Microsoft HoloLens: Steps Towards the Future

There is a scene in the film *Back to the Future II* (1985) when Marty McFly's son sits at the dinner table watching TV on a headset while still being able to interact with the world around him. Microsoft took this idea and ran with it, releasing the HoloLens in 2016, a mixed reality headset which gave one the power to have a computer right in front of one's eyes presented as holograms that the wearer sees; no screens or wires required. A user can walk around a room and have multiple screens open to watch videos, play games, or work using integrated Office 365 functionality. It is very well possible this device will change how people interact with media forever.

To understand the HoloLens, it's important to know how it works. The HoloLens uses mixed reality technology, not to be confused with CG Virtual Reality. Mixed reality is "an overlay of synthetic content on the real world that is anchored to and interacts with the real world—picture surgeons overlaying virtual ultrasound images on their patient while performing an operation" ("VR/AR/MR…). CG VR on the other hand is "an immersive experience created entirely from computer-generated content ("VR/AR/MR…). Think that Virtual Reality "wants to immerse us in an entirely new world" while Mixed Reality wants "to help us interact with the real world in new ways" (Statt). To help achieve this idea Microsoft employs a variety of cameras and sensors that track eye movement, the environment around the user, stabilize holograms while user is in motion, as well as keep an object stationary in a room so the user can see it from more than one angle. The Hololens also includes a camera that can be used in video chat with apps like Skype. CNET's Nick Statt got to get hands on a demo where a Microsoft Employee from far away walked him through rewiring a light switch using drawing commands

he could see right in front of him with a window of the employees face projected on the wall. (Statt). This is just one example of what the HoloLens can do and as application developers continue to familiarize themselves with the device, more and more functionality will be available.

With such a powerful device, it is a must to acknowledge the creator behind it: Alex Kipman. A 2001 Graduate from RIT with a degree in software engineering ("Alex Kipman"), Kipman took the world with his newest idea: the HoloLens. In a Microsoft Build Conference in 2015 while he addressed developers he made his intentions clear about how he would like technology to go foward; "move beyond devices, to move beyond screens and pixels and to move beyond today's digital borders" (Kedmey). Kipman's official title at Microsoft is "general manager of incubation for the Interactive Entertainment Business" ("Alex Kipman"). Another well known project he has worked on is the Microsoft Kinect which featured motion controls for Xbox 360 games.

It is no secret that what is truly exciting about the HoloLens is its potential. While it is mostly marketed towards developers at the moment and not on commercial use, when it rolls out for consumers, it very well might be a smash hit. One of its biggest selling points is its ability to save people money. While it currently has a steep price tag of $3,000 ("Microsoft HoloLens"), that will change over time. When computers first came out they were outrageously expensive, but due to innovations and understanding of hardware and software computers became faster, more user friendly, and cheaper. the HoloLens has the potential to become in all in one device for the user. Why by a 50" flat screen tv when one can use a 100" hologram that is projected on the wall? It has the potential to make screens and monitors obsolete. (Delgado). Another selling

point is workplace productivity as one can have access to all Office 365 programs. Having the ability to view all necessary information on a Heads Up Display can greatly increase workflow and encourage employees to work smarter. ("Microsoft HoloLens").

The future of technology might very well lie in the HoloLens controls for users. Kevin Dupzky of *Popular Mechanics* put it best when explaining the evolution of how users interact with devices; "The complexity of our interactions with computers grew for most of their history—punch cards, then a keyboard and monitor, then a keyboard, monitor, and mouse—but now are dissolving into gestures, voice, and gaze. The latter three, of course, are how we communicate with each other" (Dupzky). While a keyboard and mouse is the usual way a user communicates with a machine, gesture is how humans connect with one and other, it is the next step to making these devices connected more with real life. It's ability to transport the user to, as NASA's Onsight application does, Mars to explore and learn while simultaneously never leaving the room is game changing (Dupzky). Closing out this section will be an anecdote form Dupzky's article that truly exemplifies how this product is the next step in the evolution of technology. Comparing old PCs he used with his father as a child to the HoloLens he got to demo he expresses:

"I thought of those late nights on Dad's lap, straining to peer around corners. And with that on my mind, I got down on my hands and knees in the red Martian dust, to have a closer look at the underside of a rock that was sixty million miles away." (Dupzky).

So while the HoloLens still has a ways to go, it is hard to question the impact that it will make as it becomes more accessible. There are plans to release a HoloLens 2 in the future, with

more features and hopefully a more accessible price point. It is without a doubt that this is the

spark that will change how people interact with media forever.

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