

# CREDIT UNION TECHNOLOGY WATCH: AUGMENTED AND VIRTUAL REALITY (AR/VR)



THE National  
Credit  
Union FOUNDATION  
Ignite | Inspire | Respond

Credit unions have a major opportunity to become more engaged with members via augmented and virtual reality platforms. As physical devices become more affordable and new platforms emerge with the mass introduction of 5G networks, AR/VR may become the future of financial services. Member engagement strategies, support resources, and employee training modules will live on AR/VR platforms over the coming years – and credit unions need to be prepared for this technological wave.

“ The first wave of the computing revolution was all about personal computers. The second was the creation and widespread adoption of smartphones. The third wave – one that is taking the intelligent edge to whole new places – is mixed reality.”

SANGYA SINGH  
Chief Experience Officer, Microsoft

## AUGMENTED REALITY (AR) HAS MAINSTREAM APPLICATIONS

AR/VR applications in financial services remain largely untapped, though in-market examples from other industries support our hypothesis: AR/VR can be leveraged to improve member financial health.

For example, the booming popularity of apps like [Pokemon Go](#) prove how viable mobile augmented experiences are, as more than 800 million people have downloaded the app to move throughout the real world to capture digital “pocket monsters.” AR/VR is transforming our member’s life experiences, and these

platforms are continuing to gain traction. The growth of the augmented reality industry, for example, will continue to expand and is projected to reach a \$195 billion valuation by 2025.<sup>1</sup> Major technology providers have expanded their AR capabilities through tools like Apple’s ARKit, Amazon’s View in Your Room, and Facebook’s Spark AR. Retailers like IKEA, Macy’s, and Burberry<sup>2</sup> have invested in AR tools to embed products in the shopper’s environment, enhancing their experience.



Augmenting reality with an AR-equipped tablet.

Image Source: <https://www.businessworldit.com/ar-vr-technologies/how-augmented-reality-is-shaping-finance/>

Unlike virtual reality, augmented reality superimposes information and artificial objects over the real world. Think of augmented reality as a lens over the physical world, changing and “augmenting” what you see. Users can capture this experience through a viewer like a camera-enabled smartphone and smart glasses. The former is already widespread, with over a billion AR-compatible smartphones worldwide.<sup>3</sup> The latter has experienced some mass market hiccups; however, Google’s recent purchase of the smart glasses startup North<sup>4</sup> spells a resurgence in dedicated augmented reality hardware.

<sup>1</sup> Shanhong Liu, “[Augmented reality market size worldwide 2017-2025.](#)” Statista, Dec 13, 2019.

<sup>2</sup> “[Burberry Brings Products to Google Search Through Augmented Reality.](#)” Feb 25, 2020.

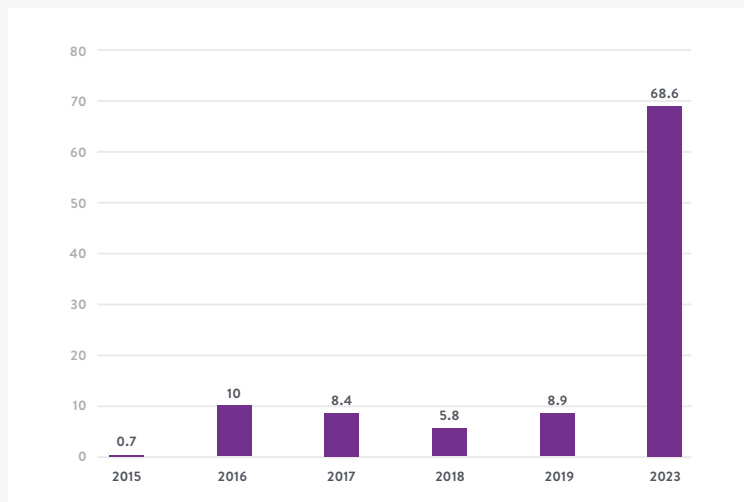
<sup>3</sup> Mike Boland, “[ARCore Reaches 400 Million Devices.](#)” AR Insider Weekly, May 13, 2019.

<sup>4</sup> Rick Osterloh, “[Our focus on helpful devices: Google acquires North.](#)” Google, Jun 30, 2020.

AR is leading us into the future of member engagement. Basic applications include virtual branch visits, ATM locators, and financial education. Credit unions should incorporate the widespread expectation of AR platforms as part of the institution's overall digital strategy.

The growth of augmented reality is largely due to the fact that it is easier to develop, because it requires less overhead and specialized tools to implement. Nonetheless, its success serves as a starting point for virtual reality applications to improve members' financial health.

### Forecast Shipments of Virtual and Augmented Reality Headsets Worldwide from 2015 to 2023



AR/VR has the potential to be a key platform across entertainment, healthcare, and other consumer verticals. As the technology improves, so will its adoption.

Source: Statista Research Department

“As it stands, online platforms struggle to inform members in an engaging way. Interaction is minimal and is replete with overbearing text. I think augmented reality's strength lies in allowing members to interface with resources, find answers, and educate themselves about their financial position in a more immersive and engaging way.”

KURT SCHROEDER  
Chief Experience Officer, Avtex

# VIRTUAL REALITY WILL BECOME MAINSTREAM OVER THE COMING YEARS

Whereas augmented reality tacks on visual markers on top of real-life images, virtual reality does not have the user interact with the physical world. Rather, virtual reality emulates an entire virtual space. There are many degrees of implementation, ranging from head-mounted devices (such as the [Oculus Rift or Quest](#)) attached to a controller, and even smartphones (usually included with a viewer, such as [Samsung's Gear VR](#), to better isolate the real world).

We expect widespread applications of virtual reality in financial services, driven by cheaper units and platform competition. Headsets may change size and shape, emotions will be captured via facial recognition,<sup>5</sup> and user comfort will increase with the development of varifocal displays.<sup>6</sup>

Mixed-reality headsets will emerge by allowing virtual objects to become interactive on a real-world overlay.

The mass introduction of 5G networks will propel virtual reality's growth. Investments are being made consistently and Oculus – which was acquired by Facebook in 2014 – is expected to command the industry in coming years because of its unique features, a thorough development kit, and a competitive price point when compared with alternatives like [HTC's VIVE](#) and [Sony's PlayStation VR](#).

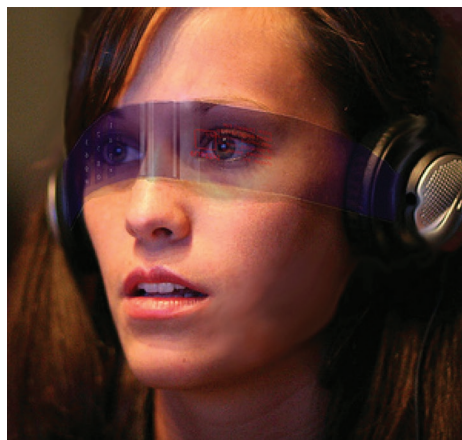
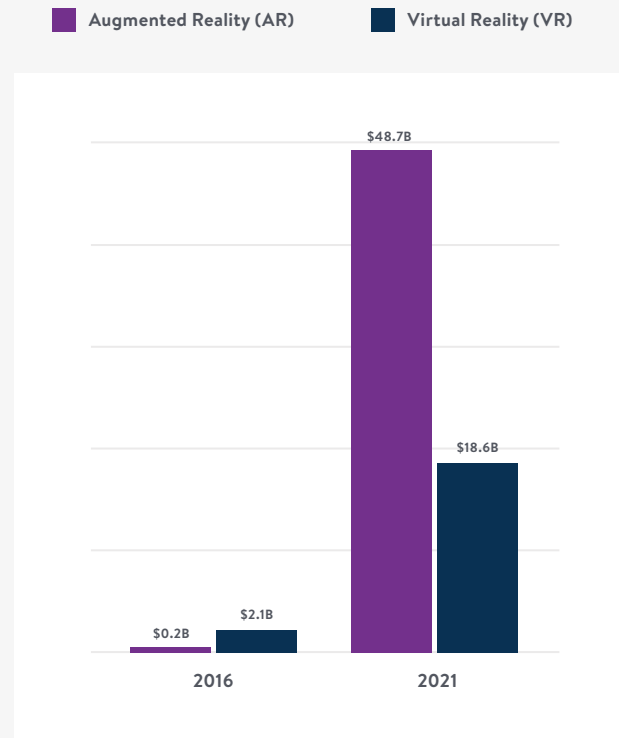


Image Source: <https://shoutout.fintechna.com/2016/05/11/augmented-reality-ar-in-financial-services/>

<sup>5</sup> "Facebook VR Research: Photorealistic Face Tracked Avatars." YouTube, Mar 14, 2019.

<sup>6</sup> "Vergence-Accommodation Conflict: Facebook Research Explains Why Varifocal Matters For Future VR." YouTube, Jul 17, 2020.

**Revenue**  
Estimated in Billions of Dollars



The growth of AR/VR headset revenue indicates a significant trend toward adoption.

Source: Business Insider/Mike Nudelman/Statista

“ While AR and VR applications might sound futuristic, they’re not completely unattainable for those in the credit union space. Collaboration is key and there are many groups that are capable of bringing interactive experiences to credit union members – the key is to have an idea and to try it out. For example, we work with a higher education program to research possibilities and explore evolving use cases ranging from payments to visualizing financial health.”

**BENJAMIN MAXIM**  
AVP of Digital Strategy & Innovation, MSU Federal Credit Union

## CREDIT UNION OPPORTUNITIES FOR AR/VR

The full power of VR platforms in financial services has yet to be realized, with the most relevant examples<sup>7</sup> found overseas. VR adoption started slowly but is poised to take off, with the global market value predicted to reach \$44.7 billion by 2024.<sup>8</sup> Much like how industries such as retail, automotive, and medical have started to capitalize on augmented and virtual reality, credit unions should do the same by evaluating distinct engagement models.

### 1 DATA VISUALIZATION: A TOOL FOR MEMBER ENGAGEMENT

One of the better-known benefits of AR/VR is the ability to visualize data in a user-friendly manner. Seemingly basic information can be manipulated to help members interact with their accounts. For instance, members could use their AR-enabled device to see a complete picture of their financial health and engage the credit union with next-generation budgeting tools. As members spend, they could receive reports and recommendations based on their activities. By empowering members with more data, smarter decisions will follow, ultimately strengthening credit unions' and members' financial health.

Data visualization using *today's* data can certainly help members spend better, and we also think there is an opportunity to leverage VR to engage members with *tomorrow's* data.

Virtual reality could help members better empathize with their distant, or future, selves. Through the power of predictive analytics, a virtual reality platform can show members their financial trajectories and promote healthier habits.<sup>9</sup> If we take this concept one step further, it is possible to leverage a VR platform that

enables members to see their future on a platform like [FaceApp](#). This idea was pioneered by Dr. Hal Hershfield,<sup>10</sup> who contributed to this research.

Credit unions can help members visualize data in more engaging ways that build more trust and create greater opportunities for financial success, such as Fidelity Labs' development of StockCity.<sup>11</sup> Additionally, improved data visualization can promote a competitive advantage in the markets that credit unions serve.

“People often fail to empathize with their distant selves. Through VR and advanced analytics, you could potentially increase the vividness of their imagination and share a visual that predicts what their future selves would look like. This could later extend to a visualization of someone's financial health and drive a positive change in behavior.”

HAL HERSHFIELD  
Associate Professor of Marketing,  
UCLA Anderson School of Management

### 2 IMPROVED MEMBER SUPPORT

Perhaps a more immediate application of AR/VR at credit unions is improved member support. For example, members can use augmented reality to find ATM locations directly from their mobile app, such as [former] Addison Avenue Federal Credit Union's platform<sup>12</sup> (now First Tech), which has been in the market for 10 years.

<sup>7</sup> Jeffrey Pilcher, “[10 Ways Banks and Credit Unions Are Using Virtual Reality](#),” The Financial Brand, Nov 13, 2017.

<sup>8</sup> Kristine Hamlett, “[Grab Your Headset: Virtual Reality Poised For Real Adoption](#),” Adobe Blog, Jun 24, 2020.

<sup>9</sup> Hal E. Hershfield et al., “[Increasing Saving Behavior Through Age-Progressed Renderings of the Future Self](#),” PMC Mar 12, 2014.

<sup>10</sup> Hal Hershfield, Associate Professor of Marketing, UCLA, Anderson School of Management.

<sup>11</sup> “[Fidelity Labs: StockCity for Oculus Rift](#),” YouTube, Nov 18, 2014.

<sup>12</sup> Jeffrey Pilcher, “[Cool App: ATM Finder with Augmented Reality](#),” The Financial Brand, May 17, 2010.

The use and functionality of branches and member support is anticipated to change over the coming years. Branch member/staff interactions can be expanded further through AR/VR. Physical locations with remotely supported kiosks<sup>13</sup> can allow members to access services with the same level of support. Idaho Central Credit Union has a branch location equipped to handle self-service with a virtual reality area.<sup>14</sup> United Federal Credit Union previously utilized virtual reality technology to better connect members and staff.<sup>15</sup> Credit unions can employ virtual reality for added effect for facility tours and to educate members about different products.

Eventually, next-generation 5G internet would allow for more seamless interactions.

A program like [Credit Human's Financial Health Centers](#) could reap the benefits of AR/VR to better impact the financial well-being of its members, too. Advancements in artificial intelligence can open up digital concierge services or conversational banking.<sup>16</sup> Members could visit cafe-style banks or remain in the privacy of their homes to connect virtually with an AI assistant to discuss their financial health. Not only does this free up member service operations to attend to other objectives, members might feel more liberated to discuss personal finances with advanced chatbots.

### 3 EMPLOYEE TRAINING

Training is a popular use case for AR/VR in other fields, especially for medical professionals. Physicians across the globe are leveraging these platforms to empathize with patients by experiencing life as the elderly, and by reducing patients' anxiety by walking them through an upcoming procedure using a VR headset.

To a lesser degree, AR/VR can help guide credit union employees around products and procedures. [Groove Jones](#) recently partnered with Wells Fargo to develop VR management training modules, including how to open accounts and handle fee reversals.<sup>17</sup>

Training — including helping tellers understand how to handle bank robberies — could be leveraged using a VR platform and would save credit unions significant training resources. In working with MDC, Altra Federal Credit Union has partnered with Avtex to provide a virtual tour of its operations center and to bring training modules to employees in different states using VR. The COVID-19 pandemic has exacerbated the need and opportunities for credit unions to engage employees on new digital platforms, and we think AR/VR has significant potential.

## A NEW REALITY FOR MEMBER ENGAGEMENT

AR/VR is a natural progression from mobile-first banking. Whether or not we realize it today, AR/VR will become mainstream over the coming years. Members are increasingly seeking experiences that offer easy access to view and manage their accounts, and they expect to be met by their financial institution where they are, regardless of platform preference.

AR/VR platforms are still evolving, and credit union executives need to consider where the opportunities exist today and where the market is heading. Adoption of AR/VR hardware is still maturing, and many consumers are priced out. Over time, we expect costs to shrink, similar to what we witnessed with smartphones within the last 12 years. Regardless of in-home adoption of AR/VR

<sup>13</sup> ["How Technology Is Shaping the Future of Banking."](#) Intel Technologies.

<sup>14</sup> Victoria Buzalewski, ["High-Tech Banking: At Rexburg ICCU branch, you can FaceTime tellers, explore virtual reality, use 3D printer."](#) Idaho State Business Journal, Sep 26, 2018.

<sup>15</sup> Paul Gatling, ["Credit Union Brings Virtual Reality to New Branch."](#) TB&P, Apr 13, 2015.

<sup>16</sup> Danny Tang, ["Conversational Banking: The Future of Banking: A Financial Concierge for Everyone."](#) IBM, 2018.

<sup>17</sup> ["Wells Fargo VR Experience for HR Management Training."](#) Groove Jones, May 29, 2019.



platforms, we believe there are AR/VR applications for credit unions to implement that will improve members' financial health.

Credit unions can act now to take advantage of AR/VR platforms by connecting with innovators such as [Bell Integrator](#), [Temenos Quantum](#), or [Avtex](#) that work with credit unions to improve member and employee engagement on different platforms enabling intelligent chatbots and augmented reality.

Credit unions need to consider how to employ creative applications with AR/VR as part of their digital engagement strategy. AR/VR platforms are changing the way members expect to engage with different institutions. By incorporating AR/VR into digital engagement strategies, credit unions can leverage AR/VR to help members visualize data, provide added support to members, and expand employee training. Ultimately, these platforms can improve members' financial health.

---

## ACKNOWLEDGMENTS

The author would like to thank the following individuals for their valuable guidance on this report: Gigi Hyland (National Credit Union Foundation); Sarah Lietz (Members Development Company); Matt Jefferson, Kevin Martin, Ben Maxim, Ben Morales, Noreen Schafer, Mike Valentine (Emerging Technologies Advisory Council).

This report also benefited from the insights of Dr. Hal Hershfield, Sangya Singh, and Kurt Schroeder.

This report is made possible through the financial support of Members Development Company (MDC) and National Credit Union Foundation (NCUF). The opinions expressed in this report are those of the Financial Health Network and do not necessarily represent those of our sponsors.



For additional information, contact Brenton Peck at [bpeck@finhealthnetwork.org](mailto:bpeck@finhealthnetwork.org).



The Financial Health Network is the leading authority on financial health. We are a trusted resource for business leaders, policymakers, and innovators united in a mission to improve the financial health of their customers, employees, and communities. Through research, advisory services, measurement tools, and opportunities for cross-sector collaboration, we advance awareness, understanding, and proven best practices in support of improved financial health for all.

For more on the Financial Health Network, go to [finhealthnetwork.org](http://finhealthnetwork.org) and join the conversation online:

