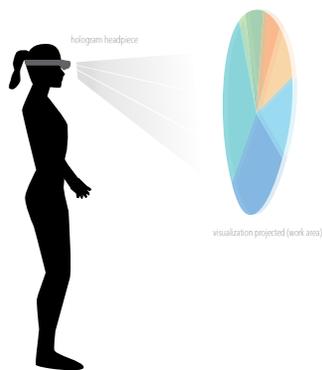


Figure 4. "Hologram Visualization"

processing units which carry out crucial information in order for the device to respond to accelerated user feedback. The lenses are a unique concept of their own that delve into complex laws of physics. Simply put, the lenses are holographically printed, which means light particles move around in ways that make our brain perceive these unique projections. The vent is the last component that ensures the device does not overheat.

Holographic Effects on Design

Microsoft HoloLens should not be seen exclusively; it is not the only technology of its kind. Instead, it is an exemplary model and outlet to a new world of media manipulation. The biggest part of holography is not just the technology itself, but the impact it will have on its users. Integrating a hologram into a designer's typical workspace allows them to visualize everything in three dimensions. Microsoft inventor Alex Kipman offers an insightful look into the idea: "The next era of computing won't be about that original digital universe. It's about the analog universe... and the analog universe has a fundamentally different rule set" (qtd. on wired.com). In other words, instead of editing behind a screen, clicking one function and then typing another, editing will become part of our own physical world. Inspiration will be everywhere and intuitive manipulation will be at your fingertips.

The Importance of Detail

Looking further into the benefits of holography and design, we have to understand the initial issues that arise from typical computer editing. As designers, we have easily adapted to this work space, but there are actually a lot of limitations. For one, the majority of all graphic work requires great attention to detail. This is manageable on a computer, but when compared to the power of a hologram it deprives the creator of pure and realistic accuracy. With HoloLens, detail is easily enlarged at an incredibly realistic dimension. To inspect these details further, the concept of "pinning" is used to explore your projected design from any angle. This means that your work won't move with you if you choose to inspect it from a different spot.

If you think more about how you interact in a program like Adobe Illustrator, there is a lot of tedious repetition. One uses a mouse or a touchpad to access different toolboxes one time after another. Clicking is used or the

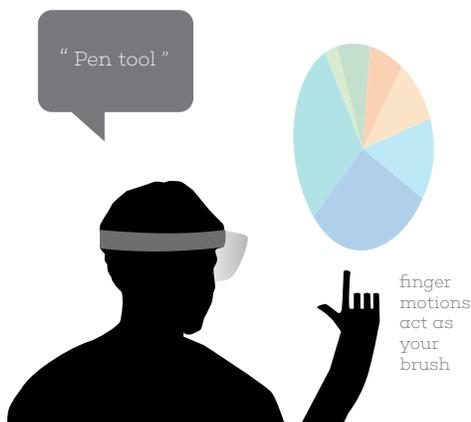
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keyboard for “hot keys”, to access drop down menus. Graphic art and media editing is time consuming and these motions become extremely repetitive and especially hard on the wrist. All of these applications become simplified with a hologram. The use of clicking and dragging would be replaced by voice commands. For example (Figure 5), to access a new tool one would simply say something like “open pen tool”. From there, a touchpad would be obsolete since you would just use hand gestures to create your actual design projected in front of you. Overall there would be way fewer steps in accomplishing a single task, thus easing your overall work environment to focus on fine- tuning the important graphic details.

Interactivity & Engagement

Working on a computer is often synonymous with being “stuck behind the computer screen”. For some professions, (e.g. social work) this may not be such a big deal, as a majority of their time is spent actively logged off a computer. But graphic design is almost entirely done digitally. This poses a huge concern and can deplete one’s creativity after awhile. Instead of closing the user off from reality holography engages them directly into it. Voice controls and gestures allow a designer to combine their work with objects from their surrounding environment. If you are creating a banner on the computer it would be shrunk down as a two dimensional display. You are left constantly envisioning how one detail could look once printed and placed. If one constructed this same banner using a hologram, suddenly there is the ability to visualize it wherever you want, wrapped around a unique surface. The user is better stimulated and engaged and their work becomes more realistic to its environment.

Figure 5. Voice Control & Gestures



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So, What Now?

With all of these intuitive functions holography offers, one could be left to believe that graphic editing and media manipulation could be performed by the everyday person. This is very well a possibility, but better yet a good reason to embrace the technology now. As media people it is crucial to constantly stay informed and be knowledgeable of the newest innovations that may impact the field of design. If you can foresee these changes then you have the ability to influence how they affect your own work and environment. Embracing new technologies like the hologram is key to becoming a front runner and figuring out how to apply it for your own benefit is even more powerful.

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Photos

Figure 1. <http://www.microsoft.com/microsoft-hololens/en-us> Figure 2. <http://www.wired.com/2015/01/microsoft-nadella/>

Cover Photo: <http://www.microsoft.com/microsoft-hololens/en-us>