7 Things about Microsoft Hololens

1 - What is it?

The Hololens is Microsoft's take on augmented reality, which they call "mixed reality". Using multiple sensors, advanced optics, and holographic processing that melds seamlessly with its environment, These holograms can be used to display information, blend with the real world, or even simulate a virtual world.

2 - How does it work?

The Hololens has a plethora of optical sensors, with two on each side for peripheral "environment understanding" sensing, a main downward facing depth camera to pick up hand motions, and specialized speakers that simulate sound from anywhere in the room. The Hololens also has several microphones, an HD camera, an ambient light sensor, and Microsoft's custom "Holographic Processing Unit" that they claim has more processing power than the average laptop. All this comes together to sense the spatial orientation of the unit in the room, track walls and objects in the room, and blend holograms into the environment.

3 - Who's doing it?

The Hololens was developed by Microsoft.

4 - Why is it significant?

The Microsoft Hololens is perhaps the most popular version of dedicated augmented reality to hit the market to date. It's significant that such an iconic company would invest the amount of resources they did into such an emerging field, and shows how far we've come in augmented reality, and where larger companies think we're going.

5 - What are the downsides?

The Hololens is the first version, and when buying it online, is still called the "development edition." There is a commercial edition as well, but it's obvious from the website that Microsoft is pushing for the public to increase the utility of the Hololens by developing apps and programs, and innovating new ways to mesh augmented reality with the world. Beyond that is the price tag. With the development edition going for $3000, and the commercial edition costing a tenuous $5000, the customer would hope for a fully optimized utility tool. Unfortunately, as with most emerging tech, there isn't a lot to do with it yet, and some of the hand motions do feel a bit clunky.

6 - Where is it going?

Augmented reality in general is going to be a big part of our future. As inertial measurement units and holographic processors become more optimal and smaller, large inconvenient headsets will become a thing of the past like car phones and we'll be able to fit an augmented reality computer in a standard pair of glasses. This may be the first piece of technology to really threaten the smartphone craze that's exploded in the past decade. BMW has also put an interesting spin on augmented reality with their concept motorcycle, the BMW Motorrad. Instead of a helmet, the driver wears an augment reality headset that displays vehicle information as a UI and even has road prediction technology and warning alert systems.

7 - What are the implications for higher education?

The Hololens is an excellent way to show students the potential of augmented reality. From playing Jenga to display the physics of the holographic processing unit to an alien game that shows the room analysis software, students can have fun, become more comfortable using the technology, and get a better grasp of the current limitations. Besides that, augmented reality is awesome for creation and innovation. Designs can be easily modeled and prototyped, ideas can be incorporated into real world objects, and users can work with digital design in ways they never could before.