

After a breakthrough 2017, the race for augmented reality headset heats up in Silicon Valley

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Augmented reality is roaring back to prominence as one of Silicon Valley's favorite frontier technologies, nearly three years after Google's brief, unsuccessful run at the market with its infamous smart glasses.

When criticism of the Google Glass over privacy and safety concerns led some bars and restaurants to ban the then-\$1,500 smart glasses, the future of mixing artificial graphics with real-life viewing seemed more like a pipe dream than science-fiction-turned-reality.

But AR headsets are back in vogue, as Facebook-owned Oculus, Apple and the much-hyped and mysterious startup company Magic Leap all work to bring new entertainment devices to market, hoping to blend reality with the internet.

Even Google Glass made a comeback in 2017 as a niche, industrial product. The glasses are reportedly being used in factories for Boeing, DHL and General Electric, and by a few neuroscience-related startups experimenting with the technology.

Microsoft's Google Glass equivalent, the HoloLens headset, also currently sells only for commercial and development purposes. Ford reportedly uses HoloLens to design cars in augmented reality. And earlier this month, French surgeons wore HoloLens during a surgery, helping them visualize portions of a patient's anatomy during a shoulder

prosthesis operation.

Meanwhile, smartphone-based AR apps like Pokemon GO are improving, and a new app this holiday season has connected with fans of the "Star Wars" movie franchise, finally bringing the possibility of mass-market appeal that once eluded Google Glass.

"We got the ball rolling this year," said Creative Strategies analyst Ben Bjarin. "We went from nobody having experienced AR to a whole lot of people experiencing it."

AR is already heading from smartphones to headsets in a natural evolution—and that transition was seen in products this holiday season, Bjarin said, like the \$199 "Star Wars" augmented reality headset and lightsaber package, built by Disney and Lenovo, which allows users to battle AR-developed stormtroopers and Sith lords like Darth Vader.

"We see augmented reality as a powerful way to bring Disney stories to life in entirely new ways, and we're already developing AR experiences on these new platforms when it makes sense, such as Star Wars: Jedi Challenges," said Kyle Laughlin, Disney's senior vice president of games and interactive experiences.

Owners of the Disney-Lenovo headset said they were impressed by the believability of the lightsaber battles.

"The sense of scale you get from having a character like Darth Maul in your living room while dueling with lightsabers is remarkably compelling," said A.J. Minotti, a digital marketing director based in Poland, Ohio. "The controller is very responsive and provides a good amount of rumble feedback to help the battles feel believable."

But the device comes with some flaws, headset owners said. For one, the

headset only plays a few "Star Wars"-based scenario games. It also requires a smartphone attached to the headset, draining a lot of battery power from the phone.

"I feel like the insertion of the phone was a little cumbersome," said Christine Lauder, an information technology and marketing manager in Houston. "You must also be sure that your phone is completely charged. Starting the app instantly brightens your iPhone screen to 100 percent and there is no built-in charger, so you are limited to gaming for however long your phone will play before dying."

Other new players are throwing their hats into the AR ring. Florida-based unicorn startup Magic Leap, which has raised \$1.9 billion from investors including Google and prominent Silicon Valley venture capital firms Kleiner Perkins and Andreessen Horowitz, unveiled its first augmented reality headset this month after three years of working in stealth mode.

The headset, scheduled to be released next year, consists of futuristic-looking goggles, a handheld controller and a Sony Walkman-style external computer, which hangs at the waist.

"We believe that what we're building at Magic Leap will completely redefine the way we interact with the world around us, and we're determined to get it right," Magic Leap spokesperson Jack Ortner wrote in an email.

Yet Silicon Valley powerhouse Apple may have already made that achievable for app developers. In 2017, augmented reality arrived for the masses who use iPhones and Android smartphones. Apple unveiled its new ARKit platform in October, ushering in dozens of new apps like Ikea Place, which allows users to visualize three-dimensional furniture models in their living rooms or bedrooms.

Apple's new platform also opened up possibilities for existing AR apps, like the popular mobile game Pokemon Go, which updated its app this month to incorporate ARKit technology so Pokemon appear in real-life scale and move and react based on users' proximity.

Meanwhile, Google has rolled out its ARKit equivalent, called ARCore, on a smaller scale. Earlier this month, the search giant unveiled its AR Stickers camera app, which allows users to insert "Star Wars" or "Stranger Things" characters into photos. Google declined to comment about ARCore, Google Glass's future or the company's investment partnership with Magic Leap.

Facebook-owned Oculus, which launched a \$199 [virtual reality headset](#) in 2017, filed patents in August detailing its plan for a futuristic [augmented reality](#) headset. Facebook and Oculus did not respond to a request for comment.

"We all know what we really want: AR glasses," said Oculus's head of research Michael Abrash at the F8 Conference in San Jose in April. "They aren't here yet, but when they arrive, they're going to be one of the great transformational technologies of the next 50 years."

Yet in the increasingly crowded race to build the first popular AR headset, Apple is best positioned for two reasons, said Bjarin: Its enormous developer community gives Apple an edge in producing apps and content for its developing headset, and it has a track record of making sophisticated technology—like wearables—commercially attractive.

Apple is ramping up development for its first AR glasses with hundreds of engineers working to complete the [headset](#) and a new operating system by 2019, according to Bloomberg.

"We don't give a rat's about being first, we want to be the best, and give people a great experience," Apple CEO Tim Cook said about AR glasses in an October interview with British newspaper The Independent. "But now anything you would see on the market any time soon would not be something any of us would be satisfied with."

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