Market Snapshot:
Consumer Strategies and Use Cases for Virtual and Augmented Reality

A Parks Associates Snapshot

![Parks Associates logo]

Virtual Reality Snapshot

Companies in connected CE and the entertainment IoT space are watching the emergence of virtual reality (VR) and augmented reality (AR) to determine their impact on **device development, content creation, and consumer engagement**. These technologies could dramatically alter the processes in all three areas, and open new revenue opportunities, although their interest is tempered by concern that adoption will not go beyond the early-adopter phase. These technologies have potential beyond the limits of tech enthusiasts, with benefits to multiple industries, but companies first need to expand consumer familiarity and comfort before they can reach even early mass-market penetration.

Familiarity

Familiarity with VR and AR technologies is still limited but growing, especially among the younger generations. **Among U.S. broadband households, 63% are not familiar or know nothing about virtual reality**, leaving a wide opportunity for industry players to educate and market these new products and services.

Familiarity with Virtual and Augmented Reality
U.S. Broadband Households

■ Very Familiar ■ Not Familiar

- Virtual Reality
- Augmented Reality
- Virtual Reality Headsets
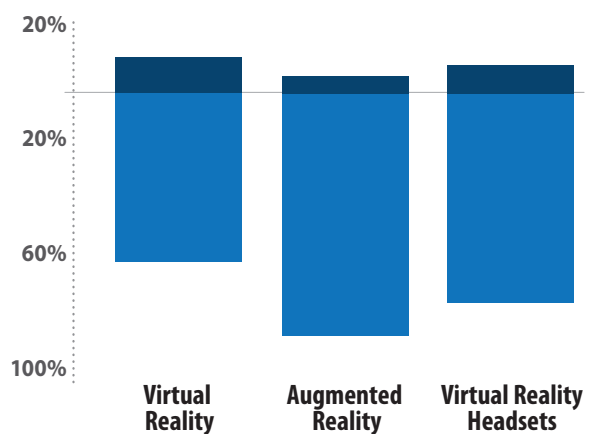
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Defining AR and VR

Virtual reality (VR) refers to a computer-generated 3D image or environment with which a user can interact. The experience is intended to make the user feel immersed and present in the virtual environment through visual and haptic interaction. VR differs from augmented reality in that VR users do not see or interact with elements from the real world; they are immersed in a virtual world.

Key VR Players: Gear VR, HTC Vive, Oculus Rift, PlayStation VR.

Augmented reality (AR) is a technology that superimposes a computer-generated image, video, or 3D model on a user's view of the real world, allowing the user to see and sometimes interact with the composite image. AR employs device cameras or sensors to map and identify the external environment.

Key AR Players: Google, Magic Leap, Microsoft, Pokémon Go (Niantic, Nintendo, and The Pokémon Company).

High Familiarity with Virtual or Augmented Reality Products
U.S. Broadband Households

- Oculus Rift
- Samsung GearVR
- Playstation VR
- Google Cardboard
- HTC VIVE
- Microsoft HoloLens
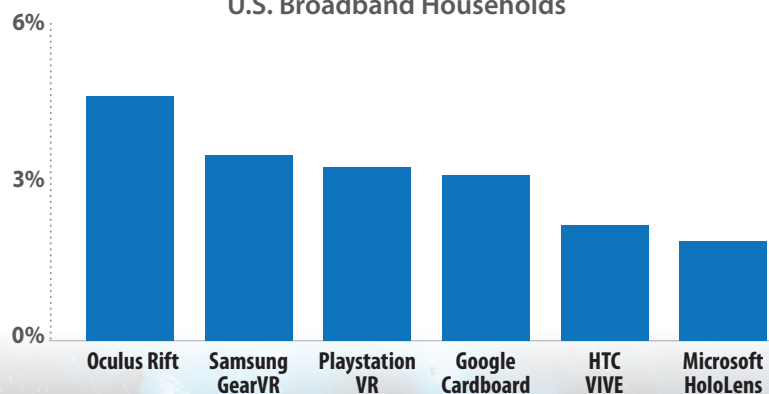
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Ownership, Purchase Intentions, and Consumer Adoption

CE companies in particular had some initial concerns that the surge in VR interest would follow the same pattern as 3D TV, where interest and activity spiked quickly and then declined with the same rapidity.

> **VR and AR will not fall into the same pattern as 3D TV since these technologies offer a new, immersive experience.**

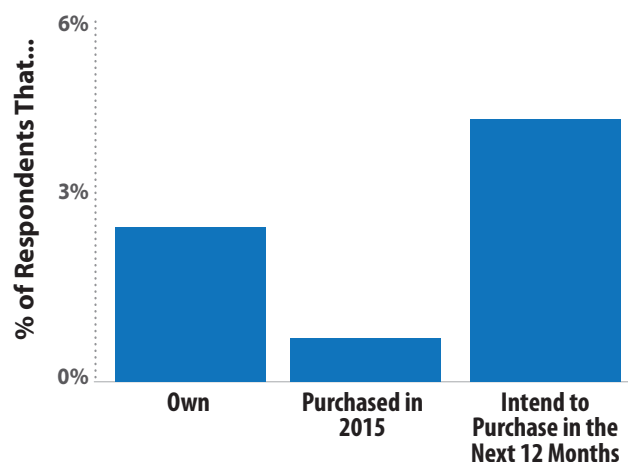## High Familiarity with Virtual Reality Technology by Generation

U.S. Broadband Households

■ Baby Boomers   ■ Generation X   ■ Millennials
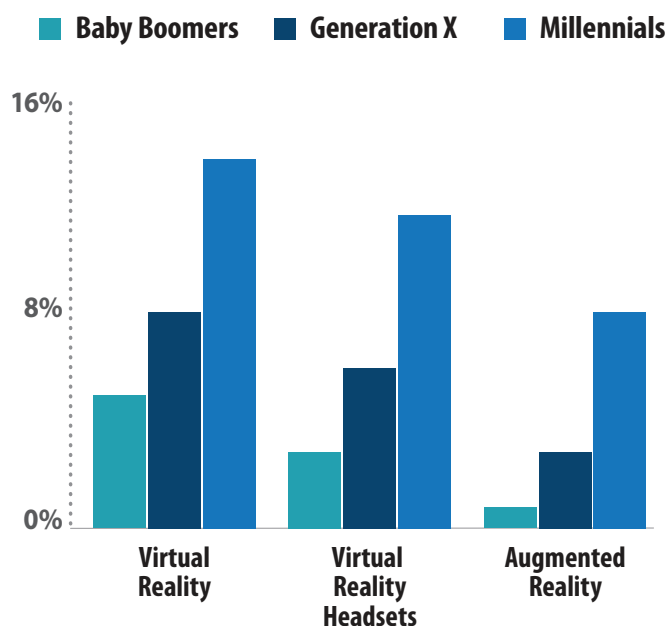
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Virtual Reality Headsets: Adoption, Purchase, & Intention to Purchase

U.S. Broadband Households

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As more households adopt these devices, and they become part of the consumer-based IoT, they will emerge as a new way to experience content streams coming into the home and a new interface for other connected devices throughout the home. Parks Associates recommends that CE companies that are developing VR headsets provide simple methods to add (and remove) multiple content streams while giving the user the tools to personalize their experience with this device. For the consumer, the division between device and content is already blurred, and innovations in virtual and augmented reality could finally erase the distinction.

> **3.5% of U.S. broadband households, or roughly 3.4 million households, own a virtual reality headset.**

Experience is the Key to Adoption

The key to wider adoption is for people to experience these technologies first hand. Almost half of consumers who try a VR headset enjoy it and plan to purchase one in the future, and 15% who try a VR headset enjoy it and then acquire a headset.

The app Pokémon Go certainly did a lot to expose smartphone users, particularly millennials, to AR, but following such rabid interest in the summer of 2016, there is uncertainty on whether Pokémon Go is a one-off phenomenon or if it truly signals a shift in content distribution. The app was successful in getting users out of the house and interacting with content in unique settings. It has yet to be proven if this success is repeatable with other apps or other use cases.

User Experience of Virtual Reality Headsets
U.S. Broadband Households That Have Tried a Virtual Reality Headset
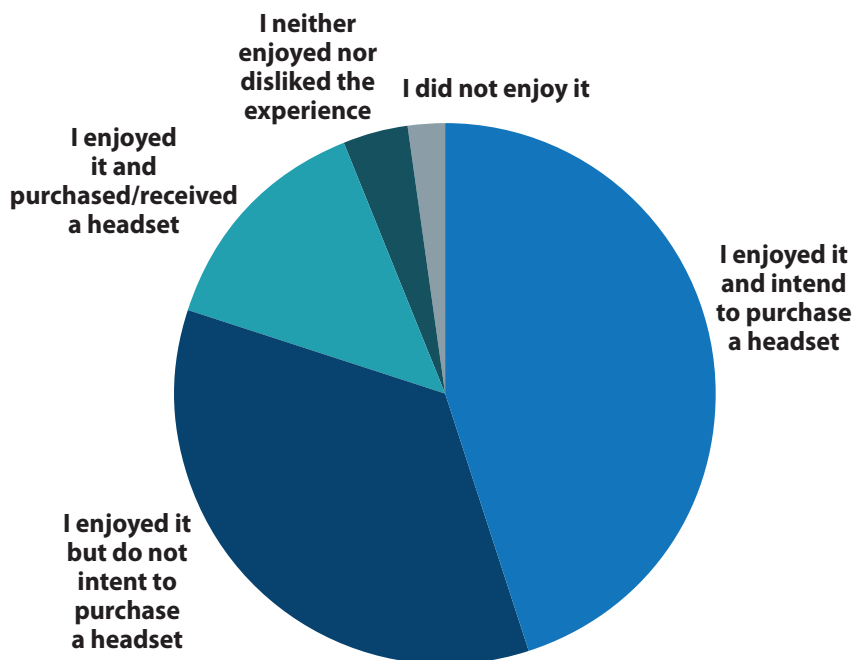
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Millennials are the Primary Target Audience

Millennials show more interest and knowledge than other generational groups when it comes to connected products and services – seen with the success of Pokémon Go. The app set several world records for downloads and revenues for both Android and iOS platforms and successfully introduced consumers to an AR app experience that doesn't require headgear or expensive equipment to see an alternate universe. Parks Associates expects to see a growing number of AR apps in the coming months, with millennials guiding that effort.

Sports fans will also have the opportunity to experience live VR content. In February 2016, Fox Sports announced a five-year deal with NextVR to host live VR experiences for a wide variety of sports, ranging from boxing to golf to NASCAR to soccer matches. The NBA also partnered with NextVR in October to broadcast one NBA game every week in VR. These early experiment will serve to guide traditional media companies in the potential for VR and strategies to broadcast live VR content.

- **4% of millennials** (heads-of-household ages 18-34) own a VR headset, and 8%, or 1.5 million, millennials plan to purchase a virtual reality headset in 2016.
- **8% of millennials** show high familiarity of augmented reality, compared to 3% for Generation X and just 1% for baby boomers.
- **12% of male and five percent of female millennials** said they intend to buy a VR headset this year, twice the percentage among other age groups.

Use Cases

Gaming
Gaming is top and most obvious use case for VR and AR technologies. PlayStation VR, launched in October 2016, was a high-profile entry.

Digital Media
360° videos are becoming more prevalent. In March, 2016, YouTube enabled the ability to view 360° videos, and just a few months later, the number of 360° videos on the site exceeded 100,000. Professionally developed content is being created as well with Hulu announcing two virtual reality series.

Health
Hospitals such as Cedar Sinai are experimenting with virtual reality as a way to improve the value of healthcare among patients, including the potential of VR to reduce pain and anxiety.

Live Events
Events such as concerts and sporting events have the option of selling virtual tickets alongside the traditional physical ones, allowing viewers to experience the event as if they were actually present.

Social Interaction
One of Facebook's primary reasons to be interested in the VR space is one of VR's key differentiators — the ability to feel a sense of presence with a friend or loved one, regardless of physical distance.

Marketing
Using VR, companies can show potential customers what their product might look and feel like. Real estate agents can use it to walk customers through a virtual version of a home they are interested in buying. Custom smart home integrators can use it to mock up a virtual version of what their home systems would look like in their customers' homes.

Education
From virtual elementary school field trips, to visualizing atoms, molecules, and their chemical reactions in a high school chemistry class, VR education apps have the potential to see use in school curriculums.

About The Authors

Brett Sappington, *Senior Director of Research,* **Parks Associates**

As a senior director of research at Parks Associates, Brett Sappington leads Parks Associates services research team, including access and entertainment services, digital media, OTT, cloud media, video gaming, and technical support services. Brett is an expert in world-wide television and broadband services. His personal research focuses on the activities and trends among operators and the market forces affecting their businesses.

Brett has spent over 18 years in the industry as an analyst, executive manager, and entrepreneur. Brett holds an MBA from the University of Texas at Austin with a concentration in high-tech marketing and a BA in physics from Baylor University.

Twitter ID: @BrettsView

Hunter Sappington, *Researcher,* **Parks Associates**

Hunter Sappington currently studies trends and innovation in connected consumer electronics including devices such as game consoles, smart TVs, virtual and augmented reality headsets, drones, and robotics as well as a variety of smart home devices.

Hunter earned his BA in New Media Journalism with a focus in advertising from Baylor University in Waco, TX.

Twitter ID: @ResearchHunter

PARKS ASSOCIATES

Parks Associates is an internationally recognized market research and consulting company specializing in emerging consumer technology products and services.

Founded in 1986, Parks Associates creates research capital for companies ranging from Fortune 500 to small start-ups through market reports, primary studies, consumer research, custom research, workshops, executive conferences, and annual service subscriptions.

The company's expertise includes the Internet of Things (IoT), digital media and platforms, entertainment and gaming, home networks, Internet and television services, digital health, mobile applications and services, support services, consumer apps, advanced advertising, consumer electronics, energy management, and home control systems and security.

For more information, visit **parksassociates.com** or contact us at **972.490.1113** / **info@parksassociates.com.**