The Battle of the Smart Glasses

To date, the lack of affordable, lightweight, high-performance smart glasses has been a barrier to augmented reality’s widespread adoption. The head-mounted displays (HMDs) most businesses use for AR tend to be expensive and cumbersome, and none of the options available to consumers have achieved broad acceptance.

But the race to develop a popular version of this new digital interface is on—and is attracting both tech titans and upstart inventors. Investors are pouring money into wearables development, betting that HMDs running AR will ultimately disrupt the market for phones and tablets. The screens in consumers’ pockets will be replaced by AR interfaces that people put on—and keep on—without a second thought, just as they do sunglasses.

In this Spotlight package we have described how businesses are using AR to improve visualization, instruction, and interaction. These same capabilities will allow HMDs to become the consumer interface for many products and forms of data. Consumers will use hand gestures and voice commands to access information about and interact with the machines and devices around them, including appliances; audio systems; and home heating, cooling, lighting, and alarm systems. Smart glasses will guide people through the world, allowing them to summon instructions (How do I change a tire?), directions (Where’s the subway entrance?), and even tourist information (What does that sign say in my language?) on a virtual screen that hovers before them whenever and wherever needed.

What will the next generation of wearables look like? Google was first to market with Google Glass, a visionary effort that stalled for a variety of reasons, including high cost and privacy concerns. Microsoft subsequently launched the HoloLens, which many view as promising, but it is expensive ($3,000), has a narrow field of view, and is somewhat bulky. (It’s more of a headset than a pair of glasses.) The HoloLens may prove adequate for some business applications but is not yet ready for consumer use. Famously secretive Apple is rumored to be developing user-friendly smart glasses; the mid-2017 launch of its ARKit developer software for AR apps and the fall 2017 introduction of the AR-capable iPhone X hint at that possibility. Google recently released an improved Glass and launched ARCore, a direct response to ARKit. Numerous other companies are jumping into the market. Among them are Magic Leap, a start-up that has already raised $1.4 billion to develop a head-mounted virtual retinal display, and three companies converging on a sunglasses-like concept: Osterhout Design Group (ODG), Vuzix, and Meta.

The stakes are high. Whoever wins the glasses wars will control a technology that transforms how people interface with the digital and physical worlds—far more than the iPhone did a decade ago. In this next round of the mobile-device arms race, the title of world’s most valuable company could be up for grabs.

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